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## The Malaysian Millennials' Characteristics: An Investigation on Selected Public Universities

Las características de los Millennials de Malasia: una investigación sobre universidades públicas seleccionadas

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### ABSTRACT

This paper aims to explore the characteristics of millennials as espoused in most literature. There are seven characteristics of millennials and each characteristic became the focus of the present study. As most literature on the millennials' characteristics is based on western context, this paper looks into the resemblance of the millennial characteristics' descriptions among the Malaysian public university students. Employing a survey, data for the study were collected using an adapted questionnaire. The respondents for the study were selected Malaysian millennials who were social sciences undergraduates in nine public universities. A cluster sampling method resulted in a total of 646 respondents who took part in the survey. It was discovered that the selected Malaysian millennials confirm some of the attributes in the seven characteristics of millennials.

**Keywords:** millennials, characteristics, higher education, undergraduates.

### RESUMEN

Este artículo tiene como objetivo explorar las características de los millennials tal como se defiende en la mayoría de la literatura. Hay siete características de la generación del milenio y cada característica se convirtió en el foco del presente estudio. Como la mayoría de la literatura sobre las características de los millennials se basa en el contexto occidental, este artículo analiza la semejanza de las descripciones de las características millennial entre los estudiantes universitarios públicos de Malasia. Empleando una encuesta, los datos para el estudio se recopilaron mediante un cuestionario adaptado. Los encuestados para el estudio fueron seleccionados millennials de Malasia que eran estudiantes universitarios de ciencias sociales en nueve universidades públicas. Un método de muestreo por conglomerados dio como resultado un total de 646 encuestados que participaron en la encuesta. Se descubrió que los millennials de Malasia seleccionados confirman algunos de los atributos en las siete características de los millennials.

**Palabras clave:** millennials, características, educación superior, estudiantes universitarios.

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## 1. INTRODUCTION

Howe and Strauss (1992) first coined the term 'millennials' when describing the latest cohort of generation starting their schooling years. At present, the millennials form the majority of higher education students for the past few years. Born between 1981-1996 (American Psychological Board (2018); Federal Reserve Board (2019); Ernst and Young (2015), the oldest of the millennials would have completed their undergraduate studies. Mannheim's sociology of generation or theories of generation (Pilcher, 1994) and past studies on generations have confirmed that different generations experience their lifestyle differently due to unique set of characteristics (Assimon, 2016; Anderson, 2013; Gentry et al., 2011; Dols & Wieck, 2010; Howe & Strauss, 1992; Howe & Strauss, 2000). Vast literature has outlined and described the characteristics of the millennials (Kaifi et al, 2012; Bannon et al, 2011; Deal et al., 2010; Ng et al., 2010; Twenge et al., 2010; Rawlins et al., 2008). However, it is important to note that most of the literature review is mainly derived from western contexts. Interestingly, the proponents of socio-economic theories propose that social, cultural and economic factors could influence the common lifestyle of a community (Burns & Roszkowska, 2016; Burns et al., 2013; Von Bertalanffy, 1968). This brought light to the conduct of the present study.

Malaysia is a country that has shown rapid growth in higher education sector over the last few decades (Ministry of Education, 2018). Besides the local students, Malaysia has seen a gradual increase in the number of foreign students' enrolment in the tertiary institutions across the country. The establishment of new universities, public and private alike, further confirms the popularity of higher education in Malaysia. This in turn, results in the mushrooming number of millennials in the local higher education institutions.

This current concern becomes the focus of this paper - the understanding of the tertiary educators and policy-makers on their latest cohort of students namely the millennials. As not much has been explored about the characteristics of Malaysian millennials studying in local higher education institutions, this paper provides empirical data that support the characteristic descriptions of selected Malaysian undergraduate millennials.

## 2. LITERATURE REVIEW

Understanding the definition of 'generation', in particular those that cohabit, is important. A generation is a product of certain period of time and its social, economic, and technological trends. The environment in which the generation developed their experiences (and values) shapes who they become, how they see the world, and what they do. The traits and characteristics pose huge societal implications especially to the field of education.

Howe and Strauss (1992) provide a definition of 'generation' as a cohort-group, comprised by all the people born in a limited span of years. Howe and Strauss (2000) have affirmed that millennial students started entering college in 2000. They propose a span of approximately 22 years. Each generational cohort represents a group of people impacted by their context, who will have an impact on the context in which they prospectively participate. In 2000, they further define the term 'generation' in terms of social and economic trends, perception of work, values or common beliefs and behaviours. Different generations hold different attitudes and expectations, creating a deep level of diversity that impact their manner of interaction and its results (Burns & Roszkowska, 2016).

The term 'millennials' is referred to the latest generation educators are dealing with. Besides being known as 'millennials', this generation is also known as Digital natives, Nets, Nexters, Internet generation, iGeneration and Nintendo digital generation (Assimon, 2016; Anderson, 2013). These terms are associated to the millennials as they are the native speakers of technology, fluent in the digital language of computers, video games and the Internet (Twenge et al., 2010).

As a generational cohort, the millennials display a number of characteristics and preferences that in some instances mimic the values of previous generations, while in others have never been observed before. Millennials are noticeably display high self-confidence, optimistic, multitaskers, and more independent than their previous generation (Howe and Strauss, 2000). Their experiences, values and preferences are likely shape a different world and challenge old paradigms.

Howe and Strauss (2003), claim that millennials live by a number of characteristics that differ from other generations. Technology is everything to the millennials. Further descriptions that distinguish the millennials from older generations include their technological sophistication, constant internet connection, community consciousness, team-orientedness and strong connection with their parents (Howe and Strauss, 2000; Matney, 2006; Dede, 2005). The millennials are also described as those who are achieving, optimistic and multitask (ibid.).

It is important to note that currently millennial generation has reached college level. This is a new breed of students who are likely to challenge paradigm shifting in higher education. Thus, it becomes relevant, given their unique characteristics, to address the challenges that this new generation poses to higher education. Matney (2006) asserts that the millennials will most certainly shape higher education nationwide.

The abovementioned discussions have highlighted the characteristics of the millennials by several researchers based on their theories and past research findings. In summary, it could be deduced that basically the characteristics are similar. The list of characteristics provided by Howe and Strauss (2003) is seen as best to summarize the identified characteristics. For the purpose of the present study, the seven characteristics identified by Howe and Strauss (2003) are referred. The following are the descriptions of each characteristic in brief, as summarized from Howe and Strauss (2003):

a) Feeling special. The notion that the millennials believe that they are collectively important to the nation and parents' sense of purpose hence they are treated special and could make demands.

- b) Sheltered. The millennials have always been subjected to various forms of protection since birth in terms of their safety, well-being and health.
- c) Confident. Possessing high levels of trusts and optimism, the millennials are general happy and believe they could be successful in life.
- d) Team-oriented. Placing high value on friendship, the millennials maintain their friendship and bonding with friends regardless of distance through the technology and internet.
- e) Achievement-oriented. Millennials are students who value activities in and out of campus and eager to attain values and success in fulfilling their life plans.
- f) Pressured. As the millennials are achievement-oriented, it is also easy for them to feel pressured from failing, taking risks and making mistakes.
- g) Conventional. The millennials are conventional in their attitudes and behaviour as portrayed in their taste for appearance and lifestyle.

### 3. METHODOLOGY

The present study is a part of a bigger research that employed a mixed method research design. However, the paper discusses only a part of the bigger study that focused on the quantitative data obtained through a student survey.

In determining the samples, a cluster sampling technique was utilized. The target population of this study was undergraduate students of social sciences faculties in Malaysian public universities. A total of 9 public universities offering Social Sciences program were selected for data collection. From the 9 participating universities, a total of 646 respondents took part in the present study. Table 1 below summarizes the demographic profiles of the respondents.

**Table 1: Demographic Profiles of the Respondents**

		Frequency	Percent
Gender	Male	186	28.8
	Female	460	71.2
	Total	646	100.0
Age	24 and below	559	86.5
	25 and above	87	13.5
	Total	646	100
Race	Malay	563	87.2
	Chinese	34	5.3
	Indian	22	3.4
	Others	27	4.2
	Total	646	100

A survey questionnaire was distributed to the respondents. For the purpose of this paper, two sections in the questionnaire; Part A: Demographic Information and Part B: Millennials' characteristics are provided. The questionnaire was adapted from Howe and Strauss (2003). The items on Section B were built based on a 4-point Likert scale; 1 being 'Strongly Disagree' and 4 being 'Strongly Agree'.

The Cronbach Alpha value for each construct obtained from the pilot test ranges between .761 - .857, suggesting the questionnaire as a reliable instrument. The following Table 2 provides a summary of the information in the questionnaire and the Cronbach Alpha value for each construct in the questionnaire.

**Table 2: Cronbach Alpha Value**

Part	Category	Number of items	Cronbach Alpha Value
A	Demographic information	10	
B	Characteristics of millennial		
	Feeling special	10	.761
	Feeling sheltered	9	.778
	Feeling confident	10	.881
	Teamwork	7	.686
	Achieving	10	.785
	Feeling pressured	15	.857
	Being conventional	10	.785
	Total	81	

In interpreting the mean scores, the present study refers to the following levels;

**Table 3: Mean interpretation**

Scale	Mean interpretation
1.00 - 2.00	Strongly disagree
2.00 - 2.50	Disagree
2.51 - 3.00	Neutral
3.01 - 3.50	Agree
3.51- 4.00	Strongly agree

#### 4. RESULT AND DISCUSSION

The discussions on identifying the characteristics of the millennials who are undergraduates in several selected public universities in Malaysia are guided by the mean scores for each construct based on Howe and Strauss (2003) descriptions of the seven characteristics.

In terms of 'feeling special', the Malaysian millennials in the present study claimed that they had to fulfil their parents' expectations (mean = 3.59) despite them wanting privacy (mean = 3.47). On top of these, the millennials also stated that they did not feel that they were treated as important (mean = 2.80) or special (mean = 2.78). This perception is further supported by their claim that others did not take time to celebrate important events in their life (mean = 2.68). The following Table 4 provides a summary of their perception of 'feeling special'.

**Table 4: Feeling special**

	N	Mean	S.D
I have to fulfil my parents'/guardians' expectations.	648	<b>3.59</b>	.63
I want privacy.	648	<b>3.47</b>	.67
I expect frequent positive feedbacks.	646	3.12	.75
I am important to the nation's development.	646	3.09	.73
I want attention.	649	3.02	.88
I deserve to make demands.	647	3.01	.79
People around me take time to celebrate important events in my life (e.g. birthdays, good academic results, entering a university.)	650	<b>2.88</b>	.86
I have always been treated as important.	649	<b>2.80</b>	.77
I have always been treated as special.	650	<b>2.78</b>	.77
I am here to solve world problems that older generations have failed to solve.	649	<b>2.63</b>	.83

The millennial undergraduates in the present study commented that they were 'sheltered' especially by their parents as they claimed to feel connected to their parents (mean = 3.46) and that their parents protected them from unpleasant experiences (mean = 3.46). Interestingly, although they felt 'sheltered' by their parents, the millennials did not depend on their parents for decisions (mean = 2.78). As undergraduates, the millennials in the study suggest that the university should provide relevant 'shelter' as they required their university to provide a support system accommodating their needs as students (mean = 3.27). The information given in Table 5 signifies the findings as discussed.

**Table 5: Sheltered**

	N	Mean	S.D
I feel connected to my parents.	647	<b>3.46</b>	0.74
My parents/guardians protect me from unpleasant experiences.	649	<b>3.46</b>	0.72
I was highly protected when I was a child.	650	<b>3.34</b>	0.79
University should provide a support system that accommodates my needs as a student.	649	<b>3.27</b>	0.69
University should find solutions to my learning issues and problems.	649	3.15	0.79
As a child, I was rarely left unsupervised.	649	3.12	0.85
University should establish policies and rules that take my needs into account.	649	3.00	0.80
I grew up in a time of high safety measures (car seats, baby on board signs, school lockdowns).	649	<b>2.96</b>	0.90
My parents/guardians decide for me.	649	<b>2.78</b>	0.86

The findings on 'Confident' had resulted in strong mean scores in several items. Generally, the millennials in the present study were confident. Some of the items to support this claim include their opinion about themselves namely being confident of themselves (mean = 3.26) and on their generation's potential (mean = 3.27). Additionally, the millennials were goal-oriented (mean = 3.30) and they expected the university to help them achieve greater heights (mean = 3.31). Nonetheless, despite these strong opinions on their confidence, the millennials did not think highly on their ability to represent the majority (mean = 2.84). This fact is supported by their low opinion of their ability to be assertive (mean = 3.03). Table 6 provides a summary of their findings.

**Table 6: Confident**

	N	Mean	S.D
I expect the university to help me achieve greater heights.	649	<b>3.31</b>	0.75
I am goal-oriented.	649	<b>3.30</b>	0.70
I think highly of my generation's potential.	649	<b>3.27</b>	0.69
I am confident of myself.	647	<b>3.26</b>	0.72
I am motivated.	650	3.20	0.67
I am optimistic.	650	3.17	0.70
I am a highly capable person.	650	3.12	0.67
I am confident of my future.	647	3.12	0.79
I am assertive.	649	3.03	0.77
I believe my opinions represent the majority.	650	<b>2.84</b>	0.80

Following their low opinion on their ability to be assertive and representing the majority, the selected millennials in the present study also had concerns on their team-orientedness. As displayed in Table 7, the millennials did not like to work with people their age (mean = 2.89) neither were they ready to change their personality in order to adapt with a group (mean = 2.53). All in all, the millennials were seen as not keen to work in a group (mean = 3.02).

**Table 7: Team-oriented**

	N	Mean	S.D.
I want to be seen as part of the group.	646	<b>3.32</b>	0.66
I am loyal to the group which I am in.	648	3.23	0.68
I like to do voluntary activities.	648	3.20	0.75
I am not afraid to voice out my opinion when the group is making a decision.	647	3.18	0.74
I like to work in a group.	648	3.02	0.83
I prefer to work with people of my age.	644	<b>2.89</b>	0.86
In order to adapt to a group, I am willing to change my personality.	648	<b>2.53</b>	0.94

Table 8 below provides a summary on the millennials' opinions on their 'Achievement-orientedness'. It could be deduced that the millennials in the present study were quite achieving as portrayed in their opinion on the importance of their academic grades (mean = 3.44) and their focus on getting good grades (mean = 3.32). Additionally, they also agreed that university degree is important in order to succeed (mean = 3.17) and that it could guarantee a high paying job (mean = 3.10). Nonetheless, despite these high regards of themselves and their academic pursuit, the millennials did not share similar opinions when it comes to their extracurricular activities (mean = 2.76).

**Table 8: Achievement-oriented**

	N	Mean	S.D.
Academic grades are important to me.	649	<b>3.44</b>	0.67
I focus on getting good academic grades.	647	<b>3.32</b>	0.68
I see having a university degree as the key to success.	648	3.17	0.79
I see having a university degree as the key to a high paying job.	649	3.10	0.81
I am hard working.	649	3.06	0.72
I am pressured to decide early on a career.	646	<b>2.90</b>	0.85
I participate in extracurricular activities to get external rewards (e.g. medals, prizes, recognitions).	648	<b>2.76</b>	0.91
I focus more on academic achievement than personal development.	649	<b>2.45</b>	0.92
I have been put on a career track orientation since primary school.	648	<b>2.41</b>	0.98
I prefer studying hard sciences (e.g. math, science).	648	<b>2.23</b>	1.03

Another characteristic of millennials as described by Howe and Strauss (2003) is 'Pressured'. It is interesting to note that the millennials in the present study did not agree that they were 'pressured' as most of the items received low mean scores. As shown in the following Table 9, the millennials only agreed that they were reminded to take advantage of opportunities (mean = 3.27) and that they had many things to do at the same time (mean = 3.10)

**Table 9: Pressured**

	N	Mean	S.D
I am reminded to take advantage of opportunities.	649	<b>3.27</b>	0.68
I have many things to do at the same time.	649	3.10	0.72
I believe multi-tasking is a smart thing to do.	648	2.94	0.86
I have to multi-task to save time.	649	2.90	0.79
I am always required to excel.	647	2.87	0.91
I am always reminded to avoid risks.	646	2.67	0.91
Others should be flexible with me to avoid conflicting schedules.	649	2.64	0.88
I feel pressured to succeed.	645	2.56	0.98
While at school, I spent many hours completing my homework.	646	2.50	0.87
I find that I always have more work than the time available.	647	2.46	0.93
I had less free time when I was at school.	646	2.30	0.92
As a child, I had a tight schedule.	647	2.17	0.88
I used to have every hour of my day filled with structured activities.	646	2.16	0.90
I do not know how to manage free time.	644	2.12	0.94
I do not have time for spontaneous activities.	646	2.05	0.89

Finally, the millennials in the present study claimed that they were quite conventional as shown in Table 10. The selected millennials seem to agree with most of the items in the 'Conventional' construct. Most importantly, the millennials valued their parents' opinions (mean = 3.58), followed common rules (mean = 3.47), agreed with traditional values (mean = 3.41) and respected the authority (mean = 3.30). They also agreed that they were civic-minded (mean = 3.26). It was also observed that despite the high values on the items listed, the millennials in the present study did not believe that the government knew what is best for them (mean = 2.70) and that it could take care of them (mean = 2.66). Additionally, they claimed that their choices of clothing, music and cultural did not represent similarity with the trend. Hence, it could be deduced that despite their high regard to their parents and the government, the millennials were still independent.

**Table 10: Conventional**

	N	Mean	S.D
I value my parents'/guardians' opinions.	647	<b>3.58</b>	0.64
I follow common social rules (e.g. wearing proper clothes to functions, respecting the elders).	647	<b>3.47</b>	0.67
I agree with traditional values.	646	<b>3.41</b>	0.67
I respect the authority (e.g. university authority).	647	<b>3.30</b>	0.64
I am civic-minded.	646	<b>3.26</b>	0.70
I do not question the authority.	647	2.81	0.83
I believe the government knows what's best.	644	2.70	0.89
I believe the government will take care of me.	644	2.66	0.86
My choices of clothing, music, and cultural markings will be similar with the trend.	647	2.59	0.96
I fear being perceived different from my peers.	645	2.48	0.94

To this end, several interesting findings have been discovered about the selected millennials in the present study. Some of the findings include confirmation of the characteristics described in the literature. However, there are also findings that revealed the Malaysian undergraduate millennials who took part in the survey did not share some of the generally accepted characteristics of millennials as given in the literature. The findings of this study confirm that sociocultural and socioeconomic aspects provide influence to how people, including the millennials, think and behave in the society (Burns & Roszkowska, 2016; Burns et al., 2013; Von Bertalanffy, 1968).

The findings of the present study have shed some lights on the understanding of the characteristics of Malaysian undergraduate millennials. While further research could be conducted to identify social, cultural and economic factors that led to such characteristics, the present study has brought to light some important considerations needed when training the millennials in higher education. The following is a summary of the pedagogical considerations based on the



salient findings of the study.

- a) Feeling special and sheltered – there is a possibility to include the millennials' parents in their study program. Some creative approaches could include the involvement of their parents in on-going assessment. As the millennials believe that they are close and appreciate their parents' opinions, the idea to involve their parents in their assessment could be a good motivation.
- b) Confident and achievement-oriented – being confident, the millennials are goal-oriented and think highly of their potential. In terms of achievements, the millennials perceive good grades and getting good grades is important. Hence, educators could integrate real-life issues and promote meaningful participation of the millennials in their tasks and assignments as the millennials look forward to achieving greater heights in the academic and future undertakings.
- c) Team-oriented – friends are important to the millennials. Living in advance communication technology and high-speed internet accessibility, the millennials connect with their friends easily. Educators should encourage group work in accomplishing relevant tasks and most importantly, there is great potential in assigning tasks and group work that incorporate web technology.
- d) Pressured – unlike what is commonly described of millennials, the respondents in the present study had indicated that they were not as pressured as it could be expected. This fact is a good indication that the Malaysian undergraduate millennials are positive thinkers. On the same note, it is also a sign that they could be ready for greater challenges.
- e) Conventional – it is interesting to learn that the millennials were conventional in the sense that they agreed with traditional values. They also have high regard and respect for their parents, their university and authority. Concurring with the findings on 'feeling special' and 'sheltered', there is plenty of opportunities for the educators to include the students' parents in the study program. There should be assignments and tasks that include national issues and agenda.

The discussions on identifying the characteristics of the millennials who are undergraduates in several selected public universities in Malaysia are guided by the mean scores for each construct based on Howe and Strauss (2003) descriptions of the seven characteristics.

In terms of 'feeling special', the Malaysian millennials in the present study claimed that they had to fulfil their parents' expectations (mean = 3.59) despite them wanting privacy (mean = 3.47). On top of these, the millennials also stated that they did not feel that they were treated as important (mean = 2.80) or special (mean = 2.78). This perception is further supported by their claim that others did not take time to celebrate important events in their life (mean = 2.68). The following Table 4 provides a summary of their perception of 'feeling special'.

## 5. CONCLUSION

At the onset of the present study, there was a need to confirm the characteristics of the Malaysian undergraduate millennials. The selected millennials who participated in the survey had provided some new insights into the understanding of their characteristics as acclaimed in the literature. The salient findings from the present study have provided evidence that while some characteristics and their attributes were true of the selected millennials, there were also some that did not match the literature.

Nonetheless, the salient findings from the present study have provided relevant empirical data to guide policy development and pedagogical decisions on how best to teach the millennials in higher education institutions. Some suggestions on how best to train the undergraduate millennials have been provided.

The differences in the Malaysian undergraduate millennials' characteristics have brought to light the potential influence due to the sociocultural and socioeconomic factors. Further investigations on the possible causes to the Malaysian millennials' characteristics are deemed necessary. On that note, further studies especially the ones that investigate possible social, cultural and economic factors that influence the Malaysian millennials' characteristics could be conducted.

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## Cognitive space dimensions in pragma-semantic analysis of defamatory communication

Dimensiones del espacio cognitivo en el análisis pragma-semántico de la comunicación difamatoria

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### ABSTRACT

Based on P. Peverelli's cognitive space theory (2000), I. Schlesinger's description of cognitive space in linguistics (1995) and G. Newby's fundamental concept for information retrieval (1993), which is developed after D. Meadows and Heiner Benking's attempt to map dimensions of various cognitive spaces (1972), and others, this paper presents a pragma-semantic analysis of defamatory communication. Following after G. Bateson (2002) and S. Grof (2002) the authors argue that defamatory communication is better comprehended and interpreted as metacommunication, or "communication about communication" (Bateson, 2002), where correlation of communicative roles of metacommunication actors influences the utterances meanings and their perlocutionary effect. It's an integrative approach to the research of the pragmatic component of a defamatory utterance which influences the stability of the lexeme meaning. It can strengthen the negative connotation of a defamatory lexeme or neutralize it in discourse. Pragma-semantic analysis of defamatory metacommunication is presented here in three cognitive space dimensions such as the Gender, Age and Structure. It demonstrates possible interpretations of male, female and children's discourse on the example of *gossip*. It shows how the type of Observer in metacommunication determines the utterance perlocutionary effect, influences the choice of the verb of defamation and defines the possibility of defamatory metacommunication within some particular discourse in general.

**Keywords:** pragma-semantic analysis, cognitive space, defamatory communication, metacommunication, cognitive space dimensions.

### RESUMEN

Basado en la teoría del espacio cognitivo de P. Peverelli (2000), la descripción del espacio cognitivo en lingüística de I. Schlesinger (1995) y el concepto fundamental de G. Newby para la recuperación de información (1993), que se desarrolla después del intento de mapeo de D. Meadows y Heiner Benking Dimensiones de varios espacios cognitivos (1972), y otros, este artículo presenta un análisis pragma-semántico de la comunicación difamatoria. Después de G. Bateson (2002) y S. Grof (2002), los autores argumentan que la comunicación difamatoria se comprende mejor y se interpreta como metacomunicación, o «comunicación sobre comunicación» (Bateson, 2002), donde la correlación de los roles comunicativos de los actores de metacomunicación influye los significados de los enunciados y su efecto perlocucionario. Es un enfoque integrador para la investigación del componente pragmático de un enunciado difamatorio que influye en la estabilidad del significado del lexema. Puede fortalecer la connotación negativa de un lexema difamatorio o neutralizarlo en el discurso. El análisis pragma-semántico de la metacomunicación difamatoria se presenta aquí en tres dimensiones del espacio cognitivo, como el género, la edad y la estructura. Demuestra posibles interpretaciones del discurso de hombres, mujeres y niños sobre el ejemplo del chisme. Muestra cómo el tipo de observador en metacomunicación determina el efecto perlocucionario de la expresión, influye en la elección del verbo de difamación y define la posibilidad de metacomunicación difamatoria dentro de algún discurso en particular en general.

**Palabras clave:** análisis pragma-semántico, espacio cognitivo, comunicación difamatoria, metacomunicación, dimensiones del espacio cognitivo.

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## INTRODUCTION

It is a well-known fact that defamatory communication poses a serious problem in the society. No wonder that libel (a written defamatory statement) and slander (a spoken or oral defamatory statement) have become subjects to liability in a number of civil lawsuits in recent times.

Nevertheless, people continue slandering, gossiping and casting aspersions on the others. Sometimes they distinctly comprehend that they inflict suffering and cause emotional distress to their victims. Consequently, defamatory communication has become a serious problem both judicially and psychologically.

However, while the lawyers are trying to prove the fact of defamation for lawsuits, the psycholinguists are intending to discover and explain the reasons and perlocutionary effect of defamatory utterances. They're also wondering why one and the same communicative act is assessed differently by the eyewitnesses of communication, who provide judgements sometimes opposite in meaning.

## LITERATURE REVIEW

We believe that the cognitive space approach is the better way to interpret this kind of utterances. This term was brought into use by Peter Peverelli. He elaborated on this theory and defined the term "cognitive space" as "social cognitive configuration and multiple inclusion" (Peverelli, 2000).

In this view it has been proposed that there are two basic elements in a cognitive space which are closely interconnected. They are "the social element, the actors involved, and the cognitive element, their share cognitive matter" (Cognitive space, 2019; Kord et al., 2017). The shared cognitive matter can be called in other words "collective cognitive space", which helps people understand each other while communicating. The shared content can include symbols, shared views, common language use, social norms, common ways-to-do-things, etc. But there is another cognitive space, which is not shared with anybody else. It utterly and completely belongs to the individual. It's his or her life experience, education, worldview, personal identity, etc. It is termed as "individual cognitive space" which acts like a filter of input information in communication act (Meadows, 1972; Schlesinger, 1995; Santana et al., 2017). It means that people, possessing different background (individual cognitive space), comprehend the same situation differently and assess it in their own way.

Another thing to be taken into account is that communication can be complicated by its structure. Communication consisting of "two communications" is in other words "communication about communication" (G. Bateson's definition: Bateson, 2002) or "metacommunication" (Grof, 2002, p. 220).

If to analyze defamation, for instance, the first communication or act (it's termed here as "precedent communication") is the communication when somebody utters something false and offensive to (or about) the other person. The second communication (we term it "current communication") is somebody's judgement about (or assessment of) the precedent communication, when a person ("the Observer") utters about somebody's defamation (Kovalyova et al., 2010; Gurevich, 2009). Thus, when we analyze such utterance as They want to keep going and **defame** these guys (SPOK. "Hillary's "Hard Choices""), it is not a defamation itself, it's a judgement about somebody's precedent communication, witnessed by the Observer and nominated by him / her this way. In its general sense the precedent communication can be termed as "utterance with its propositional content" (Harras & Winkler, 1994), but the term "proposition" is much wider in its sense, denoting any type of information implied by the speaker, not exactly additional communicative act.

As Grof argues, human communication is a very complex process, which simultaneously involves verbal exchange and a variety of kinesic and paralinguistic elements. "These can be seen as metacommunicative signals, or messages about messages, indicating how the verbal communication should be understood and interpreted." (Grof, 2002, p. 220). The full meaning of words is not a literal verbal meaning, it's a critical codetermination based on the analysis of a lot of paralinguistic signals. Communication experts argue that less than a third of the meaning is transferred from the spoken words (O'Rourke, 2008, p. 216), and presumably the major part of this transferred meaning is dependent on extralinguistic factors of communication.

This assertion comes from my investigation of different examples of defamatory discourse where the communicators were distinct from each other by their *gender*, *age* and *person's awareness*, etc., which can be termed after Meadows "cognitive dimensions" (Meadows et al., 1972).

The interpretation of precedent communication also depends on the type of the Observer, which is going to be explained further. Leaping ahead, when a third person speaks about somebody's defamation, it can be considered as *a statement of the fact*, but when the speaker is a victim of defamation, his claim can be judged as *accusation*, which is a performative utterance.

## PROPOSED METHODOLOGY

This research is based on the following scientific approaches:

- cognitive space theory (P. Peverelli, 2000);
- description of cognitive space in linguistics (I. Schlesinger, 1995)

- the theory of cognitive space dimensions (D. Meadows and H. Benking, 1972);
- fundamental concept for information retrieval (G. Newby, 1993)
- metacommunication theory (Bateson, 2002);
- pragma-semantic analysis (Gurevich, 2010).

An integrative analysis of both constituents of metacommunication (the precedent communication and the current communication) is not the same as the description of “the propositional component” in the speech act verbs approach (Searle 1980; Wierzbicka 1987; Harras & Winkler 1994, etc.). In this respect, the verbs used for nomination of metacommunication are termed as “metacommunicative verbs”. The terms “verbs of communication” or “speech act verbs” are not appropriate for the analysis of metacommunication on the above mentioned reason (cf. Harras & Winkler, 1994, p. 441).

### **The Gender Dimension of Cognitive Space in Defamatory Metacommunication**

“Each individual has his/her proper cognitive space, i.e. a perceptive capacity. The dimensions of this cognitive space depend on information, training and finally on a person’s awareness. All this depends globally from the cultural setting” (Meadows et al., 1972, p. 19).

The cognitive space dimensions are given in a most generalized sense. Particularly, a person’s perceptive capacity can be analyzed within the framework of more exact dimensions. One of them, we’ve tried to analyze, is gender dimension in defamatory metacommunication of slander, gossip, humiliation, etc. More than 1000 examples from the Corpus of Contemporary American English (COCA) were taken for this analysis.

The research has resulted in some contradictive facts. Namely, the analysis of gossip has revealed that the female discourse is predominantly associated with derisive and vicious utterances<sup>1</sup>. Generally speaking, it presents negative assertion of precedent communication. This negative connotation can be distilled from the meaning of couplets, accompanying a metacommunicative lexeme in order to intensify its meaning. For example: (1) Bad Girls are more likely to accept gossiping, bullying and aggressive behavior in their own lives (N. Jensen. The sisters). Bullying and aggressive behavior used as homogeneous parts of the sentence along with gossiping aggravates perlocutionary effect of negative connotation.

Sometimes the negative assertion is verbalize in the sentence, where the precedent communication is explicated: (2) “She knew some of the others talked behind her back, gossiping about her clothes and her dirty shoes” (N. Jensen. The sisters). The detailing of the propositional component of the utterance can be explained as the Observer’s intension to justify his or her assessment of the precedent communication as gossiping. On the other hand, explication can intensify its negative connotation like in the previous example with homogeneous parts of the sentence.

Another widely used method of explication of negative assertion is reproduction of the precedent communication content in indirect speech: (3) I will be interested if, you know, how your babysitter feels if you find her gossiping about you and saying, oh, you know, she just doesn’t want to be home with her kid or something of that sort. (Spok. Tell Me More). The reason why the Observer (and simultaneously the Speaker of the current communication) reproduces the content of the precedent communication is presumably the same as in the previously analyzed examples. Nevertheless, the assertive lexeme gossiping accompanying by indirect speech component is not understood as lexical overabundance. The latter also serves as an intensifier of the negative connotation in the utterance.

This extraction of female defamatory discourse examples is a random sampling. Almost all represented in COCA examples are used with negative connotation intensifiers. It means that the society perceives female gossiping as more injurious and destructive in comparison with male or self-referential discourse. This assumption can be supported by Coie’s affirmation that “women are also more likely to express aggressive feelings by gossiping and spreading false rumors” (Coie et al., 1995).

As for self-referential discourse, no matter of what gender the speaker is, the assessment of gossiping is rather neutral than emphatic: (4) However, telling stuff to my best friends wasn’t gossiping, it was data sharing. (M. Marks. Forget me knot).

The male discourse of gossip, on the contrary, is less negative in its nature. The assertion tends to be neutral: (5) Shuffling swarms of excited people, oblivious of the chill in the air, leaned into one another, gossiping, chatting, glancing toward the Hunterdon County Courthouse that dominated the small-town street (E. Ifkovic. FIC: Cold morning: an Edna Ferber mystery). The homogeneous parts of the sentence gossiping, chatting and glancing do not contain any negative connotation, that’s why they cannot be considered as intensifiers. It’s just listing of neutrally colored lexemes, denoting “innocent” actions. They tend to neutralize negative assertion conveyed by the participle gossiping.

The male defamatory discourse of gossip is seldom used with intensifiers in comparison with female discourse. Confer:

<sup>1</sup> The psychologists deny this fact (E. Cueto, 2016) but language examples regularly confirm it

(6) If he was in a hurry, it was a short conversation; if he had time to gossip, then we gossiped (male discourse); and

(7) The victim comes into view behind the gossiping students as a popular song about rumors swells in the background. The subsequent section of the story features the moment in which the girl learns she is the topic of lunchtime conversation (C. Kelly. *The Cafeteria as Contact Zone: Developing a Multicultural Perspective through Multilingual and Multimodal Literacies*) (female discourse). The latter example demonstrates a negative perlocutionary effect, conveyed by the lexeme *victim* serving here as an intensifier of negative assessment.

However, the tricky part of this analysis is that the general assessment of gossip in the society is rather neutral, if to disregard the gender dimension. This is the way how a famous columnist is reasoning upon gossip, for instance:

(8) You know, I mean, that gossip is absolutely ...substantive in human nature. We're all constantly talking about each other and about what we think we know or heard or saw, overheard. And we use this sort of medium of exchange between us to enhance the human condition. It helps us figure out what we think. It helps us sort out our ideas morally. Do we approve when we're gossiping? Are we approving, or are we disapproving, or are we trying to figure out what we think? And that a lot of gossip is just this idea of, let me tell you a story. (D. Bianculli. *Remembering Syndicated Gossip Columnist Liz Smith*)

The result of this part of research is as follows: the gender dimension in interpretation of gossip influences the assessment component of metacommunication. The pragma-semantic functioning of the lexeme *gossip* becomes unstable, flexible and dependent on the fact whether it is used in a female or a male discourse.

### **The Age Dimension of Cognitive Space in Defamatory Metacommunication: A Child's Gossip**

The psychologists argue that children start gossiping at age of 5, but for a very good reason: with the purpose to look out for each other. As they say, it makes gossiping weirdly encouraging at this age. Unlike some negative forms of gossip this type is categorized as "prosocial behavior" which is intended to benefit other people. It is aimed to warn others from potentially bad individuals. They also state that both men and women gossip pretty frequently and tend to find positive component in it, such as promoting generosity, relieving stress and preventing exploitation (Cueto, 2016; Reyazi & Aghaei, 2017; Amiri Mikal et al., 2016).

Nevertheless, the other type of gossip is considered to be rather harmful. It's a malicious gossip. The psychologists try to prevent children from this kind of gossiping explaining them all harmful nature of its consequences.

Interestingly enough, the analysis of language examples provides us some facts which do not completely coincide with the psychologists research.

We've studied several English-language forums and collected children's utterances about gossip along with the utterances of adults about children's gossiping.

The experts in psychology's standpoint has coincided with our conclusion that the notion of gossip remains rather complex for the under-tens children. The individual concepts<sup>2</sup> of gossip vary from "to reveal a secret" to "to cast aspersions on, to make a wrongful accusation", the latter is more close to its proper meaning: (9) "I have this friend that used to be so nice but she changed and started gossiping about me! She said that I like this guy ..." (Mia, 10 years old). (= to reveal a secret); (10) "Yes, I had 2 best friends: A girl and I had a crush on a boy... So she started gossiping about me and he chose her over me." (Makeda, 9 years old) (=to cast aspersions on).

One of the most popular children's topics of gossips is somebody's appearance: (11) "I was new at my school and I have a brother and sister in a private high school so I was like really preppy. Everyone made fun of me at first but I got in with the 'in crowd' after a while. They make fun of dorky people and they gossip non-stop. I hate it!!!" (Roxanne, 10 years old).

The child appears to be extremely sensitive to gossip, even much more than an adult in a similar discourse: (12) "I hate gossip. It hurts people and the person who rumored or gossiped feels really bad about themselves." (Shaunagh, 10 years old). The word hate lays emphasis on the negative assessment of gossip making the whole phrase more emphatic.

The emotional assessment of gossip tends to become more neutral with aging. And self-referential discourse can reduce it to its minimum: (13) "I cut my hair WAY SHORT and dressed more 'in style' and gossiped and flirted a lot. Then the guy I liked actually asked me out, but he didn't like the fact that I was all preppy so he dumped me the silent treatment way. Then I changed back to my normal self." (Alicia, 12 years old). The meaning of the verb gossip in an individual concept of a 12-year-old girl is equal to "talk a lot", "chatter".

On the other hand, it becomes gender-sensitive as we have already discussed in the part "The gender dimension of defamatory metacommunication" (See above).

It's worth mentioning, that the neutrality of gossip assessment achieves its maximum when speaking about prominent figures. Very often this word is accompanied by an attribute with positive connotation, e.g. good gossip. This is how Nina Roosevelt Gibson spoke about her grandfather: (14) Franklin Roosevelt, from what I understand, always loved

<sup>2</sup>It is termed after John McCarthy, who described individual and universal concepts on the example of "Mike's telephone number" in his article "First Order Theories of Individual Concepts and Propositions". Stanford University, 2000).



to be around people who liked to laugh, who liked to have fun. He loved having fun in many, many different ways. He enjoyed his cocktail hour. He loved good gossip (American Experience interview, 1999).

The similar example is represented in “Current news for people in public media” by Bill Moyers, who tells about Lyndon B. Johnson and Wilbur Mills: (15) They gossiped for an hour or so, shared rumors about friends and enemies, relived old battles in Congress, schemed about bills then pending - and then LBJ began to press the flesh: what Washington called “The Treatment.” (Wilbur Mills to LBJ: ‘We ain’t gonna give money to folks without some strings attached’; May 18, 2006). The meaning of the word gossip is equal to small talks in this context, it’s not accompanied by any intensifiers with negative connotation and is not perceived as something harmful and hurting somebody’s feelings. The way how a person perceives the meaning of the utterance is better to term as perlocutionary effect (Austin, 1975).

The perlocutionary effect of defamatory metacommunication depends also on some additional dimension which can be termed as “structural dimension of cognitive space”.

### The Structural Dimension of Cognitive Space: The Type of Observer

A significant role in the Speaker’s meaning assessment is played by correlation of the Speaker’s communicative role with the role of the Observer in metacommunication. We’ve analyzed all possible situations and roles where the Observer can act in metacommunication (See Fig. 1). As a result, the Observer coincides with the Speaker<sub>2</sub> and almost never with the Speaker<sub>1</sub> in self-referential metacommunication. It means that it’s uncharacteristic of people to associate themselves with the authors of defamatory utterances, in other words with rude and bad-mannered people. When such roles occasionally coincide, the utterance is associated with some “innocent action”, but not a malicious or harmful one (e.g. We gossiped a lot when we had enough time).

The Hearer<sub>1</sub> (the victim of defamation, or the Sufferer) can coincide with the Speaker<sub>2</sub>. We name this role the Internal Observer (he is an active participant of the precedent communication (PC)). He acts as an eyewitness or the victim of defamation and tells someone about it, assessing the Speaker<sub>1</sub>’s utterance as a defamatory one. In other words he directly accuses the Speaker<sub>1</sub> in defamation. Additionally, we can perceive his words as a claim.

The Observer can also speak from hearsay. It’s an External Observer (or somebody’s words interpreter).

When the Observer is an Eyewitness of the PC his judgement tends to be more objective.

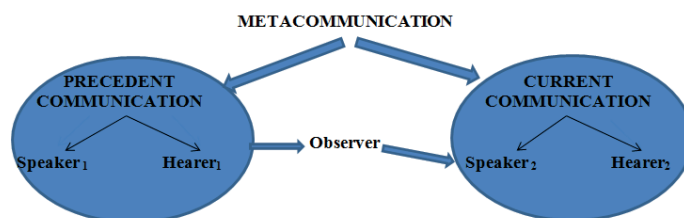


Fig. 1. The Observer of the Precedent communication coincides with the Speaker of the Current communication

The subdivision within the types of the Observer is rather important, because the coincidence of definite roles influences the usage of defamatory predicates and sometimes makes it impossible. For example, the Internal Observer=Speaker<sub>1</sub>=Speaker<sub>2</sub> is almost impossible in situation of slander (\*I’m slandering... or \*I slandered...), because it demands the External Observer, who will assess somebody’s utterance as a slander (“the utterance of false charges or misrepresentations which defame and damage another’s reputation” (Merriam-Webster Dictionary, 2019)). The Corpus of Contemporary American English (COCA) gives only two examples with the form I slandered, where one of them is an indirect speech utterance: who says I slandered him, the other is a self-referential one: now I think that I slandered Bergen. The latter was completed by comment that self-deprecation can be disarming against your enemies (SPOK 1996). The communicative strategic component is different in the types of the External and the Internal Observer. If the first type serves as an accuser, the second one (a very rare instance) serves as a person deprecating himself / herself with the purpose of the counterpart’s disarmament or apology.

Sometimes the Internal Observer coincides with the Hearer<sub>1</sub> (the Victim of PC). It’s also a very rare case and it demonstrates the Speaker’s intention to rehabilitate himself or prevent the other people from a negative assessment of his actions: (16) I humiliate myself by telling them I’d very much like to join the club and begging Krennup to untie me (G. Saunders. Bounty).

It’s impossible to have the same communicative role in the situation of offence (Internal Observer=Victim of PC), because it presupposes the perlocutionary effect of insult for which the External Observer is demanded.

On the same reason the verbs *chagrin*, *discomfit*, *embarrass*, *shame* and others are almost never used in this communicative role. They presuppose the External Observer whose communicative role doesn't coincide with the Speaker<sub>1</sub>.

It's almost impossible to say: I am offending you here by saying... because the state of offense is perceived by the victim and assessed by him as offense. In other words it also demands the External Observer. Even if it is possible to say so, it would mean intentional causation of offense, and verbalization of this communicative intention can be regarded as double offense, which contradicts the recommended rules of communication. This concerns the situation when PC and CC coincide in time (simultaneous metacommunication). If PC has happened before, much earlier CC (diachronous metacommunication), it sounds like apology for the previous offensive utterance: (17) I apologize if I offended you, Mrs. Stuart. It was not my intent (J. Dailey. *The Proud and the Free*) or (18) I'm sorry if I offended you earlier (P. Whitney. *Until the End of Time*). It is almost always accompanied by I apologize or I'm sorry.

Metacommunication with the External Observer presupposes a communicative strategic variety. It means that one and the same precedent communication can be assessed differently by different External Observers. In other word, this variety is conditioned by proposition deflection through the individual cognitive space.

## RESULT ANALYSIS

The variability of pragma-semantic meanings of the defamatory lexeme *gossip* and of the others from the list of defamatory communication lexemes is determined by such intralinguistic reason as blurred concept and extralinguistic reason as dependence on different dimensions of communicators cognitive space. The integrative analysis of intralinguistic and extralinguistic data lets us identify pragmatic content of the lexemes, used by interlocutors in communication and metacommunication. Everything that has been beyond the sight of the researcher while analyzing dialogues or polylogues becomes evident and clear when we activate cognitive space data in research and description of the results of this analysis.

## CONCLUSION

The way we have treated defamatory metacommunication in this paper suggests trying to present an integrative approach to the analysis of the pragmatic component of a defamatory utterance which influences the stability of the lexeme meaning. It can strengthen the negative connotation of the defamatory lexeme or neutralize it. It's important to note that pragmatics and semantics of the utterance cannot be analyzed separately because they act as a complex unity, that's why we term this analysis as a pragma-semantic one.

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## Influence of the environment on the language picture of the world

Influencia del medio ambiente en la imagen lingüística del mundo

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### ABSTRACT

In recent years, there has been a growing scientific interest in revealing the peculiarities of interaction between individuals and the socio-cultural environment, but to this day, many aspects of the influence of the environment on the formation of the national language picture of the world remain poorly understood. The aim of the study was to study the influence of the environment on the formation of the national language picture of the world. An associative experiment was used as a method of analysis. As a result of the experiment, it was revealed that the modern understanding of the environment in the minds of representatives of the Russian-speaking linguistic culture is mainly due to the existing features of life in society.

**Keywords:** environment, national language, picture of the world, associative experiment

### RESUMEN

En los últimos años, ha habido un creciente interés científico en revelar las peculiaridades de la interacción entre las personas y el entorno sociocultural, pero hasta el día de hoy, muchos aspectos de la influencia del entorno en la formación de la imagen lingüística nacional del mundo permanecen mal entendidos. El objetivo del estudio fue analizar la influencia del medio ambiente en la formación de la imagen del mundo en el idioma nacional. Se usó un experimento asociativo como método de análisis. Como resultado del experimento, se reveló que la comprensión moderna del medio ambiente en las mentes de los representantes de la cultura lingüística de habla rusa se debe principalmente a las características existentes de la vida en la sociedad.

**Palabras clave:** medio ambiente, idioma nacional, imagen del mundo, experimento asociativo.

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## Introduction.

Today, it is clear that language cannot be considered in isolation from the person who uses it as a means of communication, the implementation of cognitive processes, in isolation from the national community, within which a specific national language system has been formed, in isolation from the historical, natural and environmental context in which the national language systems were being established. In modern scientific literature, the provision that the language is always nationally labeled is not in doubt. Researchers emphasize that the formation of the national language system is influenced by the history of the nation, its environment, peculiarities of the national mentality, worldview and world understanding. At the same time, up to the present day, numerous aspects of the world language picture, its interrelations with the natural and social context in which it is formed, remain poorly studied and studied in fragments. In particular, to date, it is not entirely clear how the environment affects the formation of the national language picture of the world, which means the environment for representatives of a particular linguistic culture, what associations causes the concept in the minds of individuals. Meanwhile, taking into account the great importance of the environment for the life of the nation, the understanding of the content of the concept in the minds of representatives of a certain linguistic culture will allow to better understand the features of the national picture of the world as such, to identify patterns and mechanisms of interaction between the environment and the national worldview, which determines the relevance of the chosen theme of the study.

*The aim of the research* is to study the influence of the environment on the formation of the national language picture of the world.

**Theoretical aspects of the study of the national picture of the world.** The logic of this study requires, first of all, a reference to theoretical sources, which will reveal the essence of the language picture of the world.

The following definition is given in the works of N. Yu. Shvedova: the language picture of the world is “an image of all that exists as an integral and multi-frequency world, in its structure and in the language understood connections of its parts representing, firstly, the man, his material and spiritual life activity and, secondly, everything that surrounds him: space and time, living and inanimate nature, the area of myths created by man and the society (Shvedova N. Yu. 1999) “. The definition emphasizes the scale of the linguistic picture of the world, the fact that it covers all the phenomena of material and spiritual culture, all aspects of the life of individuals and society.

Y. L. Weisgerber understands the language picture of the world as a tool to represent the national mentality, the peculiarities of the national worldview, and the “misrepresentation of the world (Weisgerber Y.L. 2009).” This definition emphasizes the inextricable interrelation of environment and language, the fact that the language picture of the world is the result of linguistic means representation of the socio-cultural context, social and natural environment.

In V.V. Shkatova’s works, this category is understood as an abstract concept, “a complexly structured whole reflecting the connections of a person and objects, a person and other people, connections between objects, etc.” (Shkatova V.V., 2016).

In other words, the national language picture of the world is a kind of simulacrum, a copy, a model of the universe, in which all aspects are reflected, the results of cognitive and sensual knowledge, expressed in a set of concepts. The majority of researchers emphasize that the formation of the national language picture of the world is greatly influenced by the environment.

In turn, the environment in the logic of the so-called environmental approach is understood as “...what the subject stays among, by means of which his way of life is formed, which mediates his development, and “averages” the personality (Demidova N.I. (2009); in other words, the environment within the framework of this approach is understood as everything that surrounds the person, directly or indirectly influencing the formation and development of personality. The environment is a set of natural and social factors, in interaction with which a person enters into the process of his or her life activity, as a result of which he or she has some psychological or social qualities and characteristics; a specific form of spatially-objective content, ensuring the development and functioning of the person, the transfer of norms of life activity, socially accepted and socially approved at a particular stage of historical development.

Taking into account the fact that the environment is all that surrounds the individual, and the language picture of the world is a “stained” environment, we can conclude that the phenomena, processes, events and socio-cultural environment have a huge impact on the formation of the national picture of the world.

It is a widely recognized fact that representatives of different ethnic communities perceive the surrounding social and natural reality differently. The difference in perception and interpretation of phenomena of social-natural environment is reflected in the implementation of nomination processes, categorization of reality, respectively, absolutely identical concepts in different languages are absent. A different reality is presented in different languages in different ways. This phenomenon is understood in modern scientific literature as “linguistic relativity” or “linguistic complementarity,” which “generates so-called linguistic thinking, which is special for native speakers of each language” (Niktovenko E.Y. 2015).

To comprehend the national picture of the world of the ethnos means to understand the peculiarities of the mentality, to accept the native speaker’s point of view, to accept its worldview and “through the lexical system to get an idea of the national mentality (national logic) and national character (emotions and means of their expression, moral priorities, etc. (Kornilov, O.A. 2003)”. The main goal of the project is to identify the national and universal, the universal.

The linguistic picture of the world is imprinted in lexical, paremiological, phraseological units, grammatical structure of the language, its basic concepts, reflecting the peculiarities of perception of the world, the surrounding socio-cultural

environment. Studies of the “mysterious Russian soul” are devoted to the study of Russian philosophers (Berdyayev N. 1923), but to date, numerous aspects of Russian linguistic culture, the language picture of the world remain poorly researched. One of such aspects is the peculiarities of filling the concept of “environment.”

**Research methodology.** In the process of study, *the method of the associative experiment* was used. In modern scientific literature, associations are understood as “the intersection point of three fields: objective reality, consciousness and language (Dorzheva T.S. 2010) “. Correspondingly, associative relations acquire a global character and integrate all types of verbal and extra verbal relations.

The associative experiment in recent years has become increasingly relevant as a method of studying individual and group consciousness.

The implementation of the associative experiment involves the identification and study of the following aspects of the concept (Dorzheva T.S. 2010):

- 1) language belonging to the concept;
- 2) word-for-education model;
- 3) etymological meaning;
- 4) motivation to choose this basis rather than another producing one;
- 5) local situation, the situation at the moment of nomination.

The study of speech information allows us to obtain primary information regarding the associative background of the concept under study, but the identification of the most complete associative and verbal field as a mirror of the mental and emotional state of the language of “the average speaker at a certain historical moment of his life, and thus the life of society (Karaulov N.Yu 2002), in the case of the Russian cultural model, it requires the use of associative dictionaries, dictionaries of constants of the Russian cultural model.

The associative dictionaries offer extensive material for describing verbal associations, which allows “to reveal such semantic components in the meaning of the word, which are not fixed by other methods and techniques of semantic analysis. (Maklakova E.A., 2013.) “ Unlike other dictionaries, associative vocabularies reflect the consciousness of an average native speaker.

Modern associative dictionaries and dictionaries of constants have become a part of the research arsenal of linguists, psycholinguists, linguoculturologists, which makes it expedient to address them in the process of this associative experiment.

*The purpose of the experiment:* to reveal an associative background, filling the concept of “environment” in the minds of representatives of the Russian linguistic culture.

*The hypothesis of the experiment* was the assumption that the associative background, the filling of the concept “environment” is reflected and uniquely refracted in the linguistic consciousness of modern native speakers.

*Data collection and analysis.*

Having analyzed the dictionaries of associations (“Dictionary of associative norms of the Russian language” under the editorship of A.A.Leontiev, “Russian associative dictionary” under the editorship of Yu.N. Karaulov, “Slavic associative dictionary”), we found out that the word “environment” as an incentive is found only in the second of them. Accordingly, the research material is secondary data presented in the Russian Association Dictionary (<http://tesaurus.ru/dict/>).

In the course of the research, quantitative and qualitative research methods were used. A qualitative approach to the study of data is defined as “an approach to the study of the social world, which seeks to describe and analyze the culture and behavior of people and their groups in terms of the studied (Shareia, B. 2016). “. A qualitative approach allows collecting nonnumeric primary data such as words, opinions, perceptions and, of course, associations. Moreover, as Danielle states, “a qualitative research approach looks at human thinking and behaviour in a social context, covering a wide range of phenomena, allowing for the fullest possible understanding and appreciation of them (Daniel, Eyisi., 2016) “. The application of a qualitative approach will allow for a better understanding of associations, as well as the basis for associative relationships.

The collected qualitative data are analyzed with the help of the quantitative approach aimed at increasing the objectivity of the results, forming general conclusions reflecting the specifics of the national language picture of the representatives of the Russian linguistic culture.

**Results and discussion of research results.** Processing of the data of the associative experiment was carried out taking into account all reactions, separation of logical and grammatical associative links. Logical reactions suggest the presence of strong substantive links between stimuli and reactions; in the presence of such links, the reaction belongs to the nucleus of the associative-verbal nucleus; if this link is absent or manifested at the level of insignificant potential components, the link refers to the peripheral logical reaction.

After identification of central and peripheral logical connections, a sequential comparison of the pairs of “stimulus-response” is carried out on the basis of the frequent belonging of the revealed associations, identification of syntagmatic and paradigmatic connections.

In the explanatory dictionary of the Russian language, the following denotes (Ushakov’s explanatory dictionary) the following denotes in the structure of the “environment” concept:

- 1) substance filling the space and surrounding bodies or phenomena;
- 2) a set of natural and/or social conditions in which human society develops and operates;
- 3) name of the average day of the seven-day week.

**Quantitative treatment:** a total of 43 reactions (<http://tesaurus.ru/dict/>)

<b>Tuesday (26)</b>	<b>Sunday (3)</b>	<b>viscous (2)</b>	<b>week (2)</b>
<b>bathroom (1)</b>	harmless (1)	watery (1)	Day off (1)
<b>change (1)</b>	wash (1)	leisure (1)	nature (1)
<b>factor (1)</b>	ecology (1)		

As these data reflect, the most common association is the concept of the environment:

- 1) Tuesday: 26 reactions (16 men, 10 women);
- 2) Sunday: 3 reactions (2 men, 1 woman);
- 3) viscous: 2 reactions (men);
- 4) week: 2 reactions (1 man, 1 woman).

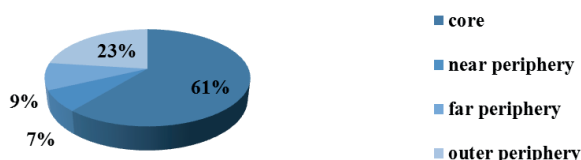
Accordingly, the *nucleus* is represented by the following reactions: Tuesday (26).

*Near periphery:* Sunday (3).

*Far periphery:* viscous (2), week (2).

*Extreme periphery:* sauna (1), harmless (1), water (1), output (1), will change (1), wash (1), rest (1), nature (1), factor (1), ecology (1).

Graphically, the percentage of associations can be represented as follows



**Picture 1: Percentage distribution of central and peripheral logical association links**

As reflected in the Pic., 61% of the reactions relate to the nucleus.

**Quality treatment:**

*Syntagmatic associations:* harmless (1), water (1), output (1).

*Paradigmatic associations:*

*Subordination relations:* Tuesday (26), Sunday (3)

*Superordination relations:* week (2).

*Coordination relations:* viscous (2), bath (1), will change (1), wash (1), rest (1), nature (1), factor (1), ecology (1).

The percentage of different types of associations can be graphically represented as follows (Pic. 2):



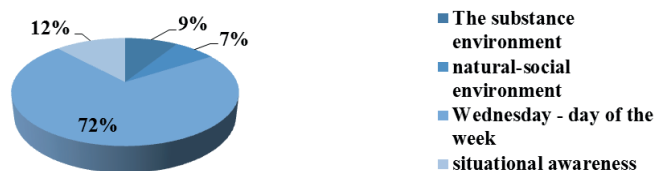
**Picture 2: Percentage distribution of paradigmatic, syntagmatic association bonds**

As reflected in Pic. 2, the vast majority of associative relationships (67%) relate to subordination relationships, to the nomination of species concepts, and to the days of the week caused by the stimulus “environment”.

#### Thematic associations:

- 1) substance filling the space and surrounding bodies or phenomena: *viscous (2), harmless (1), watery (1)*;
- 2) a set of natural and/or social conditions in which human society develops and operates: *nature (1), factor (1), ecology (1)*;
- 3) name of the middle day of the seven-day week: *Tuesday (26), Sunday (3), week (2)*;
- 4) situational related values: *bath (1), day off (1), change (1), wash (1), rest (1)*.

The percentage of different types of associations can be graphically represented as follows (Pic. 3):



**Picture 3: Thematic distribution of associations**

As shown in Pic. 3, the vast majority of reactions refer to the value of the medium as the day of the week. The perception of the medium as a substance filling a certain area or a set of natural and social conditions is only 9% and 7% of the reactions, respectively.

Thus, based on the analysis, it can be concluded that the majority of representatives of the Russian-speaking linguistic culture associate the environment mainly with the day of the week, the time period, the established social order, the established practice of organizing the working life of Russian society, the five-day working week. Wednesday is perceived as the day of the week (2), which follows Tuesday (26), being a working day, unlike Sunday (3) - the entrance day (1). Wednesday is a cleaning day for someone: to wash (1), to go to the sauna (1), to change (1) or to rest (1).

The environment as a substance is characterized by viscosity (2) and harmlessness (1). The concept is associated mainly with the water environment (1).

The environment as a set of natural and social conditions is associated mainly with nature and ecology: nature (1), factor (1), ecology (1).

**Conclusion.** In accordance with the set goal of the research, the article analyzed modern scientific approaches to understanding the national language picture of the world. On the basis of the conducted analysis it is possible to make that under the language picture of the world it is meant the process of “ill-advocacy” of the environment, which represents everything that surrounds the individual, the nation during the historical stage of its development. Under the influence of the environment the peculiarities of national understanding, worldview, lexical composition of the language, peculiarities of its grammatical system, etc. are formed. At the same time, as the results of the associative experiment reflect, the concept of “environment” is associated in the minds of representatives of the Russian linguistic culture not so much with everything that surrounds a person, as with the established features of the life of society, social practice of a five-day working week. The data obtained allow us to draw several conclusions: (1) first of all, a high degree of employment of the population, for which the environment is perceived as a working day, a high importance of work, professional activity for Russians; (2) the fact that the environment is perceived mainly as a time period, a day of the week, rather than the space in which the life of society takes place; (3) a mixture of spatial and temporal categories in the minds of representatives of the Russian-speaking linguavoculture.

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## Identification Communicational Competencies of Secondary School Teachers

Identificación de las competencias comunicacionales de los docentes de secundaria

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### ABSTRACT

The quality of educational system specially in general education, ultimately depends on the quality of teachers of that community. This research aimed to identify the Communicational competencies of secondary school teachers. Research method is descriptive, qualitative research based on grounded theory. The research statistical population have been various groups such as qualified teachers, students, parents, educators and experts of training that interviews to saturated limit were performed with them by using purposive sampling. According to research findings, Communicational competencies of secondary school teachers includes effective connection with students, parents, colleagues and society. Finally, behavioral indicators were estimated according to the codes obtained through interviews and also use of MBTI personality test tools for each of the competencies, according to four dimensions of competency.

**Keywords:** Competency, Communicational Competencies, Teachers, Educational System, Iran.

### RESUMEN

La calidad del sistema educativo, especialmente en la educación general, depende en última instancia de la calidad de los docentes de esa comunidad. Esta investigación tuvo como objetivo identificar las competencias comunicacionales de los profesores de secundaria. El método de investigación es una investigación descriptiva y cualitativa basada en la teoría fundamentada. La población estadística de investigación ha sido varios grupos, tales como maestros calificados, estudiantes, padres, educadores y expertos en capacitación que se realizaron entrevistas con ellos al límite saturado mediante el uso de muestreo intencional. Según los resultados de la investigación, las competencias comunicacionales de los maestros de secundaria incluyen una conexión efectiva con los estudiantes, los padres, los colegas y la sociedad. Finalmente, los indicadores de comportamiento se estimaron de acuerdo con los códigos obtenidos a través de entrevistas y también el uso de herramientas de prueba de personalidad MBTI para cada una de las competencias, de acuerdo con cuatro dimensiones de competencia.

**Palabras clave:** Competencia, Competencias comunicativas, Docentes, Sistema educativo, Irán.

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## Introduction

The quality of any educational system ultimately depends on the quality of teachers of that country, and any country can ignore importance of teachers' competency. The most important quality factor, is the action and interactions that occur between teachers and students. The elements of this interaction are knowledge, skill and sensitivity of teacher on one hand and learning expectations, social and economic situation and cultural characteristic of learners on the other hand that determine the success or failure of education and training (Sarkararani, 2010). So employing the most capable and most qualified individuals for profession of teacher is the most vital issue. Discuss the competencies of the teaching profession in the world today is a serious, multifaceted and fluid matter. The range of competencies of teaching profession have fixed and related to terms identities according to the indicators related to professional competencies, and include a range of competences (Voorhees, 2001).

Teacher competencies include required teaching knowledge and skills in school. These competencies contain high levels of knowledge, skills, attitudes, values and personal characteristics, sensitivities, capabilities, and also ability to combine them in order to operate and use suitable methods (Adetayo, 2016). Due to the success of teachers in the country, depends on their equal enjoyment of professional competencies, it has been stressed on the document of fundamental transformation of education in Iran on the establishment of the assessment system of the general, specialized and professional competencies, determine criteria for the evaluation and ranking and train scientific system of teachers, motivational improvement of career improvement in them, "according to the Islamic Criteria System" and "Establishment of Payments System" based on expertise, competencies and competitive performance (Fundamental transition document, 2011). So, it is required to test teacher to improve the status of teachers in the executive system of country and development and improvement in all aspects of the Islamic Republic of Iran, in particular its role in Islamic education on a system of meritocracy, based on the functional and competitive assessment and be in proper rank in accordance with professional and expert abilities and personal and social competencies.

However, today profound changes in the structure of the curriculum and students have created a crisis in professional identity of teachers (Moon, 2007). so that the results of different researches of Abedi (2005), Danish Pajouh and Farzad (2006), Niknami (2009), Naderi (2010), Cameroon (2012), Sogarnesky (2000) have shown that most people who are attracted in teacher training centers primarily do not have needed competencies and abilities to meet the position of teacher. In addition to the results of different researches of Huntly (2008), Selvi (2010), Sudsomboon (2007), Niknami (2009) have shown that there is difference between the existing competencies and desired competencies of teachers. Thus, unfortunately teachers after the recruitment of, despite all the shortcomings of the system of employment, go into the classroom and their competencies are less measured from professional and technical aspects and human relationships in the history of education in Iran. Therefore, attention to teachers' competencies and identify these competencies has high importance and value. In addition to this, the results of researches of Abdollahi et al (2010), Danesh Pajouh and Farzad (2006) and Abedi et al (2005), Karen (2015), Kuldarkhan (2016) have been shown that attention to competencies of teachers is effective and identify these competencies has high importance and value.

Now the role of other teachers is not limited to the literacy but also have the task to facilitate in direction to development of logical, critical, creative thinking and capabilities commensurate with them in students and it must be acknowledged that this would require that teachers have the necessary qualifications to play multiple roles. Different and overall categories of the required competencies for teachers have been presented for playing these roles as an example of Maleki (2009), Ven Katraman (2007) and Kaendler (2015), Torres (2015) classify competencies of teachers to three areas: cognitive, affective and psycho-movement and they raise sub-competencies for each of these areas. However, these researchers do not suggest behavioral indicators for the competencies that teachers can judge the presence or absence of these competencies in them and can pay attention to their self-assessment process. Thus act to continuous improvement of their competencies from that behavioral indicator according to the visible and measurable characteristics of the behavioral indicators. In addition, according to the state transition of the world and consequently our country in terms of technology, the increasingly development and growth of sciences, particularly in the field of psychology of growth and learning, and as well as changes to the educational system of country in terms of goals and missions and consequently increase the duties of teachers and their pivotal role in education, and that no person other than the teacher cannot have a greater impact on what the school is going to be and he/she who can do the education as a process accompanied with pleasure and success or process with lack of focus (Mehrmohammadi, 2013). It is required to identify the professional competencies of teachers. These competencies in addition to be able to teach and train teachers also these can be employed as criteria and indicators for assessing the quality of performances of teachers, so it is tried to identify the competencies of teachers in this research and given the dimension of competencies, behavioral indicators are explained for each of the identified competencies.

## Research Questions

1. What are the Communicational competencies for high school teachers?
2. What are the behavioral indicators of Communicational competencies of high school teachers?

## Methodology

The research method is descriptive and a kind of qualitative research. One of the different types of qualitative research strategies is method of the theory derived from data that has been considered because of some special features in this research. Given that the phenomenon of competency, is an alive phenomenon with the nature of the act and process-centric, which may be different people have different experiences and interpretations of it, and since that review previous researches suggests the weakness of existing theories to explain the phenomenon of competency of teachers so that a method should be used that can cover this comprehensiveness.

In this study in order to create an identification that includes a comprehensive map of the experiences of different people, Inductive approach is used to achieve this. So that in this way in relation to the phenomenon of competency, a series of systematic procedures to be used to develop a theory based on induction about considered phenomena. In other words, competency pattern of secondary school teachers is developed by using a set of data that have been collected from different sources (interviews with qualified teachers, students, parents, scholars and experts) in this research.

The following sources of information were used in this research:

- *The first group* includes teachers from high schools in Tehran who are famous in the field of competence, they are involved in it, and it is going to respond to the questions of researchers in the field of their experiences in the field of competence through interviews. They were selected based on purposive, Criterion Sampling method. Each year, qualified teachers are introduced by the education based on a selection of teacher's stylesheet that includes various items to assess across the country based on the information obtained from the Tehran Department of Education. To select these individuals was referred to Educational Organization of Tehran Province and received a list of teachers who have been chosen as sample in years of 2014 - 2018 and it was contacted with them to hold interviews. The number of these teachers were 33 that finally, a researchers got saturated with 11 teachers after interviewing and the interview process was stopped.

- *The second group* includes experts, training and education professors of universities, and finally education and training institutes of Tehran. It was tried that among these people, in the first place professors that have publications and articles on the field of competency be in priority. They were identified and were interviewed about the competencies of teachers. They were selected based on Purposive Criterion Sampling Method. A researcher was saturated after interviewing with eight person in this section and interview process was stopped.

- *The third group* includes high school students in Tehran. These students were also selected by sampling with maximum diversity. Researchers have selected a maximum diversity sampling method to use the opinions of all students (students with high academic achievement level, medium and low) in this section and has been asked comments of these students about the competencies of teachers through interview to the saturation limit. A researcher was saturated after interviewing with 15 students in this section and interview process was stopped.

- *The fourth group* consists parents of high school students in Tehran. The researchers have selected the available sampling method with maximum diversity to use the opinions of parents with different degrees of education in this section and has been asked comments of these parents about the competencies of teachers through interview to the saturation limit. Researchers was saturated after interviewing with 10 parents in this section and interview process was stopped.

Data collection tools had been semi-organized interview in this research. Interview with different groups was carried to the point of saturation. Strauss and Corbin inductive approach was used. In reviewing the results of semi-organized interviews in order to understand, the meanings, implications, and data obtained from the interview were classified as open coding and axial coding. Thus, the codes of the interview were used for the coding of knowledge, skill and attitude dimensions. Researchers have used Myers-Briggs Type Indicator personality test to encode the personality dimension given that personality does not know her/his self as expert and theorist in the field of character. MBTI personality test has been formed based on the research results of renowned Swiss Psychiatrist, Jung. Carl Jung believed that if the subjective sub-bases, perceptions and attitudes of people can be identified, their behavior could be predicted. He provided valuable opinions in this regard. Two other scientists named Briggs and Mayers designed MBTI personality test by using comments and results Jung's researches and conducting some researches in the field of character recognition after years. They identified four dimensions (preferred) personality and sixteen personality types in people. In other words, they classified all people on the ground in the 16 personality types that their personality type can be realized based on MBTI test.

Grounded theory is proposed as well as research method and data analysis method. In this research, use the grounded theory as a way of analyzing the data. In this way, there are three types of encoding: open encoding, axial encoding, and theoretical encoding. It should be noted, only encoding one and two was used as a method of analysis in this research. Thus, That first various answers to research questions are studied to get familiar with a variety of answers and repeat rate of each one. The classes that include various discussions are created according to the responses. In fact, every class adds similar responses in one place. At the end, it is needed that all the issues raised in the responses provided to questions, be in a macro class. Categories identified in the process of selecting indicators development must be such that include all aspects of a message and use as much as possible the same words in the text. In addition, an attempt has been made to use the names that fit the concept in naming each of the extracted classes. In summary, following steps were conducted to qualitative content analysis of interviews in the section to use of encryption method to identify competence of teachers in this research:

1) Extraction spoken evidences (Key points); 2) Conceptualization; 3) Category Processing

In this research check, member's method was used to check the validity of research. Thus, the number of respondents in each group were asked to provide feedback to get the researcher of their self-talks and express their opinions about the concept and dimensions of interviews.

It should be noted that in this research, the interview was used as the main tool for collecting qualitative data for the research question; the following methods will be used to increase the reliability of the research:

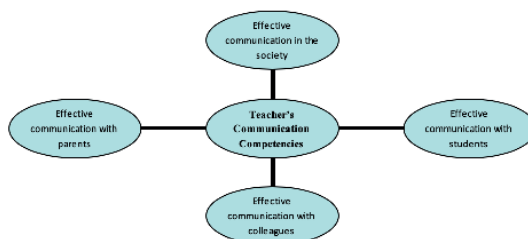
Implementation of a systematic process of registration, recording and writing data (audio recordings, to implement interviews and writing oral data) in all interviews.

Systematic and methodical analysis the data and logical categories extraction and more macro abstract concepts based on coding method.

### Findings

Competencies list of secondary school teachers within the 5 competencies, psychological, educational, communication, personal development, research and service was identified after review and interviews with various groups. Figure 1 shows a separated list of competencies.

Figure 1: Communication competencies of secondary school teachers



Behavioral indicators for each competencies have been presented in the form of tables separately given that the purpose of this study is to provide behavioral indicators for the competencies, through codes obtained through interviews.

Table 4. Reckon behavioral indicators for Communications admiration

General Competence	Sub-Competence	Knowledge	Skill	Attitude	Personality Trait
Communication	Effective connection with students	All the students recognized by birth certificate	Students were called in class with short name	Identification of students is effective in academic guidance	INTSP- ISTSP- ENTJ- ENFJ- ESFSP- INTJ- ENFSP- ENTSP- ESTSP- ESTJ
		With skills and communicating techniques with students is aware in teaching	uses from skills and communication techniques for school and non-school advice to students	Effective teaching requires good communication	INFSP- INTSP- ISTSP- ENTJ- ENFJ- ESFSP- INTJ- ENFSP- ENTSP- ESTSP- ESTJ
		Understands the value and importance of emotional connection rapport with students.	can communicate appropriate and friendship Contact with students meantime good relationship with students in different situations	Creating Interaction or reciprocal relationships between teachers and students in teaching effective	
		Is aware of the necessity to involve students in teaching and training	Asks to select the method of teaching and evaluation of students' opinions	Students contributions are part of the teaching learning process	ISTJ- ISFSP- INFSP- INTSP- INTJ- ENFJ- ESFSP- INTJ- ENFSP- ENTSP- ESTJ- ESFJ- INFJ
General Competence	Sub-Competence	Knowledge	Skill	Attitude	Personality Trait
Communication	Effective Relationship with parents	Is aware of family influence on students' learning processes.	Communicates based on a regular schedule with parents about progress student.	Knows Parents as their training partner	INTSP- INFSP- ESFSP- ISFJ- ISTJ- INTJ- ESTJ- ESFJ- ENTJ
		Has awareness of Educational and non-educational needs and expectations of parents and students	Hold meetings or seminars in accordance with the needs and expectations of families and students	Recognize and respond to the expectations of families are one of the key competencies of teachers	INTSP- ISTSP- INTJ- ENFJ- SFSP- INTJ- INFSP- ENTSP- ESTSP- ESTJ- ESFJ
		Is aware of the worries and concerns of families and parents about their children's education and future career.	Respond Quickly to the concerns of parents about students.	on part of the teacher's tasks is considering the worries and concerns of family	INFSP- ESFSP- ENFJ- ESTJ- ESFJ- ISFJ- ENTSP- INTSP
		Has information About cooperation of parents and school	Parents are Participated in educational and development activities of school.	Knows Parents as collaborators of school	ESFSP- INTJ- ENFSP- ENTSP- ESTSP- ESTJ- ESFJ- INFJ
General Competence	Sub-Competence	Knowledge	Skill	Attitude	Personality Trait
Communication	Effective connection with colleagues	Are familiar with specialization and courses of their colleagues.	Uses from knowledge and expertise of his colleagues to teach better	Knows effective his Colleague's knowledge and expertise on his teaching	ESFSP- ISFJ- ENFSP- ESTSP- ISTSP- INTSP- ISFSP
		Has awareness from the experiences of his colleagues	Using the experiences of his colleagues solve many educational problems	Is interested of using the experience of colleagues	ESFJ- ISFSP- ISFSP- ENFJ- ENFSP- INTSP- ESFSP- INFSP
		is familiar with importance of cooperation with his counterparts in other schools and school districts	Works with partners to protect the environment in school and out of school	Working with partners helps to success of teachers	ENFJ- ENFSP- ISFSP- ESFJ- ISTSP- INTSP- INFSP
	is familiar with different channels and methods of making and sharing experience with other partners in the community	Through various communication channels establishes a close relationship such as intranet and articles in magazines with other schools in the district and / or schools in the region	Communication channels is more important than the message itself	ESFJ- ISTSP- INTSP- ESFSP- ISFJ- ENFJ	
General Competence	Sub-Competence	Knowledge	Skill	Attitude	Personality Trait
Communication	Effective connection with society	Is aware of shortcomings and problems existing in educational system in society's	raises his views about educational policies in Individual and scattered way through educational conversations with colleagues	Knows effective Discussing with his colleagues in understanding educational policies	INTJ- ENFSP- INFJ- ENTSP- ISTSP- ESFSP- INTSP- ESFJ
		A thorough understanding of educational policies and his knowledge in this area is always kept up to date;	Is able to analyze the impacts of this system and educational subjects in improving his work and school	Educational policies affect the work of teachers and his teaching	ENTJ- ENFJ- ESFSP- INTJ- ENFSP- ENTSP- ESTSP- ESTJ- ESFJ
		is aware of The responsibility of individual teachers to participate in public affairs and public service	participates Occasionally volunteered to participate in projects and activities related to public services (such as elections)	Teacher are pioneer in social services	ISTJ- ISFJ- ISFSP- INFSP- INTSP- ISTSP- INTJ- ENFJ- ESFSP- INTJ- ENFSP- ENTSP- ESTSP- ESTJ- ESFJ- INFJ
	Is aware of responsibility of Teachers individual in protecting and promoting the values and ideals of the society	helps students to develop positive attitudes and values of his society	The students are influenced by their teachers		

## Discussion and Conclusion

The purpose of present study was to identify Communication Competencies of secondary school teachers in Iran based on of competence approach. The obtained results of load coding and axial coding, qualitative analysis with inductive approach demonstrates that Communication competency Pattern of secondary school teachers had formed from four sub competence, Effective Connection with students Effective Connection with parents Effective Connection with Colleagues and Effective Connection with Society.

Of course, these dimensions are so intertwined that separating them is probably not correct. In this regard it should be noted that overall components of any of patterns, theories and previous research findings does not match with components of this pattern probably due to lack of use the previous studies of the grounded theory approach and components of competence, but conceptually the comparisons can be done in some parts of conceptual pattern.

One of the qualifications of teachers is Effective Connection with students. Communication have been introduced as a process of transmission of messages, information, attitudes and facts from one person to another, whether is done verbally or non-verbally. Good communication depends on the proper communication skills and makes more dominant the learning, also most effective learnings are established based on good communication skills in student time and teachers have an important share in this field. As far as a good teacher, is known a teacher with a good communication skills.

Exchange of information and thoughts between teachers and students should be established as well as full understanding and learning efficiently. As the relationship grows, confidence and motivation of learning increase in students and thus the quality of education will be upgraded. If these interaction is not done well, perhaps the result and enough efficacy is not enough by spending so much time and costs.

Good communication between parents and teachers is one of the most important factors in improving student academic achievement that should be always respected by PTA and its one of the reasons for this is that teachers and parents both are demanding academic progress of children in compassionate way and the close association of PTA will reinforce the lessons of students. According to experts on family issues, teachers should more or less be aware of the condition of the student's family in order to help him/her to understand lessons according to family problems or may be special circumstances that he /she has in family.

## Suggestions

- It is recommended to Department of Education that displays competency model of secondary school teachers in the form of a stand, brochure or bulletin for the theatrical front of everyone. Some of these competencies are promotional in nature, and are implied to the audience in such a way that we notice to what kind of teachers in future.

- Office of Planning and manpower training of education organization can design and execute, more practical and defined training based on these qualifications because anyway behavioral goals of these competencies are defined and generally can be training and developed.

- Executive use of the competencies pattern, improves the system and culture of meritocracy in education organization and will be a role model for all teachers in education organization, to measure themselves based on it and take step to promote them.

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## Happiness and Globalization: A Study in Global Perspective about Entrepreneurship

Felicidad y globalización: un estudio en perspectiva global sobre el emprendimiento

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### ABSTRACT

The study is based on the conjecture that augmented happiness enhances the growth of entrepreneurship and happy nations have tendency to produce greater number of entrepreneurs. Apart from Happiness, this study also measures the effect of globalization on entrepreneurship. For this very purpose, happiness and globalization has been regressed with entrepreneurship. Desire Satisfaction theory has been used to explain the relationship of happiness, globalization and entrepreneurship. To verify stated assumptions, data from 125 countries from the world were tested. Data of Globalization Index (GI), Happiness Index (HI) and Global Entrepreneurship Index (GEI) were extracted from KOF Globalization Index 2017, World Happiness Report 2017 and Global Entrepreneurship index 2017 respectively. It was observed that countries with higher score in happiness and globalization also had higher score in GEI. The relationship is found to be highly significant and positive. It is suggested that countries who wish to promote entrepreneurial ventures should not focus only on conventional measures of growth like GDP but also focus for expansion through globalization and invest for the satisfaction and happiness of its people.

**Keywords:** Happiness, Globalization, Entrepreneurs, Entrepreneurship, Growth

### RESUMEN

El estudio se basa en la conjetura de que la felicidad aumentada mejora el crecimiento del espíritu empresarial y que las naciones felices tienden a producir un mayor número de empresarios. Además de la felicidad, este estudio también mide el efecto de la globalización en el emprendimiento. Para este mismo propósito, la felicidad y la globalización han retrocedido con el espíritu empresarial. La teoría de la satisfacción del deseo se ha utilizado para explicar la relación de felicidad, globalización y emprendimiento. Para verificar los supuestos establecidos, se probaron datos de 125 países del mundo. Los datos del Índice de globalización (IG), el Índice de felicidad (HI) y el Índice de emprendimiento global (GEI) se extrajeron del Índice de globalización KOF 2017, el Informe de felicidad mundial 2017 y el Índice de emprendimiento global 2017, respectivamente. Se observó que los países con puntaje más alto en felicidad y globalización también tenían puntaje más alto en GEI. Se encuentra que la relación es altamente significativa y positiva. Se sugiere que los países que deseen promover emprendimientos empresariales no se centren solo en medidas convencionales de crecimiento como el PIB, sino que también se enfoquen en la expansión a través de la globalización e inviertan para la satisfacción y la felicidad de su gente.

**Palabras clave:** felicidad, globalización, emprendedores, emprendimiento, crecimiento

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## INTRODUCTION

It is believed that entrepreneurs can contribute to economic development, enhance competitiveness and productivity. Entrepreneurship literature is mostly associated with growth, development and effectiveness (Acs, 2006; Carree & Thurik, 2003; Van Stel, Carree, & Thurik, 2005; Saidakhmedovna, 2016). But this association is rarely checked with happiness and globalization. Very few studies like (Benz & Frey, 2008; Blanchflower & Oswald, 1992; Nightingale & Coad, 2013; Estanesti & Vazifeh, 2017) showed that entrepreneurs tend to be happier and satisfied from their life. This is because of their self-achievement and fulfilment of their inner desires. But in reverse either happy people can be the successful entrepreneurs, there is lack of in depth research. So, there is gap in the literature which needs to be filled by addressing these particular issues. As per world happiness report by Helliwell, Huang, and Wang (2017) {Helliwell, 2017 #12@@author-year} measuring this relationship is very important because growth and satisfaction is now being associated with happiness and quality of life rather than wealth. Similarly, Literature is not enriched while associating globalization with entrepreneurship. The phenomenon of entrepreneurship is very crucial and important at academic level but it lacks the conceptual framework which requires to be created (Shane & Venkataraman, 2000). B. Bhasin and Ng (2019) assessed the influence of culture that can enhance the entrepreneurial spirit, encourage for risk taking and ultimately boost the economic development but still it requires a lot of work to remove the impediments to entrepreneurship. Despite deep rooted cultural differences, the consumers around the globe are becoming alike and hence creating opportunities for entrepreneurs to address the needs of these alike customers (Levitt, 1993). From above, the research questions arise. 1. Can happy nations produce more entrepreneurs? 2. Does expansion in Globalization enhances the entrepreneurial activities of a country?

## LITERATURE REVIEW

Literature is contradictory while associating the global entrepreneurship and happiness with materialistic and non-materialistic objects (Audretsch & Belitski, 2015; Gries & Naudé, 2011; Levie, Autio, Acs, & Hart, 2014; Sadehghpour et al., 2017). For example, Oswald (1997) criticized the importance of money and concluded that even money can bring little happiness in the lives of people but most of the people continuously strived to earn more. The importance of materialism is also important whether the person belonged from a developed or least developed country. The rise in income for the resident of a rich country may bring less happiness as compared to the person of poor or least developed country. It is further concluded that employed persons are more satisfied and happier as compared to unemployed persons. But we argue that entrepreneurs are even happier and satisfied from employed individuals as entrepreneurs achieve self-esteem, confidence and worth along with materialistic gain.

Happiness varies among countries and there exist larger gaps in happy and unhappy people. Unhappiness exert pressure on people to migrate from unhappy and distressed regions to prosperous and happy regions of the world. Ultimately when people move from troubled areas to peaceful area, they offset the state of ecstasy by exploring the new opportunities in new regions and provide chances to grow in their own regions for natives and for those who left behind (Sachs et al, 2018). For Immigrants, personal characteristics and attitudes are very important to make final decisions to migrate. Later, these immigrants can become entrepreneurs by self-employing or give opportunities to local entrepreneurs to hire them (Martín-Montaner et al, 2018; Marques et al., 2017). Data collected based on observations and in-depth reviews Sun and Xu (2019) observed that entrepreneurs seek to balance their life as a tourist (immigrant) or as an entrepreneur.

Happiness is being considered a highly valued phenomenon now-a-day. People of the developed and developing world supported for the growing role of happiness. Happiness is not limited to one's own personal life but it should also consider the happiness of other people. Apart from communities and societies, role of Governments is also very important to create happiness among its masses (Veenhoven, 2004). Private businesses are also the cause of happiness of the people because these businesses helped the people to fulfill their desires in the form of product or services. In case of small business, this desire fulfillment is on both sides, i-e, for customers as well as for entrepreneurs.

Happiness has different meanings for different persons. Synonyms used for happiness are well-being or quality of life. But life quality and satisfaction level of every person varies with respect to demographics, culture and region. For a layman or average person, happiness may be the loving family, good health and fully engaged in job (Bremner, 2008) but for an entrepreneur happiness has different meaning as compared to a layman. Entrepreneurs are the people who are passionate, committed, visionary with clear state of purpose in their mind. These characteristics brings inner peace and helps them in accomplishing their goals (Tabaka, 2018). Happiness is not being the rich nor having the material goods. It can be associated with finding the meaning in your work, goal attainment, pride in your life or work and feeling good on day to day basis (Parks, 2017; Veenhoven, 2009). Happiness is being considered a symbol of social growth and development for nations. So, there is a need to develop the public policies for governments to make their people happy. People in happy nations can said to be free, creative, satisfied with encouraging environment which is helpful to promote the entrepreneurial activities (Naude, Amoros, & Cristi, 2014). Al Mamun, Fazal, and Muniady (2019) found that the skills of entrepreneurs had a positive effect on entrepreneurial skill. These findings are also consistent with previous studies (Man, Lau, & Chan, 2002; Mitchelmore & Rowley, 2010; Oosterbeek, Van Praag, & Ijsselstein, 2010)

## THEORETICAL PLAUSIBILITY

Theories of well-being or welfare struggled to answer the question that what makes a person happy and how's a person life goes well. Happiness is a matter of concern by all human beings with breathing in their lungs. Mostly three theories are associated with happiness or welfare of human beings. These are: Hedonism Theory, Desire Satisfaction Theory and Objective List Theory (EdRoyzman, 2003). According to EdRoyzman (2003), Hedonism is a state of feeling and subjective

in nature. Happy life means to maximize the pleasure and to reduce the pain. Desire Satisfaction Theory is a state of happiness when a person achieves what it wants. While Objective List Theory is getting truly valuable things from a long list of desires in the real world. Among all the welfare theories, Desire Satisfaction Theory is the most successful theory and fits well to this study. This theory states that welfare is ultimately associated with desire and fulfilled desires lead towards happiness and satisfaction (Heathwood, 2006). This theory is linked with outside world and pleasure and entrepreneur can never ever be a successful person if it is not linked with outside environment. Although, there is lot of progress to understand the phenomenon of entrepreneurship with the process of development but still there is lack of a general theory of entrepreneurship with economic development (Naudé, Amorós, & Cristi, 2014). Bremner (2008) demonstrated the theories of happiness in philosophical and psychological regimes and shows his concerns during the discussions of theories of happiness. In a nut shell, a bunch of theories are available to demonstrate the phenomenon of happiness and entrepreneurship but still there is lack of specific theory which should explicitly explain the phenomenon of happiness with entrepreneurship.

### HAPPINESS AND ENTREPRENEURSHIP

According to Gries and Naudé (2011); Nightingale and Coad (2013); its universally accepted belief that entrepreneurial organizations are very beneficial and helpful for boosting the economy. There is improvement in the quality of data with the passage of time and strong methodological approaches have been used by the researchers with sober evaluations but still the ample research remains indecisive with positive and negative analyses (Nikolaev, Boudreaux, & Wood, 2019; Urbano, Aparicio, & Audretsch, 2019).

GDP is a valid measure of economic growth but the problem is that it measures the growth in a quantitative way and quality of growth still required a comprehensive and widely accepted measure. Happiness can be associated with the quality of growth as it measures the satisfaction of humans with their life and challenged the tyranny of GDP (Helliwell et al., 2017), So this paper is not considering the GDP as a predictor of entrepreneurship.

Entrepreneurs get supernormal returns from their ventures as compared to other businessmen or employed person. This is possibly because of their ability to explore the hidden opportunities or competitive environment. Whatever the reason of these supernormal returns, entrepreneurs enjoy the higher level of happiness and overall satisfaction from their work as compared to other employees or businessmen (Blanchflower & Oswald, 1992). In an empirical investigation of fifteen OECD countries over a period of eighteen years, El Harbi and Grolleau (2012) investigated the direct effect of entrepreneurship with life satisfaction and indirect effect of self-employment with per capita income. The study found a larger magnitude of direct effect in comparison of indirect effect of self-employment (entrepreneurship) with life satisfaction. Although, the study concluded that there is overall negative effect of entrepreneurship with domestic happiness but study provide a comprehensive guideline to comprehend the relationship of entrepreneurs and happiness. According to Nikolaev et al. (2019) Happiness or well-being has an essential engagement with entrepreneurship but this relationship is often poorly understood. So, it should be postulated to better understand this very particular relationship.

From above, it can be hypothesized that **H1**: World Happiness has positive and significant impact on Global Entrepreneurship

### GLOBALIZATION AND ENTREPRENEURSHIP

Globalization is simply speeding up, widening and deepening the world-wide connections (Baylis, Owens, & Smith, 2017). The criticism on globalization is that it will undermine the national talent and abilities by inviting others from the world to demise the local industry. Government can lose the control of its own economy, society and citizens. But at the same time, it also provides opportunities to doers of the country to enhance their skills through innovation so that they can compete in the global markets and can be a threat for the economies of the rest of the world. These doers are known as entrepreneurs and every country has a dire need for these entrepreneurs.

According to Soriano and Dobon (2009) small organizations are the most common types now-a-days which exist in the global economy. Due to their small size these organizations quickly modify themselves according to new situation and are more successful in innovating products and providing unique services. Contrary, large organizations face lags due to their bulky size. Flexibility of small organization enable them to respond the turbulent environment of global economy and can ease the process of globalization. Usually these small organizations are owned by the entrepreneurs hence they influence the local as well as global economy and vice versa.

Similarly, Etemad and Wright (2003) focused on globalization and entrepreneurial venture of small businesses. He discussed the relevance of small and medium enterprises and entrepreneurship with globalization. They advocated that business environment around the globe is changing dramatically so, making difficult for small businesses and entrepreneurs to compete globally. For this, governments can play important roles by removing the trade barriers, access to transportation and telecommunication and advancement in technology could provide the chance for entrepreneurs to enter in global markets.

Small and Medium (SMEs) organizations are the outcomes of entrepreneurial ventures. However, majority of these SMEs operate at national level. These SMEs cannot ripe the full benefits until unable to compete in the globalized economy. According to B. B. Bhasin and Venkataramany (2010), to compete in the global markets these SMEs must enhance their capabilities and capacities. These capacities include: access to technology, access to financing, access to market and access to information. The entrepreneurs or owners of these SMEs should recognize and take fully into account the new developments and opportunities of global markets. From global markets, these SMEs are able

to establish inter-firm linkages and can enhance their efficiency, financing and technological innovation. Although the work of B. B. Bhasin and Venkataramany (2010) focused on Indonesian markets covering the national economy, but they pointed out good insights for SMEs for successful competition around the globe.

Although there is much common in entrepreneurs and gamblers as both are risk takers. But the point which prioritize the entrepreneur is the ability to successfully anticipate the risk which is also known as calculated risk. Even in case of failure, entrepreneurs are not empty handed like gamblers. B. B. Bhasin and Venkataramany (2010) explored the relationship between globalization, immigrant entrepreneurship and criminal economy. They concluded that enhanced globalization influenced immigrants and other migrants to devise new ways of drugs trafficking. This is because of technological and facilitating links between immigrants and local based groups of industrial and advanced economies. By adapting the same techniques, globalization can also influence entrepreneurs to establish international linkages to find out their niche markets.

Bartley (2007) developed a different account for global institutions. He argued that global institutions were the outcome of political contestation through analysis of conflict and institutional entrepreneurship with a wide range of actors. He further concluded that at most basic level that rise of private regulatory associations constitutes two types of actors i-e, interested actors within the market and entrepreneurial actors outside the market. These actors initiate the projects, organized the firms and manage broader level support. In fact, these interested and entrepreneurial actors help for creation of certification and good governance.

From above it can be hypothesized **H2**: Globalization is positively associated with Global Entrepreneurship

**Regression Model**

$$GEI_i = a_1 + a_2 HI_i + a_3 GI_i + e_i$$

$$i = 1, 2, \dots$$

Where GEI stands for Global Entrepreneurship Index, HI stands for Happiness Index and GI stands for Globalization Index.

**METHOD AND VARIABLES**

Cross sectional data of 125 countries were used for analysis. Data of Globalization Index (GI), Happiness Index (HI) and Global Entrepreneurship Index (GEI) were extracted from KOF Globalization Index 2017, World Happiness Report 2017 and Global Entrepreneurship index 2017 respectively.

World happiness is measured through weighted average score ranges from 00 to 10 stating the amplitude of happiness. The study adopted these weighted scores from world happiness report 2017 (Helliwell et al., 2017). The world happiness index 2017 is a composite index comprises of six factors: GDP per capita, healthy years of life expectancy, social support, trust, freedom and generosity. The HI scores are of 156 countries out of which 125 were used in the analysis. The highest score of HI is 7.54 for Norway and lowest score is 2.7 for Central African Republic. The highest scored country means the happiest people of the world live in that country while the country with lowest score in HI index shows the least happy people of the world.

KOF globalization index (GI) has been measured by the three main dimensions of globalization, i-e, economic, social and political. Apart from these three dimensions it also includes the sub-indices of actual economic flow, economic restrictions, data on information flows, data on personal contact and data on cultural proximity. KOF index was initially developed and updated by (Dreher, 2006; Dreher, Gaston, & Martens, 2008). Data availability is of 207 countries ranging from the period of 1970-2014 and updated till 2017. This paper utilized the rankings of KOF index of globalization of 2017 for analysis (KOF, 2017). As per this ranking, Netherlands is the most globalized country of the world.

Global Entrepreneurship Index (GEI) is developed by The Global Entrepreneurship and Development Institute (GEDI). GEI is a composite index of three sub-indices, 14 pillars and 28 variables (Z. J. Acs, Szerb, & Lloyd, 2017). Data about GEI score is available for 137 countries out of which 125 countries were included in the analysis. The range of score is from 00 to 100. United States has the highest score of 83.4 in GEI while Chad with lowest score of 8.8. GEI index 2017 focused on digital revolution and termed it as digital ecosystem of entrepreneurship. The report stated that countries with high income have tendency for better entrepreneurship ecosystem. It further revealed that digital ecosystem has strong and positive relationship with entrepreneurship (Z. J. Acs et al., 2017).

**Description of Data in Tabular Form**

Variable	Description	Source
World Happiness (HI)	Score Ranges from 00 to 10 Norway: 7.54 United Kingdom: 6.7 Pakistan: 5.27 Central African Republic: 2.7	Helliwell et al., 2017

Globalization Index (GI)	Score Ranges from 00 to 100 Netherlands: 90.24 United Kingdom: 82.43 Pakistan: 52.53 Eritrea: 26.41	(KOF,2017)  (Dreher, Gaston, & Martens, 2006; 2008)
Globalization Entrepreneurship Index (GEI)	Score Ranges from 00 to 100 Unites States: 83.4 United Kingdom: 71.3 Pakistan: 15.2 Chad:8.8	(Z. J. Acs, Szerb, & Lloyd, 2017)

## ANALYSIS

Linear regression equation model is used for analysis by taking Global Entrepreneurship Index (GEI) as dependent variable while happiness and globalization were taken as predictor of GEI. EViews was used to estimate the measurement model. GEI scores were extracted from global entrepreneurship development index website. Data for the year of 2017 were included in the study. Out of 137 countries, data of 125 countries were included in the analysis. In GEI score, U.S stood first, chad at the last while Pakistan ranked at 123<sup>rd</sup> number with GEI score of 15.2. Happiness index (HI) was accessed from world happiness index (Helliwell et al., 2017) with Norway at first position, Central African Republic at the end while Pakistan ranked at 81<sup>st</sup> position. Globalization data was accessed from KOF index 2017. According to this index, Netherlands stood first in GI score, Eritrea at last while Pakistan ranked at 113<sup>th</sup> number.

**Table 1**

Dependent Variable: GEI				
Method: Least Squares				
Sample: 1 125				
Included observations: 125				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
HI	5.435194	1.223059	4.443935	0.0000
GI	0.742599	0.088711	8.371016	0.0000
C	-44.24440	4.537959	-9.749846	0.0000
R-squared	0.735854	Mean dependent var		33.30744
Adjusted R-squared	0.731523	S.D. dependent var		18.83144
S.E. of regression	9.757459	Akaike info criterion		7.417649
Sum squared resid	11615.38	Schwarz criterion		7.485528
Log likelihood	-460.6030	Hannan-Quinn criter.		7.445224
F-statistic	169.9327	Durbin-Watson stat		1.726249
Prob(F-statistic)	0.000000			

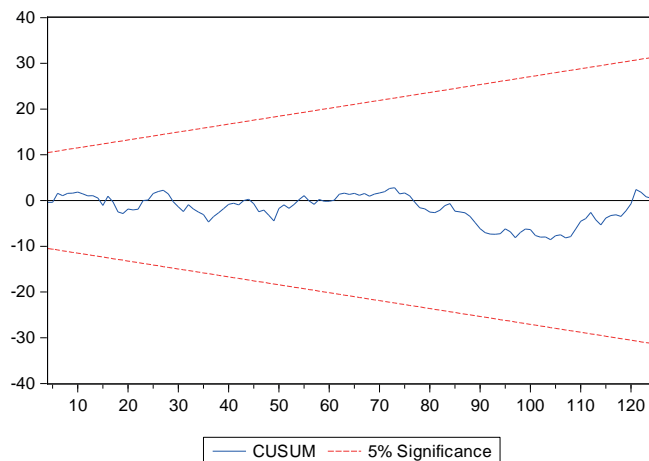
SOURCE: COMPUTED VALUES OF THE STUDY

The value of R square and adjusted R Square in above table is 0.7 which shows more than 70% of the variation in global entrepreneurship is explained by globalization and world happiness. It also shows that 73 percent of the values fall across the regression line. As per probability values which are less than 0.05 and the values of t-Statistic which are greater than 3.0, it can be said that globalization and world happiness have significant relationship with entrepreneurship. It also shows that globalization and world happiness are the good predictors of entrepreneurship. Moreover, the probability of F-statistic shows that overall regression model of the study is significant. The regression equation may be rewritten as

$$GEI_i = -44.24 + 5.45HI_i + 0.74GI_i + e_i$$

$$i = 1, 2, \dots, 125$$

Where -44.24 is the slope of the regression line while 5.45 and 0.74 are the coefficients of happiness and globalization respectively.

**Stability of Coefficients. Figure 1**

The above graph shows the stability of coefficients used in the study. Dotted lines show the critical region at 95% confidence level. It is obvious that the coefficients of both variables Globalization and Happiness are stable.

**DISCUSSION**

Based on the significance value in table 1, the hypothesis 1 cannot be rejected. It can be safely

said that happiness has positive and significant impact on entrepreneurship. It means to enhance the entrepreneurial activities for any country happiness of its people play a vital role. Previous studies concluded that entrepreneurs are happier, fulfilled and satisfied as compared to others. The assumption of this study is different from previous studies. It assumed that happiness leads towards entrepreneurship. For real growth, the countries must get rid of vicious circle and tyranny of GDP and invest for the happiness of its people. Once the people are happy, they will automatically move for creative business ventures. From the above analysis, question no. 1 of the study can be answered and it can be safely said that happy nations have tendency to produce more entrepreneurs.

From table 1, the probability value of GI is 0.00 which shows its significant relationship with GE. From this, the hypothesis 2 cannot be rejected and we can assume that Globalization has positive and significant impact on global entrepreneurship. From this analysis, question 2 of the study can be answered that if any country of the world wants to promote entrepreneurial activities it should improve its globalization index. As per KOF globalization index, this index can be improved by improving the economic, social and political dimensions of the country. Ultimately investment in economic, social and political globalization can boost the entrepreneurial activities of that country.

**CONCLUSION**

The study has described the indept interpretation of globalization and happiness with entrepreneurship at global level. Based upon duly authenticated data, it has certain implications for policy making to enhance entrepreneurial activities around the globe. The countries seeking more entrepreneurs in their society should expand the undertakings which promote globalization and happiness. For expansion in globalization, economic, political and social freedom are the basic ingredients. Similarly, the countries who want to promote happiness should set their people contented, relaxed and satisfied. These attributes can be attained by acculturating the environment of freedom, creativity and meaningful life.

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**Teachers' Beliefs, Mathematics Anxiety, and ICT Literacy: A Systematic Review**

Creencias de los docentes, ansiedad matemática y alfabetización en TIC: una revisión sistemática

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**ABSTRACT**

This paper systematically investigated the relationship between mathematics teachers' beliefs, mathematics anxiety, and ICT literacy for over five years. The study is accordance with the Matrix Method used for reviewing. In addition, the publications were taken as the data, which were databases and references. Twenty-eight ( $n = 28$ ) publications fulfilled specific inclusion and exclusion criteria and consisted of the final instances. A methodological quality score (MQS) was selected in every research. The correlation between teachers' beliefs and mathematics anxiety, as well as the ICT literacy obtained in a particular result and was categorized as exhibiting an inverse linear relationship, no statically significant linear relationship, or a positive linear relationship.

**Keywords:** Teachers' beliefs; Mathematics anxiety; ICT literacy.

**RESUMEN**

Este documento investigó sistemáticamente la relación entre las creencias de los profesores de matemáticas, la ansiedad matemática y la alfabetización en TIC durante más de cinco años. El estudio está de acuerdo con el método de matriz utilizado para la revisión. Además, las publicaciones se tomaron como datos, que eran bases de datos y referencias. Veintiocho ( $n = 28$ ) publicaciones cumplieron criterios específicos de inclusión y exclusión y consistieron en las instancias finales. Se seleccionó un puntaje de calidad metodológica (MQS) en cada investigación. La correlación entre las creencias de los docentes y la ansiedad matemática, además de la alfabetización en TIC obtenida en un resultado particular y se clasificó como exhibiendo una relación lineal inversa, ninguna relación lineal estadísticamente significativa o una relación lineal positiva.

**Palabras clave:** creencias de los docentes; Ansiedad matemática; Alfabetización en TIC.

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## 1. INTRODUCTION

Personality aspects are more than a significant factor in teaching and learning, especially in the complexity of mathematics belief in teachers. Particular researches cover the area addressing the variety and investigate their origins. Moreover, some factors contribute to mathematics beliefs as stated by some researchers (Beavis et al. 2014; J. Berger et al. 2018; Palak & Walls 2009). Mathematics belief is something crucial for a teacher. It led to the concern on how a teacher transfers the knowledge to students. The idea is similar to the research of Han et al. (2017) as it focuses on teachers' mathematics beliefs in terms of determination, relations with other affective variables and teaching practices.

In addition, mathematics teachers' beliefs have an impact on their classroom practice. It pictures on the ways they perceive teaching, learning, and assessment, and on the ways they perceive students' potential, abilities, dispositions, and capabilities (Adnan, Zakaria & Maat 2012; Haciomeroglu 2013; Siswono et al. 2016). Thus, belief relates to approaches, techniques and methods on teaching for a teacher as these bring about the impact on teachers' beliefs.

The phenomenal issue in the global world is mental psychology mainly about depression and anxiety. Based on the World Health Organization report, the extent of depression and anxiety across the globe has been a noteworthy increase in people suffering from mental disorders in developing countries (Ferguson et al. 2012) is revealed. It brings about parallel growth in the population and life expectancy in those countries. Having depression and anxiety among teachers in teaching and learning in the classroom also bring another issue. The teachers with higher levels of mathematics anxiety tend to prioritize traditional learning compared to teachers who have more ability to explore learning due to less math anxiety when teaching (Novak & Tassell 2017; Wilder 2013). Uysal & Dede (2016) underlined that pre-service elementary teachers' scores on beliefs in teaching mathematics were high whereas mathematics anxiety levels were low in general. As a result, the correlation between the sub-scale of the MARS-SV and child-centeredness beliefs are not significant at the 0.05 level. From the researches, it can be concluded that the teachers who are holding stronger beliefs and feeling of less anxious were more confident on their competency to teach mathematics effectively.

According to World Bank data, basic education does not give proper knowledge and empowering learners' capabilities on technology and ICT (Thani et al. 2008). Basic education brings about the readiness of teachers in using ICT, technology, and literacy. Teachers have a larger perspective on the role of information and communication. The rapid increase in the demand for technology has changed gradually. The use of technology might lead to anxiety for some who do not have readiness in using it during working. Anxiety is a big influence in everyday life supporting the one's performance. Previous research have stated that stress and anxiety lower the effective performance of people. Thus, the effective and cognitive become the contributing factors to the initiative of the use of ICT (Smaldino 2011). Therefore, an understanding of ICT will be beneficial for those in reducing the anxiety in using ICT

In addition to the educational experiences provided to teachers, each internal barrier also influences technology integration as the effective use of technology in the classroom has become one of the major themes in education (Han et al. 2017a). Nowadays, teachers' ability to implement classroom technologies to foster meaningful learning experiences are increasingly important in teachers' education. Previous literature have identified the important factors affecting technology integration: teachers' beliefs (Ghavifekr et al. 2015; Mahmoudikia 2014; Yang & Leung 2015), and teachers' ICT literacy (Alghamdi 2017; Dakich 2005; Kaur & Singh 2014). Therefore, the points among mathematics teachers' belief, anxiety, and teachers' competency in ICT literacy must be approved.

The analysis focuses on the association of teachers' beliefs, mathematics anxiety, as well as ICT literacy. It reflects on the nature of the association and exemplified a protective or risk factors. Thus, other investigations are the methodological characteristics of the literature and the moderate findings on methodological characteristics of mathematics teachers' beliefs.

Psychologically, a belief of an understanding or a proposition about the world that is considered true which can also be assumed as a trust. According to Berger et al. (2018), a trust is more cognitive, but it is difficult to change as compared to attitude. JYang & Leung (2015) documented that a belief can be considered as a basis for influencing one's thinking on the aspects of the world or as a disposition of an action which also contributes to confidence of a person. As stated by Misfeldt et al. (2016) who mentioned that a belief, in contrast to knowledge, can be made at various levels of confidence and are more cognitive than emotional and attitude. Thus, a belief can lead to someone's personality trait as individual and approach as a teacher. Palak & Walls (2009) stated some terms of beliefs expanding in the educational field. They cited a construct on beliefs in the education world or better known as "belief in the world of education" which is widely defined and used to identify a teacher's success, epistemological beliefs, anxiety, self-concept, self-esteem, and beliefs that are Specific. Clarification made by Han et al. (2017) on consideration of beliefs must be seen from the philosophical and psychological perspectives.

Likewise, mathematics teachers' beliefs bring about classroom practices. This can be seen especially on the images of teachers in the teaching method, teaching-learning process, and designing assessment. Moreover, in terms of assessment, it is found to evaluate students' potential, abilities, dispositions, and abilities (Beavis et al. 2014). This interpretation is the same as the definition by Uysal & Dede (2016) on mathematics teaching and teachers' beliefs. These are beliefs which were obtained from elementary mathematics teachers who were involved in peer assurance programs that were not involved in the guidance program. On the other hand, mentor intervention is based on a socio-constructivist approach to mathematics instruction, and teacher treatment groups who participated in small group teaching activities. Yang & Leung (2015) found the socio-constructivist approach to mathematics instruction applied by the program which by the time, the results of the teaching observation found that the teachers showed more traditional method in their teaching process.

Researchers recognized mathematics as a non-concrete study which has significant impacts on emotional condition

towards people causing people to love or leave it, (Wilder 2013). Boyd et al. (2014) showed that many people experienced mathematics anxiety but people could not find reliable records of it as contrast to the fact. Moreover, mathematics teachers assume mathematics anxiety as natural attitudinal and emotional factors. Another fact came from Elementary school teachers which was based on the quantitative data focusing on elementary school teachers who experienced higher mathematics anxiety. It was found as the result of spending less time planning mathematics lessons (Matoti & Lekhu 2016). On the contrary, secondary mathematics teachers who took teacher education programs with the experience on mathematics gained confidence in delivering the subject. (Novak & Tassell 2017).

#### The Academic Debates Regarding Teachers' Beliefs, Mathematics Anxiety, and ICT Literacy

The belief system is a metaphor in describing how a person believes a certain idea or object. The belief system is connected to three aspects: a) belief in a system that is primary or derivative; b) confidence in a system that has central or peripheral; c) belief on a group. According to Berger et al. (2018) researchers found that the structure belief is perceived as the combination of both philosophical and psychological constructions. The dimensions in the structure of belief are the quasi-logical relationship between beliefs of central-peripheral, and held in groups. Based on their research, Beavis and his colleagues (Beavis et al. 2014) developed a characterization on the structure of secondary school mathematics teachers' trust which is also being used in the case study analysis.

The researchers acknowledged the findings made by previous experts in shaping reflection ideas and proposed the sectional theory in characterizing belief structure of teachers' intelligence as such: (a) Isolationist: a trust structure and belief in different perspectives. They only believe in their own beliefs, do not care about the trust that others have. Accommodation is not a theme that characterizes isolationists; (b) Idealistic naivety: an observer, people observe others as a case without analysing their belief (c) Connectionist naivety: as a reflection and paying attention. They compare to others' conviction. The naive, however, makes the connectionists fail to resolve conflicts or differences in beliefs; (d) Reflective constructivists: almost the same as the previous belief, but the reflection and paying attention to others' property. Reflective connectionists, however, resolve conflicts through reflective thinking. Siswono et al. (2016) recorded that the cultivation of doubts and the influence of a confusing situation seems to be the centre of transition from being in a certain categories with varied human responses can be seen from their categories.

On the other hand, numerous researchers discovered some findings with one of them is on the dimensions of mathematics anxiety. Anxiety is measured using The Mathematics Anxiety of Rating Scale (MARS). It is a hypothesis on the mathematics anxiety that reflects on the exploratory factor analysis (EFA) which "seeks to discover if the observed variables can be explained largely or entirely in terms of a much smaller number of variables called factors" (Ramirez et al. 2018). Investigating the dimension of mathematics anxiety is the same as identifying the factors which led to the construct. The more understanding, the better perspective in the nature of mathematics anxiety for accomplishing it will be very useful to prevent or minimize anxiety.

Overall, the case illustrates the view on two factors. Those are Mathematical Test Anxiety, and Numerical Anxiety (Wilder, 2013). In contrast, the Mathematical Test Anxiety and Numerical Anxiety factor deal on different points while Mathematical Test Anxiety related to mathematics ability, while numerical anxiety includes numbers in an everyday setting. This issue is similar to that found in Gnanamuthu & Krishnakumar (2015) who mentioned two elements, which were Course Anxiety, and Numerical Task Anxiety. In contrast to previous findings, Hacımeroglu (2013) stated three free which were Evaluation Anxiety, Social Responsibility Anxiety (Social Responsibility Anxiety relates to mathematical processes in social settings), and Arithmetic Computation Anxiety. However, findings from Ramirez (2018) stated the the three dimensions as Mathematics Test Anxiety, Mathematics Studying Anxiety, and Mathematics Class Anxiety. These studies have failed to report the analysis of anxiety as the lack of rationale due to difficulty to convey disagreement in the findings. Enhancing teachers' competency in cognitive is very essential to support their educational activities. The issue that arose is regarding to teachers' competency in dealing with ICT. Some studies revealed that teachers do not have the required knowledge, which is also mentioned by Fauzi (2017), that a group of educators has lower ICT competency. In addition, most of the teachers have moderate competency which is the lowest level of competence. Thus, it is assumed that the teachers must get involved in a succession of ICT program for better understanding as it was believed that the upgrading level of ICT knowledge is useful for teachers. According to Barkatsas & Malone (2005) ICT covers the development of ICT literacy, knowledge, process, and attitude.

The ICT literacy framework produced by the Delphi panel (Tian et al. 2017) includes four categories of ICT literacy by teachers: (a) category 1: understanding the operational and application of ICT; (b) category 2: pedagogy that is rich in meaning and learning environment; (c) category 3: ICT for learning and professional involvement; and (d) category 4: the relationship between people and environment of life and teaching using ICT. For the dimension 1 consists of three abilities which refer to a) understanding of the operational of teachers and the system of ICT, for instance: getting the latest comprehending of ICTs applied at schools, workplaces, homes, as well as communities; b) showing qualified perspective and skills in computer system; c) presenting closeness and utilization of network resources for communication and academic aims.

Category 2 describes teaching practices including pedagogy that is rich with the ICT usage embedded in constructivist learning (Kafyulilo et al. 2015) and other communities connected by students (Yusri & Goodwin 2013). The focus is on new learning approaches and integrated learning and teaching with ICT. In this case, teachers are as designer and facilitator to engage students' inquiry. Subsequently, category 3 describes teachers' practices including approaches using ICT to support their needs in education as well as professional activities. Critical awareness of ICT is needed by society to be used and support their professional activities. Another phenomenon is the critical awareness on restructuring the school system in term of how students need technology to support their learning. Finally, for

category 4, it discusses social ecology that integrates ICT into daily practice which was mentioned by Tomljenović & Zovko (2016), as it deals with the use of a certain strategies showing the same position including behaviours such as moral, and some empowering issues in the use of ICT.

Teachers' beliefs, mathematics anxiety, and teachers' ICT literacy have a special domain which cannot be easily compared as there are several points to measure those. The points are definitions, dimension, object, and stability. The systematic review presented here contributes toward presenting the correlation between beliefs, anxiety on mathematics, and ICT literacy among teachers noted in several types of research for five years.

## 2. METHODS

This study uses matrix method with the related theory outlined the method for systematic literature review. The theme is on ignorance assumption which is due to the lack of knowledge in an investigation that can be protected. Ingram et al. (2006), also pointed out that matrix method is indicated as an abstract literature conveying table and grid with a rectangular array as a symbol. The method covers verbal information, quotes, summarized text, and extracts from matrices consist of various aspects of the research which are found to be a strong tool being used in many fields.

Conceptual and methodological characteristics were recorded systematically (Tian et al. 2017). For instance, the use of Methodological Quality Score (MQS) shows the highest possible MQS that was 19 which is as the maximum score of methodological characteristics. Table 1 shows the criteria for methodological quality which was presented in the average inter-rater reliability that was 0.887.

Each research examined the relationship between teachers' beliefs, mathematics anxiety, and ICT literacy. There were some variables found, such as the category related to; and the nature of the relationship. The results were categorized as an inverse linear relationship, no statistically significant relationship, or a positive relationship. A positive relationship means that high teachers' beliefs were a risk factor for certain mathematics anxiety or ICT literacy. Conversely, an inverse association is a protective factor.

## 3. RESULTS

### *Studies' characteristics*

There were 28 examined research which were published in the last five years (between 2013 and 2018) with eighteen articles showing several fields which are discussed on teachers' beliefs, mathematics anxiety, and ICT literacy. Nine articles were published in Academic Search Premiere, ten were published in ERIC databases, seven and two were published in PsycINFO and Sociological Abstract respectively. Six studies examined teachers' beliefs as a minor variable while other 18 research were presented as a disciplinary construct. Regardless of the centrality construct, only 4 articles were depicted as a theoretical elaboration on teachers' beliefs and greater than half reported were associated with mathematics anxiety or ICT literacy. Other theories (3 studies) were cited in the construct of instruments and more than half (7 studies) were reported to be used as literature reviews to guide the inquiry. Last but not least, two studies dealt with the structural equation model for the three variables.

### *Studies' methodological quality*

The study used methodological quality score (MQS). The composite of individual elements for rating every research's quality is shown in Table 1. The 7 to 14 points are the Values for the MQS. The mean = 10.69, SD = 7.96, median = 9.5, and mode = 12. The Methodological Characteristics above explanation are shown in table 1.

Table 1. Criteria for assessment of reviewed studies' of methodological characteristics and frequency distribution for each characteristic from reviewed studies

Characteristics on Methodology	Scoring The Maximum score is 19 (points)	The characteristics of Distribution	
		(n)	(%)
Meaning of teachers' perceptions/mathematics apprehension/ICT proficiency	Global = 1	12	43
	Facet-specific = 2	16	57
	stated= 1	16	57
Valid	Not stated = 0	12	43
Reliable	Reported = 1	15	54
	Not reported = 0	13	46
Theoretical framework presented of teachers' beliefs/mathematics anxiety/ICT literacy	displayed theories = 1	20	71
	did not display theories = 0	8	29
Research belief	Quantitative / Qualitative = 1	24	86
	Mixed methods = 2	4	14
The Design	Correlational/Cross-sectional = 1	28	100
	Longitudinal = 2	0	0
The size of Sample	Undetermined = 0	3	11
	Small (< 100) = 1	10	36
	Medium (> 100 and < 300) = 2	7	25
	Large (> 300) = 3	8	29

<b>The design of sample</b>	Convenience/nonprobability = 0	0	0
	Random/probability but not nationally representative = 1	17	61
	Random/probability and nationally representative = 2	9	32
<b>The analysis of the data</b>	Quantitative (content ; emergent themes analysis; grounded theory) = 1	10	36
	Univariate statistics/descriptive = 1		
	Bivariate statistics/ANOVA = 2	5	18
	Multiple/logistic regression = 3	7	25
	Multivariate statistics (canonical correlation; discriminant function analysis; path analysis, structural equation modeling) = 4	1	4
<b>Applicable inferences of causality</b>	Study's conclusion inappropriately implies causality = 0	1	4
	Study's conclusion appropriately imply causality = 1	27	96

Some previous studies showed that the frequency distributions for each element of the MQS indicated almost 40% (10 studies) of the analyzed research which conveyed a qualitative research paradigm that is a mixed method used in the research. Cross-sectional designs were featured most commonly with none of the research showed a longitudinal design. Most inquiries (17%) used large samples (>300 respondents), but the majority of these (61%) were of medium samples and small samples are for 25% and 36% respectively. Most of the reviewed were randomly selected but were not nationally representative (61%), and 32% of data were selected and nationally representative. Nine studies (29%) focused on samples in Asia (Indonesia, Malaysia, Korea, Hong Kong, Singapore, Iran, and Saudi Arabia). Three reports employed Australian participants, and both of America and Europe samples were reported in 32% (10 studies).

Systematically, majority of research covered global measures of teachers' beliefs, mathematics anxiety or ICT literacy (43%); and sixteen studies (57%) employed facet-certain measures. Facet-specific measures cover teaching experience, classroom management, motivation, self-efficacy, conceptual knowledge, mathematics' ability, and education technology. Eighteen of the reports (63%) utilized TALIS, Ohio State Teacher Efficacy Scale, and Problem in School Questionnaire, Mathematics Anxiety Rating Scale, as well as Mathematical Beliefs Instrument (MBI).

The report shows testing of the personal researcher data for both validity and reliability. 28% of studies depicts validity including 25% of studies shows reliability testing of their own data for variables on teachers' belief. Correspondingly, for mathematics anxiety variable, validity and reliability testing for their data were shown in 21% and 14% respectively. In the case of ICT literacy variable, 25% of studies pictured for validity testing, and almost the same in reliability testing viewed (21%). Most researchers covered the grounded theory or quantitative analyse to analyse their data (36%). Subsequently, scholars utilized bivariate statistics/ANOVA for their analysed data of 25%, and five studies (18%) reported using of multivariate analytical techniques of structural equation model (SEM) for their three variables.

The final criterion reviewed the inappropriate inference of causality with cause-effect relationship occupied (96%). One study reported (4%) on inappropriately implied of teachers' beliefs, the causes for the outcomes from conceptual knowledge and experience among mathematics teachers.

### ***Studies' findings***

The 28 analysed research showed 66 *results* depicted in a total of 66 *results* (average = 2.38/study, range 1 – 16). The majority (64 %) showed tests of teachers' beliefs as an independent or predictor variable while 36% were tested as dependent variables (teachers' beliefs, mathematics anxiety or ICT literacy).

Most research (n = 15, 23%) contained tests of teachers' beliefs as well as mathematics anxiety. The most frequently examined was teachers' beliefs and ICT literacy, followed by "self-efficacy (n = 3) and "ability handling ICT" (n = 4). The variables consisted of "computation anxiety, test anxiety, course anxiety, application anxiety, and social anxiety which were classified as *dimension of mathematics anxiety* using Mathematics Anxiety Rating Scale – Short Version (MARS-SV). Additional variables of ICT literacy (educational qualification, optional object, and teachers' background) were 11 findings (17%) while another variable ICT literacy that was associated with teachers' beliefs are listed in Table 2.

Table 2. The examined studies' showed percentages on findings-related towards the association among teachers' beliefs, mathematics anxiety and ICT literacy-according to the nature of findings.



Finding: relationship	Nature of finding/relationship			
	Positive n (%)	Inverse n (%)	No relationship n (%)	Total
Teachers' beliefs and ...				
Mathematics Anxiety	2 (33 %)	3 (50%)	1 (17%)	6 (9%)
<i>Test anxiety</i>	1	0	0	1
<i>Computation anxiety</i>	0	2	0	2
<i>Course anxiety</i>	1	0	0	1
<i>Social anxiety</i>	0	0	1	1
<i>Application anxiety</i>	0	1	0	1
ICT literacy	14 (41%)	9 (26%)	11 (32%)	34 (52%)
<i>Self-efficacy</i>	3	0	0	3
<i>Intention to used in learning</i>	0	3	0	3
<i>Time intention</i>	1	0	1	2
<i>Tech-based mathematics</i>	1	0	2	3
<i>Tech-produced in learning</i>	1	0	2	3
<i>Teacher's competency</i>	1	0	1	2
<i>Gender</i>	0	1	2	3
<i>Constructivist use</i>	2	1	0	3
<i>Teacher's qualification</i>	1	1	1	3
<i>Ability handling ICT</i>	2	1	1	4
<i>Teaching process</i>	1	1	0	2
<i>Motivation</i>	0	0	1	1
<i>Performance</i>	0	1	0	1
<i>Tech-used in learning</i>	1	0	0	1
Mathematics anxiety and ...				
ICT literacy	4 (36%)	4 (36%)	3 (27%)	11 (17%)
<i>Education qualification</i>	1	2	2	5
<i>Optional subject</i>	3	0	0	3
<i>Teacher's background</i>	0	2	1	3
Teachers' beliefs	5 (33%)	5 (33%)	5 (33%)	15 (23%)
<i>Mathematics concept</i>	0	2	3	5
<i>Mathematics knowledge</i>	2	2	1	5
<i>Organization of teaching</i>	3	1	1	5
Total	25 (38%)	21 (32%)	20 (30%)	66 (100%)

The table pictures 49% of findings which were yielded with no statically significant association, whereas 76% showed an inverse relationship. Besides, 74% depicted positive (Table 2). A similar pattern emerged in these relationship: 69% of the attitudinal findings exhibited positive relationship and inverse association as well, and 60% showed no statistically significant relationship. The mixed-gender samples in 4 studies investigated a lot of empirical tests for *female* gender presented inversely with no statistical relationship.

The MQS associated significantly to Cramer's V = 0.363,  $p = .001$ . Higher quality studies were presented and no relationship and positive relationships were found. Findings exhibited an inverse association on either teachers' beliefs, mathematics anxiety or ICT literacy which originated from studies with average MQSs of 6.25 (SD 5.32; 95% CI 5.62-6.88). Findings of no statical significant relationship showed an average MQS of 5.25 (SD 2.63; 95% CI 4.61-5.89) and findings of positive relationship had lowest average MQS (5.00; SD 4.32; 95% CI 4.45-5.55) (Table 3).

Table 3. Relationship of teachers' beliefs, mathematics anxiety, and ICT literacy (one-way ANOVA)

Nature of statistical relationship	N (% of total)	Mean (SD)	95% CI	F	p Value
Inverse relationship	25 (38 %)	6.25 ( 5.32)	5.62-6.88		
No relationship	21 (32 %)	5.25 (2.63)	4.61-5.89	11.870	.001
Positive relationship	20 (30 %)	5.00 (4.32)	4.45-5.55		

## DISCUSSION

The popularity of teacher's beliefs is increasing throughout decades. Beliefs on learning and teaching have attracted much interest from previous researchers (Adnan, Zakaria & Mistima 2012; Beavis et al. 2014; J. L. Berger et al. 2018). Han et al. (2017) suggested that belief is very influential in the classroom involving learning and teaching process. Siswono et al. (2016) mentioned that there were teachers who applied new methods or programs in their classroom which related to the teachers' beliefs by using the new proposed method or program. Tian et al (2017) compared and contrasted among preservice teachers and the comparison showed that teachers' belief can also be found in both countries such as China as well as Thailand. This exemplifies that mathematics teachers' applied thinking, logic, and usefulness rather than a subject on calculableness and preciseness. The findings display preservice teachers' beliefs in China are more like constructivist. Meanwhile, Rizal and Zakaria (2016) identified students' level of self-confidence from the aspects of mathematics students, mathematical discipline, teaching and learning mathematics. According to Siswono et al. (2016) analysis of teachers' beliefs on problem solving pictures indicated that teachers showed both mathematics problem and the strategies in learning mathematics from the body static perspective as students by using the dynamic approach in



teaching mathematics.

A lot of discussions conducted on mathematics teachers as candidates who experienced mathematics anxiety as well as anxiety not associated with mathematics. The main source of this problem is the transfer of knowledge from teacher to student which must be addressed immediately because the mathematics teachers' anxiety will get a long effect on learners' comprehension of this field (Boyd et al. 2014; Novak & Tassell 2017; Ramirez et al. 2018). Mathematics anxiety in teachers is also described as a tense feeling that differs them from numbers and solving mathematical problems in daily context and academic terms (Wilder 2013). The researchers designed a tool to measure mathematics anxiety which is called the Mathematical Anxiety Scale (Mathematics Anxiety Rating Scale / MARS). A number of researches have investigated mathematics anxiety and negative attitudes toward mathematics (Matoti & Lekhu 2016; Wilder 2013) with findings that teachers with mathematics anxiety affect high proportions of students who are preparing to become teachers (Boyd et al. 2014).

Other previous studies indicated that teachers who have low mathematics anxiety perceived the anxiety as useful for them as it becomes motivation to further enhance their potential in achieving the comprehension on mathematical disciplines and becoming a better teacher from what they are (Ramirez et al. 2018). Moreover, a significant correlation between beliefs and the way students construct mathematical knowledge and social anxiety ( $r = -.11, p < .05$ ). The correlation coefficient between pre-service teachers' MARS and their MBI scores is calculated to be  $r = -.117$ . The results of the Pearson product correlation coefficients of the pre-service teachers MBI and MARS pictured that a small negative significant correlation was found between mathematics anxiety and mathematical beliefs scores of pre-service teachers. The results of the analysis showed that the pre-service teachers with higher level of mathematics anxiety had lower mathematical beliefs and the pre-service teachers with low levels of mathematics anxiety had higher mathematical beliefs (Haciomeroglu 2013).

Therefore, the existence of mathematics teachers' beliefs and anxiety that have an impact on the application of classroom teaching, the application of technology included in the teaching of content mathematics have also influenced the level of teaching ability of the teachers in the classroom. In order to lessen the teachers' difficulty to balance traditional teaching skills that they normally have, technology is intensively applied in the classroom with the demands of the times that. This has an impact on changing the way teachers teach in the classroom (Matoti & Lekhu 2016; Wilder 2013).

In most cases, teachers only adapted traditional school structures, classroom organizations and existing teaching practices (Berger et al. 2018), and failed to address comprehensive educational reforms (Uysal & Dede 2016). Hence, teachers are the key agent of any policy implementation which is related to teaching and learning process (Chia & Maat 2018). A one-way between groups analysis of variance was conducted to convey the impacts of mathematics anxiety on levels of mathematical beliefs, as measured by the Mathematical Belief Instrument (MBI). Pre-service teachers were divided into three groups according to their mathematics anxiety scores: low ( $M = 3.83, n = 75$ ), moderate ( $M = 3.74, n = 149$ ) and high ( $M = 3.73, n = 77$ ). Results of the analysis showed that there was a statistically significant difference on the  $p < .05$  level in MBI scores for the three anxiety groups [ $F(2, 298) = 3.607, p = .02$ ]. Despite of reaching statistical significance, the actual difference in mean scores between the groups is quite small. The effect size was calculated using eta squared which is  $.02$  (Haciomeroglu 2013). According to Uysal & Dede (2016), this value would be considered a small effect size. The resulting eta value is according to the Tukey's HSD tests with the mean differences in MBI scores between low and moderate anxiety groups and between low and high anxiety groups were found to be statistically significant.

On the other hand, as for teachers' ICT literacy, Yusri & Goodwin (2013) stated that Indonesian teachers' participation in training was limited due to venue, time allocation, budget of a program and opportunity. One of the strategies for teachers to adapt technology to be involved in any group interaction with different level of competencies as it can be one of the ways to contribute to each other (Tian et al. 2017). According to Yusri & Goodwin (2013), age plays an essential role in ICT application that led to productive age in Indonesia around is said to be around 25-30 years old. The percentage also appeared as the result of observation on teachers who used ICT which only reached 35% with 43% of teachers aged 30-35 used ICT compared to teachers on the upper age, 40-45 years. This is supported by the factor of age as an influence on ICT integration and ICT literacy skills in the classroom. Based on previous research, the teachers aged 21-40 years are more likely to use ICT in their learning than other age groups.

Pearson correlation analysis based on their responses to the four scales. The scales are was the nature of mathematics, beliefs about mathematics teaching and learning, attitudes towards ICT, and their beliefs about ICT literacy Both the Static Belief and Dynamic Belief were found to be significantly and positively correlated with Constructivist Use and Traditional Use of ICT literacy ( $r = .16 - .50$ ). However, only the correlation between Dynamic Belief and Constructivist Use has a coefficient larger than 0.5, suggesting a moderate relationship (Palak & Walls 2009).

## CONCLUSIONS, LIMITATIONS, AND RECOMMENDATIONS

In conclusion, mathematics education has pictured teachers' beliefs as an essential guarding factor for some behaviours. In spite of the recognition, the protective factor is inconclusive, and within mathematics anxiety or ICT literacy. The limitations in the literature on mathematics teachers' anxiety that exclusively focuses only on primary schools and not yet expanded to research on the destructive nature of mathematics anxiety for teachers at the secondary school level. One of

the reasons mathematics anxiety at the secondary school level is overlooked because researchers reasoned that teacher's high school mathematics anxiety might not be present. It was assumed that teachers use mathematics in daily routine and have a good specialization in mathematics. However, competent and high-performing adults can worry about mathematics too (Boyd et al. 2014; Ramirez et al. 2018), and individuals in professions who use mathematics regularly also range in performance. Lacking in the area of their specialization as a consequence of mathematics anxiety. For example, nurses handling drug dosage calculations show an inverse relationship between mathematics anxiety and the accuracy of drug dosage calculations (Boyd et al. 2014). Therefore, it brings about the secondary mathematics teachers' experience anxiety in mathematical situations.

Moreover, according to the former studies, ICT literacy and skills essential are factors affecting teachers' usage of ICT. Some research identified the shortcoming of teachers' ICT literacy which aid the parties to make teachers' literacy standards and it can encourage the use of ICT literacy at school (Gnanamuthu & Krishnakumar 2015). In addition, some ICT problems such as teaching experience are extensive, therefore more research is needed to get a clearer understanding of the problems as according to Dakich (2005). Alghamdi (2017) believed that studies on second-order barriers are mainly based on questionnaires to explore teachers' beliefs on ICT usage in teaching. The investigation addressed teachers' beliefs, mathematics anxiety, and ICT literacy which were mentioned as not authentic. For future studies, essential factors contributing to teachers' belief, ICT, including anxiety must be considered.

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## On the question of modern industrial reproduction specifics

Sobre la cuestión de la reproducción industrial moderna

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### ABSTRACT

In the researches concerning the modern specificity of reproduction processes, the question about the functional role of industry in economic development becomes more and more actual. This emerging reproductive structure is the result of the transformation of the main types of economic activity and, above all, industry. Theoretical base of the research is presented by scientific and practical results of domestic and international researches of reproduction regularities and tendencies of industrial production development, including in post-industrial conditions. Theoretical and analytical generalizations, functional and structural analysis, comparative and comparative methods were used as the specific basic scientific methods and methods of research. The article singles out, on the basis of the study of the specifics of the transformation of economic systems in the post-industrial era, integrating the functional role of the industrial sector of the economy, which is to ensure the formation of a new reproductive structure with a pronounced dominance of the service activity through the advanced creation of progressive material-product and cost component, which allowed to combine the systemically important patterns of use of limited production resources on priority ses.

**Keywords:** transformation, post-industrial epoch, industrial sector of economy, reproductive structure, reproductive processes.

### RESUMEN

En las investigaciones sobre la especificidad moderna de los procesos de reproducción, la pregunta sobre el papel funcional de la industria en el desarrollo económico se vuelve cada vez más actual. Esta estructura reproductiva emergente es el resultado de la transformación de los principales tipos de actividad económica y, sobre todo, de la industria. La base teórica de la investigación se presenta mediante resultados científicos y prácticos de investigaciones nacionales e internacionales sobre regularidades de reproducción y tendencias del desarrollo de la producción industrial, incluso en condiciones posindustriales. Se utilizaron generalizaciones teóricas y analíticas, análisis funcionales y estructurales, métodos comparativos y comparativos como métodos científicos básicos específicos y métodos de investigación. El artículo destaca, sobre la base del estudio de los detalles de la transformación de los sistemas económicos en la era postindustrial, integrando el papel funcional del sector industrial de la economía, que es asegurar la formación de una nueva estructura reproductiva. Con un marcado dominio de la actividad de servicio a través de la creación avanzada de componentes progresivos de material-producto y costo, lo que permitió combinar los patrones sistémicamente importantes de uso de recursos de producción limitados en las sesiones prioritarias.

**Palabras clave:** transformación, época posindustrial, sector industrial de la economía, estructura reproductiva, procesos reproductivos.

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## INTRODUCTION

In the researches concerning the modern specificity of reproduction processes, the question about the functional role of industry in economic development becomes more and more actual. To a large extent, the emergence of this problem is connected with the process of social transformation, which has led to almost universal significant changes in the structure of national economies, accompanied by the creation of new types of economic activity and new forms of socio-economic relations.

As the post-industrial economy has begun to transform into a knowledge economy, the lack of a clear understanding of the place and role of industrial production can lead to serious strategic errors.

## METHODS

The methodological basis of the work is, first of all, represented by the requirements and principles of the system approach. It has allowed to provide unity of a subject and a method of research, necessary and sufficient reliability of the theoretical results containing in article. Theoretical and analytical generalizations, functional-structural analysis, comparative and comparative methods were used as concrete basic scientific methods and methods of research.

## THE MAIN PART

Let's look at the background to this issue in more detail. Thus, in modern economic science, the approach of D. Bell has become widespread, according to which there are three main stages of socio-economic development: pre-industrial, industrial and post-industrial epoch (Amosenok, 2011). Pre-industrial society was characterized by close interaction between man and nature. The main forces of this type of society were concentrated in agriculture, forestry, fishing and mining. The main resource was raw materials, not energy. Products were extracted from natural materials, not produced from them. The main factor of production was human labor. The perception of the surrounding world determined the experience of previous generations, as well as the natural conditions of the place of residence. According to the UN data, by the end of XX century in the world the number of states of pre-industrial type included about 40% of all fears (Dlin, 2001).

The development of industrial society began about 300 years ago. This type of society is characterized by industrial organization (application of energy to machines), expansion of manufacturing industries, emergence of mass producers, high rates of urbanization, etc., which together led to a radical change in lifestyles and activities of people. It is believed that most countries nowadays correspond to the industrial type. However, the level of development of each of these countries may differ significantly.

In the 60s and 70s of the 20th century, post-industrial society began to emerge in the developed world. This concept was introduced by D. Bell in 1959, using it to designate the society, the increasing technologicalization of which caused a decline in the role of the industrial sector and the rapid growth of science. The development of a post-industrial society determines the amount of information and knowledge it possesses. D. Bell in his work «The future post-industrial society» formulated the basic concept of post-industrial society: «assessment of the new society as sharply different from the society that dominated over the past centuries is primarily marked by a decline in the role of material production and the development of the sector of services and information, other nature of human activity, changed types of resources involved in the production, as well as a significant modification of the traditional social structure» (Bell, 2004).

The most radical differences between post-industrial society and industrial and pre-industrial society concern (Orlov & Gritsenko, 2012):

- The main production resource: in post-industrial society it is information, and in pre-industrial and industrial society it is raw materials and energy, respectively;
- The nature of production activity: in post-industrial society it is expressed in processing, and in pre-industrial and industrial society - in production and manufacturing;
- Production technologies: in post-industrial society they are knowledge-intensive, and in pre-industrial and industrial society they are labour- and capital-intensive.

These distinctions have contributed to the emergence of the famous formulation of three societies, the first of which is characterized by active interaction with nature, the second by interaction with human transformed nature, and the third, post-industrial, by active interaction between people (Kon'kov, 2011).

At present, the position of post-industrial civilization is becoming increasingly stronger in society. The development of new theoretical approaches and concepts, in which the main attention is paid to the processes and factors that reflect the essential characteristics of the new era of human development, determines the emergence of great terminological diversity in the definition of modern society. The scientific literature uses many synonymous concepts such as «information economy», «new economy», «knowledge economy», «service economy», «service economy», etc. However, there is one crucial point here. Thus, the concepts of «service economy» and «service economy», which emphasize the fundamental role of the service sector in post-industrial society, are to a greater or lesser extent related to information resources. In the opinion of scientists, interactive and constantly monitored relations with consumers are established in the service economy in order to maximize their satisfaction (Prigulny, 2012). In this regard, the efficiency of the service economy is largely determined by interaction factors, rather than technological factors. And that is why the most frequently used term for modern society is «information society». Often it is this term that is synonymous with post-industrial society.

At the same time, the economy of post-industrial society can be viewed from different points of view, differing in completeness and depth. This explains the existence of approaches according to which the concept of information society



is an integral part of the post-industrial theory. For example, in recent decades, the term «new economy» has been widely used, which appeared in Western literature in the 1980s and was initially used to refer to the economy, in which the leading role is given to the production of services rather than material goods. In the 1990s, the term began to refer to industries with high-tech elements as opposed to the old economy. However, to date, the term «new economy» has been interpreted more broadly. Thus, the new economy assumes that the economic environment is conditioned and, as a consequence, changes in certain macroeconomic parameters are caused by the level of development of high technologies. According to E.F. Avdokushin, this definition of «new economy» pays special attention to the peculiarities of modern economic development (Avdokushin, 2011).

Meanwhile, a deeper understanding of post-industrial society, its significant but not obvious at first glance problems, makes us recognize the significant role of information as a resource with certain characteristics that distinguish it from production resources in traditional society (Romanchevsky, 2012). In particular, new economic processes, which manifested themselves in the early 90s of the XX century, became possible due to cardinal changes in the field of information technologies, as well as the emergence of the Internet global network, the widespread use of personal computers, telecommunications systems and related software. All of this has had a significant impact on the technological basis of reproduction. Factors that were not decisive for the well researched processes of the mid-1970s came to the fore.

Such factors include (Mindeli & Pipiy, 2007):

- The growing importance of global processes. The demonstration of high competitiveness of production and goods in the global markets became the determining factor in demonstrating the economic power of developed countries. Even though such integration determined the dependence of these countries on each other;
- Widespread innovation as a fundamental factor in competition. Innovation activity had become very important in the context of the shrinking life cycle of goods and services, the further diversification of market niches for traditional goods, and the increasing individualization of supply and demand. However, innovation had become important not only for small forms of entrepreneurship operating in a highly competitive environment, but also for large businesses, whose sustainability could no longer be sustained by scale alone;
- Entry of economic processes into the phase of continuous technological revolutions causing not only continuous changes in the production base of industrial sectors, but also changing the structural characteristics of the entire complex of socio-economic relations. Thanks to this, other types of economic activities, including in the field of services, have been actively developed, new professions, company management systems, educational technologies, new ways of organizing everyday life and cultural leisure have appeared.

In this case, the information refers to inexhaustible resources, and its dissemination leads to its self-increase (Kastels, 2001). Taking into account these aspects, in the 90s of the last century, American and European scientists developing the information concept began to pay special attention to knowledge, which subsequently led to the emergence of the concept of «knowledge society». Many modern scientists express the position that the information factor as a whole, on a global-historical scale, plays a decisive role in understanding human history and prospects for the development of society. Thus, the type and level of civilization and culture of the society is determined by the volume and quality of information, while the lack of information resources has a strong deterrent effect. According to Robertson's point of view, civilizations that are on the same information level of development, despite many possible differences, are more similar than civilizations that are on different levels. The basis of all civilizations without exception are powerful «explosions» of the information space, each of which radically changes the economy, lifestyle, culture, etc. Later on, this ensures the transition of the society to a new stage of its development - to a new civilization. At the same time, the ability of civilization to solve this or that task of development is directly determined by the volume of available information. Thus, information determines the development of civilization, stimulating its development or setting its limit (Yun, 2011; Sebaa et al., 2017).

On the basis of the presented provisions, the key points that distinguish the knowledge economy from the industrial economy based on traditional factors of production - labor and capital - are singled out (Ailarova, 2011):

- While in the traditional economy production is accompanied by reduction of the main factors, in the knowledge economy information and knowledge are not depleted, but spread among all participants of the economic process and multiplied. Therefore, the knowledge economy is not considered to be an economy of scarcity of resources and benefits, but rather an economy of abundance;
- Information and communication technologies used in the knowledge economy contribute to the creation of virtual marketplaces that minimize the time and transport costs of access to resources and products. Therefore, the knowledge economy significantly reduces costs mediated by the effects of isolation, localization and territorial limitations.

In general, the important features of the modern post-industrial economy, where the main factors of production are information and knowledge, can be highlighted (Burmenko, 2011):

- Qualitative change of a person's role and place in production;
- Complication and appearance of new types of property relations, increasing the role of intellectual property, including in the economic turnover;
- The fundamental role of highly developed material production, the priority of consumption in the interrelation «production-consumption» (realization of freedom of consumer choice);
- The role of the network principle of production organization and the corresponding new system of requirements

to employees;

- The increasing role of the institutional system, including the state;
- Leading positions of the service sector in terms of employment and GDP creation in it.

The last aspect of post-industrial society - the leading position of the service sector in terms of employment and GDP creation - should be discussed in detail here. Thus, 2/3 of the total structure of economic production in the ten most developed countries of the world, which account for about 2/3 of the total world GDP, is represented by the services sector. And only the remaining 1/3 of the volume is the sphere of material production (Evseeva, 2012). That is why the level of development of the sphere of services in the economy began to judge the level of development of this or that society.

Taking the above into account, we can talk about strengthening the sphere of intangible component in the structure of modern economic reproduction. In general, this indicates the entry into a fundamentally new stage of social division of labor, in which the sphere of intangible production acquires the status of the main factor of economic growth, including the development of material production. At the same time, the efficiency of the latter is increasingly determined by factors that are not directly related to the material production: training and cultural level of workers, their health, social skills, quality of management, the level of development of banking, auditing, legal, insurance and other activities. It is this moment that characterizes the specifics of post-industrial society and underlies the opinion that industry has lost part of its reproductive role in the modern economy and society.

For the most complete picture of the evolution of the role of industrial production and its place in the modern era, it is necessary to consider in more detail the features of post-industrial reproduction. Reproduction itself is a continuous and constantly renewing and repetitive process of social production. Reproduction covers all aspects and elements of economic activity in the economic system. Continuity and repeatability of reproduction is explained by the continuity of public consumption. There are four stages of reproduction: production, distribution, exchange, consumption.

In modern science, there are two main types of reproduction:

- Simple is the simple renewal of production processes on a constant scale in relation to the quantity and quality of manufactured products. The factors of production do not change in each subsequent cycle. All additional product is directed to consumption;
- Extended - reproduction, in which each subsequent cycle increases the volume and quality of the product. For this purpose, additional factors of production are used. The source of their increase or qualitative improvement is an additional product.

Two subtypes are also distinguished within the expanded reproduction:

- Extensive, at which the growth of production volumes is provided at the expense of quantitative increase of factors of production while maintaining their parameters. At the same time, labor productivity and efficiency of means of production remain unchanged. Technical stagnation is formed and marginal costs of production are growing. Rapid development of natural resources and reduction of unemployment are taking place;
- Intensive, at which the growth of production volumes is provided at the expense of qualitative improvement of factors of production at improvement of organizational-economic relations (division of labor, specialization, cooperation). This type of reproduction contributes to the increase of labor efficiency and productivity. It increases the efficiency of natural resources use.

## DISCUSSION

The analysis of reproductive processes in the most developed countries of the world allows us to identify two trends. The first one is to increase the knowledge intensity of material production. The second trend shows the transformation of some categories of goods into services. The scientific synthesis of these aspects allowed to form the concept according to which the main factor of development of the sphere of services is scientific and technical progress, development and introduction of innovative technologies into production. As a result, the functional content of industrial production is undergoing a qualitative transformation and contributes to the formation of new service industries focused on servicing the industrial sector of the economy (transport, insurance and financial services, science and education services). Also, in the context of technical complexity of products, industrial enterprises are increasingly expanding the network of services and customer service centers (Karanovich, 2013; Pakdel & Talebbeydokhti, 2018). Partly, these processes are accompanied by retraining of labor resources (Kluka, 2012). That in aggregate leads to an accelerated increase in the share of the service sector in the structure of employment and GDP production.

At the same time, this concept has a scientific basis. Thus, the sectoral structure of the economy, as a rule, is divided into two groups of industries: tangible and intangible industries. The main difference between these groups is that in the branches of material production material products are created, and in the branches of intangible - spiritual, intellectual and informational.

However, the fairness of such a division may in some cases be called into question. Thus, some types of services contain material components to some extent. Such services result in the creation of new or restored value in use. This type of service is usually based on the individual needs of consumers. In particular, there is a classification according to which services differ in their specific content. According to this principle, services can be divided into the following categories (Burmenko, 2011):



- Services that create a new consumer value (cooking lunch, sewing an individual costume, etc.);
- Services aimed at restoring any consumer property of tangible goods (service repair and maintenance);
- Services to serve the domestic needs of the person (hairdressing, courier services, etc.).

Taking into account the specific features of the results of production activities in the field of intangible and material production, among the most common definitions of a service are those that focus on changes in the quality of the object to which the service is directed. According to these definitions, an economic product in the form of a service represents a new quality that arises in the process and due to economic activity (Burmenko, 2010). And some services are just before the creation of physical goods (public administration, education), and some - can be created only if there are appropriate physical goods (television, security, art). In other words, it becomes clear that the production of some material goods is preceded by the consumption of intangible services (Perepelkin, 2013). In this connection, there is an opinion that the human need for intangible benefits is the primary one, and the need for material benefits is a side effect, the production of which has become possible due to changes in the course of consumption of intangible benefits (Abramova, 2013; Marandi & Farzizadeh, 2017).

However, this point of view contradicts the theory about the nature of human needs, the main provisions of which are reduced to the impossibility of the existence of society without production, because all the essentials are created in the process of social and production activity by transforming natural resources. In this case, the emergence of the economy occurs with the beginning of production of material goods aimed at meeting various human needs (Sychev, 2010).

In this case, production and consumption are closely and inextricably linked. On the one hand, demand is the driving force behind production, but on the other hand, the production of specific types of goods creates a need for them. At the same time, needs play a significant role in public life and in the process of stimulating production and economic activity.

In general, the production of material goods can also be organized in the absence of intangible assets. However, certain material goods are required to produce intangible assets. In addition, the creation of intangible goods is also driven by the need to produce improved or fundamentally new material goods. Therefore, modern services act as a catalyst for the development of material production. At the same time, material production, even in the modern post-industrial economy, plays the role of the main source of satisfaction of various needs of society.

The feasibility study presented thus highlights a number of specific features inherent in the links between the tangible and intangible production sectors. The main thing is to preserve the fundamental role of tangible production in the functioning of the economy. At the same time, the reduction of the share of employed in the industrial sphere does not indicate a decrease in the importance of commodity production for the modern economy. On the contrary, there is a constant growth in the volume of created and consumed goods (material goods). In addition, the material base of modern production determines the emergence and development of new economic and social processes. For example, according to calculations, at present, the creation of up to 95% of value added in the sphere of services of developed countries would be impossible without an appropriate industrial base (Fairushin, 2012; Ghodrati & RahmaniDoust, 2017). However, the continuously developing conditions of the post-industrial economy make it impossible to reduce the processes of social reproduction exclusively to the factor of material production.

## CONCLUSIONS

On the basis of this, it is possible to conclude that there is an insolvency of judgments about the loss of the industry's functional role in the conditions of modern reproduction. This is partly explained by the following provisions (Bukhtoyarov, 2013):

- A society that has reached a sufficiently high level of wealth and well-being, i.e., with a large middle class, is characterized by a developed and steadily developing service sector. In modern Russian practice, however, this is also confirmed by the method «from the opposite». Thus, negative trends in the development of material production and, as a consequence, the need to ensure a minimum material and product type of production, together with limited resources, have determined the secondary role of socially significant sectors of the service sector;
- The interconnectedness of the two spheres of public production is significantly influenced by the time factor. Thus, in the short term, the functioning of material production affects the sphere of services, and in the long term the scale and quality of functioning of the intangible sphere (development of science, education, health care, etc.) determine the nature of the development of material production.

Summarizing the current specifics of reproductive processes presented in the course of the study, we can conclude that in the post-industrial era, the service sector is closely integrated into virtually all sectors of the economy of developed countries, including the national economy of Russia. On the one hand, this aspect complicates the definition of the exact boundaries of this sphere. In some sectors of the economy, the service activity acts as a system-forming one, while in others, though it takes a smaller share, it is an irreplaceable element. On the other hand, this aspect illustrates the close relationship between tangible and intangible production.

At the same time, even though the sphere of non-material production prevails in the structure of the world economy and national economies of developed countries, and considering that material production: in some cases, it is impossible without the consumption of non-material goods, which are not primary needs in themselves; it precedes the satisfaction of society's needs for material goods; it can be argued that it is the material production represented that determines the production of a number of services and the satisfaction of society's needs for them.

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## Pedagogical studio as a teacher training technology

El estudio pedagógico como tecnología de formación docente

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### ABSTRACT

The modern development of teacher training system demonstrates the rethinking of teacher professional competences and focuses on general pedagogical, educational, methodological and psychological skills of a comprehensive school teacher. Improving the effectiveness of school education makes high demands on the personal qualities and professional competences of a teacher. In the new socio-economic conditions the approaches to the organization and content of methodological work in terms of in-service teacher training are changing. The successful pedagogical process is largely determined by the activity of emotionally secure, socially and professionally competent teacher, ready to continuing professional development. It implies a broad general cultural background, mastering of reflective skills. The study of these problems is associated with the increasing role of professional components in the development of teacher as a highly qualified specialist. This is due to the multidimensional scope of teacher's activities, research attitude to the work, readiness to implement innovations. Such specialists make it possible to provide methodological support and i-service training of teachers at a qualitatively new level.

**Keywords:** pedagogical innovation, pedagogical studio, professional development of a school teacher, teacher training level.

### RESUMEN

El desarrollo moderno del sistema de formación docente demuestra el replanteamiento de las competencias profesionales docentes y se centra en las habilidades pedagógicas, educativas, metodológicas y psicológicas generales de un maestro escolar integral. Mejorar la efectividad de la educación escolar exige mucho sobre las cualidades personales y las competencias profesionales de un maestro. En las nuevas condiciones socioeconómicas, los enfoques para la organización y el contenido del trabajo metodológico en términos de capacitación docente en servicio están cambiando. El exitoso proceso pedagógico está determinado en gran medida por la actividad de un maestro emocionalmente seguro, social y profesionalmente competente, listo para continuar el desarrollo profesional. Implica un amplio trasfondo cultural general, el dominio de las habilidades reflexivas. El estudio de estos problemas está asociado con el creciente papel de los componentes profesionales en el desarrollo del maestro como especialista altamente calificado. Esto se debe al alcance multidimensional de las actividades de los docentes, la actitud investigadora hacia el trabajo, la disposición para implementar innovaciones. Dichos especialistas hacen posible brindar apoyo metodológico y capacitación i-service de docentes a un nivel cualitativamente nuevo.

**Palabras clave:** innovación pedagógica, estudio pedagógico, desarrollo profesional de un maestro de escuela, nivel de formación docente.

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## INTRODUCTION

The Russian Federation provides large-scale support for educational concepts aimed at developing innovative programs and educational environments, which involves partial revision of the existing ideas about innovative experience focused on the professional growth of a school teacher. At the moment, this resource could and should be positioned as one of the most important conditions for the modernization of educational system, which poses new, more complex challenges. Its significance is reflected in a number of documents at the federal level: the program “Development of Education in the Russian Federation for 2013-2020”, the Concept for Long-Term Socio-Economic Development of the Russian Federation until 2020, and some others.

Humanization and democratization of modern society involves updating the school and the entire educational system as a whole, which in current socio-economic conditions is expressed in the emergence of new types of educational institutions (gymnasiums, lyceums, colleges, etc.), changing the content and methods of training and education, in the formation of a professional teacher. Today it is becoming increasingly obvious that only highly qualified professionals who are able to perform their work with high quality and be responsible for it can ensure the survival and development of society, its way out of a deep crisis, return to national cultural traditions and fruitful contacts with other countries and peoples (Borisova et al., 2018; Gadzhieva, 2018; Narkevich & Narkevich, 2018; Tsahaeva et al., 2017; Gnatyuk & Pekert, 2018; Kryuchkova, 2018; Ashmarov, 2018; Gadzaov & Dzerzhinskaya, 2018; Sergeev & Trubakova, 2017). These challenges make qualitatively new demands on the personal qualities and professional activities of a teacher. It is not enough for a modern teacher to master a certain amount of subject, psychological and pedagogical skills and teaching methods. It is important to realize the need for cooperation, the search for new approaches and solutions to break out of pedagogical stereotypes. On the basis of taking into account the needs of students and their parents in satisfying the educational interests and demands, schools should create the conditions for the formation and development of student's personality, competitive in the level and quality of knowledge gained, prepared to continue successful lifelong education. Given the novelty of the tasks, at the present stage of development of Russian education, increasing demands are placed on the professional activities of teachers regardless of experience and service length. The effectiveness of pedagogical process is largely determined by the emotionally secure, internally holistic, socially and professionally competent teacher, which implies a broad general cultural background, mastering the skills of reflection, inclusion in innovative practice, providing a new quality of education (A.A. Verbitsky, V.V. Kraevsky, Ya.S. Turbovsky and others).

## LITERATURE REVIEW

Effectiveness of the educational process is largely determined by the professional qualities of a psychologically resilient teacher, competent in the chosen field, which implies a high general cultural level and the development of productive reflection skills.

One of the effective innovative forms of continuing in-service education of a school teacher is Pedagogical Studio.

The word “studio” came from the first person singular of the Italian verb “studiare” with the meaning “work hard, study”. Studio is a creative team of like-minded people who set themselves diverse tasks: training, educational, productive and experimental. We proceed from the interpretation proposed by the legendary Russian theater director K.S. Stanislavsky: “A studio is a place where a person should learn to observe his/her own character, his/her own inner strength, where he/she needs to develop the habit of thinking” (Tuseyeva, 2008).

Pedagogical innovations were originated in the United States and Western Europe in the late 1950s. Since then, a significant number of articles and monographs were published, expanding and deepening the perception of pedagogical innovations, emphasizing its scientific status. Among modern authors, we should mention J. Miles, D. Moon and A. Nicholls; among the scientists who created their work in the first half of the 20th century, the American author B. Ryan, at the junction of pedagogical and natural-scientific knowledge (Miles, 2010; Moon, 2000; Nicholls, 1988; Ryan & Gross, 1943).

In Russian education, the study of innovative processes was the result of increased interest in the proposals of innovative teachers (1950 - 1960s). In the late Soviet period, the mechanisms were created to integrate methodological achievements into the educational process. As pedagogical innovations moved forward, new scientific research works related to the development and dissemination of educational innovations were published (Slobodchikov, 2003; Sirotyuk & Sergeeva, 2011; Tkachev & Popov, 2006; Yusufbekova, 1991). The innovative activities of schools and universities were substantiated by methodological arguments (Korzhujev & Sergeeva, 2015; Sergeeva, 2015; Tuseyeva, 2006). Approaches to innovative activities in the field of training and education were proposed in the works by K.E. Sumnivnyi, A.V. Khutorskoy, L.V. Shmelkova and others (Sumnitelny, 2007; Khutorskoy, 2008; Khutorskoy, 2005; Shmelkova, 2008).

The key tasks of pedagogical innovations, formulated by Russian scientists V.S. Lazarev and B.P. Martirosyan, allow us to consider the general vectors of the research (Stepanov, 2012).

- Tasks of the first type are descriptive and explanatory, they demonstrate at the level of theory those real causal relationships that underlie the educational process;
- Tasks of the second type are related to the development of new algorithms for innovation, new forms of its design and implementation technologies;
- Tasks of the third type are based on identifying the ways to improve innovation: careful analysis and adequate assessment,

formulation of detailed development scenarios and possibility of timely correction of shortcomings.

In our research we consider Pedagogical Studio as a creative professional association of school teachers within the school as the part of methodological activities related to the improvement of teacher qualifications in terms of in-service training, the acquisition of new knowledge by modeling problem situations that may arise during the lessons, conducting special trainings, games, using innovative forms of teaching in own classes (Tuseyeva, 2007).

An important difference between Pedagogical Studio and any other professional association of teachers is the fact that educational activities are carried out simultaneously at the theoretical, technological and methodological levels.

Professional associations of teachers (which, in addition to Pedagogical Studio, also include clubs, workshops, creative microgroups etc.) are aimed at implementing complementary tasks (Tuseyeva, 2006):

- Increasing the level of professional competence of school teachers;
- Increasing the effectiveness and prospects of educational processes.

The main objectives of Pedagogical Studio are to improve the competences of school teacher, stimulate him/her to pedagogical creativity, build a clear and at the same time flexible trajectory of professional and personal development, increase enthusiasm, make sustainable use (distribution) of psychological resources, further reveal the potential, develop a positive pedagogical position.

Based on the listed factors L.T. Chernova defined the following Pedagogical Studio tasks (Chernova, 1997):

- 1) Consolidation, enrichment and use of the information and experience received in own lessons;
- 2) Assimilation of new information about the educational process, its participants, their capabilities in the context of the activities performed;
- 3) Development of the need for the implementation of skills acquired in studio classes, in the course of everyday work with students;
- 4) Development of leadership and organizational properties;
- 5) Improving communication skills;
- 6) Creation of one's own, "author's" image of pedagogical thought and the style of professional performance;
- 7) Training of intuition and empathy, the ability to feel personality and internal state of student.

Pedagogical Studio is based on four principles:

- Voluntariness (a teacher decides whether to take part in the studio, or to perform certain tasks);
- Self-determination (a teacher should develop a sustainable pedagogical position and attitude to the innovative activities he/she implements);
- Productive interaction and creation of new school traditions (a teacher should use democratic style of communication, involving developed intellect, high spiritual potential (morality, will), team-building and control skills, creating a friendly and trusting environment, taking into account the views of all students in the discussion of disputable issues; reference to optimal pedagogical experience;
- Active participation (modeling and acting role-playing situations, performing special tasks, tracking the nuances of other people's behavior).

## PROPOSED METHODOLOGY

Meetings of the Pedagogical Studio should combine two forms of work - individual and group. Subtypes of studio training are communication trainings, creative work, games, etc. The variety of subtypes requires using different educational methods and technologies: discussion, conversation, positional analysis.

Indicator of the success or failure of continuing education of a school teacher is the final result, which reflects the degree of development of the necessary skills (general pedagogical, educational, methodological and psychological). Based on the analysis, the levels of professional training of school teacher (in ascending order) were determined: spontaneous, operational, tactical and strategic. The foundation of the proposed classification is the structure of professional activity described in the works of M.S. Kagan, A. M. Novikov and L.I. Shatalova. (Tuseyeva, 2007; Tuseyeva, 2006; Khutorskoy, 2008). This classification takes into account key activities: cognitive, communicative, transformative, ethics-centred (focused on moral values) and aesthetic.

### *Spontaneous level:*

A school teacher possesses basic knowledge in the field of chosen profession and a very general idea of the zone of its closest development and the prospects of educational institution;

Owens some components of professional skills; works with students intuitively, by trial and error, relying on existing



experience, but not trying to expand or deepen it;

Prefers inefficient didactic technologies;

Builds lessons according to outdated schemes, characterized by a virtual lack of communicative skills.

*Operational level:*

A school teacher possesses certain knowledge in the field of chosen profession and limited understanding of the zone of its closest development and the prospects of educational institution;

Has moderate level of training, prefers traditional pedagogical approaches;

Demonstrates mastery of certain creative methods and techniques, as well as didactic operational technologies;

Builds lessons in a template, morally and functionally outdated scheme; usually holds uninteresting, monotonous lessons.

*Tactical level:*

A school teacher has extensive knowledge in the field of chosen profession, but does not have a clear idea of the zone of its closest development and the prospects of educational institution;

Has a high level of professional training;

Demonstrates fluency in some modern didactic technologies;

Enriches the educational process with non-standard methods and techniques;

Shows significant motivation and result-orientation.

*Strategic level:*

A school teacher has extensive knowledge in the field of chosen profession, a clear idea of the zone of its closest development and the prospects of educational institution;

Engaged in creative planning and designing of professional activities;

Demonstrates independent knowledge of various didactic technologies;

Enriches the educational process with new ideas;

Communicates with students at a high substantive and aesthetic level;

Gives the study of discipline emotional value.

The considered levels of skills development (general pedagogical, educational, methodological and psychological) formed the basis for diagnosing the professional level of in-service teacher training. The results of Pedagogical Studio work were evaluated using the following methods:

Analysis of classes and educational activities;

Study of pedagogical activities and results of research work of teachers;

Use of tests and questionnaires to verify the level of professional achievements of teachers in experimental groups, as the part of initial and final stages of training in Pedagogical Studio.

## **RESULT ANALYSIS**

The following components of continuing education for school teachers within the framework of Pedagogical Studio are identified: general pedagogical, educational, methodological and psychological.

General pedagogical component involves the development of general culture of a teacher through the development of fundamentally new mental skills, motives and attitudes oriented towards self-education and self-improvement.

Educational and methodological component is associated with designing a system of communicative and game training, conducting creative classes aimed at mastering the system of intellectual and moral education of a person, development of productive value systems, adequate ethical positions focused on active and positive transforming the surrounding environment; creating conditions for the use of modern educational tools, methods and technologies.

Psychological component is represented by the study and implementation of acquired knowledge in the field of psychology: the development of innovations in this field, the acquisition of new knowledge about the specifics of cognitive processes, individual and communicative psychology.

Pedagogical Studio as a way to improve the qualifications of a school teacher in the framework of methodological



activities of educational institutions demonstrated high efficiency. In accordance with the results of this study, the use of this method leads to the increase in the quality of teaching and the development of teacher creativity in a methodological aspect.

Pedagogical Studio as a part of methodological system in the course of advanced in-service training in the experimental work confirmed the expediency and effectiveness of general pedagogical, psychological, methodological and educational components; contributed to the disclosure of creative potentials and increased teacher self-esteem. In Experimental Group 1, teachers were free to choose to participate in the Studio; in Experimental Group 2, by decision of the administration of educational institutions, teachers attended classes mandatory. Based on the data obtained, tables 1-3 were compiled.

Table 1

Levels of teacher training (%).

Experimental Groups 1 and 2

Levels Stages	General pedagogical		Psychological		Methodological and educational	
	Before experiment	After experiment	Before experiment	After experiment	Before experiment	After experiment
Strategic	21/15*	31/21	31/29	38/34	24/21	33/27
Tactic	22/17	31/24	37/32	43/36	32/29	40/34
Operational	42/56	28/46	25/27	17/22	28/31	19/23
Spontaneous	15/12	10/9	7/12	2/8	16/19	8/16

\* 21/15 (the first figure shows the result of Experimental Group 1, the second figure shows the result of Experimental Group 2).

The creative component of professional training implies a desire for active citizenship, readiness in the current conditions to create and inspire, to promote new thinking and learning.

Table 2

Creative component of teacher training (%).

Levels Stages	Experimental Group 1		Experimental Group 2	
	Before experiment	After experiment	Before experiment	After experiment
Strategic	17	28	14	22
Tactic	20	30	18	25
Operational	44	33	47	39
Spontaneous	19	9	21	14

Improving self-esteem gives the teacher the opportunity to record progress, to realize one's own experience not only at the level of thinking, but also at the level of feelings and emotions.

Table 3

Self-esteem of the personality of the teacher (%)

Levels Stages	Experimental Group 1		Experimental Group 2	
	Before experiment	After experiment	Before experiment	After experiment
Strategic	29	36	21	26
Tactic	34	43	29	35
Operational	28	17	37	28
Spontaneous	9	4	13	11

Thus, the proposed content and form of organization for improving the level of pedagogical qualifications of teachers confirmed their effectiveness in the course of experimental work (tables No. 1-3).

## CONCLUSION

The main objectives of Pedagogical Studio as a form of continuing in-service education of a school teacher are:

Increase of general pedagogical, psychological, educational and methodological skills,

Formation of personal positions,

Development of professional competences and creativity of teachers.

Functions of Pedagogical Studio: extensive, corrective, predictive, self-developing, intuitive.

The content of teaching in Pedagogical Studio includes various aspects of teacher's professional activities, reflecting the main spheres of human life: value-orientational, cognitive, transformative, communicative, aesthetic.

The effectiveness of continuing education of a school teacher in Pedagogical Studio depends on the following basic conditions:

- Constructing a holistic content of Pedagogical Studio in accordance with the professional positions and pedagogical experience of participants allows us to create an effective form of continuing education, where everyone, including the Head of Studio, takes part in the organized and guided creative process. Accordingly, teachers determine topics, forms and methods of conducting classes in Pedagogical Studio;

- Pronounced personal pedagogical positions and experience of the Head of Pedagogical Studio. This allows the leader, as a carrier of pedagogical norms, models of communication and interaction, to bring teachers to a new level of pedagogical proficiency;

- Creative atmosphere in Pedagogical Studio, which makes it possible to freely offer and test pedagogical ideas;

- Classes should be equipped with modern computer facilities.

Classes in Pedagogical Studio are based on a combination of group and individual forms of training. Specific forms of training in Pedagogical Studio are communication training, workshop, role playing, creative lessons. A variety of forms involves the use of various methods of conducting sessions: conversation, discussion, positional analysis etc.

Stages of organization and development of Pedagogical Studio: preliminary, technological, practical, creative, introspection. Stages of activity: identification of problems, determination of goals, modeling, implementation of models, reflection.

The role of the Head of Pedagogical Studio: to show teachers the prospect of finding new creative innovative forms, methods and techniques.

Functions: educational, organizational, coordination, communicative, controlling.

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## Measuring Psychometric Properties of the Effective Teaching Elements for Trust School Program (TSP)

Medición de las propiedades psicométricas de los elementos de enseñanza eficaces para el programa Trust School (TSP)

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### ABSTRACT

Student-centred learning in the School Trust Program (TSP) provides a benchmark and reference centre for 21st century learning. Unfortunately, research on the psychometric properties of items for testing TSP elements is very limited. It is difficult to obtain empirical evidence for accurate, valid, and reliable measurement items. Therefore, this study aimed to test the psychometric properties of the items for TSP teaching elements through the Rasch Model. The study utilized a survey design with a fully quantitative approach. The questionnaire was adapted from the Trust School Teacher Handbook 2018, Performance Management System for Teachers.

**Keywords:** effective teaching instruments, Trust School Program (TSP), Rasch Model, validity, reliability.

### RESUMEN

El aprendizaje centrado en el alumno en el School Trust Program (TSP) proporciona un punto de referencia y un centro de referencia para el aprendizaje del siglo XXI. Desafortunadamente, la investigación sobre las propiedades psicométricas de los artículos para probar elementos TSP es muy limitada. Es difícil obtener evidencia empírica para elementos de medición precisos, válidos y confiables. Por lo tanto, este estudio tuvo como objetivo probar las propiedades psicométricas de los elementos para elementos de enseñanza TSP a través del modelo Rasch. El estudio utilizó un diseño de encuesta con un enfoque totalmente cuantitativo. El cuestionario fue adaptado del Trust School Teacher Handbook 2018, Performance Management System for Teachers.

**Palabras clave:** instrumentos didácticos efectivos, Programa Trust School (TSP), Modelo Rasch, validez, confiabilidad.

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## 1. INTRODUCTION

Teaching in the classroom should be given serious attention to ensure that the goal of effective teaching is achieved. Effective teaching can be described as a teaching that aims to achieve the intended learning outcomes or objectives or at least provide students with insight. By establishing effective teaching in the classroom, the process of transition and knowledge sharing between teachers and students can be balanced. Teachers need to understand that effective teaching can have a lasting impact on students. Asmawati et al. (2014) says that effective teaching not only gives students a real understanding of the lesson, but also develops the attitude and personality of the students. It is argued by Sakarneh (2015) that the quality of teaching is a process that can built the basis of knowledge and personal transformation of students. Teaching is an activity that requires the mastering of several skills to teach effectively and effectively. Therefore, teachers need to understand the skills used to convey knowledge and equip themselves with various teaching techniques to make teaching fun and leave a deep impression on students. Establishing the Trust School Program in Malaysia by applying teaching methods and techniques to effective teaching is expected to enhance the effectiveness of teaching in schools

The Rasch model was selected to measure the psychometric properties of the effective teaching element in the Trust School Program. The Rasch model introduced by Georg Rasch in the 1960s was a popular and growing IRT model for analysing dichotomous data into a form of scale-level data by Andrich, a partial model by Masters to facets of the model by Linacre (Sumintono & Widhiarso 2014). An individual's ability to respond to an item correctly depends on the individual's ability and difficulty. Therefore, the basis for this model is to separate the individual's ability with the quality of the instrument. This model assumes that the individual's response to an item is influenced only by the individual's ability and item difficulty (Bond & Fox 2015). The selection of the Rasch Model is because the data collected is inter-dimensional and has a small sample size. In addition, the output obtained is also easy to read, clear and easy to understand. Rasch also does not require normal data to be dispersed, so this study is well suited to using Rasch model and does not require inference analysis.

The objective of this article is to determine the validity of the items and the reliability of individual items for TSP effective teaching instrument. Item validity was studied in terms of item fit, item polarity, local independence and unidimensional analysis. Reliability is not just about studying items, it also involves individuals. In addition, the individual-separation index was also studied to identify the hierarchy of item difficulty while the individual separation index was able to distinguish between high and low performing individuals. The Rasch measurement model also analyses internal consistency values based on Cronbach's alpha values

## 2. PROBLEM STATEMENT

In line with the realization that effective teaching elements in TSP have not yet been covered by local scholars, studies on TSP effective teaching elements should be emphasized. Past studies have also shown a focus on effective teaching elements in the context of classroom management and teacher attitudes (Schumacher et al. 2015; Xu et al. 2015; Lans et al. 2017; Maulana et al. 2017). However, the study of TSP effective teaching elements on elements that affect the whole element of effective teaching should be emphasized. Therefore, research on these seven elements should be undertaken to obtain teaching elements that are difficult to implement by teachers. . The seven pedagogical pillars used in the TSP are teaching and delivery content, creating a positive learning environment, assessment for learning, collaborative and cooperative learning, questioning and thinking skills, differentiation and professional knowledge and reflection that need to be emphasized that the instruments used are of high quality and reliability. Several analyses were performed to assess the validity and reliability of this instrument using Rasch model approach.

## 3. METHODOLOGY

A quantitative survey was conducted on 203 TSP teachers at three schools in the Sate of Selangor. Questionnaires is used to obtain information from the study. The questionnaire was found to be suitable for large-sample studies and large study locations (Denscombe 2017). Sampling is based on random sampling and clustering. The sample size is derived from sample size in Rasch model as shown in Table 1.0 below. Based on the sample size table in the Rasch model, the researcher used 203 samples to obtain 99% confidence level and  $\pm 0.5$  logits.

**Table 1.0 Sample size in Rasch Model**

Item Calibrations or person measures stable within	Confidence	Minimum sample size range	Size for most purpose
$\pm 1$ logits	95%	16-36	30
$\pm 1$ logits	99%	27-61	50
$\pm 0.5$ logits	95%	64-144	100
$\pm 0.5$ logits	99%	108-243	150

Source: *Linacre* 1994

The instruments is adapted from the Trust School Teacher Handbook 2018, Performance Management System for Teachers (LeapEd Services 2018). The instrument consists of fourteen competencies and 130 items covering seven pedagogical milestones. Table 2.0 shows the number of items by constructions and items. The instrumentation uses a five-point likert scale to get teacher feedback on effective teaching elements implemented in the classroom.



**Table 2.0 Total item by construct and seven pedagogical pillars**

Pillars	Pedagogical Pillars	Construct (Competency)	Total item
1	Lesson Planning, content and delivery	Plans and structures lessons effectively	16
		Uses learning objectives & success criteria	9
		Uses range of resources to support learning	6
2	Creating a positive learning environment	Establishes a physical environment	9
		Establishes an emotional environment	14
3	Assessment for learning	Uses feedback strategies	13
		Uses On-going assessment	14
		Provides opportunities for self & Peer assessment	6
4	Collaborative and cooperative learning	Uses define structures	7
		Provides opportunities for students to learn collaboratively	5
5	Questioning and thinking skills	Skilled use of questions	7
		Uses strategies to promote student thinking	5
6	Differentiation	Differentiates lessons to support individual student achievement	8
7	Professional knowledge and reflection	Applies effective learning & teaching principles	11
Total item			130

#### 4. RESULT AND DISCUSSION

##### Misfit Item

The two types of compatibility statistics provided are outfit and infit mean square analysis (MNSQ) and Z scores (Z-std) that can detect whether or not an item is compatible. MNSQ's expected value is 1.00 logits. The last researcher has set the range to be followed to test the assumption that the item's MNSQ value should be within the range of 0.77 logits to 1.30 logits (Fisher, 2007), 0.5 logits to 1.5 logits, 0.6 logits to 1.4 logits (Bond & Fox, 2015). In order to test the assumption of item compatibility, researchers have chosen the MNSQ acceptance range of 0.5 to 1.5 logits. The researchers chose the MNSQ infit range of 0.5 to 1.5 logits because based on Boone et al. (2014) and Bambang & Revelation (2015) stated that items within the range are productive in measuring teachers' effective teaching level.

Z-std value indicators are used to indicate the importance of data. This is a squared mean fit statistic that estimates the theoretical mean and variance distribution. Zstd values ranging from 0.2 to 2.0 are acceptable values (Bond & Fox, 2015). In this study, the Zstd value was ignored because the MNSQ value was accepted according to Linacre (2005).

To test the assumption of item compatibility, the researcher selected the MNSQ infit range of 0.5 to 1.5 logits (Linacre 2002; Sumintono & Widhiarso 2014; Boone et al. 2014). Findings show that the MNSQ infestation and outfit values ranged from 0.56 to 1.45. A total of 45 items were dropped from this analysis. Standard error values range from 0.18 to 0.2 for 85 items. Fisher (2007), stated an error range below 0.25 to be considered excellent. This gives the impression that the error value is small and does not interfere with the study data. In this study Zstd values were ignored based on Linacre's (2005) argument that if MNSQ is acceptable, then Zstd values can be ignored. In all, 45 items were dropped from this instrument and only 85 items matched Rasch's model.

This means that all items are productive to measure teachers' abilities and do not because the teacher to confuse the items contained in this instrument. Low and high MNSQ values can interpret the item as either overlapping the item or the item is beyond concept (Khan et al. 2013; Karim & Osman 2019). The results show that the values of 0.56 to 1.45 are within the selected range.

##### Unidimensionality

The testing of psychometric features in TSP effective teaching instruments emphasizes the concept of unidimensionality in the Rasch Model. In order to meet the assumption of unidimensionality as a degree of capability as emphasized by (Bejar, 1983), unidimensionality does not imply that performance on an item is due to a single process, but rather to many processes involved in answering the test item. However, as long as this process works together, the performance of the items is influenced by the same process and shape, so the concept of unidimensionality exists.

In the study, the value of raw variants explained by measurement was 45.2 percent beyond the 40% minimum assumption value in Principal Component Analysis (PCA). When the value of 45.2 percent is greater than 40 percent this value is better (Bond & Fox 2015). If it reaches 60 percent it is very good (Linacre 2005). This finding therefore concludes that the construct is good.

The study found that the item noise was 5.2 percent which is less than 10 percent and is a good value for the study. Correlation of standardized residual tests showed good results because no item exceeded the control level of 0.70. This indicates that the instrument is free from any confusion in the purpose and intent of the survey. Therefore, it can be concluded that this instrument meets the criterion of unidimensionality.

### Local Independence

The range that meets local freedom requirements is a correlation value of less than 0.7 (Linacre 2012). If it is below 0.30 the value of local freedom is said to be better (Balsamo et al. 2014; Gibbons et al. 2011). In this study, the value of local freedom can provide information on whether the items are dependent on each other in the same construct or that they are not dependent on each other.

Standardized Residual Correlation test should be performed to determine if items are confusing and overlapping with each other. The analysis results show that the ten item pairs have a standardized residual correlation value of 0.62 to 0.69. This range is found to meet local conditions of freedom of correlation less than 0.70 (Linacre, 2012).

These matches have weak correlation values, that is, the items are not dependent on the items in the same construct. The findings show that the items in this instrument are not confusing and do not overlap with each other. In contrast to the study conducted by Mu'min & Hassan (2018), it shows that there are two pairs of items having local independence problems with values greater than 0.7. This means that these item pairs share several other dimensions or combine the same dimensions. If this happens, one of the items will need to be dropped.

**Table 3.0 Standardized Residual Correlation**

Correlation	Entry number-Competency	Entry number-competency
0.69	26 E26	27 E27
0.69	84 E84	85 E85
0.69	102 E102	103 E103
0.68	83 E83	84 E84
0.67	63 E63	64 E64
0.66	22 E22	23 E23
0.64	42 E42	43 E43
0.64	18 E18	22 E22
0.62	41 E41	42 E42
0.62	51 E51	54 E54

### Reliability index and Separation Index

According to Fisher (2007), reliability values exceed 0.94 as excellent, 0.93 to 0.91 as excellent and 0.90 to 0.81 as good. An individual reliability index above 0.8 with item reliability greater than 0.9 also proved that the sample was adequate (Linacre 2012). Cronbach's alpha values were also observed with values greater than 0.80 as good.

The individual separation index indicates the number of strata identified in the sample group. The item separation index indicates the isolation of the item's difficulty level (Rahayah, 2008). The index values of the individual separation should be more than two items can be considered as good (Jones & Fox 1998).

The study found that the individual reliability index was 0.98 and the item reliability factor was 0.91. Cronbach's alpha value was 0.98. This show that these items are reliable. Individual separation index is 6.60 and item separation index is 3.10. This value can be considered as good because it exceeds two (Bond and Fox, 2015).

Meanwhile the reliability of teachers or individuals in this study is at the level of Fisher (2007). The reliability of this study instrument is that it can receive the same information or small differences even if administered repeatedly. Item and teacher reliability values closer to the value of 1.00 can give the impression that there is strong feedback from teachers as well as good instrument items (Boone et al. 2014). The value of the individual separation index in this study indicates that the instrument can distinguish high or low performance individuals. Both indexes in this study exceed the specified reference values.

**Table 4.0 Summary of individual statistics**

	Raw Score	Count	Measure	Model error	Infit		Outfit	
					MNSQ	ZSTD	MNSQ	ZSTD
Mean	351.6	85.0	4.50	0.27	0.94	-0.3	0.93	-0.4
Standard Deviation	30.0	0.0	1.99	0.04	0.53	2.8	0.57	2.8
Deviation								
Max	420.0	85.0	9.45	0.47	3.30	9.3	3.35	9.6
Min	262.0	85.0	-0.51	0.19	0.05	-6.3	0.04	-6.4
Real RMSE	0.30	Adj SD	1.97	Separation	6.60	Person Reliability		0.98
Model RMSE	0.28	Adj SD	1.97	Separation	7.12	Person Reliability		0.98

**Table 4.0 Summary of Item statistics**

	Raw Score	Count	Measure	Model error	Infit		Outfit	
					MNSQ	ZSTD	MNSQ	ZSTD
Mean	629.6	152.0	0.00	0.20	0.99	-0.1	0.93	-0.5
Standard Deviation	17.2	0.0	0.67	0.00	0.22	1.7	0.24	1.4
Max	678.0	152.0	1.79	0.20	1.45	3.2	1.50	2.6
Min	582.0	152.0	1.89	0.18	0.65	-3.0	0.56	-3.1
Real RMSE	0.21	Adj SD	0.64	Separation	3.10	Item Reliability		0.91
Model RMSE	0.20	Adj SD	0.64	Separation	3.25	Item Reliability		0.91

### Item polarity

Item polarity is a basic or preliminary analysis of Rasch models. The PTMEA CORR (point measure correlation coefficient) is used to determine the polarity of an item. Polarity analysis or item alignment are indicators used to indicate that items used move in one direction as measured constructs (Siti Rahayah 2008). If the value of PTMEA Corr is high, then an item is more likely to discriminate between respondents. Negative or zero values indicate that the response to an item or respondent is inconsistent with the variables or constructs (Linacre 2005). If the PTMEA CORR value is less than 0.30 the researcher can decide whether to dismiss or improve the item. The range of polarity value of an instrument is 0.3 logits to 0.6 logits (Bond & Fox 2015). PTMEA Corr is also an early detection of construct validity.

The findings show that the Point Measure Correlation (PTMEA Corr) obtained positive values for all 85 items. Findings indicate that the polarity of items or Point Measure Correlation (PTMEA Corr) ranges from 0.39 logits to 0.79 logits. This value has a polarity value of more than 0.30 which means that all items in this instrument can distinguish or discriminate PSA teacher effective teaching items. The findings also show the positive values of PTMEA CORR for all 85 items. This shows that correlation values are good for all competencies. It can also be concluded that all items in this instrument do not conflict with the measured competencies.

The selection of the TSP's effective teaching elements is in line with the elements used by other studies, both domestically and abroad. In addition, measurement of the psychometric properties of the instrument was found to meet the assumptions of the Rasch model.

### 5. CONCLUSION

As a conclusion, the use of the Rasch model is to measure the psychometric properties of the items in this instrument has fulfilled all available assumptions after reference to previous Rasch model researchers and pioneers. This instrument has been found to be very effective in measuring the teaching elements of TSP. This instrument also has high reliability and reliability both in terms of item and individual. The use of the Rasch model in the measurement of psychometric properties can contribute to accurate measurement. Therefore, the Rasch model is reliable for measuring the psychometric properties of items. In this regard, the Rasch model is also a model that allows for a direct comparison between items and teacher abilities. Therefore, the Rasch model can improve existing measurements for better results.

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## Ways of expression of opinion in Maoniy science

Formas de expresión de opinión en la ciencia Maoniy

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### ABSTRACT

All languages have a specific style of expression of opinion and specific rules. In this article, Instruction for expressing opinion in Arabic is researched in detail in the “Maoniy” section of Balogat. Maoniy Science is considered as finding and using words that are intelligent and profound. It is necessary to correct the misconceptions of people in order to rectify their character, to turn them from evil and oppression. That is, to love them from a very young age (before they are still evil and oppressive), as beauty, justice, tolerance, love of the homeland, humility, hard work, courage, compassion, nobility, and great virtues. It is important to teach people how to value themselves, even if they are friends, parents, and compatriots. It should also help in the acquisition of spirituality and spirituality. According to the requirements of Maoniy the following is researched, which any opinion is expressed by a few words (Ijoz), many words and phrases are used for detailed coverage (itnob), the intended purpose is expressed without words.

**Keywords:** Balogat, Maoniy, ijoz, itnob, musava.

### RESUMEN

Todos los idiomas tienen un estilo específico de expresión de opinión y reglas específicas. En este artículo, las instrucciones para expresar opiniones en árabe se investigan en detalle en la sección “Maoniy” de Balogat. Se considera que Maoniy Science encuentra y usa palabras que son inteligentes y profundas. Es necesario corregir los conceptos erróneos de las personas para rectificar su carácter, alejarlas del mal y la opresión. Es decir, amarlos desde una edad muy temprana (antes de que sigan siendo malvados y opresivos), como belleza, justicia, tolerancia, amor a la patria, humildad, trabajo duro, coraje, compasión, nobleza y grandes virtudes. Es importante enseñar a las personas cómo valorarse a sí mismas, incluso si son amigos, padres y compatriotas. También debería ayudar en la adquisición de espiritualidad y espiritualidad. De acuerdo con los requisitos de Maoniy, se investiga lo siguiente: cualquier opinión se expresa con unas pocas palabras (Ijoz), muchas palabras y frases se usan para una cobertura detallada (itnob), el propósito pretendido se expresa sin palabras.

**Palabras clave:** Balogat, Maoniy, ijoz, itnob, musava.

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In Maoniy, an integral part of the Arabic Balogat, sentence and its types, part of speech and their using, ways of expressing opinion are defined as the main points of speech.

With the beginning of the writing of literary writings of the classical period, ideas about expressing opinion began to develop. As a result, the following types of ideas are distinguished according to how they express opinion:

1. Ijoz
2. Itnob
3. Musava

If the opinion is expressed in a few word, it is called "ijoz". If the idea is expanded and expressed in many words, it is called "itnob". When expressing the idea, words and meaning of opinion equal, it is called "musava" (Beirut.H. 1375).

Lexical meaning of the word ijoz is "short,"(Baranov H. K. 2005) which has been widely used since the time of ignorance. According to the expression, the ijoz can be divided into 2 parts:

1. Omitted
2. Not omitted.

Although a word or phrase which should be used in the process of expressing an opinion is omitted, without any distortion of meaning, the way to fully explain the intended meaning is called omitted "ijoz".

When expressing an opinion, a word or phrase is omitted and then the meaning of opinion changes, it is called not omitted "ijoz". The "not omitted ijoz" is divided into two parts:

1. "Ijoz Kisar"
2. "Ijoz hazf".

Ijozi qisar: in this case, it is required to expand the meaning with little use of words. Words or phrases that should be used to express an opinion can be broadly expressed in short phrases without omitting (hafz). Asiriy says about this species: "It is the highest form of expression, if someone finds it in the sentence, he finds the most rare species." This type of "ijoz" can also be called "ijoz balogiy"(Abdulaziz Ateeq, P. 192). For example:

There is life in revenge for you.

The meaning of the verse is interpreted as the following:

"Murdering stops another murder. Preventing the second murder is a life for humanity." (Mansurov A. 2001)

In this verse, it is expressed that if a person commits a murder, he should be killed, and this will end his life, and if he does not commit a murder, his life will be good. Understanding the meaning of this verse prevents murder, there is life in revenge, because execution prevents murder. Through revenge, human life will be prolonged, and it is defined as the guarantee of the increase of the human offspring, the ability of everyone to do useful work, to produce different provisions for a prosperous life, and to live in complete prosperity."(Mansurov A. 2001)

"If revenge is carried out in accordance with Sharia rules, it means that the soul of the majority will be protected. The revenge will be based on justice, otherwise, at the cost of one person innocent people can be sacrificed on both sides". (Mansurov A. 2001. p.305)

As shown in the translations of the verse above, three commentators give three different meanings, and although the verse is briefly written, it appears to be broadly expressed.

Ijoz hazf

In this type, any part of the sentence that does not affect the violation of meaning of the sentence (a combination of letter group, or group of nouns, part of a consecutive phrase, a part of a conditional phrase; a musnad or a musnad ilayhi), or a phrase is omitted. For example:

Omitting letter or auxiliary word category:

*They said, "By Allah, will you remember Yusuf until you are dead or even killed?"*

The verb contained in the combination must have been dropped

I'm not a bad woman.

The letter in the word is omitted. The original position is .

Omitting of mudof (detectable) or mudof ilayhi (detective) in the izofa compound. For example:

- omitting of mudof:

*“Ask the people of town where we came from and the caravan we were traveling with. We are truthful.”*

They are the components of izofa compound: mudof and ilathi, which are the detective. The mudof will be holistic compound

-Omitting of mudof ilayhi:

*“We promised Moses thirty nights. Then We complemented it with another ten” not-adapted mudof its ilayha is omitted*

3. Detectible of Adapted detective is also omitted.

For example:

*And We gave Thamud the camel (as a clear miracle), but they wronged them.*

*The sentence is omitted from the word its adapted detective is relocated with detected. There are also many cases of omission when an adapted detective is expressed as appeal or masdar.*

The omission of detective in the compound of appeal, for example:

The omission of detective in the compound of masdar, for example:

*“He who repents and does good deeds will surely return to Allah.”* The detective of the word is the gerund according to morphology.

4. Omission of adapted detective, for example:

As for the ship, it belongs to the poor who worked on the sea. So I wanted to blame him. (Because) behind them was a king who was pulling all (whole) ships.

6. The omission of “the Oath” and its answer.

For example:

1. Qof. *By the Glorious Quran.* 2. *Yes, indeed, they are surprised that a warner from among themselves has come to them. The disbelievers said, “This is a very interesting thing.”*

In this verse the word is omitted in

“the Oath” and its answer. Abdulaziz Mansur interpreted this as the following: (Mansurov A. 2001) the oath was sworn, but the answer of the oath and the reason of this isn't included in the verse.

The reason is that the answer is clear from the context. In this case, the answer of the oath is the phrase that, even if you, Muhammad, prove that the resurrection is true, the people of Mecca will not believe. The condition or the answer of the condition is omitted. For example

*“Allah has not children and is not a god with him. Otherwise, of course, each God would have gone with what he had created, and would have prevailed over each other.”*

Ijz is also used to save in memory or to make it easier to understand, to express cases such as hiding something from others except for listener, to express feelings of disorder, boredom, hatred, broad meaning. Also, this way of expression is used in the expression of kindness, complaining, asking for apologize, condolences, doubts, promises, reprimands, strict warning, possession of land, collecting money, papers of the ownership of the rulers during the war, orders and prohibitions, gratitude for the blessings given.

Another way to express an idea is a itnob. The lexical meaning of the word is that “overloading, exaggerating” (Baranov H. K. 2005)

Itnob is the way of expressing a sentence using many words. The use of a lot of words in itnob can be considered as cautious on the one hand, and on the other hand perform the function of highlight. For example,

*“My God, my bones became brittle, and my head is whitening.”* (Mansurov A. 2001. p.305)

If a lot of words are used to express the idea, but the meaning does not come out, it is called stretching, if the meaning doesn't change, it is called hushu

Itnob is used for the purpose of expressing such meanings as firmness of meaning, clarification of purpose, highlighting, elimination of misunderstanding.

The following types of itnob are common:

Transition to the main goal after the general sentence:

*Keep all prayers, especially the middle prayer (read it on time).* (Mansurov A. 2001. p.39)

The main goal that I want to say here is a warning.

To say a general sentence after a special sentence:

*Oh God, forgive me and my parents, and all those who have entered my house believing, and all the believing believers!* (Mansurov A. 2001. p.571)

Add a comment after an incomprehensible sentence. In this case, the speaker tries to keep the listener's mind by expressing it twice, when expressing the idea for the first time, it eliminates the misunderstanding, if it is intended to give a brief explanation, then in the second time it is intended to give a detailed explanation

*Oh believers, may those who believe testify to a "trade" that will save you from the painful torment? (That "commercial" is that) – you will believe in Allah and His Messenger and strive with your wealth and your lives in Allah's way.* (Mansurov A. 2001. p.552)

4. Tavshi-designation, coming at the end of the sentence, a separate word is used to illuminate the meaning:

Science is of two types: the science of the body (man) and the science of religions.

In the Repetition - the thought is expressed by repeating a word two or more times. From repetition the following meanings are considered:

a) Emphasize the meaning and make it firm:

*No way! Soon you will know (the consequences)! Once again, no, you will soon know!* (Mansurov A. 2001. p.600)

B) it stretches repeatedly so that one part of speech is not separated from the remaining parts. If the piece is detachable, it cannot be recited. For example:

*Oh, Dad! I saw (in a dream) eleven stars, the sun and the moon worshipping me.* (Mansurov A. 2001. p.235)

C) repeated in order to understand. For example:

"I read the book chapter by chapter and literally understood it."

d) repeated for the purpose of apologizing. For example:

*"Of course, your wives and children may also be enemies to you. So be careful of them.* (Mansurov A. 2001. p.557)

d) repeated to attract attention. For example:

*And he who believed said: "Oh, my people! follow me, I will guide you on the right path. Oh, my people, the life of this world is just a (trivial) fabric. Only the hereafter is the guarantee of stability."* (Mansurov A. 2001. p.471)

In the verse, the word "people" was repeated, which used to attract the listener to himself, so that nobody did not suspect him.

E) it is repeated in order to praise the listener for something. For example:

"Really, generous! Generous Yusuf ibn Yaqub Ibn Ibrahim!"

J) repeating words several times in a row to several different words. For example:

*"A generous person is close to God, close to paradise, close to people, far from hell. Greedy Man is far from Allah, far from paradise, far from people."* (Abdujabborov A. 2004)

The type of itnob repetition can be expressed remembering pleasure, following the best path and other meanings.

The speaker's dissatisfaction with the intended purpose can also be used between the sentence, in the style of the introductory sentence, sometimes at the end of the sentence, without obeying any rules:

*"Allah is sufficient to us. He is extremely worthy of representation.* (Mansurov A. 2001. p.72)

Also, this type of expression is used to express such meanings as prayer, explaining the virtue of a work, healing a patient, highlighting, further exaggerating fear. For example:

*"We have ordered man to please his parents. His mother carried him with weakness (in the uterus). Isolating it (from the breast) ends in two years. (We ordered): 'Give thanks to me and to your parents, The return is with me'"* (Mansurov A. 2001. p.412)

Iybol-deepening. This type is used at the end of the sentence, it is expressed as using an anecdote or the meaning is expressed as an exaggeration:

*Allah will give overwhelming provision to those who want.* (Mansurov A. 2001. p.33)

Tazyil-annotation: describing one phrase with another phrase, In this case, the second sentence follows the interpretation of the meaning of the first sentence

*“Say again: “the truth” (Islam) came and falsehood (disbelief) disappeared. Because falsehood is the disappearing (thing).”* (Mansurov A. 2001. p.29)

Caution type is used in the case of loss of imagination against the goal it can be used both between the sentence and at the end of the sentence:

Ending style is an increase the second-order parts of speech in the composition of sentence.

Excessive use of such parts as maf’ul, status case, tamyiz, determinant cause to be awkward of the sentence.

Itnob, in addition to the above, is also used in such cases as agreement, praise, curse, satire, sermon, management, exclamation, announcement of general affairs, mass dissemination of information, greeting, writing official letters to the authorities.

The speaker can express his opinion taking into account the circumstances, sometimes through the methods of ijoz, sometimes through the methods of itnob. In some cases, the idea can also be explained with the help of the musova style, depending on the circumstances. The lexical meaning of this word is “equality” (Baranov H. K. 2005). In the style of musova, the idea is as short as in the ijoz and is expressed between them, with the unity of thought and word, without being stretched, as in the style of itnob. For example:

*“Whatever good you do for yourself, you will find it in the presence of Allah.”* (Mansurov A. 2001. p.17)

*“Of course, Allah commands justice, good deeds and good deeds to relatives, and also forbids corruption, evil deeds and oppression. (He) will instruct you that you will take note.”* (Mansurov A. 2001. p.277)

*Evil traps will only destroy their owners* (Mansurov A. 2001. p.439)

In the examples, it was clearly seen that the words used for the purpose of expressing the meaning are neither less nor more and the equality of meaning and word harmony. If in the style of Musova, the word is used more than meaning, it is not considered to have passed on to the style of the itnob. Because, the increase in words in the style of itnob does not undermine the meaning. And in the style of musova, it is observed that the use of excessive words makes it difficult to understand the meaning. It does not serve as a benefit to the function of style (Abdulaziz Ateeq).

In Uzbek language Stylistics, the styles that express the idea are divided into five types: the conversation style, the official style, the scientific style, the publicistic style and the artistic style. The differences and requirements in the using of these styles are explained in detail, but the importance of words in expressing an opinion is not particularly reflected in Uzbek Language Stylistics. Therefore, the idea in the science of Maoniy cannot be compared with the methods of expression of Uzbek Language Stylistics. It is possible to observe the practical using of ijoz, itnob, musova in Uzbek styles. In the composition of Proverbs and sayings, a deep meaning is given by means of a few words, which is related to ijoz. In the texts of the scientific and official style, the requirements for musova are used. No matter in which style the idea is expressed, it is necessary for the listener to be understandable. It is important that it does not originate a question in the listener either when it is short and laconic, or when it is stretched, in addition, it should not make him bored, but interested in the content of the phrase. A proper understanding of these types of expression styles for Maoniy prevent us from having negative consequences, especially as a result of an incorrect analysis of the verses of the Qur’an.

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## Vocalize genre in the Sergey Rachmaninoff's works

Vocalizar el género en las obras de Sergey Rachmaninoff

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### ABSTRACT

The purpose of the study is to determine the semantics of vocalize in the S. Rachmaninoff's works. An integrated approach, combining general aesthetic, source studying, historical and stylistic and systemic genre ones, allowed considering such a capacious concept as vocalise. On the basis of the method of complex analysis the results about the uniqueness of vocalize as an artistic definition are obtained. Vocalize has gone a long historical path of development from the original form (as a technical exercise to develop the voice) to its concert kind of solo vocalise, which appeared in the S. Rachmaninoff's work. Not limited to an independent genre, vocalize penetrates into chamber vocal music. Based on the analysis of these works, the conclusion is made about the uniqueness and universality of the expressive properties of choral vocalise. Special attention is paid to choral vocalize as a means of choral texture. Based on the analysis of the works "Liturgy of St. John Chrysostom", "Nightlong vigil", choral scenes of the opera "Francesca da Rimini", cantata "Spring", poem "Bells", "Three Russian songs" the conclusion about the manifestation of instrumentality in the choral texture is made. In general, the analysis of Rachmaninoff's musical heritage allows affirming vocalize in the status of the artistic universe.

**Keywords:** S. Rachmaninoff, vocalise, semantics, genre, style, drama.

### RESUMEN

El propósito del estudio es determinar la semántica de la vocalización en las obras de S. Rachmaninoff. Un enfoque integrado, que combina la estética general, el estudio de fuentes, el género histórico y estilístico y sistémico, permitió considerar un concepto tan amplio como la vocalización. Sobre la base del método de análisis complejo, se obtienen los resultados sobre la singularidad de la vocalización como definición artística. Vocalize ha recorrido un largo camino histórico de desarrollo desde la forma original (como ejercicio técnico para desarrollar la voz) hasta su tipo de concierto de vocalización en solitario, que apareció en el trabajo de S. Rachmaninoff. No se limita a un género independiente, la vocalización penetra en la música vocal de cámara. Basado en el análisis de estos trabajos, se llega a la conclusión sobre la unicidad y universalidad de las propiedades expresivas de la vocalización coral. Se presta especial atención a la vocalización coral como un medio de textura coral. Basado en el análisis de las obras «Liturgia de San Juan Crisóstomo», «Vigilia nocturna», escenas corales de la ópera «Francesca da Rimini», cantata «Primavera», poema «Campanas», «Tres canciones rusas», la conclusión sobre Se realiza la manifestación de instrumentalidad en la textura coral. En general, el análisis de la herencia musical de Rachmaninoff permite afirmar la vocalización en el estado del universo artístico.

**Palabras clave:** S. Rachmaninoff, vocalizar semántica, género, estilo, drama.

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## INTRODUCTION

In the history of Russian music a solo vocalise emergence as exercises for development of voice mobility, and choral vocalise as the timbre texture organization and their further evolution in artistic composition, could be traced for several centuries. So in the early twentieth century, the value of vocalise was leveled. According to Professor of the St. Petersburg Conservatory A. Puzyrevsky, the use of the choir, which as an accompaniment to the solo voice, sings with clenched lips, that is, without uttering words, has no serious artistic significance (Puzyrevsky, 1908). Time has changed a lot. Now it is impossible to imagine a complete picture of the development of musical genres without the introduction of vocalise, both solo and choral, which allows stating the synthesis of genre features.

Analyzing the degree of scientific development of the theme, as well as the interests of domestic and foreign musicologists, we can conclude that the appeal to the question of the role of vocalise in some S. Rachmaninoff's works rose sporadically, without revealing the whole picture of this genre. The problem associated with vocalise was reduced solely to its solo type. In addition, the studies did not reveal a complete picture of the development of vocalise. Aspects of the study of musical genres represented in some works became the basis for the concept of this work. They made it possible to adjust its analytical focus.

The works dealing with different components of vocalise are divided into four groups. In the first one the object of research is solo vocalise and its application in the process of formation of knowledge, abilities and professional skills of singers. S. Berzhinskaya, A. Filippov, R. Sladkopevets, N. Polyakova, E. Sharma, N. Guseva, E. Simonova, O.-L. Mond, P.V. Lutsker and others are among the authors of such works in Russian musicology.

The second group consists of dissertation research on the development of musical hearing, in which the methodological and pedagogical vector, in particular, solfeggio is represented by exercises - solo vocalises of L. Loginova, M. Lyudko, A. Zingarenko, M. Efreмова, P. Sladkov, I. Tikhonova.

The third group includes works related to the folklore practice. Their solo vocalise appears as a stylistic element of folk music of different nationalities: for example, Mordovia (E. Melyankina), Bashkortostan (R. Galimullin), Adygea (E. Gogina), Western-Arabic music (T. Sergeeva), the Arab-Andalusian art of singing (A. Belferruni).

The fourth group consisted of works, exploring the features of the certain era music, or of the works of one composer: O. Shepsheleva, A. Kurabnov, A. Petrova, N. Filatova, L. Ravikovich, A. Shtrom, T. Khromenko, G. Chernaya, I. Romaschuk and others. Here vocalises are examples of certain stylistic and genre features of the composer's writing.

The main provisions of the study were developed on the scientific work of T. Livanova, Yu. Keldysh, S. Skrebkov, V. Protopopov, E. Dolinskaya, Yu. Paisov, G. Grigoryeva, M. Vysotskaya, A. Sokolov, V. Kholopova, N. Gulyanitskaya, which raised the problem of evolution of a specific genre events (Keldysh, 1974; Kholopova, 2001).

Based on the foregoing, *the relevance of the research* is that vocalise in the S. Rachmaninoff's works, as a genre, the drama, and as texture forming and shaping parameter is studied for the first time, thus filling certain gaps in this area of musical science, and that the analysis of genre and stylistic components of the vocalise is directed not only in the field of cerebral but and practical - on the basis of obtained data to define the specifics of performing. The scientific novelty of this research lies in the fact that for the first time in the history of world musicology vocalise is presented as a unique artistic definition – theoretical and performing, specially studied comprehensively in terms of genre specificity and stylistic features, as well as peculiarities of interpretation of Rachmaninoff's works.

Goals and objectives of the study:

- To determine the artistic value of vocalise in the music of S. Rachmaninoff ;
- To determine the semantics of vocalise in the S. Rachmaninoff's works;
- To classify vocalise (solo, choral);
- To interpret theoretically the genre prototypes of the solo vocalise;
- To determine the dramatic, textural forming and shaping properties of vocalise in works of different genres;
- To reveal the specifics of artistic interpretation of vocalise.

## METHODS AND MATERIALS

An integrated approach that combines general aesthetic, source studying, historical and stylistic and systemic genre methods of analysis became the main in the work. Consideration of such a capacious concept as vocalise (solo and choral), required reliance on research related to chamber vocal, vocal-symphonic, choral and opera music by S. Rachmaninoff, as well as on works that analyze the state of modern performing practice and problems of interpretation. At first glance, this area of research is almost entirely in the field of vocal and choral performance. Indeed, many aspects of this problem were the starting point for the study of the specifics of vocalise – it is an inevitable and, at the same time, a necessary condition for achieving new scientific results. Vocalise in the context of musical creativity is inextricably linked with other aspects of the composer's artistic thinking. Professional skills of musical analysis are assumed for its study. It is this circumstance that introduces the problems of research in the field of musicology, determining the relevance of the formulation of this problem. Thus, the study of vocalise is complete only if there is the synthesis of research methods and the results of the

analysis of two related areas of musical art – chorology and musicology. **The materials of the study** were chamber vocal music, choral works and works in the genre of musical theater by S. Rachmaninoff. It is in the work of this author that the most important properties of vocalize were born, which led to the birth of a unique independent genre of choral vocalize a cappella in Russian music.

## RESULTS AND DISCUSSION

For a long time the genre of vocalize existed only in the sphere of instructive compositions for the development of vocal technique, like etudes in the field of piano music. However, in the beginning at the end of XIX-XX centuries in Russian music the purely educational and methodical component of solo vocalize is replaced by a new interpretation - vocalize becomes a conceptual parameter of the composition. Where the word is powerlessly silenced, a universal means of artistic expression—vocalize comes into force.

So in 1910-1915 in the S. Rachmaninoff's works "Vocalise" becomes an artistically valuable work that goes far beyond the exercises for the voice and it is a *romance-vocalise*. It is in "Vocalise", dedicated to N. Nezhdanova, the final number of the cycle, the composer puts a hidden program of sacred confession, expressed without words, the confession of the soul, a kind of transcendent beginning. As I. Stepanova noted, "the word itself reflected in the music indicates the boundaries of semantically meaningful elements" (Stepanova, 2002), therefore, to create a generalized conceptual philosophical-aesthetic "musical statement" the composer did not need poetic lines: rising above the initial level of confession, as a subjective, individual start, "Vocalise" appears as "art space" of an artist, overcoming the space and time of musical-historical process, and the "art space" (according to Yu. Lotman) acts as "a model of the world of the author, expressed in the language of his spatial representations" (Lotman, 1988).

Genre prototypes of the compositional solution of "Vocalise" are extremely diverse. This is, in fact, a synthesis of stylistic features of many eras: vocalises of Italian masters, la mento arias, Baroque music, sign chant, Russian lingering song.

"Vocalise" is an aria without text, where the voice is treated as a special paint, and intonation base maintains the connection with the song-aria melodies and instrumental melodies. In "Vocalise" second intonation moved from la mento aria, descending bass line, moving on the scale of natural minor down.

With regard to the sign chant, we should clarify that at present sign singing is usually understood as one-voice (unison) Church singing, the experience of which can now often be heard both at the divine services of the Russian Orthodox Church, and on the concert stage and in audio recordings. Sign chant is the original modal and melodic forms of syncretism (in gregorianica the modal and melodic patterns much more autonomous). The chant is exceptionally smooth, moving in seconds. In this movement, the key intonation of the whole set of sign chants is the ascending stroke within three sounds (less often – four), that is, one accord of the everyday scale. Syncretism consists in the inseparable unity of the most common melodic course and the cell of the mood scale – one "accord". Three ascending sounds overtly or covertly move each melodic line of the sign chants. The same features are found in the work of S.V. Rachmaninoff. Speaking of other origins of "Vocalise", we emphasize Russian start, Russian song melody. In common with the Russian song it has melodic simplicity, drawl, and mood solution – natural minor, characteristic of folk songs (Rachmaninoff, 2008; Nazar & Hamidzadeh, 2017; Ibragimova, 2017).

Baroque traditions, primarily associated with the composer's style of J. S. Bach, are expressed in the sublime, objective beginning of the figurative system. In piano accompaniment, this consists in a pulsation of polyphonic texture. In this regard, we can recall the second part of the "Italian Concerto" by J. S. Bach.

The texture of "Vocalise" is diverse, changing depending on the place in the musical form and artistic idea. The texture is represented by the main types: melody of the vocal part, the bass line, pulsation by the eighth durations of the middle voice. The melody is the most developed and plays a key role in the composition. The bass line plays a harmonic role, giving the music a touch of infinity of historical time. It moves in a linear-progressive downward vector. The middle voice is the "heartbeat" of the texture, consisting in the rhythmic and harmonic unity of the pulsation of the chords.

The appeal to ancient musical forms is also symptomatic. "Vocalise" is solved in the old two-part form of the deployment type. The last section (code) brings to the architectonics of the work the features of a three-part reprise form. Here is the first period in their original form in the middle voice and in support part. Rachmaninoff's "Vocalise" is a unique example of individual composition. It contains features of many forms, genres and styles, being at the same time unlike anything else, the author's work. There is a similarity with Russian song, the Russian Church sign chant, an old Baroque tradition and however true features of Rachmaninoff's compositional style.

S. Rachmaninoff uses vocalize as postscripts in vocal chamber music. Let us remember the song "Uzh ty, niva moyá" on verses by A. Tolstoy, where in the code, after the words *Tam vskhodila lyuta pechal'-trava, vyrastalo gore goryuchee* vocalize sounds - crying as a generalized sign of mourning in Russian music with a characteristic initial ascending leap to a perfect quint, achieving the highest tessituras subsequent semitone to the sound of  $b^2$ , and further long-term downward movement to  $^1$  - the timbre of human voices finishes the musical thought outside the text, contained in the piano part.

Vocalize manifests itself in the song "Polyubila ya na pechal' svoyu" on verses by A. Pleshchev (from T. Shevchenko), dedicated to M. Olferyeva, where after the words *Uzh takaya dolya mne vypala* the crying-vocalise, like a moan, repeating the main theme. In these romances the influence of Russian folk music on Rachmaninoff's work is traced. In the writings there are no direct quotes, but intonation parallels, as well as the melodic development on the principle of

the melodies are sweeping, reveal the genesis of the melody of Russian lingering songs not so much with external signs, but with deep relationships. Perhaps it is vocalize that plays a dramatic role not only as an important afterword, but also as a reflection on fate. Through vocalise, the image of the future is modeled as a sphere of inner contemplation, something supra-conscious, which, according to K. Malevich, "is... something that is thinner than thought and lighter and more flexible", which is "to utter is not only false, but even quite impossible to convey in words" (Malevich, 1989).

Vocal and vocal-symphonic music in general plays an important role in the work of S. V. Rachmaninoff. Being a brilliant melodist, he wrote a large number of works for voice with accompaniment and for choir. Vocalize penetrates into the sphere of sacred music, and into the sphere of vocal and symphonic music of S. Rachmaninoff.

Since the mid-80s of the XIX century a stage characterized by a rethinking of the features of the partes and spiritual concerts began, which led to a bright flash of generalized concert, and, as a consequence, the emergences of works where the essence of the genre received a highly artistic embodiment. In this aspect, the concert for choir of S. Rachmaninoff "In prays the unfailing Virgin" is the most significant. Rachmaninoff's melodic lines, with great length, wavy principle of development, a wide breath encompass a large number of inner syllable chants that makes this principle of work with text common with a Russian lingering song (Mazel, 1947): for example, the chant of the words *neprelozhnoe upovanie, ne uderzhasta* in the first part, *Mater', prestavi* - in the second, *prisondeustvennyyu* - in the third. Let us note and other genetic relationship of melodic development and work with the word – peal, which has the motive-variant repetition, accented by S. Rachmaninoff's inner syllable chant, and the lyrical-romantic tendencies of "endless melody".

Not trying to sound every word, S. Rachmaninoff creates a composition in which the sacrament of sacred meaning prevails, and the word only concretizes the thought. As A. Lyakhovich writes, "Rachmaninoff's art is a revelation given in silence, a mystical comprehension of the mystery of the symbol <...> "music speaks for itself", and (to paraphrase an aphorism) "the musical thought extracted in the Declaration is a lie" (Lyakhovich, 2013). In this regard, a very illustrative example of self-sufficiency of music, semantic context is extremely voluminous, are the chants of the many-part spiritual cycles of S. Rachmaninoff "Liturgy of St. John Chrysostom" and "Nightlong vigil". Thus, in the hymn "I sing to You" from the Liturgy in the second stanza (from the words *i molimtsiya Bozhe nash*) there is the composer's remark: "from here to the end the choir can sing with a closed mouth" (Rachmaninoff & Chrysostom, 1988). Text is given in the part of the soprano soloist; the choir also acts as a vocal "orchestra", on the one hand, harmonically supporting a solo voice, and on the other hand, musical means expressing meaning beyond the unspeakable: the sound of the mixed choir with the mouth closed is multifaceted, semantic context is boundless. This arrangement of choral sound and solo voice also makes Rachmaninoff's spiritual work related to Russian folklore (Rasooli & Abedini, 2017; Mondelo et al., 2017).

In the Nightlong vigil (1915) the role of choral sound is many times amplified. The composer writes in the sheet music with a special icon (+) all the fragments performed by the choir with the closed mouth. Symphonic choral texture demanded that the composer had fundamentally new approach to the interpretation of the timbres of choir voices. So method of vocal "orchestration" singing with mouth closed is found in "Blessed art thou o Lord" and "Bless the Lord, o my soul". An interesting technique is the "choral pickup" of the final sound of the theme performed by the soloist or choral party. This "pick-up" continuation of the vocal line, sometimes lasting several bars, can finish the phrase, and can, as the development of musical thought, transform from the afterword in a new textured layer, against which the subsequent melodic line will be set out. This principle of vocalization of the choral texture resembles a kind of "endless melody", but having a Russian soil – a sign chant. "Endless melody" is a term brought by Richard Wagner. In fact, under the "endless melody" Wagner means "infinity" (continuity) in the entire music web, including harmony - impression of continuous deployment is also achieved through the use of interrupted cadences and interrupted harmonic momentum. The Rachmaninoff's "endless melody", often interpreted as long endings of musical phrases, in particular with the transfer of the endings from one voice to another, is found in the cycle "Six women's choirs", and in vocal-symphonic compositions.

The word and silence in Rachmaninoff's work are the constant, inexhaustible presence of mystery, of the unreal, of the inexpressible. In Rachmaninoff's vocalise, the word dissolving into silence is immersed in the "absolute" of music. "Unspeakable silence", always present in the visible world, appears in Rachmaninoff's works as the original space for sound, in which there is an almost imperceptible edge, the moment when the word impotently falls silent or when the word pierces the silent world.

Vocalises penetrate almost all genres of musical art. Choral vocalizes begin to play a special role in musical theatre, as it is in them that attention is focused on the timbre of human voices due to the exclusion of the poetic word. Perhaps, the appearance of choral vocalises in Rachmaninoff's operas was primarily associated with the development of the opera genre, where polyphonic vocalises were one of the means to create an artistic image, often for the *personification of choral sound*. So in the opera "Francesca da Rimini" the choir sounds the moans of souls driven by a hellish whirlwind. Choral sound with no words (text only instructed the chorus in the phrase that closes the whole opera: "There is no greater sorrow in the world as to recall the happy time in misery") is woven into the orchestral web, as the tone paint that brings the opera close to orchestral poem, and the cantata. The pictures of hell (prologue and epilogue) are dominated by fatalism and hopelessness. Initially in the orchestra, and then in the choir, a descending second intonation is heard, developed further throughout the prologue in a spirit close to the medieval Catholic hymn *Dies ira*. This intonation will appear in other S. Rachmaninoff's works: in the symphonic poem "Island of the dead" (1909), in "Rhapsody on a theme of Paganini" for piano and orchestra (1934), in "Symphonic dances" (1940).

Cantata and oratorio genres also contributed to the formation of vocalize as an independent genre. In the conditions of a large form, the timbre originality is not so much important in vocalize as its function: *a means* of drama or a technique

of writing.

As a means of drama choral vocalises can be divided into the following types:

1. choral vocalize – character;
2. choral vocalize – descriptive technique;
3. choral vocalize – emotional state.

As writing technique choral vocalize is an important tool of texture formation: choral vocalize – the accompaniment or counterpoint. Let us note that this classification is very conditional. In the cantata-oratorio work of many composers, an integrated approach to the function of choral vocalises is manifested. They can simultaneously act as a means of drama, and as a texture forming means. Let us consider musical examples.

Quite often in choral vocalize not only the timbre is important, but also the semantic accent, “words” of an inanimate character were entrusted to the choir. Let us recall, for example, the famous episode from S. Rachmaninoff’s cantata “Spring”, where in the words of the soloist *Kill, kill the traitress!* mixed choir comes in octave unison, singing with the mouth closed low third intonation (*f-d*), the hidden meaning of which, a beat later, a solo will open – *Kill!* The rhythmic formula of this episode is also interesting. Direct speech of the character of “Winter” is written out with large durations (half and whole), and “decoding” this leitintonation in the baritone party sounds by eighth and quarters (c.11 of sheet music). In addition, leitintonation of “Winter” received subsequently sequence downward development as a psychological component – almost going crazy man, in the heat of passion overwhelmed with passion and revenge. In this case, S. Rachmaninoff follows the traditions coming from the work of M. Glinka. After all, M. Glinka for the first time in Russian music to characterize a fantastic character (the Head of the opera “*Ruslan and Lyudmila*”) chose choral macro-timbre of male voices.

In the poem “Bells” (1913) choral vocalises appear in semantic climaxes. In the middle episode of the first movement in the cis-moll tonality (the tonality of “death”) the sound of the chorus with the closed mouth paints a gloomy, static-severe image – a harbinger of disasters and losses that inevitably accompanies human life. This inevitability lies in the application of an infinite canon in unison with a four-voice mixed choir. The melodic line itself is built in a narrow range of perfect fourth and represents gradual upward movement with return to the prima via “bell” singing of third tone. This most important dramatic episode anticipates the mournful conclusion of the cantata, where in the texture of the choir – “the bell tolls” with a closed mouth, against which the words of soloist *Hollow bell sobs* sound. PoE’s symbolist poems (translated by Balmont), falling into certain dramatic conditions of Rachmaninoff’s music, acquire new meanings. Thus, the choral vocalize becomes a symbol of Time, acts as a “living embodiment of temporal processes, philosophical and mythopoetic understanding and reflection of which is one of the main meta musical thematic lines of Rachmaninoff’s music” (Lyakhovich, 2013).

Choral vocalise, as an image of separation, anguish, appears in Three Russian songs (1926). In the first part vocalize appears like a prolonged conclusion of the main themes *Across the river, the river quick*. The basis of this part is a wedding song from A. Lyadov’s notebook. The final word of the phrase *Malina* in the party of male voices lasts three and a half bars, singing the vowel *a*, allegorically transforming into a “groan” of loneliness. In the second part of *Akh, ty, Van’ka* the theme of poor female destiny goes beyond the fate of one man, it is a generic picture of loneliness, lost love, heartbreak, suffering. In Russia, the song is widespread, performed in many voices and belongs to the female tradition. Rachmaninoff took as the basis of his work the performance of F. Chaliapin, lingering, sad. In the code vocalize sounds descending d-moll chromatic scale sounds twice, as written glissando cascading through the end of the songs-laments. It is also important that the violas perform this vocalize with their mouths closed. This principle of performance has great dramatic power, symbolizing the inner cry or moan, state of mind, grief, which the heroine has no right to pour out, show people.

The third song *Belilitsy, rumyanitsy vy moi!* is about a jealous husband who wants to beat his wife. This song S. Rachmaninoff heard in performance of N. Plevitskaya. Heavy dance, as if the dance of death, is written with the help of elastic rhythmic, “pressure”, the force of tectonic conjugations. Chorus syllables *Ay!; Ay, da!; Ay, lyuli! Oh!; A...; A!*; due to the chant, the length of the sound acquire the value of vocalize with emotional and dramatic content. In these vocalises there is fear and horror of the future, memories of the past. The climactic performances are choral vocalises performed with a closed mouth, acquiring multiparameter shades of emotional state, mixing of feelings. Thus, the heavy drama of hopelessness, despair, so tormented the composer in emigration, after a decade of silence reflected in this opus.

## CONCLUSIONS

Vocalize has gone a long way of aging and gained genre autonomy to the middle of the twentieth century. Expanding their emotional capabilities, the vocalize (solo and choral) was closely within the original scope of “service” vocal technique. Vocalize has become popular in other genres. The inclusion of vocalize as an artistic phenomenon allowed it to gain positions within different genres.

The musical heritage of S. Rachmaninoff fully demonstrates the dramatic and genre-stylistic possibilities of vocalise. Thus, the vocalize in the S. Rachmaninoff’s works appears not only as independent genre concert solo vocalize (“Vocalise”), but also as choral vocalize - artistic universe, able to manifest as a final postscripts in chamber vocal music (songs “*Uzh ty, niva mooyu*”, “*Polyubila ya na pechal’ svoyu*”), in the role of a vocal orchestra, in the field of sacred music (“*Liturg*



of St. John Chrysostom, "Nightlong vigil"), as a personification of choral roles in musical theatre (Opera "Francesca da Rimini") and dramatic emphasis in vocal and symphonic music ("Spring", "Bells", "Three Russian songs").

Thus, the objectives of the study – the study of vocalize in the S. Rachmaninoff's works from the historical, theoretical and practical aspects of musical science have been fully achieved. In comparison with scientific works on typological and stylistic aspects of various genres, among which chamber vocal and choral occupy one of the central places (first of all, let us call the works of M. Kagan, G. Pospelov, T. Chernova, E. Nazaykinsky, M. Mikhailov, M. Aranovsky), in which only general questions of classification of genres are considered, in the present study the maximum results are achieved: vocalize appears as a unique artistic definition. In a relatively short period of historical development, choral vocalize demonstrated a qualitative leap from episodic manifestation in major musical genres to genre diversity. In this regard, it is possible to assert the position of universality of choral vocalize in Russian music. In Rachmaninoff's work, vocalize becomes not so much a means of compositional writing as an aesthetic and philosophical constant. The stated problems were revealed in numerous musical examples. The goals and objectives of the study are fully resolved. If we look more broadly, the designated aspects are not limited to purely Russian vocal and choral art. Vocalises are also represented in the music of other countries. Let us recall the choral works of O. Messiaen ("Chorale") and Z. Kodaly ("Evening song"), S. Beatty ("Vocalize Opera") and others.

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## The Problems in reading skills of English among rural primary school pupils

Problemas en las habilidades de lectura del inglés entre alumnos de escuelas primarias rurales

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### ABSTRACT

Reading skills is a basic language skills for pupils in primary schools. This skill is very important for the pupils to achieve a proficient level in the target language. Therefore, this study aims to identify the problems regarding the reading skills in English among the rural primary school pupils. The participants consist of 150 primary school pupils studying in Standard 4 to Standard 6 in a rural primary school in Sarawak, Malaysia. This study is a descriptive survey research utilizing the use of a questionnaire that encompasses the personal background information and the problems that are faced in reading skills.

**Keywords:** Reading skills, rural primary school, primary school pupils, English language skills, remedial education.

### RESUMEN

Las habilidades de lectura son habilidades lingüísticas básicas para los alumnos de las escuelas primarias. Esta habilidad es muy importante para que los alumnos alcancen un nivel competente en el idioma de destino. Por lo tanto, este estudio tiene como objetivo identificar los problemas relacionados con las habilidades de lectura en inglés entre los alumnos de la escuela primaria rural. Los participantes consisten en 150 alumnos de primaria que estudian en el Estándar 4 al Estándar 6 en una escuela primaria rural en Sarawak, Malasia. Este estudio es una investigación de encuesta descriptiva que utiliza el uso de un cuestionario que abarca la información de fondo personal y los problemas que enfrentan las habilidades de lectura.

**Palabras clave:** habilidades de lectura, escuela primaria rural, alumnos de primaria, habilidades en el idioma inglés, educación de recuperación.

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## 1. INTRODUCTION

According to Ama Baafra, Todd and Leigh (2014), reading is defined as a cognitive process of decoding symbols to make meaning. Meanwhile, Perfetti and Stafura (2014) stated that reading is an active process of constructing meanings of words. The reader could direct information towards a goal and emphasizes their attention when he or she reads with a purpose. Reading is also a thinking process where the reader uses his or her prior knowledge. During this process, the reader uses different ways to comprehend what they are reading, organizing ideas into themes, and uses textual clues to find the meanings of new words.

There are few reading skills that a child needs for his or her childhood literacy (Bainbridge 2019). The first one is the phonemic awareness. It is the child's ability to listen and play with the sounds of the particular language and create words using that sounds. This occurs naturally within the normal course of the child's development. The indicator that a child has phonemic awareness when he or she begins to play with small pieces of a word as they are familiar with different rearrangements of sounds. Secondly, print awareness. Exposure to books and other reading materials could foster this awareness and the introduction of the letters of the alphabets to the children. Next, active vocabulary and passive vocabulary. Active vocabulary are words uses regularly in speech and writing while passive vocabulary are words interpreted through context. Besides that, spelling is also crucial reading skill in a child's literacy development. The concept of arrangement of letters to form words helps children to read earlier especially when encountering new words (Byrne 2014). Lastly, the reading comprehension skills. It is the ability to read and understand something that has been read and are able to make interpretations and identify hints in the texts.

Shea and Ceprano (2017) mentioned that one of the challenges that reading teachers faced in their classroom is poor reading comprehension among pupils. They also narrated that pupils were unable to use different skills and strategies in order to stimulate their thinking and construct meaning from the text which later on prevent the pupils from achieving reading proficiency. Meanwhile, Cambridge Baseline Report 2013 (Ministry of Education 2013) revealed that only 43 percent of Standard Six ESL learners were able to achieve the lowest level, which is A1, in their Common European Framework of Reference (CEFR) reading proficiency test. It shows that our primary school pupils still unable to "read and understand a range of English texts for information and enjoyment" as outlined in the Kurikulum Standard Sekolah Rendah (KSSR) English syllabus (Ministry of Education 2012).

It is important to identify the problems in the reading skills among the primary school pupils in rural primary schools as an initial step to structure an intervention action to curb the problem in precise and appropriate manner (Hanafiah & Md Yunus, 2016; Jagig & Wan Mohammad, 2016; Parvani & Md Yunus 2018; Wong & Abdul Aziz, 2019; Tham and Mohd Said, 2019.). This is to ensure that the literacy rate among primary school pupils in the rural primary schools could be improvised and closing the literacy gap between urban primary school pupils and the rural primary school pupils.

## 2. RESEARCH OBJECTIVES AND RESEARCH QUESTIONS

The main objective of this study is to identify the problems regarding the reading skills in English among the rural primary school pupils and the pupils' perceptions towards the teacher's teaching on the reading skills. This study is conducted to answer two research questions, (a) What are the problems regarding reading skills in English among the pupils in rural primary school? (b) What are pupils' perceptions towards the teacher's teaching in terms of reading skills?

## 3. LITERATURE REVIEW

### 3.1 Reading Skills in English Language

Reading is one of the ways of to get information and serve as the basic self-development towards acquiring knowledge. The purpose of reading to understand the content of the text gives meaning to the reader (Hedgcock & Ferris 2018). The ability to read is a valued skill and it is a dynamic process which requires meaningful and active communication between the reader and the writer. Reading is also one's ability to recognize the visual input and connecting that input with the sounds and shapes to make meanings. Reading comprehension depends on the combination of linguistics knowledge, cognitive styles and the reading experiences. Therefore, the reading skill is the basic requirement towards a successful teaching and learning process in multidisciplinary of subjects in schools. A good grasp of reading skills could ensure a higher potential and achievement in English and other subjects as well.

According to Ministry of Education (2003), each pupil is different in terms of their experiences, behaviors, values, talents and abilities. Therefore, the teachers should understand the need of remedial activities in the classrooms to overcome the problems in reading skills among pupils in rural schools. It is undeniable that many efforts have been done by the Ministry of Education, State Education Departments and District Education Offices to outline various programs such as Kelas Intervensi Awalan membaca dan Menulis (KIA2M), Literacy and Numeracy Screening (LINUS), Program Bimbingan Membaca dan Menulis (PROBIM) and Program Pemulihan Asas Membaca, Menulis dan Mengira (PROTIM). These programs were carried out to help pupils and fulfill their learning needs. These remedial programs is one of the ways to overcome learning problems in pupils especially in reading and writing skills. The teacher needs to fulfill the learnings needs of these weak pupils so that they could strive towards achieving their full potential and confidence to be able to compete with their mainstream friends.

Teachers have a huge responsibility in ensuring that the language skills of these pupils are in accordance to the standard

level as outlined by the Ministry of Education in the Kurikulum Standard Sekolah Rendah (KSSR) documents. According to Roselan (2003), language skills is an important basic skill and should be emphasized in the teaching and learning process that occurs in the classrooms. The teacher who is the responsible person to carry out the curriculum should have put more concern towards achieving the curriculum objectives to ensure that the aspiration of the education system could be achieved.

### 3.2 Problems in Reading Skills

Primary school pupils are future assets of the country to continue the effort in modernizing the nation. However, there is a huge separation gap in developing young generations and balancing individual potential. Emphases in the concept of multiple intelligences and individual differences make the remedial education as one of the choice to help them to be successful in life and to contribute to the success of our education system. With that regards, remedial is an approach which differs from mainstream classrooms in the national school system. According to Ovando and Combs (2018), remedial education focuses on restoring 'deficiency' in pupils' learning skills. The issue of slow learners is worrying not only parents, but also society and the government. It is believed that low academic achievement and learning disabilities are influence by many factors such as psychological, biological and environmental factor (Newman & Newman 2017).

Lower intellectual and psychological level among pupils could be the result of different factors such as genetics, physical disabilities and environments could contribute towards difficulties in learning and memorizing the information that is being taught by the teacher (Cortiella & Horowitz 2014). Besides that, health problems and emotional instability could also lead to learning problems. Pupils who inherit lower intellectual capability might shows different sorts of emotional distress such as anxiety, fear, anger and different other emotions which in turns will surely affect their focus towards their learning (Sharp 2014). There are also biological problems such as physical heath and neurological functions which might affect the learning curve. Therefore, intelligence that stems from high efficiency of neuron cells in the brains not only create knowledge but also gives meaningful experiences.

Environmental problems is an external phenomenon that occurs from the school system and pupils language development. School systems which practice complex curriculum and less concern about different needs of pupils could illustrate the inefficiency of school administration aspect (Beare, Caldwell & Millikan 2018). When the concept of multiple intelligences among pupils is abandon, the separation gap between pupils is created. Moreover, there are number of pupils that were left out from the mainstream learning because the insufficient of correct use of language. Lack of exposure of the language exposes the pupils to the problems in using and utilizing the language.

According to Suggate (2016), the effects of particular factors could create problems in the pupils' acquisition of reading skills. Weak reading skills amongst pupils might contribute to the pupils being lack of confidence and other disciplinary problems. Ongoing failures from the lack of confidence could bring the pupils towards low self-esteem. Aggressive behaviors, being negative, being childish and dispirited are all signs of serious emotional problems. This could jeopardize their ability to acquire the language skills effectively.

According to Sugiarto and Sumarsono (2014), the problems in acquiring reading skills which make pupils not interested in English is the result from their inability to master the subject. Among the problems are confusion between lowercase and uppercase while reading, unclear pronunciation of words and omitting difficult words. These problems slow down the reading process and make the pupils cannot comprehend the text that is being read. Besides that, the pupils also unable and uninterested to find information on the visual stimuli that was given by the teacher. According to Bennett (2014), reading is an interaction process between the text and the reader's imagination. Therefore, teachers should diversify the teaching techniques so that the teaching and learning process could attract pupils' interest and they could learn better.

When a pupil does not master the reading skills, it causes them not mastering the basic skills as well, that is, verbal skills. According to Ehri (2017), among the weaknesses in verbal skills are wrong pronunciation of letters that has close or almost similar shapes and sounds. These make pupils confuse of the order of words, sentences and intonation of the text. Pupils' inability of both skills could be presented in their writing. Pupils' deficiency in reading skills make them uninterested in learning and loss of focus (Akubuilu, Okorie, Onwuka & Uloh-Bethels 2015). In addition, external factors could also be the cause to the problem of mastery of reading skills such as disability, illness and genetics. This is coupled with environmental factors such as poverty and lack of parental attention is also a contributor to the problem in the mastery of reading skills.

### 3.3 The Teaching of Reading Skills

One of the discussions regarding reading is the appropriate age for children to start learning to read.. Some feel that teaching children reading before kindergarten overloads their brains, and others believe that a child should learns to read as soon as possible. It turns out that the answer is more complex than what one would think of. Literacy is a complicated skill which comprises different components such as psychological, social, and linguistic. According to Strickland (1990), children could learn pre-literacy skills from infancy onward.

Tompkins, Campbell, Green and Smith (2014) suggested that children who learn to read before kindergarten are unable to handle such a complex skill because the stages of reading progress are much more diverse than just being able to read books autonomously. Pupils could have better academic potential when they learn basic reading skills before kindergarten (Claessens, Engel & Curran 2014). According to Torgeson (2004), children start to develop abilities that will help them learn to read later on when they start picking up language. Some researchers also believed that the process of early childhood literacy starts in infancy and these essential skills that lead to reading later on are called pre-reading skills (Paris & Hamilton 2014).

There are also other factors that might affect the method of pupils picking up these skills. For example, pupils from low-income families read less compared to pupils from high-income families (Owen 2018). This resulted in pre-reading skills gap between the pupils with different family socioeconomic backgrounds. Moreover, some learning disabilities like dyslexia or Attention Deficit Hyperactivity Disorder (ADHD) could also have effects towards a child's literacy development (Cortiella & Horowitz 2014). However, parents and teachers could take preventive steps to overcome these deficiencies. A pupil could develop literacy as early as he or she could but all children should be learning pre-reading skills before they enter primary school. This responsibility falls on parents and any resources provided to them during early childhood (Mason 1980). And after that, families and teachers should cooperate to provide an inclusive literacy education through the pupils' schooling years.

#### 4. METHODOLOGY

The research design chosen for this study is descriptive survey. According to Mohd Majid Konting (2005), descriptive survey is a study used to illustrate a scenario that happened. The researcher believed that this research design is apt to identify the problems regarding reading skills in English among pupils in rural primary school.

The research data were collected, processed and analysed using SPSS (Statistical Package for the Social Sciences) software. The result was presented in descriptive form using mean and standard deviation. The respondents were consisted of 150 pupils in a rural primary school in Sarawak. The overall distribution of the respondents are 50 pupils of Standard 4, 50 pupils of Standard 5 and 50 pupils of Standard 6. The choice of these respondents are based on the ease of access to the respondents. This is in line with suggestion by Mohd Majid Konting (2005) that the choice of respondents must be able to minimize the costs, energy and duration of data collection.

The collection of data were based on the distribution of questionnaire that encompasses the background information of the respondents, the problems regarding reading skills and the pupils' perception towards the teachers' teaching process. The data were collected by the aid of the teachers in helping the pupils to answer the questionnaire given.

#### 5. FINDINGS

The result shows that there are problems in reading skills of English among pupils in rural primary school. The overall mean for problems in reading skills of English among pupils is mean=3.69 and standard deviation=0.89. It was also found out that the failure of understanding the content of the text read is the highest with mean=3.53 and standard deviation=0.74. This is among the problems that lead to pupils failed to understand the information that they have read. Besides that, pupils were found out to not be able to comprehend the meaning of the sentences that they have read with mean=3.37 and standard deviation=0.63. The inability to acquire these basic skills has resulted in pupils' poor grasp of the skills which require them to list down ideas or classifying the contents of the texts. Meanwhile, the poor reading skills has also lead pupils to not being able to read mechanically, both skimming and scanning with the mean=3.03 and standard deviation=0.94 and pupils were found out to be feeling tired while reading in long duration with mean=3.03 and standard deviation=0.94. (Refer Table 1).

**Table 1: The Problems in Reading Skills**

No.	Statements	Mean	Standard Deviation
1	Did not understand the content of the text	3.53	0.74
2	Did not understand the meaning of the	3.37	0.63
3	Unable to skim and scan the text	3.03	0.94
4	Tired and bored reading the text	3.03	0.94

The finding also shows that the problems that exist in reading skills could be curbed by planning and executing teaching and learning process that is interesting and conducive by the teacher. Besides that, a conducive learning environment and supports from the teachers could motivate pupils to keep learning. The finding also shows that additional reading exercises could uplift pupils' reading skills with mean=3.63 and standard deviation=0.51 and the drill reading technique has helped pupils in pronunciation and fluency in reading with mean=3.63 and standard deviation=0.64. The pupils believed that good reading skills could turn the reading activities in the classroom as interesting activities with mean=3.53 and standard deviation=0.52. Besides that, good teachers' guidance (mean=3.47, standard deviation=0.70) and the use of suitable teaching aids (mean=3.44, standard deviation=0.68) are also believed could lead to meaningful and effective reading activities. (Refer Table 2).

**Table 2: Pupils' Perceptions towards Teachers' Teaching of Reading Skills**

No.	Statements	Mean	Standard Deviation
1	Additional reading exercises	3.63	0.51
2	Drill reading technique	3.63	0.64
3	Interesting reading lessons	3.53	0.52
4	Good teachers' guidance	3.47	0.70
5	Interesting and suitable teaching aids	3.44	0.68

## 6. SUGGESTIONS AND RECOMMENDATIONS

There are few suggestions that could be looked into in order to improve the teaching performance and the pupils' learning potential to ensure the reading skills of English could be elevated among primary school pupils in rural schools. Firstly, the teaching of basic reading skills should be given important priority. The teaching of English language should be delivered in a more interesting approach with the diverse usage of teaching materials which would develop the pupils' reading skills. The use of different and appropriate approach would make pupils to enjoy the lesson and feeling less burnout during the process of teaching and learning in the classroom.

Secondly, the use of appropriate teaching aids, in-line with the pupils' intellectual ability and level of development during the lesson could motivate pupils in the learning process. The use of teaching aids should be used optimally so that the learning process would be a meaningful and leave a positive effects in the pupil's self. This is as suggested by Deaton (2015) that the use of media could enhance the two-way communication between the teacher and pupils in the teaching and learning process.

Besides that, the school administration should also be consistent in helping the pupils to master the reading skills during the remedial class activities or interventions. Seminars and courses that are beneficial for the teachers should be given priority in order to give the teachers new and updated information, technology and approaches in helping pupils with reading problems. There should also be systematic assessments to be done to evaluate the efficiency of teaching and learning process of those problematic pupils.

Lastly, the teachers should have positive perceptions towards pupils with reading problems and realise that these pupils deserve to be treated with equity and equality while believing they have the same potential if were given the appropriate guidance and help. In addition, the teachers need patience and perseverance to help these pupils to achieve their full potential. The Ministry of Education should also organized more courses and workshops for teachers to be more knowledgeable in managing issues regarding reading problems so that the reading problems among pupils could be curbed and eventually eliminated.

## 7. CONCLUSION

Pupils' weakness in reading skills could affect the potential and motivation in acquiring other skills in the English language. The finding shows that all the respondents agreed that teacher's ability and creativity could change their perceptions towards them achieving higher potential and success in learning. The close cooperation between teachers and school administration could create conducive and safe school and learning climate to stimulate pupils to be more motivated to learn. Besides that, teachers who are skillful and able to absorb the approaches, techniques and activities and structuring learning stages to create a set of creative and innovative teaching and learning process are deemed to give positive and meaningful impacts towards the pupils. Teachers must have also have a balance amount of content and pedagogical knowledge in teaching English so that the teaching and learning of English language in primary schools could be improvised as a whole.

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## ¿Can Rule of law be an efficient policy-planning tool for Sustainable Development in Asia?

¿Puede el Estado de derecho ser una herramienta eficiente de planificación de políticas para el desarrollo sostenible en Asia?

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### ABSTRACT

Sustainable Development is currently overriding problem in UN Millennium agenda of 21st century. Recently, is considered purely a matter of rule of law. Rule of law are now considered as bedrock for Sustainable Development in Asia. Keeping in view, this study evaluates the importance of Rule of law for Sustainable Development policy planning in after taking into consideration of 12 Asian countries over the period of 1984 up to 2012. The analysis depicts that rule of law is primarily important for Sustainable Development policy planning in Asia. For empirical analysis, we estimated the results through dynamic panel data model approach.

**Keywords:** Rule of Law, UN Millennium agenda, Sustainable Development, policy planning, Asia, Dynamic Panel Model

### RESUMEN

Sustainable Development is currently overriding problem in UN Millennium agenda of 21<sup>st</sup> century. Recently, is considered purely a matter of rule of law. Rule of law are now considered as bedrock for Sustainable Development in Asia. Keeping in view, this study evaluates the importance of Rule of law for Sustainable Development policy planning in after taking into consideration of 12 Asian countries over the period of 1984 up to 2012. The analysis depicts that rule of law is primarily important for Sustainable Development policy planning in Asia. For empirical analysis, we estimated the results through dynamic panel data model approach.

**Palabras clave:** Estado de derecho, Agenda del Milenio de la ONU, Desarrollo sostenible, planificación de políticas, Asia, Modelo de panel dinámico

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## 1. INTRODUCTION

The achievement of Sustainable Development (SD) goals are overriding challenges of the 21st century. The question of sustainability is top priority in United Nation millennium development goals (MDG's). SD means "development that meets the present generation's needs without compromising the ability of future generations to meet their own needs". SD focuses on the importance of intergenerational equity of resources possible through efficient utilization of the resource (Bilbao-Ubillas, 2013). Sustainable production and consumption patterns can cause smooth transition of intergenerational resources (Loos et al., 2014). SD is now considered as genuine wealth of nations (Anielski, M. 2007). If investment in genuine wealth is positive, it means intemporal social welfare of society is rising over the time; (Toke S Aidt, 2003; Arrow, Dasgupta, & Mäler, 2003). In recent decade, the genuine wealth investment is problematic at global level where some countries are investing more while other countries are free riders having low level of genuine investment at the expense of future generation. In this way, free rider countries are facing serious challenges for achieving SD goals. One of possible way to mitigate these challenges is to consider the political interference and interest for achieving its SD goals (Toke S. Aidt, Castro, & Martins, 2016; Mebratu, 1998; Waage et al., 2015; Mohammadi & Jamali, 2017).

Recently, institutional factors have received paramount attention in context of SD (Kemp, Parto, & Gibson, 2005; Lele, 1991; North, 1990a, 1990b; Quental & Lourenço, 2012; Sohrabi, 2017). Although, a comprehensive and theoretical debate exist for the role of institutes in enhancing economic growth, a very few studies have investigated both theoretically and empirically the role of institutes in promoting SD. The findings of these studies are mixed in explaining the institutions-sustainable development nexus. Some studies indicate a positive relationship between institutions and SD. These studies have shown that rule of law, good governance, transparency and democratic quality influence SD positively (Behboudi, Beheshti, & Mousavi, 2011; Veisi, 2017; Brinkerhoff & Goldsmith, 1992; Carbonnier & Sumner, 2012; Opschoor & van der Straaten, 1993). Yet, some other studies have found that weak rule of laws impacts SD negatively (Pande & Udry, 2005). Similarly, a contradictory literature on governance and sustainable economic growth; either it enhances economic efficiency through rules or deregulations (Levy & Temin, 2007; Méon & Weill, 2010) while some studies indicate negative impact of corruption on SD (Toke S Aidt, 2003; Toke S. Aidt, 2009).

To the best of our awareness, the economic literature has paid less consideration towards studying the impact of political interference on SD. A very few studies have considered whether institutions are link with sustainable development, but empirical results are inconclusive. In the same manner, theoretical literature identified direct and indirect channel through which institutions influence SD. But, the empirical literature adopts the direct approach in examining the impact on sustainable development. The economic literature has paid less attention towards studying the impact of law enforcement on SD, especially focusing on the stages of development of countries. Furthermore, most of the studies that have evaluated the impact of law enforcement on SD are not grounded on a specific theoretical framework. In this study, we add to existing literature by examining overall consequences of rule of laws on SD assuming endogenous growth framework after following the studies of (Bovenberg & Smulders, 1995; Hofkes, 1996). For empirical evaluation, we use "System GMM" approach which is preferable for explaining cross sectional variations (Blundell & Bond, 1998). In this paper, we have considered Asian countries for empirical analysis. The Asian countries are interesting case study for empirical analysis due to several reasons. Asian countries are facing serious challenges such as lack of less government support and lack of proper infrastructure that is supportive to achieve sustainable development goals (SDGs) (Sarvajayakesavalu, 2015). Asian countries are continuously facing rule of laws problems which are signals for SD outcomes (Berg & Desai, 2013). A visit to Asian countries rapidly confirms that most states are weak and failure. These states are major source of human misery, unsustainability and global disorder. State effectiveness has now received practical attention in polices making, with focus on how to deal with asian countries having weak and failure states for achieving sustainable development goals(SDGs). A number of international actors such as international institute of sustainable Development (IISD), the World Bank, and United Nation developmental programmed (UNDP) have recently taken initiatives to target governance matters relevant to SD in developing countries.

The rest of this paper is arranged as follows; 2<sup>nd</sup> section describes the prevailing literature relevant to impact of rule of laws and sustainable development; 3<sup>rd</sup> section explains the data and its econometric methodology which is considered. While 4<sup>th</sup> section presents' econometric results and finally section 5 is relevant to summery and conclusion.

## 2. LITERATURE REVIEW

During the previous decades, the prime focus has turned from contiguous causes of growth in economies towards exploring the more major causes of SD. In the same manner, the significance of institutions in discussing across country differential in economic growth requires more attention from the researchers. Some important studies in this context include the study of (North, 1990a), the research work of (Jones, 1994). The concerned literature signifies the importance of rule of law role in economic growth. (North, 1981) defines institutions in a wider sense such as "the human designed constraints imposed by humans themselves". The primitive literature started from Adam Smith also highlights the role of governance for economic growth of a country. Adam Smith basically highlights the role of a state in relation to generating the role of administrative justice, easy tax generation and the alleviation of barbarism and social injustice in the form society that brings all activities in natural course of action<sup>1</sup>.

The economic literature dilated upon various channels through which laws can affect SD. First, formal institutions can affect SD by the way of rule of law (Kardos, 2012). The rule of law that is better should be based upon an independent and accessible, equitable and efficient legal system that promotes good governance with characteristics such as accountability,

<sup>1</sup>This Adam Smith quotat on is taken from Lecture in 1755 ht p://wwwadamsmith.org/

transparency and participation. The institutional efforts along with better rule of law promote good governance that in turn helps in achieving progress towards each goal of SD<sup>2</sup>. The laws can be linked with SD by an economic system based on property rights and transaction cost.<sup>3</sup> The security of property rights brings resource protection essential for SD (Acemoglu, 2010; Mazurova, 2017; Rodrik, Subramanian, & Trebbi, 2004; Bhattarai & Hammig, 2001; Knack & Keefer, 1995; Taylor, 1993). The laws impact SD through a level of transaction cost that includes negotiation and control costs well as market and managerial transaction cost that determines the structure for institutional governance (Platje, 2004). The laws are linked with SD through the channel of an enforcement system based on formal rules such as taxation and fines, imprisonment and fines for any illegal act of resource exploitation. The effect of the taxation is transmitted to SD through the financial capacity-building channel by the government's effective support to sustainable policies (Simmons and Elkins (2004)). In the case of the absence of formal and well-designed institutional mechanism, a high level of transactional cost is imposed in search of honest trading persons for formal agreements' enforcements (Shirley, 2005). Corruption impacts on the SD through production and consumption channel<sup>4</sup>. The indirect effect of corruption and clan politics is transferred through formal institutional quality channel<sup>5</sup>. On the basis of a theoretical framework, it can be inferred that laws impact on SD through various channels.

To best of authors' information, there are only a few studies those had focused specifically on the institutional laws impact on SD. (Pande & Udry (2005) provided the proof for a causative link between a collection of good institutional laws and long run growth which is more rapid. The micro level data of Ghana for institutions is used to determine as to how individuals respond to change economic and demographic pressures. The institutional laws of growth and development observed in cross-country analysis proved that long run growth is much faster in those countries which have higher number of quality focusing institutions, enhanced protection of private and public property rights, improved law enforcement, controlled central and governmental bureaucracy, smooth operating procedures in formal sectors and markets, consistent democratic structure along with high level of trust. It has been observed that an entity which is smaller than a country may postulate a consistent environment for a specific institution that can play a causal role for that institution. An alternative view point of Dietz, Neumayer, and De Soysa (2007)) studied the effect of quality and natural resources for institutional laws on adjusted and genuine savings in Arab Countries from 1984 to 200. The findings show that index of corruption has positively associated with Adjusted and Genuine Savings but the association of natural resources has negative effect in the long run. In order to deal with the endogeneity aspect, studies are now using variables which are instrumental. (Stoever, 2012) evaluates the impact of institutional quality on SD. He used adjusted net savings (ANS) which indicates for sustainable development.

The corruption impact is found to be negative on SD in African countries, which shows that the control of corruption is positively related to sustainable development. They use the adjusted net savings growth rate as proxy for measuring SD. A similar relationship has been observed in Asian countries, but the value of the magnitude of relationship b/w corruption and SD was less as compared to African countries. Abou-Ali & Abdelfattah (2013) evaluated SD and resource intensity measures by using the Millennium Development Goals (MDG) from World Development indicators which is based on a panel of 62 countries ranging from the period of 1990 to 2007. This interconnecting relationship is observed and analyzed with the estimation of Resource Curse Hypothesis (RCH) model and the Environmental Kuznets Curve (EKC) model at the same time while keeping on eye for the important institutional quality standards. The overall results suggested dealing of sustainability with MDG negatively associated with the quality of environment. The way the countries deal with this phenomenon is also important. Variables, such as investment ratio; inflation rate; education expenditure as well as institution quality were included as conditioning. The 3SLS technique was used with CO<sub>2</sub> which is taken as a standard to measure the quality of environment. Countries have to focus on having better rule of law in order to improve institutional quality. The results also indicate that institutions are not serious and concerned to improve the environment quality. Carbonnier & Wagner (2015) studied the impact of institutions laws inform of armed violence in 104 developing countries on SD. He finds negative effect of institutions on sustainable development. The result of the study supports that excessive resource extraction negatively impact on SD. The institutional law failure in developing countries has been observed which could not control the armed violence. Carbonnier & Wagner (2011) evaluated the effect of institutional quality on growth and development and come to the conclusion that institutions positively affect development. They use dynamic panel data as well as system GMM estimation, while covering 108 developing countries for the period of 24 years, with a span of 23 years ranging from 1984 to 2007. The result indicates that correlation exists b/w quality of institutional laws and the outcome resource extraction of development. The variables use constraints for political and executive powers with effective check and balance, type and extent of corruption, type of regime, conflict and armed violence along with negative effect of richness resources on SD. Corruption indicator is found to be negatively affecting the resource rich countries.

From the discussion of above literature which is also based on empirical surveys, it is concluded that oval literature failed to properly address the problem of endogeneity and biasness of omitted variables. This issue may cause the generation of inconsistent and biased parameters. Therefore, it is suggested that further investigation should be carried on to tackle such issues. In order to address such issues, the study adopted a dynamic panel analysis which is

<sup>2</sup>(Harris, 2001; Morita & Zaelke, 2005).

<sup>3</sup>(C. L. Anderson & Swimmer, 1997).

<sup>4</sup>There exists a contradictory literature on corrupt on and sustainable economic growth; either it enhances economic efficiency through rules or deregulations (Levy & Temin, 2007; Méon & Weill, 2010) while some literature shows negative impact of corrupt on on SD (Toke S Aidt, 2003; Toke S Aidt, 2009).

<sup>5</sup>The literature in this context includes (Svensson, 2009; Venard, 2013).

based on “System Generalized Method of Moments” (SYS-GMM).

### 3. DATA AND ECONOMETRIC METHODOLOGY

To find out the impact of institutional law on sustainable development, we use the data set of 12 Asian countries in the panel form starting from 1984 to 2012, taken on the annual bases.<sup>6</sup> We use adjusted net savings per capita in growth as sustainable development indicator, calculated from the adjusted net savings per capita as used in most of studies. The adjusted net savings per capita are derived from the division of adjusted net savings over the total population. The adjusted net savings excluding particular emission damage is taken from the WDI data source, which defines it as: “adjusted net savings” are equal to net national savings with addition to education expenditure, subtracted net forest depletion, mineral depletion and carbon dioxide and particular emission damages are excluded from this variable. The data on GDP per capita growth; GINI index; trade openness; public spending on education; health expenditure per capita and  $\bar{X}_i$  indicates fuel exports as an indicator of depletion of natural capital is also collected from the WDI data source. The selection of most appropriate estimation methodology is very important for attaining robust estimates results. For empirically estimation the impact of institution on sustainable development, we utilize panel data estimation techniques. It is important for allowing combination of different cross sections period, and it also provide more reliable results. Firstly, we use Fixe Effects Methods based on hausman test results. Furthermore, We use the System GMM to tackle endogeneity problem. It is advance form of GMM method widely used for the growth evaluation (Arellano & Bover, 1995) and (Blundell & Bond, 1998) and applied by (Bond, Hoefler, & Temple, 2001).

$$SD_{it} = \alpha + \beta LO_{it} + \gamma Z_{it} + \varepsilon_{it} \dots \dots \dots (1)$$

In below given model,  $SD_i$  indicates the average per capita sustainable development over the time period an  $SD_i$  subscript is for country specific starting from  $i = 1,2,3,4 \dots N$ . The variable  $Ins_i$  represents the level of institutional laws whereas  $z_i$  is a matrix explanatory variables which are left, and error term is represented by  $\varepsilon_i$ . In abovementioned model,  $\alpha, \beta$  indicate the parameters and  $\gamma$  indicates a set of the parameters of explanatory variables.

$$SD_{it} = \alpha + \beta LO_{it} + \gamma Z_{it} + \varepsilon_{it} \dots \dots \dots (1)$$

The above-mentioned specification does not take into accounts cross section specific effect which causes omitted variables biasness. The strict exogeneity independent variables are pre-condition completely violated. This problem can be tackled out through appropriate utilization of instruments (Islam, 1995). For appropriate tackling of time varying effects and endogeneity problem, Generalized Method of Moments (GMM) is most suitable method (Bond et al., 2001; Caselli, Esquivel, & Lefort, 1996). Now, we can write our panel model specifications such as:

$$SD_{it} = \alpha + \beta InsL_{i,t-1} + \gamma Z_{i,t} + \varepsilon_{i,t} \dots \dots \dots (2)$$

In the above-mentioned equation, the  $t$  subscript is for time dimension of variables. To capture the time invariant effects, the error term is distributed in this way given as:

$$\varepsilon_{i,t} = \Omega_i + v_{i,t} \dots \dots \dots (3)$$

In above error term specifications, it is represented that  $\Omega_i$  is for the time invariant components of error term and  $v_{i,t}$  is purely the time variant characteristics of component of error term. The panel model as mention in (2) takes the following form:

$$SD_{it} = \alpha + \beta InsL_{i,t-1} + \gamma Z_{i,t} + \Omega_i + v_{i,t} \dots \dots \dots (4)$$

The omitted biasness of variables can be solved by taking the first difference on both side of panel model as mention above. Thus, our panel model takes the following form

$$\Delta SD_{it} = \alpha + \beta \Delta Ins_{i,t-1} + \gamma \Delta Z_{i,t} + \Delta v_{i,t} \dots \dots \dots (5)$$

Whereas the following condition is applied  $\Omega_{i,t} - \Omega_{i,t-1} = 0$ . But, the endogeneity problem is introduced between  $v_{i,t-1}$  and the lag term of dependent variable  $SD_{i,t-1}$ . There is no difference between relationships of  $SD_{i,t-1}$  and  $v_{i,t-1}$  as mentioned in the above equation but here  $SD_{i,t}$  indicates the lag of dependent variable. We can write the model as given below:

<sup>6</sup> A list of countries is given in Appendix A.



$$ifSD_{i,t} = f(v_{i,t}) \Rightarrow SD_{i,t} = f(v_{i,t-1}) \dots \dots \dots (6)$$

Thus, the estimates produced through OLS method are biased, but for the sake of appropriation and the introduction of instrumental variables, they are essential (T. W. Anderson & Hsiao, 1981) highlight that  $\Delta SD_{i,t-2}$  as an appropriate instrument and later on  $SD_{i,t-2}$  considered most suitable instrumental variables. They propose a matrix of variables  $M = [Sd_{i,t-2}, \Delta X_{i,t}]$  consider that  $\Delta x_{i,t}$  depend upon exogenous variables. Further, they proposed more Instrumental variables  $SD_{i,t-2}, SD_{i,t-3}, SD_{i,t-4} \dots, SD_{i,t-k}$  which can be used (Arellano & Bond, 1991). The following moment restrictions are used

$$ifE(SD_{i,t-k} \Delta v_{i,t}) = 0 \text{ and for } k = 1, 2, 3, \dots, (T-1) \dots \dots \dots (7)$$

Where as:

$$(x_{i,t-n} \Delta v_{i,t}) = 0 \text{ for } n = 1, 2, 3, \dots, (T-1) \dots \dots \dots (8)$$

Thus, the two abovementioned models highlight that endogenous variables may be less than the number of instruments used. (Arellano & Bond, 1991) formulate a method based on two steps for an efficient way of combining the instruments with GMM method. The zero restrictions are assumed regarding moments' condition in the model (Arellano & Bover, 1995; Blundell & Bond, 1998). As the first step, all instrumental variables are taken in the vector form the Arellano and Bond (1991) methodology, as given below:

$$z^* = (SD_{i,t-2}, SD_{i,t-3}, \dots, \Delta V_t, \Delta V_{i,t-1}, \Delta v_{i,t-2}, \dots) \dots \dots \dots (9)$$

In the second step, the variance-covariance matrix in an inverse form can be represented where  $D_H$ , and GMM estimators are written as:

$$\xi_{GMM} = (XZ^* D_H Z^* X)^{-1} XZ^* D_H Z^* Y \dots \dots \dots (10)$$

The GMM estimators calculated from the two steps Arellano and Bond (1991) are more efficient and it also proposes most appropriate instruments for endogenous variables  $x_{i,t}$ . Thus, the system GMM is most appropriate method for taking endogenous variables into consideration

#### 4. EMPIRICAL RESULTS

We have empirically estimated the equation (21) to find out the impact of institutional laws on SD for 12 Asian countries during the time period 1984 up to 2012 by utilizing the Fixed Effects methodology. The empirically results are reported as mention in Table 1. Furthermore, the estimation has been carried out separately for a set of all countries that belongs to low and lower middle income countries. We have used utilize various test for assuring the appropriateness of estimated models. The overall results are in favor that estimated models are properly specified.

It is argued that the law and order situation of an economy works as a pre-requisite condition in promoting SD. The law is investigation of legal system strength and order is a judgment regarding popular observance as mentioned in law (ICRG, 2012). In the table 4.1 and table 4.2, law and order impact on SD is given. In the entire analysis, a set of explanatory variables have expected signs similar to that of literature in different models. Law and order shows a positive impact on SD in the case of full sample as well as economic development base distribution of countries. The estimated coefficient is 0.29 upto 0.43 that is positive and statistically significant at 10 percent level. The results imply that if there is a one percentage point enhancement in the law and order quality, then, SD is enhanced by 2.9 upto 4.3 percentage point.

The overall results as discussed in the tables 4.1 and table 4.2 represent that the quality of law and order impacts positively on SD. It means that the law and order is a binding force for people that they must adhere to public policies in regards to the natural resource conservation and its usages in a region. Thus optimal resource utilization in an economy brings social welfare in the context of achieving resource efficiency and optimality. The countries having low qualified citizens can improve institutions more rapidly. other reason is that countries having greater number of qualified citizens may respond negatively to institutional system by way of personal supremacy and interferences within system (Alonso & Garcimartín, 2013; Roelfsema & Zhang, 2012).

Further, we have taken numerous set of control variables for empirical analysis. In discussing the SD pattern, most economists highlight the importance of growth in physical stock and the GDP per capita growth uses growth in physical capital stock. The results indicate that the GDP per capita growth is negatively related to SD in asian countries, low middle income. The empirical evidence produced in the study also supported by resource curse hypotheses to the extent of Asian countries. It implies that most of developing countries are rich in natural resources but unable to properly

manage these natural resources for economic progression. Thus, it leads towards deterioration in the context of genuine savings for the upcoming generation in economy (Toke S. Aidt, 2011; Atkinson & Hamilton, 2003; Dietz et al., 2007). Furthermore, the GDP per capita growth measures the current economic activity and ignores social welfare aspects (health, safety, human rights). Thus the destruction of available resources in the quest of increasing the income level leads to unsustainable development in an economy (Toke S. Aidt, 2011). For assessing the role of social capital is essential for attaining sustainable development goals (SDGS) in Asian countries. For this purpose, the GINI index is used as an indicator. GINI index indicate negative impact on SD. The empirical evidence of our study is supported by the following studies (Hoseini, 2014; Tchouassi, 2012). The coefficient of trade openness has positive impact on SD in whole Asian countries and low and lower middle income countries. Thus, it can be argued that as developing countries follow neoliberal policies, the resource efficiencies are promoted in economies, which leads towards attaining SDGS in developing countries various empirical studies also point to the role of economic globalization for SD (Edwards & Tabellini, 1991; Harbaugh, Levinson, & Wilson, 2002). The coefficient of human capital have positive for SD. Most studies belonging to empirical literature confirm that human capital is a major source for enhancing SD by the way of economic progression in developing countries (Greene, 2008; Grossman & Helpman, 1993; Smulders, 2012). Thus, focusing on the per capita health expenditures leads to improving the social welfare of people through public interferences. The improvement in social welfare of people is considered as a vehicle for SD. The relevant empirical studies that support empirical analysis of our study (Pearce, Barbier, & Markandya, 2013).

**Table 4.1: Impact of Law and order on Sustainable Development in Asia: Fixed Effect Method: Dependent Variable (Adjusted Net Saving Per Capita Growth)**

Variables	(1)	(2)
	Country Specific	Country and Time Specific
LO_I	0.29* (0.17)	-0.003 (0.21)
Physical Capital	-0.92*** (0.11)	-0.99*** (0.07)
Social Capital	-0.16** (0.06)	-0.080*** (0.01)
Trade Openness	0.003** (0.001)	-0.001 (0.0009)
Human Capital	0.22*** (0.06)	-0.002 (0.02)
Health Expenditure	0.11* (0.06)	0.03*** (0.005)
Constant	-6.8*** (1.04)	-2.53*** (0.61)
Observations	172	172
R-squared	0.84	0.844
Hausman test	42.72(0.0)	7.16(1.00)
F values	138.04	198.04
Number of countries	12	12
Country FE	YES	YES
Year FE		YES

Note: Data period range from 1984-2012 with annually. Robust standard errors are in parentheses. \*, \*\* and \*\*\* denote significance at the 10, 5 and 1% levels, respectively.

Variables	(1)	(2)
	SYS-GMM1	SYS-GMM2
LO_I	0.4*** (0.13)	0.43** (0.19)
Physical Capital	-1.29*** (0.07)	-1.22*** (0.08)
Social Capital	-0.008 (0.03)	-0.03 (0.03)
Trade Openness	0.02*** (0.007)	-0.002 (0.002)
Human Capital	0.005** (0.002)	-0.02 (0.04)
Health Expenditure	0.07 (0.04)	0.03*** (0.007)
Natural Capital	-0.02*** (0.007)	

Constant	-4.38*** (0.91)	-3.65*** (0.70)
Observations	155	163
Number of countries	12	12
Wald Chi2 Value	1238.87	683
AR1 Test	0.0269	0.024
AR2 Test	0.126	0.124

Note: Data period range from 1984-2012 with annually. Robust standard errors are in parentheses. \*, \*\* and \*\*\* denote significance at the 10, 5 and 1% levels, respectively.

## 5. SUMMARY AND CONCLUSION

The main focus of this study is to identify the dynamic role of institutional laws for sustainable development in 12 Asian countries over the period started from 1984 upto 2012. This study uses theoretical model for better understanding the dynamic relationship between institutional laws enforcement and sustainable development. We have considered fixed effect and SYS-GMM estimation techniques for empirical analysis.

Thus it strongly support hypothesis that institutional laws should be prime concern for sustainable development in developing countries. The empirical results of the study strongly support the thinking marginal benefit of improvement in institutional laws in Asian countries. The laws, order, and democratic accountability improvement more affect more sustainable development in Asian countries. Therefore, it is compulsory that institutional laws and order should be given preference when designing policies regarding to achieve objectives of sustainable development.

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## About the historical and contemporary integration of art works in the fine arts of Uzbekistan

Sobre la integración histórica y contemporánea de obras de arte en las bellas artes de Uzbekistán

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### ABSTRACT

The article expressed an opinion about the historical and current state of the works of the monumental painting of Uzbekistan. Since ancient times, the development of monumental art works presented data on its origin. In particular wall paintings. As we know, monumental painting is a type of monumental art. At the present stage, it is closely connected with architecture. This painting is applied directly to walls, arches, floors, ceilings, windows, etc. It can be either the dominant feature of an architectural monument, or its decoration. However, this is the oldest type of painting. It has been known since the Paleolithic. Cave paintings, paintings in caves, created by primitive people, have been preserved on almost all continents. These monuments are very valuable, and sometimes the only source of information about the characteristics of cultures of different historical eras. The author analyzed the research and commentary of researchers on the the historical and current state of the works of the monumental painting of Uzbekistan and presented them in this article.

**Keywords:** Fine arts, history of art, pearls of art, the ancient art, medieval art, artists, and creators.

### RESUMEN

El artículo expresó una opinión sobre el estado histórico y actual de las obras de la pintura monumental de Uzbekistán. Desde la antigüedad, el desarrollo de obras de arte monumentales presentó datos sobre su origen. En particular pinturas murales. Como sabemos, la pintura monumental es un tipo de arte monumental. En la etapa actual, está estrechamente relacionado con la arquitectura. Esta pintura se aplica directamente a paredes, arcos, pisos, techos, ventanas, etc. Puede ser la característica dominante de un monumento arquitectónico o su decoración. Sin embargo, este es el tipo de pintura más antiguo. Se conoce desde el Paleolítico. Las pinturas rupestres, pinturas en cuevas, creadas por personas primitivas, se han conservado en casi todos los continentes. Estos monumentos son muy valiosos y, a veces, la única fuente de información sobre las características de las culturas de diferentes épocas históricas. El autor analizó la investigación y los comentarios de los investigadores sobre el estado histórico y actual de las obras de la pintura monumental de Uzbekistán y los presentó en este artículo.

**Palabras clave:** Bellas artes, historia del arte, perlas de arte, arte antiguo, arte medieval, artistas y creadores.

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Restoration, preservation and study of ancient monuments, which is a priceless treasure of Uzbekistan, is a matter of state policy. As we know, the magnificent colorful wall art created on the basis of the national architecture of our people, has a long history. From the earliest times the art of our country has been making a valuable contribution to the development of world culture. Peoples, nations, and also the arts of the times are intertwined and develop different patterns. That is why new trends, trends and styles are emerging in the art, and the study of the history of the magnificent painting, which has died in such a way.

The magnificent painting was the first of the ancient forms of art. During the development of mankind, both the East and the West have been successful and have attracted great interest. Today, a number of European countries are interested in the magnificent paintings of the Oriental people, and the peoples of the East are eager to explore the important sources of creativity of other countries. This type of art has been highly developed and prosperous in a number of popular areas, including China, the West-East, Asia. It is well developed, especially in European countries. (Applied Decorative Art. 2006)

In the people of east, one can see that this type of art is partly stagnant. If we pay attention to historical events, it is these monumental wall paintings that have changed the way people think. Today, the inadequate preservation of this type of works of the Oriental people arose as a matter of study. Therefore, the sources of creation are imagined through assumptions and hypotheses. From the above, we can conclude that despite the extensive study of the history and the present-day status of the magnificent painting, we can see that there are still many shortcomings. Therefore, the more we study this type of creativity, the more useful it becomes.

This type of art is the first source of information about the cultural life, ethnicity and everyday life of our people. The magnificent painting is shaped by ancient wall paintings, and its study should be based on the analysis of monumental art from the 4th to 20th centuries. (Stepanov G.P., 1984)

The way in which magnificent painting has gone from ancient times to the present day can be traced back to the centuries-old adoration of this form of art, and from the twentieth century to the present.

As for the versatility of art, this is naturally due to the diversity of artists' creative styles, each of which is a unique and distinct perception of the universe. Although the general forms of art in Uzbekistan may look quite different, we still see the artists' interest in cultural resources, the study and mastering of the achievements of our creativity, the history and beliefs of our ancestors, the beautiful land, and the rich heritage of the peoples who lived there.

The artists of Uzbekistan also avoid the artistic world scene. Charming artists are emerging from the background of national color and art, who contribute to the further development and enrichment of our art.

First and foremost, we need to look at history. The development of fine arts It appeared in the 4th century. In this era we see not only the development of painting or sculpture, but also the development of fine arts. Achievements of the first feudalism in Central Asia, an important cultural center in Uzbekistan, are fully reflected in the monumental-decorative painting, Afrosiab (Samarkand), Varakhsha (Bukhara region), Balaliktepa (Surkhandarya region). These paintings are marked by their ingenuity and vivid reflection of real life in artistic images. The remains and walls of the palace of the ruler of Varakhsha, found in the Bukhara oasis, are dated to the VII-VIII centuries. The hunting scenes are well preserved within the Varakhsha wall paintings. This photo depicts a lion's attack on people walking on an elephant, and this composition proves that the creator is a master of skill with his dynamic and colorful colors. The artist sought to make every image of the artist work in its entirety, to show every detail as accurately and as fully as possible. (Abdullaev N. 2007)

In 1965, archeological excavations of the legendary king Afrasiab palace near Samarkand caused a stir. This finding has once again demonstrated to the world that high culture existed in Central Asia during the first feudalism. The palace wall paintings are remarkable for their high skill. The importance of Afrasiab wall paintings is that along with the pictures, there are a number of words written in the letters of Soghd. The content of the wall paintings discovered in the archeological excavations at Afrasiab is even more striking. In front of the white elephant on the throne, the princess is holding the throne. Three women with dark hair, nails, and straws are following the elephant in the hands of the first of them, with clear words, called Suja (queen's new). The women are accompanied by two men armed with camels. Above is a picture of a horse-rider and four young swans. Their mouth and nose are tied with a white cloth. In the center of the wall is surrounded by cavalry, which is twice as large as other paintings. On the west wall of the rooms are those who have made valuable gifts in royal robes. The Afrasiab wall is not a fanciful vision of the artist, but it illustrates the historic event in Samarkand with the embassy's relations with the kingdom of Chach, Ferghana and Ustyurt.

The elegant embodiment of the early medieval painting (especially Samarkand) was occasionally solemn and sometimes exhilarating, the appearance of people as much as possible, and their movements and state of mind were tenderly expressed. Three-quarters of the faces, despite the complexity of their shapes, have a special emphasis on painting. The main characteristic of the technique, which enhances the overall beauty of the decor and images, is the combination of visual images in the decoration.

When you think of the monumental-decorative painting of the early feudalism in Central Asia, it is worth noting the pictures of the "Round Top" near to Termez and the "Childhood Peak" near it. The characteristic of these paintings has a monumental-decorative painting style of the period, which demonstrates that this art was high in the early Central Asian feudalism, and that there were different styles and trends in this art. In the first feudalism, applied arts were also developed.

If we look at the Dalvarzintepa wall, we can see the diversity of themes and their ingenuity. The development of this period in poster paintings and sculpture was influenced by various ethnocultural influences. One of the rare examples of fine art is the Baliktepa wall art. The characters are solemnized in the context of the historical atmosphere that exists. (Karabaev, U. 2009)

Nowadays, Uzbekistan has become increasingly interested in the interconnectedness of artistic experience in a broader sense, with new perspectives on different fronts related to the idea of color reproduction. Demand for liberty-based works is growing over time, which is at the heart of today's policy, which is indicative of increased emphasis on artists' work.

At the same time, it is worth noting that there are a number of challenges facing artists in the development of monumental art. In particular, it is important to create a modern creative school in this area, as well as to educate mature sculptors and architects who are widely thought of, deeply aware of our ancient history, national nature, and who are able to create all the features of their image. (I.A.Karimov, 2008)

Large-scale transformations, renewal and rise of new stage of development in Uzbekistan allow to make great discoveries in this area of art. The basic tenets of contemporary fine art in Uzbekistan, with a wide range of styles and a high level of mastery of images, are displayed from realistic traditions to avant-garde research, especially in monumental art.

In particular, one of such beautiful buildings can be seen on the main entrance hall of the Senate building the magnificent paintings of the great artist of our country, academician V.I. Burmakin. In these works, the composition is very complex, composed of the ornamental forms of the Sherdor madrassa, and when we look at his second work, the work is in an abstract way. The work is colorfully shaped, with upward strokes depicting the sunny paradise of our country.

Creating a magnificent and magnificent Palace of Forums building in the center of Tashkent has made a big difference in the history of our country. When we look at the exterior and interior of this building, we feel a sense of national identity. Speaking of the decoration of the "Palace of Forums" in the interior of the lobby of the foyer, People's Artist of Uzbekistan, academician J.G. Umarbekov created a monumental painting that led to a philosophical discussion under the guise of a "Uzbekistan for the Future. This invaluable work has contributed greatly to the development of national art of our country. The idea of the connection and influence of universal values is reflected in the magnificent composition of the artist himself. In the work, it is possible to notice a dramatic change in his painting style, the magnificence of the form, the inextricable meaning of composition and rhythm, and the vibrant atmosphere of light and air in the painting. In the book "Wise Man," Umarbekov tried to convey the idea of the development and advancement of human intelligence and knowledge through the ages of great minds and talents.

One of the most beautiful buildings in our city is a monumental painting in the Organ Hall of the State Conservatory of Uzbekistan. Created by *Khudayberganov*, the work is executed in a monumental painting, "Vitraj", where the interior of the building adds to the interior of the building, adding color to the music. Another monumental painting by Rustam Khudaibergenov, created in the upper part of the Senate lobby in the center of Tashkent, is also called "Tree of Life". The total volume of this work is more than 50 sq m and consists of three thematic sections in the form of triptych.

In the process of globalization, the form and the content of the national orientation must preserve its peculiarities in the emergence of a universal character and its manifestation in the world civilization. In this respect, the role of visual arts, which is increasingly embracing new forms and trends, is invaluable.

In conclusion, after Uzbekistan gained its independence, great efforts have been made to revive, preserve and promote the traditional art culture, fine and applied art created by our ancestors for millennia. One of the main criteria for the development of the magnificent painting art is freedom of choice, free choice of themes and styles, and most importantly, the opportunity to appeal to the rich traditions of our artistic heritage, and contribute greatly to the development of our spiritual world. During the years of independence, the magnificent painting did not stop despite the difficulties of the transition period. Along with the older generation, a number of works have been created that are boldly explored in the contemporary artistic process. In particular, J.Umarbekov, B.Jalolov, R.Hudoyberganov and A.Alikulov, the variety of works reflects the development of modern magnificent painting and national-cultural research. The works of these creators have been preserved not only for young artists of our country, but also as a cultural heritage, as a ritual of national culture and art to the spectators and tourists. After all, it is not an exaggeration to say that the art and culture of a nation determine its uniqueness.



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## Relationship among Online learning, Multimedia Instruction and Individualized Learning

Relación entre aprendizaje en línea, instrucción multimedia y aprendizaje individualizado

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### ABSTRACT

The quest for effective teaching-learning strategies and instructional approach in engineering communication skills has been a challenge to educators throughout the world. Students must be in the centre of learning in any effective approach to cater for each individual to achieve the predetermined objectives. This study aimed at designing, developing and implementing a new online individualized multimedia instruction framework for engineering communication skills. The questionnaire has three sections to assess individualized instruction, multimedia instruction and online learning. Overall reliability using the Alpha Cronbach test and the Rasch Model analysis together with expert reviews for the content validation of the questionnaire, suggested that the questionnaire is reliable and valid to measure the OIMI model. Data collected from 166 engineering learners were tested with confirmatory factor analysis using AMOS to obtain three best-fit measurement models from the three latent variables. Subsequently, the structural equation modeling was applied to test the hypotheses. The results showed a strong relationship between Online Learning and Multimedia Instruction, and a negative relationship between Individualized Instruction and Multimedia Instruction.

**Keywords:** OIMI, Individual Instruction, Online Learning, Multimedia Instruction.

### RESUMEN

La búsqueda de estrategias de aprendizaje de enseñanza efectivas y un enfoque de instrucción en habilidades de comunicación de ingeniería ha sido un desafío para los educadores de todo el mundo. Los estudiantes deben estar en el centro de aprendizaje en cualquier enfoque efectivo para atender a cada individuo para lograr los objetivos predeterminados. Este estudio tuvo como objetivo diseñar, desarrollar e implementar un nuevo marco de instrucción multimedia individualizado en línea para las habilidades de comunicación de ingeniería. El cuestionario tiene tres secciones para evaluar la instrucción individualizada, la instrucción multimedia y el aprendizaje en línea. La confiabilidad general usando la prueba de Alpha Cronbach y el análisis del Modelo Rasch junto con revisiones de expertos para la validación del contenido del cuestionario, sugirió que el cuestionario es confiable y válido para medir el modelo OIMI. Los datos recopilados de 166 estudiantes de ingeniería se probaron con análisis factorial confirmatorio utilizando AMOS para obtener tres modelos de medición de mejor ajuste de las tres variables latentes. Posteriormente, se aplicó el modelo de ecuaciones estructurales para probar las hipótesis. Los resultados mostraron una fuerte relación entre el aprendizaje en línea y la instrucción multimedia, y una relación negativa entre la instrucción individualizada y la instrucción multimedia.

**Palabras clave:** OIMI, Instrucción individual, Aprendizaje en línea, Instrucción multimedia.

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## 1. INTRODUCTION

The location of study is Al al-Bayt University in Jordan. It offers a bachelor degree in architecture, civil, and surveying engineering. The current practice of engineering communication skills can be classified as instructors led instructions. Classes proceed with application tasks, case studies, or discussion of communication practices. Students and staff alike often complete these classes wondering if they are just pretending to communicate. In reality, engineering education traditionally rely on technical skills, more than communication skills (Corrello 2012). Engineering instructors teach engineering communication skills with deficient or inappropriate teaching and lack of opportunity for engineering students to practice communication skills. Methods of teaching engineering communication skills are considered as insufficient (Mehra & Virgandham, 2013; Veerasamy 2010).

Engineering students are learning the technical skills they need in the classroom, but they need more communication skills training (Nasir et al., 2018; Nicometo et al., 2012). Thus, insufficient and unsuccessful online engagement reflect defectively on the individual and the profession (Baharudin et al., 2018). The insufficient level of engineer communication skills are due to engineering communication skills instruction (Riemer 2007). Rayan and Shetty (2008) emphasized that the training should focuses on particular area, and training should be individualized. Nordan (2013) in his study drawed attention to the need for technical communication skills in order to allow engineering graduates to adjust to their employer's demand and achieve their future career goals. A gap between learning and practicing engineering communication skills demand in engineering education do exist. Understanding the main reasons for this gap, universities should adopt an integrated approach to enhance engineering communication skills. The quest for effective teaching and learning strategies, and instructional approach in engineering education in general has been one of the challenges that continue to be of interest to educators around the world (Al Mashakbh et. al. 2013; Ahmad et al. 2016; Zainal et al. 2018).

Online multimedia instruction has the ability to increase learner motivation by providing both greater learner autonomy and increasing options for support (Azizul & Din 2016; Gabarre et al. 2016). Its benefits may vary from simple e-mail lists, through multifunctional virtual learning environment, to totally adaptive learning environment (Khalid et al., 2016; Moore et al. 2011). Despite the large volume of research published at this time on online learning, neither had tried to develop a model to individualize learning connecting OL, II, and MI models together specifically in engineering communication skills. Therefore, this study investigates the relationships among the variables within a multivariate model of individualized instruction, online learning, and multimedia instruction for engineering communication skills. The following hypotheses was developed to test:

H1: Multimedia instruction influences towards individualized instruction

H2: Multimedia instruction Influences online learning

## 2. METHODOLOGY

This study adopts mainly a quantitative research approach. The target population was from Al-Bayt University undergraduate engineering learners' participation in three engineering communication skills courses (engineering communication skills course, the provisions of the building and skills practice of the profession course, and technical skills course). The sample was 166 engineering learners in the first semester of an academic year and were selected purposively with the acceptable of the sample size (Loehlin, 1992; Hoyle, 1995).

The need analysis study was conducted as an early sub study involving a small-scale quantitative research using the open-ended questionnaire. A task analysis for blackboard interfaces and media was conducted to ensure whether the modules used fit learner needs and to make sure, the suitability of individual learner pace. The respondents rated the subtopics in terms of the consequences of incompetence in certain areas. Four scales were provided starting with "not significant" (0 marks), "significant" (1 mark), "serious" (2 marks) and "disastrous" (3 marks). The average rating for twenty-seven of the subtopics were "significant" while three subtopic, Intercultural interdependence communication, Minimizing bad listening habits and Building positive workplace relations received an average rating of "serious". Additionally, the respondents were asked to rate the importance of each subtopic. Four scales were provided starting with "not relevant" (0 marks), "not important" (1 mark), "important" (2 marks) and "critical" (3 marks). Twenty-two subtopics received an average rating of "important" while the other five subtopics received an average rating of "critical". As a result, all significant subtopics that received a rating of "significant" and "important" were delivered online while all "critical" subtopics were delivered online with additional activities. This was done despite the fact of whether the subtopics received a rating of significant, disastrous or serious because of incompetence.

Thirty modules were listed. The respondents were asked to rate the subtopics in terms of the Satisfaction level. Four scales were provided starting with "not satisfied" (0 marks), "natural" (1 mark), "satisfied" (2 marks) and "very satisfied" (3 marks). The average rating for twenty-three modules were "very satisfied" while seven modules received an average rating of "satisfied". Additionally, the respondents were asked to rate the importance of each module. Four scales were provided starting with "not relevant" (0 marks), "not important" (1 mark), "important" (2 marks) and "critical" (3 marks). Twenty-six modules received an average rating of "important" while the other four modules received an average rating of "critical".

The course structure and contents, especially the learning matrix, were developed and redeveloped based on experts' agreement on overall comments and suggestions. (ii) Authoring and developing the courses activities, this was done using Blackboard Course Management System corresponding to learners' paces (e.g., lectures, assignments, examples, exercises, self-assessment tests, feedback, discussion forms, course outline, calendar, useful link, and questionnaires); In addition, during this stage numbers of media file were selected and develop based on learners pace. (iii) Designing and developing the individualized engineering communication skills course portal on backboard course management system. This research

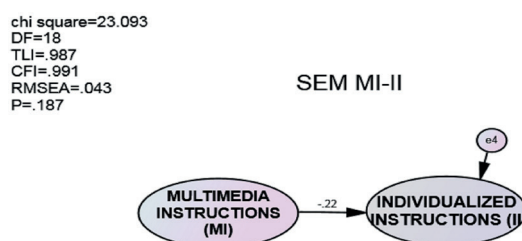
used two approaches for evaluation; formative and summative evaluation. The formative evaluation throughout the instructional development process was used to ensure that the model achieves its stated goals and objectives. One evaluation method for online educator to consider, as suggested by Willis (1992), is to give students number of assignments, self-assessment test, exercises, and a feedback. Summative evaluation was addressed using a survey study to collect necessary information about confirmation factors, which are assumed to influence the formation of II, MI and OL.

This study proposes a system development framework to develop learning and teaching environments within the online individualized multimedia model for engineering communication skills course. The new developed delivery system consists of multi stages corresponding to student, instructor and administration. This research used two main instruments to develop the I-OIMI model for engineering communication skills and to answer the research questions. The OIMI model for engineering communication skills using participative design and validation method includes the six phases of the research design such as design, development and validation (Din, 2010). The Index of Learning styles (ILS) questionnaire, which was developed by (Felder & Silverman 1991, 2002) consists of 44 questions that specialize in four dimensions of learning styles was adopted to check empirically all two hypothesized relationships where II-22items, MI-31 and OL-26). The measurements scale is a Likert-type scale, which has 1 to 5 scales; 1 equals “strongly disagree” and 5 equals “strongly agree.”

The content validity of each section of (I-OIMI) was established by conducting the systematically reviews related literature, interaction analysis, document analysis, and Experts’ judgments. The content validity index (CVI) in this study was determined to be 0.78 (i.e. 78%) or above which is in the acceptable value as suggested by Beck and Owen (2007). Therefore, the reliability of the II, MI, and OL measure were established by employing the internal consistency (Cronbach Alpha) approach where their values was more than .80. The overall analyses suggested that the instrument was reliable to measure these three constructs. To evaluate the adequacy of the II, MI and OL measures for engineering communication skills, the data were analyzed using WINSTEPS (Linacre 2003), a computer program for Rasch Model. Subsequently data were collected using the validated instrument with a acceptable reliability index. Structural Equation Modeling was used to analyze the data to answer the research hypotheses.

### 3. RESULT AND DISCUSSION

On one hand, the results showed that the SEM procedures supported the theoretical framework. The results as shown in Figure 1 suggest that II was related to the MI where multimedia instructions influences individualized instructions. However, the relationship of .22 indicates a moderate influence of MI towards II. No single method can be said to be globally effective because learners differ in preferences and interest. Combining the II method with other methods such as MI will increase the possibility for instructors to approach the needs of more students and to help them develop and reach their learning goals (Okeakwa, 2011).

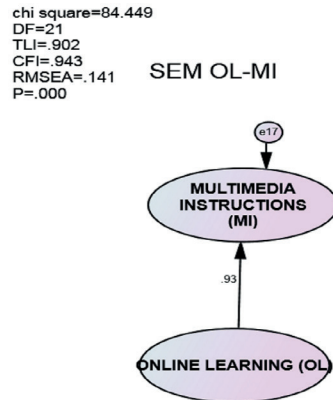


**Figure 1. Revised Structural Model Showing MI and II Relationship**

Specifically, the test calculated that the CFI (.991) fit indicator exceeded the threshold of .90, while the TLI index of .987 fall between the typical range of 0 and 1, hence meeting the threshold of .90 to indicate a good fit (Hair et al. 2006; Arbuckle 1997; James et al. 2006). The root-mean square error of approximation (RMSEA=.043), chi-square (  $\chi^2$  ) 23.09 with DF 18 (normed chi-square (  $\chi^2/df$  ) =1.16) and p value of .187 (normally acceptable  $p > .05$ ) indicate a good fit (Arbuckle 1997; James et al. 2006; Hair et al. 2006). The beta value of .22 indicates which is larger than the required 0.2 value shows a direct influence between MI and II exists. The test failed to reject the hypothesized model. Thus, the procedures established a model showing MI influences II as in Figure 1. In other words, as MI goes up by 1 standard deviation, II goes down by .22 standard deviations. The result did not establish any basis, which can be used to claim that (MI influences the achievement of II) is incorrect. Thus, the result of this study was consistent with the literature of MI and II that the MI help create a student’s centered learning environment which provides students with an opportunity for more individualization in the learning process.

On the other hand, the results as shown in Figure 2 suggest that OL was related to the MI. Online multimedia instruction can contribute to provide students with options regarding their learning. Moreover, online multimedia instruction provides students as well as instructors a systematic framework to implement, use, repeat, and redevelop the pace of instruction, methods, and contents to individualize the instruction (Genden 2005). According to Junaidu (2008), students systematically perform far better in queries related to the demonstration of understanding and the application of algorithms that have been carefully animated. Students’ comments have typically been that they found the course a lot easier when the first major examination happen and as they study the rather more heavily animated parts of the course subsequently. In other words, MI can improve the online experience and improve the ability to learn and retain information. The quality of the online multimedia instruction depends upon the use of good design principles; students can improve test performance and improve the transfer of learning if they are exposed to well

design MI (Genden 2005) in an online environment.



**Figure 2. Revised Structural Model Showing OL Influence on MI**

The result did not establish any basis, which can be used to claim that (OL influences the achievement of MI) is incorrect. The results indicated that the CFI (.943) fit indicator exceeded the threshold of .90, while the TLI index of .902 fall between the typical range of 0 and 1, hence meeting the threshold of .90 to indicate a good fit (Hair et al. 2006; Arbuckle 1997; James et al. 2006). Root-mean square error of approximation (RMSEA=.141), chi-square ( $\chi^2$ ) 84.449 with DF 21 (normed chi-square ( $\chi^2/df$ ) =4.1) and p value of .00 (normally acceptable  $p > .05$ ) indicate a good fit (Hair et al. 2006, Arbuckle 1997, James et al. 2006). The factor loading of OL towards ML is .93. Overall result indicates that the test failed to reject the hypothesized model Thus, the procedures established that the OL was related to the MI model in Figure2. Hence, the result of this study was consistent with the literature of MI and OL that using OL environment suits MI and vice versa. OL can help to create a student centered learning environment providing students an opportunity to be more active in the learning process.

#### 4. CONCLUSION

The purpose of this study is to establish a theoretical framework that validly and reliably represent the OIMI model for engineering communication skills. These findings are associated with an integrated learning and teaching environment that allow for more socialized interaction. This study assisted engineering learners with differentiated learning style preferences to learn and practice engineering communication skills knowledge by integrating; OL, II and MI theories into the learning environment via Blackboard Course Management System. This conception represents a major adjustment in the way engineering faculties have usually developed engineering communication skills. Overall, the OIMI model will not replace, eliminate, or displace formal learning. Teaching institutions will still need to create, deliver, provide, set learning outcomes, prepare course outlines and reports on official recognition and conformity initiatives.

In conventional engineering communication skills settings, teachers spend much more time teaching in content presentation. This activity usually takes the form of lectures. Moreover, students consume much more effort in their studies in taking down lecture notes. Irrespective of whether this is a good or bad educational practice for engineering communication skills learning; it is certainly an inefficient and ineffective use of teachers' and students' time. There are surely, several more efficient and effective ways of teaching and learning engineering communication skills. Engineering communication skills needs more active and individualized instructional environment, based on learners pace. Students in OIMI model settings are doing more than they did in conventional systems. Experience is the best teacher, and a student's activity is the experience by which he learns. II is attained through the socialized learning environment. Establishments of interactive communications to over come the distance between learners themselves and with instructors, often is so accurate. Neglecting the improvements of learning opportunities in engineering communication skills at the university level can lead to a low level of understanding in the engineering education. Thus, embedding more technology in learning and teaching engineering communication skills can lead engineers to be part of the contemporary globalized world.

The present study expands the existing body of knowledge in several ways. Firstly, the positive of OIMI model for engineering communications skills learning to reach predetermines learners' objectives. Secondly, the learners appear to be enhanced to use new technology. To sum up the model is projected to be able to fit the data from other similar courses with the same characteristics offered by any other university in the world.

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## Formation of social interaction competence of future specialists of the management sphere

Formación de la interacción social competencia de futuros especialistas del ámbito gerencial

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### ABSTRACT

Trends in the economic situation development in the Russian Federation determine the basic requirements for graduates of Russian universities in the direction of “management” training, whose professional competence depends directly on the level of mastering communication skills and social interaction skills. The social interaction competence for managers is the key one in the formation of professional competencies and affects the decision-making of many professional tasks. The social interaction competence plays an important role in the management personnel training, because they have a need for constant interaction with people, staff and clients. Lack of social interaction competence can lead to failures in professional activities. Thus, the bachelor of management should have not only knowledge in the professional sphere, but also be able to interact with various specialists, clients and partners, carrying out high-level social communication that can affect effectively the result of professional activity.

**Keywords:** manager, social interaction, effective professional activity, skills, competencies.

### RESUMEN

Las tendencias en el desarrollo de la situación económica en la Federación de Rusia determinan los requisitos básicos para los graduados de las universidades rusas en la dirección de la formación de “gestión”, cuya competencia profesional depende directamente del nivel de dominio de las habilidades de comunicación y de interacción social. La competencia de interacción social para los gerentes es la clave en la formación de competencias profesionales y afecta la toma de decisiones de muchas tareas profesionales. La competencia de interacción social juega un papel importante en la capacitación del personal de gestión, ya que tienen una necesidad de interacción constante con las personas, el personal y los clientes. La falta de competencia de interacción social puede conducir a fallas en las actividades profesionales. Por lo tanto, el licenciado en administración debe tener no solo conocimiento en el ámbito profesional, sino también poder interactuar con varios especialistas, clientes y socios, llevando a cabo una comunicación social de alto nivel que pueda afectar de manera efectiva el resultado de la actividad profesional.

**Palabras clave:** gerente, interacción social, actividad profesional efectiva, habilidades, competencias.

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## INTRODUCTION

The definition of the concept of “social interaction competence” has no clear formulations so far, but in order to understand the essence of this concept, the properties and attributes present in it, it is necessary to study the evolution of the concept of “competence” and “social interaction”. The concept of “competence” is actively spread, studied and supplemented by teachers, researchers, sociologists and managers. According to the philosopher V.P. Kokhanovsky, on the dialectical side, interaction can be defined as a philosophical category that reflects the process of influence of one object on another, the level of mutual conditionality, possible changes or emergence of a new object. The true properties that characterize the object appear and are known in the process or as a result of interaction with others. The process of interaction is an integrating factor by which the individual parts are combined into a single system. Interaction acts as an objective and universal phenomenon, through which the material integrity of the world is formed. Social life is represented by many complex forms of interaction, the main of which is the interaction of people with each other. They allocate some categories of interaction, which may be a cause, consequence, connection, development, contradiction, etc. Under the version of I.I. Zhbankova the interaction can be considered in four aspects such as ontological, epistemological, methodological and logical. For the study the most appropriate aspect of the interaction process is methodological.

## LITERATURE REVIEW

The analysis of curricula, work programs and funds of assessment means of students training of the “Management” training direction allowed revealing a lack of using active, group, project and interactive methods of training that leads to insufficient mastering of social interaction competence, and also to a weak level of the graduate’s readiness for professional activity on a workplace (Abuzjarova, 2018; Ashmarov, 2018; Aminova & Tsakhaeva, 2018; Badakhov, 2017; Bolotin et al., 2017; Borisov, 2018; Borisova et al., 2018; Borovikova, 2017; Khosravipour et al., 2018; Saedi & Safara, 2017).

The problem of formation of social interaction competence in the process of professional training was raised in many studies of both Russian and foreign authors. To date, a sufficient number of studies related to educational activities aimed at training competent professionals, who master a number of skills and abilities that ensure a successful professional future, were conducted (Gadzaov & Dzerzhinskaya, 2018; Gadzhieva, 2018; Gasanova et al., 2017; Gnatyuk & Pekert, 2018; Ilkevich & Medvedkova, 2017; Kobets, 2017; Kryuchkova, 2018; Kuznetsov et al., 2018; Sadeghpour et al., 2017; Monteiro, 2017).

O.S. Vikhansky, L.I. Korneeva, V.M. Shepel, etc. pay attention to the question of the basic components of the manager’s professional efficiency; H. Holeman, R. Boyatzis, E. McKee, etc. – to the psychological development of the manager’s personality; H. Gregory, G.I. Ibragimova, G.V. Panasenko, etc. – to the improvement of intellectual and moral qualities of representatives of the profession; N.A. Berdyaev, M.S. Kagan, E.R. Tagirov, etc. consider the individual aspects of manager’s professional activity; A.Ya. Kibanov, H. Ford, F. Taylor and others – core traits and temperament of the “typical manager”; E.Yu. Ayrapetyan, O.S. Vikhansky, A.M. Zobova etc. – substantial specifics of professional training of students of the “Management” specialty.

The main problems in the implementation process of professional competence formation were considered by V.A. Bolotov, I.A. Zimnyaya, V.S. Lednev, N.D. Nikandrov, and R. White.

Formation of the social interaction competence was considered by V.I. Andreev, L.P. Bueva, A.A. Bodalev, S.G. Vershlovsky, M.A. Galaguzova, L.K. Geykhman, B.S. Gershunsky, M.V. Gukovskaya, and V.S. Mukhina.

However, the variety of approaches in the study of the principles and methods of formation of the social interaction competence does not reveal the structure of the process of formation of the social interaction competence of bachelors of management in training at the university (Moiseenko, 2017; Narkevich & Narkevich, 2018; Novikov, 2017; Osipova, 2018; Popov, 2018; Pozharskaya & Deberdeeva, 2017; Schwarzkopf, 2018; Sergeev & Trubakova, 2017; Tsakhaeva et al., 2017; Vernigor, 2017).

## PROPOSED METHODOLOGY

Having analyzed the literature reflecting the problems of competence and competency, we can say that the concept of competence is used in the case of:

- Description of the educational process result, which determines the level of training, mastering of methods, ways and means of activity, as well as the ability to solve the tasks;
- Formation of a set of knowledge, skills and abilities to determine and achieve specific goals for the effective development of activities;
- Determination of the set of properties, motives, beliefs, values that contribute to the performance of professional activity;
- Identification of the candidate’s compliance with the requirements.

Based on this, we can say that competence is a property of the individual, the ability of the individual to solve specific problems, their knowledge, skills and abilities necessary for the implementation of a certain professional activity.

Having analyzed the concepts of the term “competency” we can focus on some features:

- Competency refers to the specific area in which the person in question is a professional or expert.
- Specific competency determines the characteristics of the individual, their professional tasks, determines the list of means and methods of action in different situations.
- Competency is the basic characteristics of the individual, their stable qualities, which can predict human behavior in specific professional and life cases.
- Competency is the result of education and depends on the quality of graduates.

By combining all the above features we can say that competency is a process of interaction between existing knowledge, skills and abilities, and also personal individual qualities in the solution of professional problems, the assessment of which is on the eligibility criteria for the specific competence.

As a result of the analysis, it can be concluded that competence and competency are inseparable concepts that exist and are defined in the process of interrelation, competency must meet the requirements of competence. Competence can be formed and created by heads of enterprises, potential employers, while competency is formed and developed in the process of future managers training.

Having defined the interpretations of the concepts of “competence” and “competency” it is necessary to determine what meaning is made in the concept of “social interaction”. Theorists and practitioners, studying this concept, did not come to a consensus about what is meant by social interaction. However, the multiplicity of approaches in the study of social interaction, both from domestic and foreign authors allowed determining its essence.

Interpretation of the term “social interaction” is variable due to the fact that it is used in various fields such as political science, economics, sociology, philosophy, pedagogy, etc. First of all, it is necessary to highlight the essence of the concept of “interaction” from a philosophical point of view, but rather as a reflection of the universal essential connection of all living things. S.I. Ozhegov and N.Yu. Shvedova’s Explanatory Dictionary of the Russian language defines interaction as “mutual relations between someone or something”, describing from the point of view of mutual communication of phenomena. Thus, the interaction is based on the principle of “subject-subject”, which is based on social relations. Domestic and foreign scientists, trying to clarify the nature of social relations and competency, identify various components of social interaction competence of the individual.

Being revealed on the basis of the analysis of pedagogical and psychological literature the following structure is the most complete: *motivational component* (i.e., motives that encourage the manifestation of personal properties in activities, human behavior, social tasks, implementation of rules and norms of behavior), *cognitive component* (i.e., knowledge of the means, methods, programs of action), *activity component* (i.e., the ability to act in a variety of standard and non-standard situations) and *axiological component* (i.e., value-semantic attitude to social interaction).

Motives and goals, first of all, are the basis of human social interaction. The motives that determine the human need for social interaction are allocated to a special group, this is due to the fact that the goals, which are directed by these motives of action, can be implemented only in interaction with other people, they are dominant and are called social motives.

The meaning of social interaction is revealed under the condition of inclusion of individuals in some common activity, carrying out which they pursue certain goals, perform jointly actions and operations. The level of development of social interaction competence of individuals is manifested in the successful performance of the following skills: 1) ability to define goals and build a target hierarchy of social interaction; 2) ability to search and exchange information; 3) ability to analyze social situations, act in accordance with personal and public benefit; 4) ability to develop various programs of interaction, design and model them in practical forms, implement them in specific activities. Value-semantic attitude of the person to social interaction gives it meaning and direction.

It should be noted that the realization of values is the realization of relations, and social values determine the basis of social interaction in the person entering into interpersonal relations. Under the influence of the social environment, personal values are formed, especially those of the social groups in which it is included, these are values such as: duty, responsibility, kindness, interest, freedom, mutual understanding, cooperation, justice, people, tolerance, support, success, empathy, mercy.

## RESULT ANALYSIS

The model of formation of social interaction competence of future specialists of the management sphere has the following components: 1. The motivational-value component includes the formation of attitudes to social interaction as a socio-pedagogical value. 2. The cognitive component includes a system of integrated psychological, pedagogical and social knowledge about the social interaction competence. 3. The social-activity component includes a system of special skills that ensure the readiness of the bachelor-practitioner to implement effective social interaction in professional activity. 4. The communicative component includes a system of interpersonal communications, interpersonal interaction, intensification of social relations, expansion of the field of communication. Thus, as a result of the study, the definition of the social interaction competence of the future specialist of the social sphere was formed – this is the presence of socio-pedagogical characteristics of the personality of the manager, representing the formation of attitudes to social interaction as a socio-pedagogical value, a system of integrated psychological, pedagogical and social knowledge about the social interaction competence, special skills that ensure the readiness

of the graduate student to implement effective social interaction in professional activity, interpersonal interaction, manifested in their willingness and ability to carry out social interaction with representatives of different categories of the population, providing future bachelor successful self-realization in professional activity. The model of formation of social interaction competence should be focused on the formation of general professional and special knowledge, abilities, skills, ways of their implementation in professional activity; it assumes the expediency of the educational process organization so that the whole, that is, the educational result, would not be equal in importance to the sum of its individual parts, and represent a single holistic system.

The model of formation of social interaction competence is developed taking into account the general scientific and theoretical provisions, in particular competence, socio-pedagogical and axiological approaches. *The competence approach* strengthens the practical orientation of education, the need to strengthen the emphasis on the operational, skill side of the result. The competence-based approach expands significantly the content of education with its own personal components, which makes it humanistically oriented. The competence approach allows investigating the social interaction competence from the position of three levels of methodological analysis – general philosophical, general scientific and specific scientific. On the philosophical level social interaction competence is seen as part of an integrated system of personal properties, where an essential element is the goal-ideal, and the process of formation – as personal growth changing, which suggests the temporal aspect of competence formation at the stage of learning at the university. The general scientific level makes it possible to consider the formation of the social interaction competence as a procedural and effective phenomenon, to judge the effectiveness of the result, assumes the mandatory inclusion of evaluation procedures for the formation of the social interaction competence in the educational process. At the specific scientific level, the role of key competencies in the professional training of the future manager is actualized, the importance of the social interaction competence as a key professional competence of the manager is emphasized. *Socio-pedagogical approach* allows identifying different activities that determine the level of development of the individual as a subject of socio-pedagogical interaction with society. The formation of the social interaction competence in the educational process is correlated with the idea of holistic development of personality in unity with motivational, cognitive, activity, communicative components, and the formation of socially necessary personal qualities (social responsibility, social activity, tolerance) is carried out by making systemic changes in the organization, content, forms and methods of vocational education. *The axiological approach* allows considering the personality as the highest value, and the formed social interaction competence as result of achievement by the personality of high level of readiness for implementation of social interaction in professional activity; gives the chance to actualize motivational and valuable aspect in the process of formation of social interaction competence. The developed model is a multi-level, organized system that allows organizing real educational processes and phenomena; perceiving them holistically, designing the model as an “intermediate” link between theory and practice, opening the way to theoretical understanding and experimental research, providing a logical transition of the studied problem into reality. To build a model, you must set criteria. In search of criteria of social interaction competence it is necessary to be guided by the fact that criteria express an assessment of compliance of social interaction competence to public requirements. The criterion of social interaction competence should reflect: system, integrity of social interaction competence; the way of essential interrelation of elements. With the main criteria for the formation of social interaction competence we can determine: the presence of socio-pedagogical knowledge; skills of implementation of socio-pedagogical knowledge and socio-pedagogical technologies in practice; the ability to systematize empirical material; the presence of professional and pedagogical thinking; emotional stability; mastering of speech and written skills; the need to help others; the need for contacts, interest in the results of the group; the presence of a complex of social qualities (social responsibility, social activity, tolerance).

## CONCLUSION

As a result of research three stages of formation of social interaction competence are allocated.

1. Value stage. The main objective of the value stage is the implementation of purposeful formation of the complex of social qualities and the system of special needs and abilities of social interaction; the formation of the orientation of students' motivation for socio-pedagogical activity, the profession of manager, the social interaction competence as a socially necessary value. The importance and necessity of this stage is explained by the fact that the activity only becomes meaningful for the person when the motive of the activity coincides with its subject. The result of the stage is a formed system of knowledge about the social interaction competence as a socially necessary value, attitude to the profession of manager and social activity as a value in real society.

2. The next stage we define as *activity*, whose task is to improve the educational process for the effective formation of the social interaction competence on the basis of assimilation of technologies of social and pedagogical activity, integration of cultural, special and social knowledge; general professional and special skills of social and pedagogical interaction implementation; determination of the most optimal forms of organization of educational, cognitive, public and social activities aimed at the formation of the social interaction competence. This stage involves the formation of students' skills to integrate knowledge of various fields of sciences, which form the cognitive basis of the social interaction competence in the classroom and in extracurricular activities on the basis of educational institutions, centers of additional education, management structures. The result of this stage is the formation of students' system of integrative socio-pedagogical knowledge about the social interaction competence and formed on the basis of their subject-activity and special skills to carry out social interaction in practice, the accumulation of individual experience.

3. Social stage. At the social stage the organization of use of potential opportunities of society, realization of skills of social interaction and approbation of social and pedagogical technologies in real activity of various establishments is carried



out. At this stage, there is an active inclusion of students in the real professional activities of institutions. The result of the social stage is the formation of a system of basic social qualities (social activity, responsibility, tolerance), social abilities and social needs that determine a stable social position, social status, ensuring the adaptation of the future manager to the conditions of a constantly changing society.

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**The main peculiarities of forestry terms: its significance in linguistics**

Principales peculiaridades de los términos forestales: su importancia en la lingüística

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**ABSTRACT**

This article outlines the place of forestry terms in linguistics, its importance and features in speech and language. Comprehension of the terms and the ideas on the differences between the terms and simple words are discussed hereby too. Due to less study of forestry terms in Uzbek linguistics the aim of the article is directed to compile forestry terms, to get them in one order, to study the names of the trees that make the forests, landscape, feed and raw materials. During the years of independence many changes have undergone in science. Radical changes of social life have caused to the introduction and implementation of new terms.

**Keywords:** terms, forestry, forest farm, lexical units, general system, language, subjects.

**RESUMEN**

Este artículo describe el lugar de los términos forestales en lingüística, su importancia y características en el habla y el lenguaje. La comprensión de los términos y las ideas sobre las diferencias entre los términos y las palabras simples se discuten aquí también. Debido a un menor estudio de los términos forestales en la lingüística uzbeka, el objetivo del artículo está dirigido a compilar los términos forestales, ponerlos en un orden, estudiar los nombres de los árboles que producen los bosques, el paisaje, la alimentación y las materias primas. Durante los años de independencia, muchos cambios han sufrido en la ciencia. Los cambios radicales en la vida social han provocado la introducción e implementación de nuevos términos.

**Palabras clave:** términos, silvicultura, granja forestal, unidades léxicas, sistema general, lenguaje, materias.

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The language has been passing over the stages of social development through centuries. Continuous creation of scientific and modern technologies and their implementation in life allowed to the appearance of new vocabularies and terms in all branches of our language. In linguistics, the change of terms and the emergence of new terms are inextricably linked to the advancement of science and technology. L.I. Bojno expressed this view on these changes: "Under the influence of technical progress, terminology changes according to two interrelated laws, firstly with the laws of scientific and technical progress, and secondly on the general laws of language development." (1971, p.103). Whatever the reasons for the emergence of terms are well-grounded, these terms can enrich the language. The terms of forestry are one of these terms.

Of course, the task of collecting and sorting terms is one of the major challenges that facing linguists. According to the linguist N.Makhmudov, "terms not only record and systematize scientific knowledge and results, but also performs high heuristic task too, that is, they help to discover new knowledge (2017, p. 122). In theory of linguistics it is noted that as a result of the expansion of the semantic range of certain words in public, the terms gradually penetrate into the terminological system (Abduazzov A.A. 2010, p.74-75). This point is absolutely correct, because for many years' lots of words in Uzbek language have entered the system of forestry terminology. Indeed, there are many common lexemes in forestry vocabulary, which have contributed to their separation from terminology. The word, both as a unit of language and as a unit of speech, can express the most complex aspects of certain relationships, characteristics, actions and situations (Rasulov R. 1992, p.36).

As we know the scientific views on the terminology are different. In particular, scientific considerations should not impede the study of terms of specialty that are to be studied in the language and also the collection, regulation, and research of words and terms resulting from new developments. Of course, one of important features of the terminology that is actively discussed in modern linguistics is its systematicness. It is well known that extensive study of systemic relations in the language began after the book of F. Saussure with his point "Language is a system where all elements form a unity, the importance of one element is simultaneously defined by the existence of others" (Saussure F. 1977, p.147). The question of the entry of terms into a particular system in linguistics was arisen by D. S. Lotte too. As he noted the systematicness of terminology requires a number of conditions fulfillment:

- 1) the terminological system should be based on the classification of concepts;
- 2) terminated symbols and concepts should be distinguished based on classification schemes;
- 3) the words should reflect the generalization and specificity of the terminated concept with others;
- 4) it is important to use word-forming elements of special narrow meaning that allow to systematization of a number of concepts of the same order (Lotte D.S. 1961, p.10). Taking into account the views of the aforementioned scientists, the work on collecting forestry terms can be done as follows:
  - 1) collection and generalization of general terms of forestry;
  - 2) collection, regulation of technical terms used in forestry;
  - 3) study and regulation of the names of trees.

Why am I proposing this idea? In the universities except philology the students first learn special knowledge on their specialty in textbooks and manuals. They mainly contain specialty terms and it is important to understand them and to know how to name them in foreign languages.

Therefore, it is necessary to study the word combinations, lexemes, to define the terms and to research the terminology that is met in such literature. While forestry terminology is an important component of lexicography, the most frequently used terminological units contribute to the logical, scientific thinking and formation of an individual, as well as mastering the language of specialization in both Uzbek and German.

This article enables to explore forestry terms in textbooks and manuals and to study them in Uzbek and German languages. Indeed, the task of linguists is to collect and organize a forestry terms in one system. This sorting helps to delineate the boundaries of terminological units.

Therefore, we draw the attention of linguists to the study of forestry terms that have so far been important in the dictionary. Definitely, it is worth noting that some technical terms are outdated and new terms are substituting them to meet the demands of technical development. In particular, the use of numerous lexical units and terminology, and the concealment of certain lexical units in the language of forestry experts indicate the need for thorough researches on forestry.

The teaching of forestry subjects such as dendrology, forest botany, forest entomology, forest phytopathology, soil science, forest crops requires to conduct more scientific researches to study ornamental trees and shrubs in the country.

The frequent increase of the importance of the forestry, horticulture and landscaping sectors in the national economy has caused to the formation of dendrology as an independent science.

Dendrology as a science is closely related to the morphology and systematics of plants on the one hand, and the other related disciplines - forestry, forest taxation, forest selection, cultural forests and forest melioration on the second hand (Kayimov A.K., Berdiev E.T. 2012.p.4).

Early forestry and dendrology books contained only morphological and systematic information about tree - shrub plants, the foresters and gardeners could distinguish their tree-shrub species only by morphological features. Later in the sector of

forest melioration further expansion of forest activities, especially sands consolidation, deforestation of mountains, railways and highways, strengthening of eroded soils with forests, establishment of green zones in parks and cities have led to increasing of forestry knowledge.

Trees and shrubs that form broad forests are important to the national economy. First of all, they are the only source of production of wood products widely used in industry and national economy. Wood is a raw material for the chemical industry. After processing of wood or as a result of wood-working the turpentine, acetic acid, methyl and ethyl alcohol, cellulose, nitro-lacquer and many other substances are extracted.

Some trees and shrubs are food sources of nutrients, fruits and seeds, including walnut, almonds, pistachio, Siberian cedar, pine nut, pecan, and eatable chestnut. Many other species are important as medicinal plants and their leaves, flowers, fruits, bark and roots are rich in biologically active substances and vitamins. Such trees - shrubs are oak, mountain herring, fake chestnut, Japanese saffron, hawthorn, dog-rose, barberry, sea buckthorn, zizifus, elderberry, blackberries, raspberries, blueberries, dates, mulberry, saltwort, white birch, hawthorn, alien and other species. Some trees - shrubs serve as a source of technical raw materials used in the national economy. Many valuable compounds such as cork, tanning substances, tannins, sugar, resin and technical oil are prepared from these trees and shrubs. Such trees and shrubs include cork oak, sumac, smoke tree, sugar maple, pine, legumes, birch and oleaster.

Furthermore the beautiful, tall and shady branches of trees, leaves of unusual pretty shape and lovely flowers give a unique beauty to the city parks, boulevards, street yards and also create high aesthetic landscapes. Ornamental trees and shrubs in the city have important sanitary and hygienic functions - clearing air from gases and dust. Many tree species isolate volatile substances such as phytoncides, which in turn kill the harmful and disease-causing bacteria in the air. These type of landscaping trees and shrubs include fake chestnut, plane tree, oak, maple, boxwood, Crimean and Eldar pine, Tian Shan and Canada thorny spruce, forsythia, Judas tree, simple spruce, biota, cypress, thuja, willow, catalpa, yew-tree and others.

Trees and shrubs are also important in forest melioration, especially in mountain forest and sand desert melioration. Tree protective forests defend the crops from the harsh winds and increase their productivity. The tree species planted on the terraces on the slopes of mountains and foothills strengthen the soil with their strong horizontal root systems and prevent the erosion of mountain forests. The shrubs such as hemoxylin, ammo dendron, astragalus are important in strengthening the moving sands. One of the main tasks of forestry specialists is to choose wide range of drought, frost-resistant, productive and long-lived trees and shrubs suitable for different climatic and soil conditions. At present, large problems are under the solution of the forestry sector of the country. They are to increase the level of forest cover, to expand juniper forests, to enrich the country's dendroflora with new species.

In writing this article, we have learned many forestry terms by referring to textbooks and manuals on forestry, forest reclamation and forest farming. The knowledge of the forest has been significantly expanding up to present days. In this regard, a number of textbooks have been published by professors reflecting forest knowledge. These are the means that can represent our level and knowledge on this sphere. The textbooks and literature were accepted not only as a source of research contributed to the collection and systematization of the terms of forestry, but also they directly provided the collection of technical terms.

Since the role of forestry terms in lexical layers of the Uzbek language is immeasurable, it is expedient to study them as follows.

- terms related to names of trees;
- terms related to the color and shape of trees;
- terms related to tree location;
- terms related to tree structure.

In conclusion, it is important to note that although forestry terminology is less complex than other fields, it occupies a significant place in the large German-Russian dictionary (Nemetsko-Russian Selskohozyaystvenny Slovar. 1987). Like all branch terminology, forestry terminology has its own characteristics. If we analyze the terms of forestry, it allows us not only observing the general patterns of development of modern Uzbek vocabulary, but also helps to identify the features and to distinguish components in the development of terminological vocabulary in Uzbek.

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**Political Institute of the State in the context of the historical and typological analysis**

Instituto político del Estado en el contexto del análisis histórico y tipológico

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**ABSTRACT**

The article is devoted to problems of structuring state created history taking into account a variety of social, political, forms, various speeds of political genesis. Problems of allocation of development stages of the political organizations (statehood) taking into account uncertainty of the general units of the analysis, terms, and concepts of rather various paradigms of structuring and periodization of history are considered. It is shown that the decisive force causing the transformation of all other public sectors is growth, distribution, and deduction of a dominant position of the most effective in the conditions of this period of a political regime.

**Keywords:** historical, typological analysis, potestarny structures, historicism, Kondratiyev's paradigm.

**RESUMEN**

El artículo está dedicado a los problemas de estructuración de la historia creada por el estado teniendo en cuenta una variedad de formas sociales, políticas, diversas velocidades de génesis política. Se consideran los problemas de asignación de etapas de desarrollo de las organizaciones políticas (estadidad) teniendo en cuenta la incertidumbre de las unidades generales del análisis, los términos y los conceptos de varios paradigmas de estructuración y periodización de la historia. Se muestra que la fuerza decisiva que causa la transformación de todos los demás sectores públicos es el crecimiento, la distribución y la deducción de una posición dominante de los más efectivos en las condiciones de este período de un régimen político.

**Palabras clave:** análisis histórico, tipológico, estructuras de potestarny, historicismo, paradigma de Kondratiyev.

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## 1. INTRODUCTION

Today many ways of the description of evolutionary typology of the state organization are offered, there are alternative versions. And business even not in forming of the tough evolutionary scheme and in the admission of some variability which after all is set by certain logic of education and development of political institutes.

The problem of historical typology of the state certainly deserves the detailed analysis and our further researches will be devoted to it. Let's consider some ideas and the approaches which are put forward by modern scientists here, having concentrated on the main eras and stages of historical process, in relation to its so important aspect as history of the state and other potestary structures.

## 2. HISTORICAL ANALYSIS OF TECHNIQUES AND MODELS

Consideration of the historical past in terms of chronology and stadial development has more than centuries-old tradition. Still Plato in "Laws" began discussion of a variety of political institutes with the lowest steps of the social organization.

### 2.1 "Process", "phases" or "stages".

The theory of stages or phases does not remain unnoticed by critics, the brightest of whom are K. Popper and R. Nisbet (Popper, 1993).

Johan Gudsblom in work about which the speech will go below, noted that the tradition of creation of phase models (from Plato and Aristotle to Marx and Spencer) sparks criticism for the following reasons: first, they lack historical concreteness, so, and checkability; secondly, they mix fact and standard statements; thirdly, they proceed from a concept of inevitability and teleology. The last decades were added to them two more points: fourthly, they are not able to explain transition from one stage to another and, fifthly, they actively open experience of Western Europe and North America, i.e. are "Europe-centered" (Goudsblom, 1996).

It is possible to agree with Y.Gudsblom's opinion on what stadial models have along with advantages and certain shortcomings. At the exit, owing to small empirical representation, they can be not verified. Creation of the general schemes of social evolution was carried out quite often at the expense of chronological accuracy.

Lack of initial spatial limitation is among advantages. One of the essential metamorphoses which happened in recent years to stadial models is a pre-stress from "phases" and "stages" on "processes". It allowed removing claims of critics of the theory of stages in points of insolvency in an explanation of transitional states between stages and "Eurocentrism".

The concept "process" began to form a basis for development of a concept of "phases" or "stages". "Process" is considered as the sequence of changes which assume transformation something from one phase in another. That is each "stage" or "phase" is transition in progress. It consists of small processes and is, eventually, a part of big processes. At the same time process does not exclude distinction of stages in social development.

### 2.2 Formational and stadial approach

One of theoretical predecessors of modern tipology of structuring history is formational and stadial approach. This approach - one of serious attempts to create the comprehensive natural-historical theory. Her authors were K. Marx and F. Engels.

Direct material vital circumstances were recognized as the only and unconditional reality. The main postulate is expressed in a formula: "the way of production of material life causes social, political and spiritual processes of life in general" (Marx & Engels, 1981).

Primacy and certainty of production of goods of life leads to creation of a certain dependence of a political superstructure on economic basis: "In social production of the life people enter in certain, necessary, from their will not the dependent relations - relations of production which correspond to a certain step of development of their material productive forces. Set of these relations of production makes economic structure of society, real basis on which the legal and political superstructure towers and to which there correspond certain forms of public consciousness" (Marx & Engels, 1981). Thereby it is emphasized that the state, policy, political institutes are caused by economy. Despite separate signs that it is capable to make the return impact on economy the Marxism isolates the main thing: intrinsic dependence of political institutes on economy is observed, the logic of development of the state forms is defined by dynamics of productive forces, way of production and relations of production.

"Productive forces ... form fundamentals of all history" (Marx & Engels, 1981). This history includes three consecutive steps of world development: primary, or archaic; secondary, or economic, and tertiary, or communistic (Marx & Engels, 1981). The Marxist idea about steps of development of productive forces became key in conceptualization of a concept of a public formation which was expressed in typological fixing and registration as stages of world development. The Marxism assumes accurate distinction of the formations connected with type of productive forces, the interformational and intraformational stages connected with ways of production, and also smaller stages not only connected with types of relations of production, but also including also aspects of the organization of work, the production technology, distribution, etc. (Lyubashits, 1993; Lyubashits, 2016; Lyubashits, 2017; Adriana & Holanda, 2016; Ali et al, 2017).

### 2.3 Theory of cycles

Marx and Engels's numerous followers, owing to any circumstances, including the wrong translation of Marx in Lenin work "That it "friends of the people" and how they are at war against social democrats", the expression "an era of an economic public formation" which turned into "eras in the history of economic formations of society" promoted emergence of a so-called five-stage. The Marxist interpretation of a political genesis was extremely hardy and found reflection in numerous neo- and post-Marxist researches. Formational stadial the concept of cycles of N. D. Kondratyev is genetically close to approach of Marxism. Socioeconomic structures, stages and development stages of human society are easily implanted into cyclic fundamentals of history.

The structure of kondratyevsky cycles (duration of a cycle makes 40-60 years) consists of two parts or waves: upward wave and wave bearish. The upward wave is the period of long prevalence of a high economic environment in world economy. The bearish wave is the period of long prevalence of a low economic environment.

Long waves of Kondratyev allow considering not only cycles of a world environment, but also manifestation of the technological, economic, political, social shifts happening within such wave or a cycle.

One of experts in the field of kondratyevsky waves G. van Rhum designated a thematic row from social life which can be investigated in this paradigm: social stratification, social mobility, revolutions and reformism, development and distribution of various ideologies - from liberalism to fascism, changes in religious views, democratic changes, etc. (Room van C., 1984).

Within a kondratyevsky paradigm waves of the most various frequency - are considered from 3-5 to 1000 years; (Pashinsky, 1994; Bytyak, et al, 2017; Mamychev et al, 2016), for certain regions temporary distances of their action (André Gounder Franck, Barry Gills, George William Modelski) are allocated; political dynamics is described (Umov & Lapkin, 1992). André Gounder Franck in collaborations with Barry Gills reveal kondratyevsky cycles of rise and recession during era of the Middle Ages and Antiquity that definitely structures world history, establishing the extent of world system in five thousand years against vallerstaynovsky five hundred years of the European system (Mordovtsev et al, 2017; Mordovtsev et al, 2017; Mordovtsev et al, 2017).

Driving force of development of world system is the accumulation of the surplus value or the capital connected with change of hegemony and various combinations of the market and the power.

Frank and Gills besides an economic environment consider rises and expansions of empires, establishment of communications between them, activation of exchange or disintegration of empires and worldsystem communications.

Other expert in the field of social evolution of the analysis of world systems and long geopolitical cycles J. Modelski in own way structures the scheme of world history. Evolution is divided into four main stages: variation, cooperation, selection and reinforcement. Transitions from one stage (era) to another are explained by exhaustion of innovative impulses which dominated during a former era, and preparation of new products of innovations.

So, innovative transition from the first era (for 3200 - 1200 BC) to the second (1200 BC - 1000 AD) was connected with formation of multiple cultures and was characterized by distribution of city-states, small number of large empires, etc.

Rather original approach to a periodization of historical development of society was shown by Johan Gudsblom in the work "History of mankind and long-term social processes: to synthesis of chronology and phazeology" (Goudsblom, 1996; Martyshin, 2003). In its research strategy main "catalysts" are allocated (control over fire; an agrarization and industrialization) as some kind of ecological transformations which become dominating at this or that stage of development. Then four consecutive stages are built:

1. A stage, when there is no society with control over fire, either agriculture, or the machine industry, or X (X are understood as conditional human achievement - statehood, writing, religious institutes, etc.).
2. The stage when some societies exercise control over fire, but any have neither agriculture, nor the machine industry, nor X.
3. The stage when, at least, in some societies there is a control over fire and agriculture, but in one is not present either the machine industry, or X.
4. A stage when, at least, in some societies there is a control over fire, agriculture and the machine industry, but one has X.

If we X fill with such epoch-making innovation as "the state (in the sequence from less developed and simple to more difficult and developed types of the political organization), then we will receive effective tools for comparison and coordinating of the most various periodization.

The simple four-stage criterion is entered. For example, for transition from communal autonomy to the state we will take such innovation, (X): 1) one social community has no this achievement; 2) the chiefdom is available for one social community; 3) the chiefdom is available for some social communities; 4) the chiefdom is available for all social communities.

This life cycle of stages with the advent of the fifth step when some social community is not required such form of public organization as a chiefdom any more comes to the end. It is replaced with other innovation: a specific form of the political organization - the traditional state. The traditional state enters own life cycle. Other types of the state forms can undergo such expansion.

### 3. MAIN PART. TYPOLOGY AS METHOD

At the review of various stadial attempts of structuring models it is impossible to ignore the large phenomenon of domestic science - the book of the orientalist I. M. Dyakonov of "A way of history" (1994). The author offered the stadial model of history including eight phases: primitive, primitive-communal, early antiquity, imperial antiquity, Middle Ages, stable and absolutist post-Middle Ages, capitalist and post-capitalist.

The scientist in the periodization makes a start from basic Marxist positions and it notes: "From the point of view of causativity the theory of social and economic formations planned by Marx more than hundred years ago (in 1859) and in the deformed look formulated by Stalin in 1938 has advantage. According to this theory, productive forces, i.e. technology in combination with her producers as public category, develop until the relations of production existing in society match the need of their development" (Dyakonov, 1994). Considers deacons that at the end of the XX century the Marxist theory of historical process reflecting realities of the 19th century "became hopelessly outdated". He tries to consider new factors, namely: technological level and condition of social and psychological processes. That new relations of production were established, it is necessary, in his opinion, "introduction of essentially new technologies, in particular production technologies of weapon" (Dyakonov, 1994).

Transition from one type of managing to another and - from one system of the social attitudes towards another has to be followed further by change of social values. Independent significance is attached to a role of military equipment and military science in general. It is important from the point of view of belonging of the military organization to political structure in general.

Thus, technological level and a condition of social and psychological processes is criterion of "change of the principle of the social relations" or character of a state system. These factors cause change of rises and declines both within this or that phase, and between them.

Only in the third dyakonovsky phase (early antiquity) the control system of society is institutionalized, receives the constant conventional structure, enforcement machinery, and turns into the state.

Phase transition to communal antiquity crowned a chiefdom (the second phase of communal primitiveness). The state educations typologically belong to communal antiquity (the third phase).

During each separate period of history societies of different phases of development, and within one phase - different societies coexist. It demonstrates that during each separate period of history societies of different phases of development coexist, but within a uniform phase different societies have approximately equal opportunities (equal share) and efficiency of the political legal regimes. M. V. Ilyin wrote about similar gaps and disagreements between generations of the political systems creating difficulties in interaction of chronopolitical occurring at different times, but calendar modern political systems (Ilyin, 1999).

It is interesting that the worldsystem typology, offered by Hristofer Chase-Dunn and Thomas Hall (Chase-Dunn & Hall 2001) in the aspect interesting us in many respects is conformable Dyakonov's periodization. By comparison of two approaches it is detectable that the third dyakonovsky phase (early antiquity) corresponds to primary state worldsystem where Mesopotamia, Egypt, the valley of Indus, the valley of Ganges, China, pre-Columbus Mexico and Peru enter. The fourth phase - a phase of imperial antiquity - to primary empires to which the autonomous states united as a result of a gain (Akkad, Egypt of an ancient kingdom, Magadkh, Zhou, Teotihuacan, Uari), and partly multicenter, consisting of empires, to the states and peripheral regions (The Middle East, India, China, a mezoempire of Peru).

The fifth phase, medieval, partially covers multicenter imperial worldsystem and commercialized, founded on the state in which important aspects of marketability are developed. Let's note that as criterion of worldsystem distinction "the way of accumulation" is taken. Also the 6, 7 and 8 phases are corresponded.

For Chase-Dunn and Hall in the analysis of historical development the problem of emergence and development of a chiefdom (chiefdom) and the state from less hierarchical structures founded on relationship of societies was extremely important. They made an attempt to designate in a periodization importance of intersocietal processes and structures (worldsystem) in a grid of coordinates "a kernel - a periodization".

Essential aspect of conceptualization worldsystem - identification of consequences of various types of interactions on a long distance, for local societal structures. It is interesting what the key indicator allowing to carry out domination of a kernel where the equipment of the power is most developed is, as well as for Dyakonov, the specialized military organization, the back and supply, strategy and arms, and also the organizational equipment for management of the remote provinces and withdrawal of a tribute and taxes (Chase-Dunn & Hall, 2001; Ali et al., 2017).

On an own question: "what similarity and distinction between the sequence of processes of political centralization and decentralization in different worldsystem types?" authors answer with the formulation of a hypothesis. It consists that, first, when in the centralized empires the equipment of the power was improved, peripheral regions lagged behind in

the development, and, secondly, peripheral regions acquire much quicker social and technological features of regions of a kernel as soon as trade on a long distance becomes more intensive and based on the commodity relation (Chase-Dunn & Hall, 2001).

Thus, Chase-Dunn and Hall specify conditions and the nature of influence of societies, leaders (kernel) on other societies (peripheries) within a worldsystem.

The uniting moment of the considered typology is consent concerning coexistence of the state educations and development stages during the same historical period of time. At the same time formation of the states represents an accurate watershed in development of society. The state is the politically structured society with specialized institutes, including military and bureaucratic, performing functions of management and control.

State registered society differs from society of the previous stage - a difficult chiefdom (chiefdom) - degree of development of the specialized control functions which are not based on relationship.

The concept of "political evolution" is taken from works of the Dutch researcher, famous specialist in problems of an evolutionism H.J. M. Klassen. Klassen on the basis of a multiple line evolutionism tried to explain cyclic development and those cases when at different stages of evolution similar political structures appear again. Evolution is carried out as process of structural reorganization in time. Emergence of this or that form, structure which qualitatively differ from the previous form (Claessen et al, 1985; Claessen & Oosten, 1996). He noted that the similar political organizations (the state or chiefdom) unexpectedly appear in the most different regions of the world and in various evolutionary streams.

In search of the solution of this paradox Klassen addresses Julian X's idea. The steward who long before him tried to explain appearance of patrilocal group in a number of the societies which are not connected among themselves. The Steward explained emergence of not similar socio-political structures with presence of similar cultural forms at these groups. The thought of Klassen and his coauthor Osten that for maintenance of the law and an order, preservations of territorial integrity of the country, etc. are required such organizational structures which are quickly enough forced to find effective and functionally successful solutions attracts attention. Here the reasonable functional argument moves forward (Claessen et al, 1985; Claessen & Oosten, 1996). Each political organization passes severe tests for efficiency and owing to this circumstance there are few functionally suitable institutes. Klassen considers that evolutionary changes are result of complex interaction of a number of factors, namely: economic, ideological, demographic and sociopolitical.

The structure, the periodization offered by the Novosibirsk researcher N. S. Rozov considerably does not differ from the academic tradition of studying of a political genesis, but is rather innovative and requires to itself due consideration. Rozov sets a task of improvement and restructuring a conceptual framework in an explanation and understanding of history. On the basis of the enough extensive philosophical and methodological researches (Rozov, 1992; Rozov, 1995; Rozov, 1999), (Development and approbation of a method of theoretical history, 2001) it formulates set of requirements to a periodization of history and according to a political genesis: the principle of a substantiality (the periodization has to correspond to the main characteristics determining by the qualities setting specifics and stability of various parts of historical and political reality and also with the strongest factors (the reasons, driving forces, patterns) of historical change in these parts directly; the principle of temporary comparability (division of the periods of history on the basis of conceptually homogeneous and comparable criteria); the principle of spatial comparability (the accounting of a real-life variety of historical forms, obvious distinction in the speed of historical changes); the principle of comparability of paradigms (the conceptual structure of a periodization has to be comparable to key categories of the most developed and productive macro historical paradigms); principle of flexible traditionalism.

Across Rozov, the substantial criterion of a periodization consists in change of the main types of variety of the modes. The social mode, for example, includes regular military, political, economic, moral and legal and other interactions. Character of an era is set by the strongest dominating modes, and it in an obvious or implicit look is present at many attempts of structuring history of mankind, starting with Hegel and Marx. The author understands as the dominating modes "their higher efficiency in the wide limits which developed at present conditions, and this efficiency is shown in steady distribution through replacement and assimilation of the competing modes" (Rozov, 2001). Rozov enters the concept "type attractor" which is defined in structural terms as the regime complex steady within a certain variety of conditions.

In the conceptual design offered by the Pink major link the scheme of change of domination of the new modes and regime complexes is (types - attractors). Criteria of allocation of factors of domination are set by communication of growth of value of a political regime upon transition of society and state from one phase in another.

Let's note that noticeable impact on allocation of factors of domination was exerted by works of the American political anthropologist R. Karneyro who for identification of the political leader marked out 14 categories. From them the category "political organization" serves as the defining criterion of efficiency of the modes.

So, relying on the ideas of stages of political evolution of the Steward, Klassen, Karneyro's development, the general structure of history of Gellner, I. M. Dyakonov and others, Rozov offers the ideally typical scheme including six phases of development of society from which four are state issued. The third phase - "society of early statehood"; the 4th - "society of mature statehood"; the 5th - "society of through statehood" and the 6th - "sensitive society" (the developed capitalism with liberal and corporate and state versions). Here the main state educations on this or that phase of development of society are fixed. The level of political evolution (a factor of universal value) is inherent in each type attractor or a regime



complex. Development of political structures and institutes defines other factors of domination which are grouped in factors of geopolitical, geocultural and geoeconomic domination.

For this research allocation of factors of domination, or indicative criteria which are correlated with the ideas of a number of scientists of phases and development of societies, of essence of transitions considered above from one phases to others, and also about the domination reasons is represented to the most urgent.

In the ideal and typical construction society, across Rozov, represents set of human groups with unity of structures of the power, moral and/or legal rules, and unity of an order of exchange and distribution, unity of language or languages of social interaction (Rozov, 2001).

But such criteria answer the developed statehood form, in particular, to the national state. Considering that aspect that the basic modes are political and legal and economic, we can define the state registered society as set of human groups with unity of structures of the power, rules of law and the general unity of an order, exchange and distribution.

Whatever different ways formation of statehood at people of the world went, we will find everywhere the installed system of the power (political regime) which regulates rules of interaction between people (the legal and moral regime), an order of exchange of material benefits and services and their distributions (economic regime). Common language (the cultural mode) is necessary for communication and social interaction.

And the first statehood on the earth which arose in the Ancient East (in Egypt, Babylon), differing in the special regularities caused by specifics Egyptian, Babylon and others modern it civilizations (History of political and legal doctrines. Ancient world., 2001), (History of political and legal doctrines, 2003) and to the Antique states of Ancient Greece and Ancient Rome - an example of the statehood which arose, developed, reached civilization height and reached a deadlock within this culture - Ancient Greek and ancient Roman, and only it inherent lines, and to all other state forms the unity of the basic social and cultural modes is inherent in the feudal states which are characterized by the. If the unity of the basic modes is broken off - it is possible to speak about similar society in terms of "the falling states" or "the failed states" (failing states). Modern experts counted forty one states which can be referred to category of the falling or failed states. The vector of development of all these states shows their swift social, economic, political and intellectual degradation. Quite often the board just leads to extinction of the own people (Rwanda, Somalia other). One of parameters of similar educations - inability of the leaders of these countries to provide elementary human rights in the territories.

#### 4. CONCLUSIONS

Problems of structuring state issued history are exclusively difficult, first of all, because of existence of a huge variety of social, political, state forms, various speed of a political genesis. Allocation of development stages of the political organizations (statehood) is complicated by uncertainty of the general units of the analysis, terms and concepts of rather various paradigms of structuring and a periodization of history.

The analysis of evolution of society through changes of combinations of distinguishable structural signs in which this society differs from previous is carried out in the real work taking into account the separate ideas of concepts of structuring history of the Steward, Klassen, Karneyro's developments, structure of history of Gellner, the general conceptual approach of Rozov. Though conceptual schemes of the called authors do not propose the final decisions of problems of a periodization of the historical and state process, but represent an important step on the way of knowledge of communication of internal structures (social processes and regularities) and external structures (division into time historical spans). It is obvious that consideration and classification of the political organizations (state) in many respects reflect values of qualifiers.

Consideration of various points of view on structuring state issued history showed importance of a question of basic criterion of distinction of the periods. Fixation of transition of society to another demands allocation of the main criterion or a factor from one phase of the state development - the level of political development which, in our opinion, is universal on the value.

The essence of any historical period disclosing a change source, the decisive force causing transformation of all other public sectors is growth, distribution and deduction of a dominant position of the most effective in the conditions of this period of a political regime.

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## The relationship of students learning Styles and historical Thinking

La relación de los estudiantes Estilos de aprendizaje y pensamiento histórico

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### ABSTRACT

The aim of this research is to investigate the relationship between learning style (LS) and historical thinking skills (HTS) among Malaysian secondary school learners. The Grasha-Riechmann model used in this study consists of independent, avoidance, collaborate, dependent, competitive and participant learning styles. However, the historical thinking skill is using the Malaysian Ministry of Education model which consists of understanding the chronology, exploring evidence, interpreting, imagining, and rationalizing. A total of 400 fourth-grade students were selected as sample from high schools in the district of Hulu Langat, Selangor. Data were evaluated using SPSS (Statistical Package for the Social Sciences 22.0). The findings of the pilot test used Cronbach's alpha assessment which showed that the learning styles were at a high point of reliability, 0.89 and 0.92 for the HTS. The findings of the descriptive evaluation test indicate that the dominant learning style is cooperative and competitive learning style.

**Keywords:** Learning Style, Historical Thinking Skills, History Lesson, Grasha-Riechmann, History Education.

### RESUMEN

El objetivo de esta investigación es investigar la relación entre el estilo de aprendizaje (LS) y las habilidades de pensamiento histórico (HTS) entre los estudiantes de secundaria de Malasia. El modelo de Grasha-Riechmann utilizado en este estudio consiste en estilos de aprendizaje independientes, evasivos, colaborativos, dependientes, competitivos y participativos. Sin embargo, la habilidad de pensamiento histórico está utilizando el modelo del Ministerio de Educación de Malasia que consiste en comprender la cronología, explorar la evidencia, interpretar, imaginar y racionalizar. Un total de 400 estudiantes de cuarto grado fueron seleccionados como muestra de escuelas secundarias en el distrito de Hulu Langat, Selangor. Los datos se evaluaron utilizando SPSS (Paquete Estadístico para las Ciencias Sociales 22.0). Los resultados de la prueba piloto utilizaron la evaluación alfa de Cronbach que mostró que los estilos de aprendizaje tenían un alto punto de confiabilidad, 0.89 y 0.92 para el HTS. Los resultados de la prueba de evaluación descriptiva indican que el estilo de aprendizaje dominante es el estilo de aprendizaje cooperativo y competitivo.

**Palabras clave:** estilo de aprendizaje, habilidades de pensamiento histórico, lección de historia, Grasha-Riechmann, educación histórica.

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## 1. INTRODUCTION

History education in Malaysia is a core subject in the National education curriculum. This statement is discussed by (Dahalan, & Ahmad 2018) stating the significance of the historical subject which became much clearer when the Malaysian Ministry of Education (KPM) made this particular subject as one of the compulsory core subjects for students to pass the Malaysian Certificate of Education examination (SPM). These steps are in line with Malaysian multi-racial society, whereby history education can be used as a medium to educate and nurture unity.

Based on the Secondary School Standard Curriculum (KSSM 2016) history education in Malaysia highlights the elements of historical thinking skills in teaching and learning. The approach of this skill has also raised one pertinent issue, such as what is the importance of this knowledge to the students? (Spoehr et al. 2010) expresses historical thinking as the ability to criticise based on evidence, understand changes that happen as time passes by, empathise with the past, and investigate the cause of incidents based on the causes and consequences. This statement is in line with the historical training and learning module (KPM 2001) stating that historical thinking skills is a process that involves critical and creative thinking of students.

These skill elements require a wide range of approaches to be applied to students within a long-term period. Students are individuals with different tendencies. The aspects of thought, reaction, interests, achievements and understanding are among the differences in this aspect. This statement describes each student who possesses his own learning style to receive and respond as well as use a stimulus in the learning process (Jamian 2012). One of the important aspects of contributing to the success of students is the learning style. According to (Zapalska, & Dabb 2013) learning style is a key factor that determines the success and failure of a student. This statement clearly proves that there is a relationship between learning style and student achievement. In addition, among the causes of declining student academic achievement is that they fail to adapt to the way of teaching and learning, as well as not having a proper learning style (Abu et al. 2007) Universiti Teknologi Malaysia. Kajian ini berbentuk deskriptif dan menggunakan instrumen soal selidik dengan skala empat mata bagi mengukur lima kategori gaya pembelajaran dan enam aspek kemahiran belajar. Lima kategori gaya pembelajaran oleh Dunn dan Dunn adalah kategori Persekitaran, Emosional, Sosiologikal, Fizikal dan Psikologikal dan kemahiran belajar. Enam aspek kemahiran belajar adalah Kemahiran Membaca, Kemahiran Menguruskan Masa, Kemahiran Menulis Nota, Kemahiran Mendengar, Kemahiran Membuat Rujukan dan Kemahiran Menghadapi Peperiksaan. Nilai pekali Alpha Cronbach untuk kajian ini adalah 0.83. Dapatan kajian mendapati kategori Emosional (min 3.09, SP=0.63. This statement clearly proves that there is indeed a relationship between learning style and student achievement. Therefore, research on students learning style based on theory and learning style models is a worthwhile endeavour and can be used as reference to further improve the quality of national education.

## 2. LEARNING STYLES

Learning style is one of the contributing factors that determine the performance of a student. There are a variety of theories and models of student learning style. In general, the learning style approach of students can be divided into five aspects, namely personality, information processing, social interaction and preferred learning medium. This statement is based on the model by Curry (1987) discussed in (Cools, & Bellens 2012) which explains the learning style through the "red onion model". This model describes four main aspects namely personality model, information processing model, social interaction model and preferred learning medium model. Each aspect of the study examines and measures the learning style from a different perspective.

There are a number of researchers who have studied learning styles, such as Kolb (1984) based on the information and cognitive development approach, where learning style is seen as a specific feature and tendency to be used by individuals to access and receive knowledge. Dunn & Dunn (1978) define learning style according to the individual procedures of learning and responding to the factors that affect understanding. Selmes (1987) approached learning styles base on information processing on persons intellectual. Felder & Silverman (2002) describe learning style in four dimensions preferences base on tendencies for certain behaviour and often used in research related to learning styles in advanced learning technologies.

In this study the researchers used a model pioneered by (Riechmann, & Grasha 1974). This model has been developed to determine the style of student learning in the classroom. This model is used to identify student interactions with teachers and other students in their learning process. It is categorised into six elements namely independent, avoidance, collaborate, dependent, competitive and participant learning styles. (Montgomery, & Groat 1998) stated that the Grasha-Riechmann model focuses on students' responses to real learning activities. According to Grasha (1996) the style in the Grasha-Riechmann learning style scale can be described as the trait practised by students. Every student has his own style of learning, however, most individuals only have one or two dominant types of learning styles. This learning model enables the teacher or lecturer to identify student's learning styles to further improve their respective teaching style.

## 3. HISTORICAL THINKING SKILLS

The field of history has its own discipline structure just like any other field of science. The structure of historical discipline includes aspects of history, resource gathering, historical thinking skills, historical explanation, historical understanding and empathy. According to the statement by the Malaysian Ministry of Education (KPM 2016) in the Historical Curriculum and Assessment Standard Document (DSKP 2016), history is a science discipline to investigate the truth about the past. History is a subject that can stimulate thinking. It enables students to empathise and analyse how humans interact based on time, space, change and continuity.

The historical thinking skill model enhances student's cognitive skills to explore complex and abstract ideas. Thus, students are able to understand critically and imaginatively all aspects of human life to this day. These skills allow students to understand how historians reconstruct the past by using evidence-based resources to determine the significance of past dates, figures, events, locations and human activities (KPM, 2016). In addition, students will be able to understand historical features so that they can improve their thinking skills to be more critical and analytical. These skills are cultivated and developed among students with skills such as chronological skills, exploring evidence, interpretation, imagination and rationalisation.

#### 4. RESEARCH OBJECTIVES

1. Identify the types of learning styles practised by fourth graders students in history subjects.
2. Identify the level of historical thinking skills of students in history subjects.
3. Identify significant differences in the learning styles of fourth graders in history subjects based on gender.
4. Identify the relationship between learning styles and historical thinking skills.

#### 5. RESEARCH METHODOLOGY

This study used a five-point Likert scale survey to obtain data from a sample. The learning style component instrument used the (Riechmann, & Grasha 1974) questionnaire while the historical thinking skill instruments used the research developed by (Laila 2016). The validity of the content of the items in the study was examined and verified through discussion with the research supervisor. Pilot studies were performed to determine the reliability of the instrument before it was used in the actual study. The pilot study used 30 students to represent the fourth-grade high school student's population at Bandar Baru Bangi. The pilot test results on learning style and historical thinking skills are shown in table 1 below:

Table 1. Cronbach Alpha for Every Sub-Construct of Learning Styles

Learning Style Sub- Construct	Total Item	Cronbach Alpha Value
Independent	10	0.702
Avoidance	10	0.741
Collaborate	10	0.788
Dependent	10	0.639
Competitive	10	0.784
Participant	10	0.785

Table 2. Cronbach Alpha for Every Sub-Construct of Historical Thinking Skills

Sub-Construct KPS	Total Item	Cronbach Alpha Value
Understanding Chronology	6	0.790
Exploring Evidence	5	0.822
Interpreting	5	0.812
Imagining	5	0.674
Rationalizing	7	0.730

Based on tables 1 and 2, the alpha coefficient values for each element of learning style and historical thinking skills are accepted. This is in line with the opinion of Hair, Black, Babin and Anderson (2009) that the Cronbach Alpha value generally accepted and agreed upon by many experts is 0.7, however the alpha value of 0.6 is still acceptable and used in exploratory research. Nevertheless, according to Pallant (2001), an alpha index value of 0.7 or above is good for an instrument scale of ten or more items, while an alpha value of 0.5 is considered good for an instrument scale of less than ten items. Furthermore, Alpha 0.5 or higher is considered sufficient and sufficient for research purposes (Nunnally, 1967). Therefore, the reliability values derived from this pilot study are considered good because there are some constructs with less than 10 items. Moreover, Alpha values above 0.60 are frequently used by researchers as an index of reliability in studies (Mohd Majid 2005).

#### Population and Research Sample

The population for this study consisted of fourth-grade high school students in the Hulu Langat district of Selangor. According to information from the Selangor State Education Department, the total number of fourth-grade students in Hulu Langat district is 12116. According to (Krejcie, & Morgan 1960) a population of 12000 people requires 291 respondents as the sample size. As a result, a total of 450 sets of questionnaires were distributed to the respondents and 450 forms were returned to the researchers. This makes the response rate to be 100%. Out of the total 450 questionnaires collected, only 400 questionnaires could be used for further analysis with a valid response rate of 88.88 percent. This response rate is considered good because according to Sekaran (2006) a response rate of 30 percent is acceptable for the survey. Data analysis in this study involved descriptive statistics and inference using SPSS (Statistical Package for the Social Sciences 22.0).



**The interpretation of mean score values based on (Riechmann, & Grasha 1974)**

Table 3. The Interpretation of Mean Score Values

Learning Styles	Weak Score	Moderate Score	Dominant Score
Independent	1.0-2.7	2.8-3.8	3.9-5.0
Avoidance	1.0-1.8	1.9-3.1	3.2-5.0
Collaborate	1.0-2.7	2.8-3.4	3.5-5.0
Dependent	1.0-2.9	3.0-4.0	4.1-5.0
Competitive	1.0-1.7	1.8-2.8	2.9-5.0
Participant	1.0-3.0	3.1-4.1	4.2-5.0

Source: Grasha-Riechmann (1974)

**The interpretation of mean score value on historical thinking skills based on (Jamil 2002)**

Table 4. The Mean Score of Historical Thinking Skills

Mean Score Range	Tendency Level
1.00 - 2.36	Weak
2.37 - 3.66	Moderate
3.67 - 5.00	Strong

Source: Jamil (2002)

**The interpretation of the relationship between learning style and historical thinking skills using Pearson Correlation is based on Alias Baba (1997).**

Table 5 Relationship Strength between Variables

Correlation Coefficient	Correlation strength
0.00 - 0.20	Very Weak
0.21 - 0.40	Weak
0.41 - 0.60	Moderate
0.61 - 0.80	Strong
0.81 - 1.00	Very Strong

Source: Alias Baba (1997)

**6. RESEARCH FINDINGS AND DISCUSSION**

**Demographic Profile of Respondents**

Table 6. The Profile of Respondents based on Gender

Gender	Frequency	Percentage (%)
Male	210	52.5
Female	190	47.5
Total	400	100

Data analysis in Table 6 shows that the respondents of the study consisted of 210 male students at 52.5% and 190 female students at 47.5%.

**Type of Learning Style**

Table 7. Mean Score Analysis on Student Learning Style

Aspects	n	Mean Score	Standard deviation	Level
Independent	400	3.44	0.43	Moderate
Avoidant	400	2.95	0.60	Moderate
Collaborate	400	3.85	0.48	Strong
Dependent	400	3.60	0.41	Moderate
Competitive	400	3.59	0.56	Strong
Participant	400	3.79	0.49	Moderate
Total	400	3.53	0.49	Moderate

Overall, all learning styles show a moderate mean score of 3.53. Based on table 7, the mean score of independent style

is 3.44, avoidant 2.95, collaborate 3.85, dependent 3.60, competitive 3.59 and participant is 3.79. This indicates that the students practise all types of learning styles and are not tied to only one type of learning style to learn historical subjects in the classroom. Based on the findings, students show more tendency or preference towards the collaborative and competitiveness learning styles. However, these findings are contrary with (Chong, & Mahamod 2014) that stated dependent and participative style of learning is more adopted compared to independent, avoidant and competitive style of learning.

### Historical Thinking Skills Level

Table 8. Mean Score Analysis Level of Historical Thinking Skills

Historical Thinking Skills	n	Mean Score	Standard Deviation	Level
Understanding Chronology	400	3.59	0.66	Moderate
Exploring Evidence	400	3.69	0.75	High
Interpreting	400	3.66	0.31	Moderate
Imagining	400	3.81	0.65	High
Rationalising	400	3.72	0.59	High
Total	400	3.69	0.59	High

Overall, all historical thinking skills items show a high mean score of 3.69. Based on table 9, the imagining skills shows the highest score with a mean of 3.81. Data shows that the students strive to imagine a past event by using photographs of historical events for better understanding. This finding support a study conducted by Zarina (2013) showing student's skills in imagining is excellent. However, the mean score of understanding chronology is shown to be at its lowest level compared to other skills. This shows that students need to improve their ability to articulate the relationship between past, present, and future, and to highlight the changing times. The findings are in contrary with the study by Laila (2016) who showed that chronological skills are at a high level.

### Learning style differences based on gender

Table 9 T-test Analysis for Overall Comparison of Learning Styles based on Gender

Gender	n	Mean	sd	t	Df	Sig
Male	210	3.52	.308	-1.190	397.434	.074
Female	190	3.57	.285			

\*Probability levels is significant at <0.05

Table 9 shows the differences in learning styles among fourth graders in history subject based on gender. The study found that there was no significant difference in student learning style based on gender  $t(397,434) = -1.190$ ,  $sig = 0.074$   $p > 0.05$ ). The mean between groups indicated that the mean for male students was ( $M = 3.52$ ,  $SD = .308$ ) while the mean for female students was ( $M = 3.57$ ,  $SD = .285$ ). This data shows that gender does not play a significant role because it does not make any difference in terms of learning style in history subjects. The findings support the study conducted by Wan Zakri (2000), Nik Mohd Rahimi et al. (2010), (Puji, & Ahmad 2015) and (Ishak, & Awang 2017) that stated there were no significant differences in gender-based learning styles.

Table 10. Comparison of Sub-Construct Learning Style based on Gender

Type of Learning Style	Gender	N	Mean	Standard Deviation	t	p
Independent	Male	210	3.39	0.42	-2.109	0.07
	Female	190	3.49	0.44		
Avoidance	Male	210	2.95	0.64	-0.091	0.06
	Female	190	2.95	0.55		
Collaborative	Male	210	3.78	0.49	-2.827	0.18
	Female	190	3.92	0.45		
	Male	210	3.58	0.40		

Dependent					-3.765	0.01
	Female	190	3.74	0.41		
	Male	210	3.67	0.54		
Competitive					2.863	0.00
	Female	190	3.51	0.56		
	Male	210	3.76	0.48		
Participant					-1.565	0.01
	Female	190	3.83	0.48		

\*Probability levels is significant at  $< 0.05$

Table 10 shows the differences for each sub-style of learning among students based on gender. The findings show that independent, avoidant and cooperative learning styles were not significant at  $p > 0.05$ . Nevertheless, there was a significant difference in dependent, competitive and participant style at  $p < 0.05$ . From the mean score obtained, female  $M = 3.74$  were more likely to adopt a dependent style than male  $M = 3.58$ . This means that female students rely heavily on teachers to give them guidance in completing a task. In terms of cooperative style, female students are more dominant than male students. This means that female students tend to always follow instructions and focus on teaching. In addition, female students are more responsible for their learning and have better relationships with other students than male students. On the other hand, male students are more likely to adopt a competitive learning style than female students. This is because, male students are more likely to show off their greatness with a tendency to do better work. In addition, male students are always curious about the level of achievement of other student's performance.

### The Relationship between Learning Style and Achievement of Students in History Subjects

Table 11. Pearson Correlation Analysis Between Learning Styles and Historical Thinking Skills

LS		HTS		
	<i>n</i>	<i>P(sig)</i>	<i>r</i>	Relationship Strength Level
Independent	400	.000	0.29	Weak
Avoidance	400	.003	-.146	Very Weak
Collaborative	400	.000	0.47	Moderate
Dependent	400	.000	0.38	Weak
Competitive	400	.000	0.27	Weak
Participant	400	.000	0.45	Moderate

\*Probability levels is significant at  $< 0.05$

Table 11 shows all variables having a value of  $p < 0.05$  which concludes that there exists a significant relationship between all the learning styles of historical thinking skills among students. A positive and medium relationship is seen more dominant in the collaborative style  $r = 0.47$  and participant  $r = 0.453$ . This shows that students who learn to collaborate in the group will be able to learn better and able to improve HTS. However, for the style of avoidance  $r = -0.14$  shows significant negative relationships. The findings support the Grasha-Riechmann Model (1996) which states that students who practise their learning to avoid a tendency to have a low and weaker grade distribution while managing their duties. Overall it can be formulated that there is a significant relationship of learning style on HTS. In this study, researchers find students who learn to cooperate in the group will be able to learn better and able to improve their performance. In addition, students who are always responsible for attending all class activities and interested in learning can improve the skills of historical thinking. The findings of this study support the findings of research conducted by Rully Putri (2016) that there is a significant relationship between learning style with HTS. In contrary, the results from (Ghani et al. 2016) showed that the level of learning style is not correlate with students' academic achievement. In addition, studies conducted by (Ishak, & Awang 2017) also show no significant relationships.

## 6. IMPLICATIONS ON THE TEACHING AND LEARNING OF HISTORICAL EDUCATION

Education in Malaysia, particularly in historical education, has a wide range of areas that need to be improved so that the quality of education in Malaysia is at par with the education provided in other countries. All problems and deficiencies in the field of historical education serve as an opportunity for researchers to conduct studies and make improvements. Therefore, the findings of this study on learning styles play an important role in providing valuable information to curriculum makers, administrators and teachers. This study is thought to provide understanding that low performance or lack of interest in historical subjects may be treated as disinterest or lacking of student's knowledge. But in fact, it may occur because the student is having difficulty in adopting a certain learning style. Next, teachers with an understanding of learning styles will be more open minded and ready to implement effective learning activities. Furthermore educators who are aware and understand the difference in learning style will be more sensitive to different student's characteristics. Therefore, they will endeavour to diversify the way to teach historical subjects to improve their teaching quality. Consequently students who know their own learning styles will be able to improve their level of

achievement in mastering historical thinking as well as other subjects field.

## 7. SUMMARY

This study affirmed that learning styles practised by students are varied and are not tied to one type of learning style. The study shows that collaborative learning style is the most preferred learning style practised by students followed by participant, dependent, competitive, independent, and avoidant learning styles. There are significant differences in dependent, competitive and participant learning style based on gender. Moreover, there is a significant positive and weak correlation between independent, dependent, and competitive learning style with historical thinking skills. Nevertheless, the cooperation and participant learning style shows a positive and very low relationship. However, only avoidant learning styles indicate a significant negative relationship with historical thinking skills. In conclusion, the student's learning style is related to historical thinking abilities. Consequently, educators need to be aware of the differences in learning styles especially in history subjects and use the appropriate approach to correct existing weaknesses. Furthermore, students need to be aware and improve their learning style in order to maximize their achievement especially in history subjects.

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## Social economic results of the development of Uzbekistan's of digital economy

Resultados socioeconómicos del desarrollo de la economía digital de Uzbekistán

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### ABSTRACT

In conditions of globalization and strong competition, wide use of digital systems in people's social life, as well as various industries and spheres of developed countries, forces developing countries to digitalize their economic too. Therefore in order to strengthen Uzbekistan's economic competitiveness, wide adoption of digital technologies and solutions in economic spheres and industries is one of the crucial tasks to be achieved. Therefore, the problem of digitalization is one of the urgent directions to be investigated.

**Keywords:** Uzbekistan, digital economy, GDP, science and technology, digital banking

### RESUMEN

En condiciones de globalización y fuerte competencia, el amplio uso de los sistemas digitales en la vida social de las personas, así como las diversas industrias y esferas de los países desarrollados, obliga a los países en desarrollo a digitalizar también su economía. Por lo tanto, para fortalecer la competitividad económica de Uzbekistán, una amplia adopción de tecnologías y soluciones digitales en las esferas e industrias económicas es una de las tareas cruciales que deben lograrse. Por lo tanto, el problema de la digitalización es una de las direcciones urgentes a investigar.

**Palabras clave:** Uzbekistán, economía digital, PIB, ciencia y tecnología, banca digital

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## INTRODUCTION

In Global Economy digital economy systems are considered as integrated part of the economy and subject to permanent support of the states. In our country, digitalization of the economy will be the main driver in raising share of innovations in GDP, production of competitive and differentiated quality products, as well as increasing quality of rendered services to public, digital economy will be the main driver.

While the measures to improve the position of our country in World Economic Forum and Global Innovation Index are based on developing scientific and innovation activities, protecting the results of intellectual properties, increasing the share of ICT, these procedures result in the need for establishing a digital system with high security level.

In the development of global digital systems, first and foremost, the coordination of state and economic bodies and local government agencies with the necessary information systems and resources, the implementation of software and e-services in the country, is based on the digital economy, information technology market, creation of favorable conditions for attracting foreign investment through the establishment of centers, modern telecommunication infrastructure, development of communication technologies and networks, coordination of development of modern telecommunication service, enhancement of digital economy through introduction of electronic services in public administration and economy, development of e-commerce and software market, organizational, logistical and economic support of national segment of the Internet is digital media content. Development proposals through support, use in urban and regional infrastructure management, housing and communal services, transport logistics, safe and smart city " for the development of an 'intelligent system to improve the training of qualified personnel, (Lex.uz) plays an important role.

## RESERCH METHODOLOGY

In order to conduct wide and through investigation of the practice of state motivation and implementation of digital systems in foreign countries, the study had effectively used various methods like analysis and synthesis, inductive, deductive, and grouping methods.

In order to draw conclusions and securing accuracy of the results, the study had exploited econometric methods of analysis.

## LITERATURE REVIEW

The topic is very wide and had been investigated by various researches from developed and developing world. And the acceleration of IT growth in South, South West Asian countries have resulted in deeper leaving of this topic by researches..

For instance, Watanabe et.all had exploited this topic in various scientific works. In the article "Measuring GDP in the digital economy..." following thoughts had been analysed and investigated.

As revealed by Tapscott in his best-seller *The Digital Economy* published in 1994, the Internet has dramatically changed the way of conducting business and our daily lives. Further advancement of digital innovation, including cloud, mobile services, and artificial intelligence, has augmented this change significantly and provided us with extraordinary services and welfare never anticipated before. However, contrary to such an accomplishment, productivity in industrialized countries now confronts an apparent decline raising the question of a possible productivity paradox in the digital economy. The limitations of gross domestic product (GDP) statistics in measuring the advancement of the digital economy have become an important subject.

While this mismatch is an old problem rooted in the dynamics of product innovations, since mismatch brought about by information and communication technology (ICT) is very strong. Finding a solution to this critical issue has become highly crucial in the digital economy.

Based on an intensive review of preceding studies and empirical analyses of national, industrial and individual behaviors in the digital economy, this paper attempted to draw a perspective on this critical issue.

By means of an analysis of co-evolution among a shift in people's preferences from economic functionality to supra-functionality beyond economic value, the advancement of ICT and paradigm change to uncaptured GDP, a solution to this critical issue was investigated. New insights for measuring the digital economy were explored which provide insight into integration of national accounts with product-oriented micro-analysis efforts.

Watanabe, Chihiro& Tou, Yuji& Neittaanmäki, Pekka (Gaspareniene,.. 2016) stated that "the Internet has dramatically changed the way we conduct business and our daily lives by provided us with unprecedented services and conveniences. However, contrary to such accomplishments, productivity in industrialized countries is now experiences an apparent decline. This has raised the question of a possible productivity paradox in the digital economy. The limitation of GDP statistics in measuring the advancement of the digital economy has thus become an important subject.

This paper analyzed the structural sources of this problem.

Utilizing the results of empirical analyses of national, industrial, and individual behavior in the digital economy, solutions to these critical issues were investigated.

Based on the two-faced nature of information and communication technology (ICT) and the fact that people's preferences extend beyond economic value, the concept of uncaptured GDP was postulated and spinoff dynamism to a new co-evolution among advancement of the Internet, increasing dependence on uncaptured GDP, and a shift in people's preferences was

reviewed. This provided new insight and suggested a transformative direction to address the limitation of using GDP statistics in the digital economy.

Gaspareniene, Ligita & Remeikiene, Rita (Central bank of Uzbekistan 2019) in their study tried to focus on theoretical and empirical identification of economic and demographic characteristics of the subjects, operating in digital shadow economy.

Although, in general sense, the characteristics of the subjects, operating in digital shadow economy, are not extremely different from the ones of the subjects, operating in traditional shadow economy, the expert evaluation has enabled to identify the distinctive features of an illegal digital market seller, who can be represented as a young or middle-aged male with higher education, a professional in his operational field. With reference to the research results, sellers in digital shadow economy include the entities with officially registered activities, who are trying to evade taxation of the revenues earned from the operations in e-space. On the other hand, according to the experts, the amount of the officially accounted revenue earned by these entities may reach up to 300 EUR. Hence, the defined profile of an illegal seller, as of a subject, operating in digital shadow economy, proposes that a seller in digital shadow economy is an intellectually developed person with advanced professional skills, but insufficient financial earnings.

There is an endless list of studies related to the topic of our research, however the author tried to analyse the role of the state in developing digital economy. And based on this grounds in our study we will try to analyse the impact of the development of digital systems to social life, and analyse the share of scientific-technique costs in GDP

## ANALYSIS AND RESULTS

As from 1 of August 2018, by the decree of the CBU the national legislative system had acquired new term “digital banking”. According to the legislation sets that banks or their branches rendering remote banking services via innovative banking technologies will be vellored as “digital bank”.

Services of “Digital banks” have several features::

- It should maximize clients digital access to the non.cash money circulator;
- It should provide modern methods of provision of secure banking services, by employing authentication of physic digital, biometric coded, combined methods;
- Optimization of data management and digital IT architecture via “Big data” instruments of the centralized Information Centre through domestic internet;
- Wide used of various form of social media, web programs, video communication.

The 1st stage of Uzbekistan digital banking services is in raising the quantity of users.

Thus, according to the CBU’s information in November 2018, 28 Commercial Banks had rendered remote banking services for 339 546 legal entities and 7 088 288 persons and Xalq bank had been found as the lider in providing such services for people with 2 611 718 clients.

Table 1.

**Number of customers applied remote banking systems as of September 1, 2019**

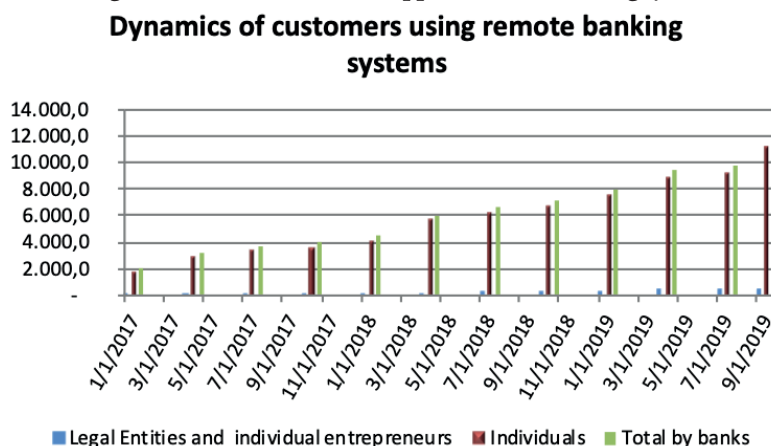
No	Bank's name	Legal Entities and individual entrepreneurs	Individuals	Total by banks
1	National bank for FEA	55 581	895 906	951 487
2	JSCB “Uzbek Industrial and Construction Bank”	22 384	682 974	705 358
3	JSCB “Agrobank”	100 158	1 317 200	1 417 358
4	JSCMB “Ipoteka-bank”	94 638	811 566	906 204
5	JSCB “Mikrokreditbank”	44 729	638 436	683 165
6	JSCB “Xalq banki”	40 637	3 765 711	3 806 348
7	JSCB “Savdogar”	3 723	74 252	77 975
8	JSCB “Qishloq qurilish bank”	18 001	244 315	262 316
9	JSCB “Turonbank”	15 601	144 424	160 025
10	JSCB “Hamkorbank”	67 169	661 849	729 018

11	JSCB "Asaka"	16 415	561 800	578 215
12	JSICB "Ipak Yuli"	15 210	294 055	309 265
13	JSC "ZIRAAT BANK UZBEKISTAN"	1 053	12 363	13 416
14	PJSB "Trastbank"	19 269	79 142	98 411
15	JSC "Aloqabank"	14 749	235 505	250 254
16	JSC "KDB Bank Uzbekiston"	814	21 298	22 112
17	PJSCB "Turkiston"	2 844	7 745	10 589
18	Subsidiary bank of "Saderat Iran"	114	702	816
19	JSCB "Universal bank"	2 988	28 785	31 773
20	JSCB "Kapitalbank"	14 373	121 549	135 922
21	PJSCB "Ravnaqbank"	1 868	8 433	10 301
22	PJSCB "Davri-Bank"	16 750	48 476	65 226
23	JSCB "Invest Finance Bank"	16 588	180 109	196 697
24	JSCB "Asia Alliance Bank"	9 515	205 548	215 063
25	PJSCB "Hi-Tech Bank"	1 258	19 875	21 133
26	PJSCB "Orient Finans"	8 156	139 485	147 641
27	JSCB "Madad Invest Bank"	513	6 926	7 439
28	JSCB "Uzagroeksportbank"	196	419	615
29	JSC "Poytaxt bank"	344	654	998
30	JSCB "Tenge bank"	-	2	2
<b>Total by types</b>		<b>605 638</b>	<b>11 209 504</b>	<b>11 815 142</b>

\*Central bank of Uzbekistan (2019). The number of users of remote banking systems <http://www.cbu.uz/uzcl/statistics/paysistem/2019/09/174420/>.

Comparing the indicators for January 1, 2017 and the same period in 2018, we can see that the number of individuals using remote banking services has reached almost 2.3 million.

Figure 1. Dynamics of change in number of customers applied remote banking systems for 2017-2019.



\* *Central bank of Uzbekistan (2019). The number of users of remote banking systems <http://www.cbu.uz/uzzc/statistics/paysistem/2019/09/174420/>.*

The main reason for this can be attributed to the implementation of currency liberalization policy in our country and the growth of commercial banks' liquidity. Increased access to cash, as well as an increase in the number of service payment terminals also stimulate the expansion of remote banking services.

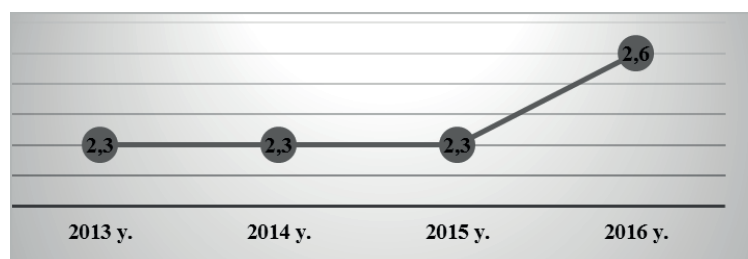
Thanks to introduction of Uzcard system in Uzbekistan and introduction of a number of projects that allow you to pay with mobile devices and computers at any time and place, a new business network - e-commerce is developing rapidly. Online payment services such as Click, MBank, Sms Payment are successfully working. People can go home and shop online such as Mytech.uz, Esavdo.uz, Uzbekmarket.uz, Bozor.uz, including food, clothing, appliances, perfumes, household goods and even furniture.

As a result of the effective implementation of the innovation policy in Uzbekistan, not only the banking services have become distant, but also the impact of the innovation policy on the real sector of the economy.

Today our country is recognized as the most dynamically developing country in the field of ICT. According to the International Telecommunication Union in 2017, in comparison with 2016, our country rose by eight points to 95th place in the ICT development index.

The share of ICT sector in GDP in 2016 was 2.6%. The highest share in the ICT sector is in the services sector.

Figure 2. ICT sector's share in the GDP of the Republic of Uzbekistan, %



\* *State Statistics Committee data (2018). [www.stat.uz](http://www.stat.uz)*

The share of communications and informatization in the economy of the country is achieved through the provision of technical capabilities of the population to the telecommunication network, on their basis providing high-quality service, full transition to digital telephone communication and television systems. Information and communication as a form of economic activity is 2.5% of the GDP of the Republic of Uzbekistan.

At present, the country is in great demand along with communication services, financial services, transport, trade and catering. Today, Uzbekistan is moving towards new horizons with the use of advanced information and communication technologies. Fiber-optic lines are used in all main types of trunk, regional and interstitial communication, which is the result of introduction of modern broadband technologies into telecommunication systems. Expanding the coverage area of such communication lines will allow expanding the range of ICT services provided in the market, improving the quality of video telephony services, Internet access, high-speed internet, ND-channel broadcasting. At the same time, digital technologies have been introduced, telecommunication networks have been reconstructed at all long-distance and international levels, as well as local telephone exchanges, the level of development meets modern requirements. Internet access channels have been greatly expanded. This, in turn, has allowed the operators and service providers to reduce the cost of channels by six times in the last five years.

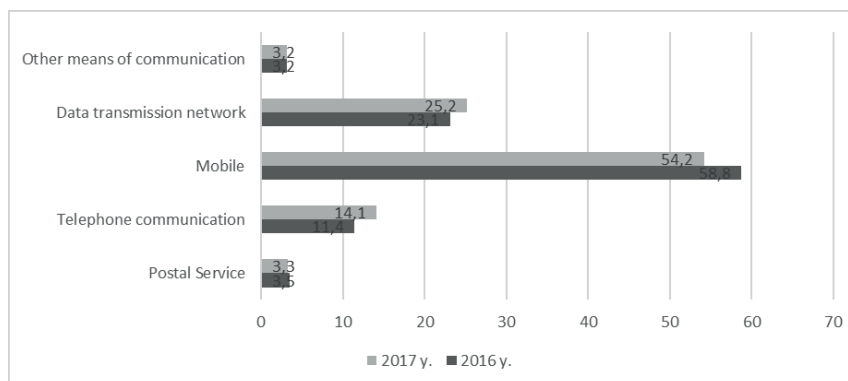
Active use of ICT is based on the high human potential, which is widespread, equipped with the latest types of equipment and technology infrastructure. This work is aimed at improving the quality of life of people, improving their daily lives, and ensuring efficient use of state-of-the-art technologies. In 2017, the volume of communication services was 7168.1 billion soums and increased by 28.5% compared to 2016 (at current prices). The largest volume of mobile communication services (UZS 3881.0 billion); data transmission network, including Internet (1808,8 billion sums); services of long-distance and international telephone services (911.1 billion soums).

The share of services rendered to the population in the total volume of communication services was 71.2%. The volume of communication services provided to the population in 2017 was 5104.7 billion This figure increased by 25.1% (in actual prices) compared to 2016.

In the regional context, the largest share in the total volume of communication services was provided by Tashkent city (42.1%), Samarkand (7.7%), Fergana (7.4%), Andijan (5.9%), Namangan (5.4%). The Kashkadarya region (5.2%) was the most popular. The lowest shares were in Syrdarya (1.9%), Tashkent (2.5%), Jizzakh (2.5%), Navoi (2.7%), Khorezm (3.6%), Surkhandarya (3.9%), Bukhara (4.4%) and the Republic of Karakalpakstan (4.4%).



Figure 3. The structure of communication services by types of activity,%.



\* State Statistics Committee data (2018). [www.stat.uz](http://www.stat.uz)

Dynamic expansion of mobile communication networks is observed in the republic. If it has only recently been used for speaking purposes, today this modern type of communication helps to get up-to-date information, information sharing, and financial transactions. Currently, Unitel LLC (Beeline trademark), Universal Mobile Systems (UMS trademark), RWC (Perfectum Mobile trademark), Coscom FE LLC ("U cell" trademark) provide mobile services in the market of Uzbekistan. Mobile communication services are provided in CDMA, GSM900, GSM-1800, UMTs 2100, 4G LTE standards. Mobile operators provide additional services for mobile users, including mobile internet, SMS-informer, internet banking and other services.

We also performed a regression analysis of GDP growth in mobile phone subscribers as well as deductions from GDP to scientific and technical costs during our research. This analysis is a regression and covers data on our country for the period 2000-2016.

Table 2 Dynamics of GDP and Scientific and Technical Expenses for 2000-2016

Years	GDP (billion dollar)	STC, %
2000	13,76	0,36
2001	11,4	0,34
2002	9,7	0,29
2003	10,1	0,27
2005	14,3	0,27
2006	17,3	0,22
2007	22,3	0,22
2008	29,5	0,19
2009	33,7	0,2
2010	39,3	0,19
2011	45,9	0,19
2012	51,8	0,2
2013	57,7	0,2
2014	63	0,2
2015	66,9	0,21
2016	67,4	0,22
<i>Here, GDP (billion dollar)=Y, the share of STC=X1.</i>		
<i>* Developed by the author on the basis of data from the World Bank.</i>		

Years	Y	X1
2000	13,76	0,36
2001	11,4	0,34
2002	9,7	0,29
2003	10,1	0,27
2005	14,3	0,27
2006	17,3	0,22
2007	22,3	0,22
2008	29,5	0,19
2009	33,7	0,2
2010	39,3	0,19
2011	45,9	0,19
2012	51,8	0,2
2013	57,7	0,2
2014	63	0,2
2015	66,9	0,21
2016	67,4	0,22

Years	lnY	lnX1
2000	17,27114	-0,66165
2001	2,433613	-0,73881
2002	2,272126	-0,94787
2003	2,312535	-1,03933
2005	2,66026	-1,03933
2006	2,850707	-1,29413
2007	3,104587	-1,29413
2008	3,38439	-1,47073
2009	3,517498	-1,40944
2010	3,671225	-1,47073
2011	3,826465	-1,47073
2012	3,94739	-1,40944
2013	4,055257	-1,40944
2014	4,143135	-1,40944
2015	4,203199	-1,35065
2016	4,210645	-1,29413

Multiple correlation coefficients R (multiple R) is a positive square root of R (multiple coefficients, Residual spreads, and R-square coefficients). These statistics are useful in describing the relationship between variables when performing variable regression (i.e., using multiple independent variables).

Multiple correlation coefficients describe the proximity of the relationship between dependent and variable. It varies from 0 to 1 and is calculated by the following formula:

$$R_{y|X_1, X_2, \dots, X_n} = \sqrt{1 - \frac{|R|}{R_{yy}}}$$

In our statistical analyzes, the correlation coefficient is 0.59.

The significance of the multiple correlation coefficients is confirmed by the Fisher F-test table. His hypothesis is that if the deviation probability value exceeds a certain level (often they are = 0.1, 0.05, 0.01, or 0.001). The following formula should be used

$$F_{\text{MSR}} = \frac{\frac{1}{k-1} r_{y|X_1, X_2}^2}{\frac{1}{n-k} (1 - r_{y|X_1, X_2}^2)}$$

Quantitative measure of convergence	Qualitative description of the power of communication
0,1-0,3	Weak
0,3-0,5	Medium
0,5-0,7	Noteworthy
0,7-0,9	Higher
0,9-0,99	The highest

In our analyzes, F is 0.09. This indicates that the correlation between the observed variables and the invariant is very weak. That is, the impact of scientific and technical costs on GDP changes is low. It is important to take into account that social, cultural and other costs also play a role in changing the value of GDP. However, in developed countries, changes in scientific and technical costs are reflected in GDP dynamics. This is explained by the high technology share of high-tech goods in the country's GDP and the high technology in the export structure. Increased GDP expenditure on science and technology is a major factor in the country's GDP growth and development of the digital economy.

- But there are other problems that hinder the development of the digital economy in our country:
- Low internet speed in the country;
- Past Low public confidence in remote services (accustomed to paper receipts and other similar documents);
- Unprepared level of qualification of the population to digital system, etc.
- In order to solve the above problems we propose:
- The first step is to adopt the State Program for the Transition to the Digital Economy.
- It is also expected that at this stage a full study of information technologies, manuals and algorithms will be introduced in educational institutions; The following tasks should be set at the state level in the field of training and personnel training in the digital economy:
- Creating conditions for teaching the digital economy;
- Improving the education system that provides the digital economy with qualified personnel;

- The labor market, which should be based on the needs of the digital economy;
- Creating the necessary conditions for the development of the digital economy of Uzbekistan and the creation of a motivation system to ensure staff participation.

The modern education system has passed an active phase of computerization and information. These processes were crucial to funding, the level of development of universities, the level of faculty preparation, and so on. The cultural significance of digital media is clear regardless of their strengths and weaknesses. With their spread, there are changes that affect people's daily lives, cultural hierarchies, and people's interactions with each other and the world around them. The system of shaping cultural experience transforms the key areas of culture.

It is necessary to create a legal basis for the establishment of venture funds. In particular, it is necessary to point out that venture financing in the Republic of Uzbekistan is carried out by venture companies and venture funds.

Venture companies are legal entities focused on venture financing. Venture funds are legal entities formed through the sale of securities. Venture funds can also be formed from the Pension Fund, other public funds and insurance companies. Venture companies and funds are set up with at least 51% of the founders or the founders having their own funds. Venture companies and funds may direct more than 10% of their total funding to only one project.

Sources of financing Venture contracts are:

- Funds of venture entities;
- Funds raised by joint stock companies;
- The national budget or local budgets provided by the relevant budgets for these purposes;
- State organizations involved in the activities of the state budget and extra-budgetary funds, venture capital;
- Foreign investors;
- International financial institutions and funds;
- Personal savings of individuals.

The state will provide priority funding for the implementation of applied research activities, taking into account the use of research and development in production.

Program funding is provided on a repayable basis with the participation of stakeholders.

The second step is to develop a program for the use of digital systems for all segments of the population. Including:

Teaching general knowledge and concepts for 7-17 years. In addition to computer science, modern equipment and their equipment, which are the basis of the digital economy, we propose to integrate the "Digital System" discipline into the educational process.

This discipline teaches the design of ATMs, terminals, computers, android devices and other devices.

18- to 25-year-olds (students of higher educational institutions) are instructed to design and apply innovative technologies and techniques in their specialty. At the end of the course, each student will have to present a course work on his or her innovative ideas and projects. Depending on the direction of the higher educational institution it is applied to production activity. Innovative Ideal Course Courses should be sent to Manufacturing and Service Organizations within 30 business days of their submission and receive appropriate response. Such a system will allow young professionals to link innovative ideas to practice and to develop the digital economy.

There will be courses on digital technologies in the workplace for people aged 25-60 years. Such courses may be provided in a non-productive manner.

Also, if there were any training courses for designers such as Design, Banking and Digital Banking, there would be increased literacy in the digital economy.

The third stage is one of the most important for our country. At this stage it is necessary to increase the volume of state budget financing of production and innovation activities.

Today, there are few companies in the country that produce computers, bank terminals and electronic equipment. The main assets are imports. Even chips for plastic cards are imports. Once the second phase has started to yield its results, implementation of the third stage will not be difficult.

The main task of the state at this stage is to provide financial, organizational, legal support to new industries.

The fourth stage is the state support for the transformation of digital technologies into a livelihood, the active application of digital technologies in the service and production systems. For example, e-mailing a physician, electronically sending the results of the analysis and sending it to the doctor, and receiving a physician's e-signature diagnosis; or e-ordering meals in public places, etc.

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## Study of school child motor activity using individual wearable devices - fitness-trackers

Estudio de la actividad motora del niño en la escuela utilizando dispositivos portátiles individuales - rastreadores de actividad física

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### Abstract

They presented the results of qualitative and quantitative indicator study concerning the motor activity of schoolchildren of both sexes, obtained by using individual wearable devices-fitness trackers. It was found that 8.2% of students, regardless of gender and age, are characterized by low values of this indicator; 3.4% demonstrate high values of the indicator relative to the hygiene norm.

**Key words:** fitness tracker, physical activity, aerobic zone, anaerobic zone, maximum oxygen consumption.

### Resumen

Presentaron los resultados del estudio de indicadores cualitativos y cuantitativos sobre la actividad motora de escolares de ambos sexos, obtenidos mediante el uso de dispositivos portátiles individuales: rastreadores de estado físico. Se encontró que el 8.2% de los estudiantes, independientemente de su sexo y edad, se caracterizan por valores bajos de este indicador; El 3,4% demuestra valores altos del indicador en relación con la norma de higiene.

**Palabras clave:** rastreador de actividad física, actividad física, zona aeróbica, zona anaeróbica, consumo máximo de oxígeno.

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## Introduction

The formation of a healthy lifestyle of the nation, one of the fundamental factors of which is physical activity, has become a priority trend of the Russian state in the social sphere, requiring close attention not only of the health care system, but also of the education system.

Particular attention in the framework of state social policy is given to children and adolescent health improvement, the creation of favorable conditions for them, as well as raising the level of public awareness about the main risk factors and the ways of disease prevention. The use of physical education and the formation of physical culture since a very early age can be considered as one of the main components of such complex of preventive measures (Starostin, 2018; Gilmore, 2015).

Overcoming of intensive educational and cognitive activity negative consequences among schoolchildren must be considered as one of the links in the general system of physical education. In this regard, the issue of the purposeful development of the most important physical qualities among children, including physical activity, which can reduce the adverse effect of excessive educational loads on the health status of schoolchildren, is of practical interest (Volodin et al, 2015; Grudina, 2012). The study of student health status in conjunction with physical education is extremely important for preventive measure substantiation and strengthening the health of the younger generation (Butko, 2015; Galimov & Mutalov, 2012; Pegov & Tarasevich, 2013).

Wearable and digital technologies are an example of the latest technologies that have quickly burst into the life of a modern person, and designed to expand the knowledge of the body and its movements, the formation of “healthy” habits and lifestyle through this knowledge, especially among people belonging to the “risk group”.

Constant monitoring of health indicators using individual wearable devices, fitness technology trackers allows not only to monitor the general condition of a person, but also to understand and prevent possible problems, as well as to track changes in the body performance (Sloan et al, 2018; Finkelstein et al, 2016; Dawson, 2015).

Despite numerous works available in the domestic and foreign literature on the role of physical education in the development of schoolchildren, the monitoring of quantitative and qualitative characteristics of physical activity, including various metabolic loads for schoolchildren remains unexplored, which served the basis for this research.

**Study material and methods.** A representative sample of 500 students of both sexes from general education organizations in Moscow was formed to conduct the study (Table 1).

Table 1. Experimental sample

Age	Girls	Yong men	Total
8-9 years	93	112	205
10-11 years	93	88	181
12-13 years	38	59	97
14 years	11	8	19
Total	235	267	502

Students with disabilities, people with disabilities, and people assigned to special medical groups were not involved in the study, taking into account their deterministic nosological features.

Fitness trackers - individual wearable devices were used to organize and conduct the study, the form factor of which is a wrist polyurethane bracelet for daily use.

The hardware and software component of the fitness tracker and the user interface of the device corresponded to the Xiaomi Mi Band 3 model or similar models corresponding to the following characteristics:

- compatibility with iOS and Android;
- the presence of a vibration signal;
- the presence of moisture protection standard of at least IP68;
- water resistance class WR50 (shower, swimming without diving);
- the presence of a monochrome OLED touch screen;
- the presence of Bluetooth interface - at least 4.2 LE;
- the ability to monitor sleep, calories, physical activity automatically;
- the presence of accelerometer sensors, and built-in heart rate monitor;

- the presence of a non-removable Li-Ion battery with the capacity of at least 110 mA/h.

Also, they used modern models of smartphones with installed software from the manufacturer of the fitness tracker to organize the study.

The above-mentioned models of wearable devices are capable of capturing and processing the following parameters of physical activity:

- sleep duration and quality;
- heart rate (hereinafter - HR), including minimum, maximum, and average values;
- number of steps;
- traveled distance (Hallinan & Striphas, 2014; McGrath & Scanail, 2013; Millington, 2016).

Based on the data obtained, the device automatically calculates such parameters as the duration of load in the aerobic, anaerobic zone, the duration of physical work at the level of maximum oxygen consumption (hereinafter - MOC).

Current and operational control of physical exertion volume and intensity among students, taking into account all forms of physical education and sports (both in school and after school), was carried out for 30 calendar days by screening physiological indicators, including cardiac activity dynamics.

The most informative and productive mode of fitness tracker use is the following one: after carrying out appropriate instruction, students begin to use fitness trackers that are worn constantly, which is accompanied by a systematic collection and processing of data obtained using wearable data devices.

Statistical processing of the data obtained during the experiment was carried out using Microsoft Excel 2010 and Statistika 10.0 software. The confidence level of differences in the studied parameters was determined using Student's criterion. The results were considered statistically significant at  $p \leq 0.05$ .

Study results. Body weight is one of the indicators that a fitness tracker takes into account for the correct processing and interpretation of signals, as well as determines the parameters of physical activity. Like age, this indicator cannot be tracked by the device on its own and is entered directly by the user in the corresponding software field. Of course, for a correct assessment of body weight correspondence to the age period, it is much more objective to use the body mass index. However, it is not taken into account in the corresponding device operation algorithms and is not evaluated in this study.

The normative boundaries were developed by the World Health Organization. At that they are defined without taking into account growth parameters and correspond to the age characteristics of girls and boys, which meets the objectives of the study. Also, the normative values are compared with the data array of the open segment of the Internet information and telecommunication network using Big Data (Data mining) technologies. At that no significant and statistically significant differences were found (Mayer-Schonberger & Cukier, 2013).

In this study, the median values for each age and gender are determined, the upper and lower limits of the norm are determined. Based on these data, the assessment of the body weight of schoolchildren of both sexes showed that the greatest significant ( $p \leq 0.001$ ) excess of the age norm is typical for 14 year old adolescents (62.5%), the smallest one - for 12-13 year old boys - 10.2%. A similar pattern was revealed in the groups of girls: the excess of the age norm is typical for the age of 14 years - 18.2%, the smallest one is for the age of 12-13 years - 2.6%.

The presence of an accelerometer in the used models of fitness trackers made it possible to estimate the duration of sleep with a certain degree of certainty ( $p \leq 0.01$ ), according to the dynamics and normative values of which presented by the American Academy of Sleep Medicine, one can judge the degree of physical load sufficiency and adequacy, as well as about the mental state of a child, the general state of his health. In addition to the duration of sleep itself, the duration of the fast sleep phase, which is determined by the accelerometer on the basis of muscle vibrations during sleep and the decrease of heart rate, is essential.

Studies have shown that about 50% of young men of all age groups (except for 14 year olds) have a sleep duration characterized by a lower limit of normal, at the age of 14 this indicator reaches 75%. At that, the quality of sleep is within the normal range among 60% of young men of all age groups (except for 14 years old), at the age of 14 this indicator reaches 75%. In groups of girls, there were no significant age-related

differences in the duration of sleep; the number of examined patients, characterized by the value of this indicator at the lower boundary of the norm, as well as the median, was about 45%. Sleep quality of about 70% of girls of all ages (except for 14 year olds) was within the medial range; 27.3; 36.4 and 36.4% of 14 year old girls had the quality of sleep at median, lower bound and below normal, respectively.

The main parameter of physical activity, which is monitored with a fitness tracker by photometry and registration of electrochemical signals on human skin, is the heart rate. Heart rate is the most labile, informative and reliable parameter for physical activity evaluation, the level and nature of the functional load, as well as the most important parameter for use in device algorithm operation.

The digital algorithms of fitness trackers basically use the results of research in the field of sports physiology, one of which is the principle of physiological zoning, which consists in correlating the dynamics of the heart rate with the time during which exercise is performed. The range of heart rate will determine the physiological zone of physical work from the point of view of energy supply mechanism and the volume of energy consumption.

Using a fitness tracker allows you to track such parameters in automatic mode, keep track of received loads, set the necessary goals and monitor their achievement.

In the course of the study, we analyzed the data on physical work performed during the study period in terms of the length of stay in the following physiological zones:

- aerobic;
- anaerobic;
- the duration of physical work at the level of maximum oxygen consumption.

In order to obtain reliable information about the level of physical activity of students in general educational institutions, we analyzed the average duration of physical work in the aerobic zone per day for the study period. Such an approach will allow to take into account all types of physical activity, also to determine the contribution of a physical education lesson to the general level of physical activity. The obtained average data for 30 calendar days make it possible to assess the physical activity of students on a five-level scale, from low to high based on the average time per day when a student is in a supporting aerobic load zone (Fig. 1,2, Table 2-3).

Fig.1. Physical activity level among young men, %

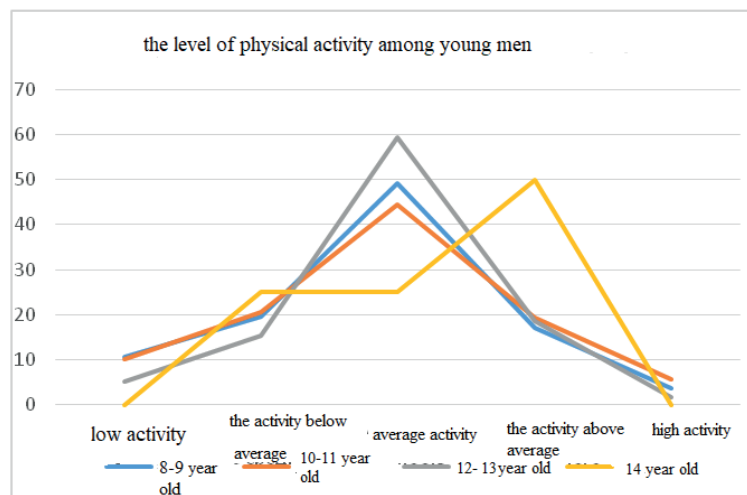


Fig. 2. Physical activity level among girls, %

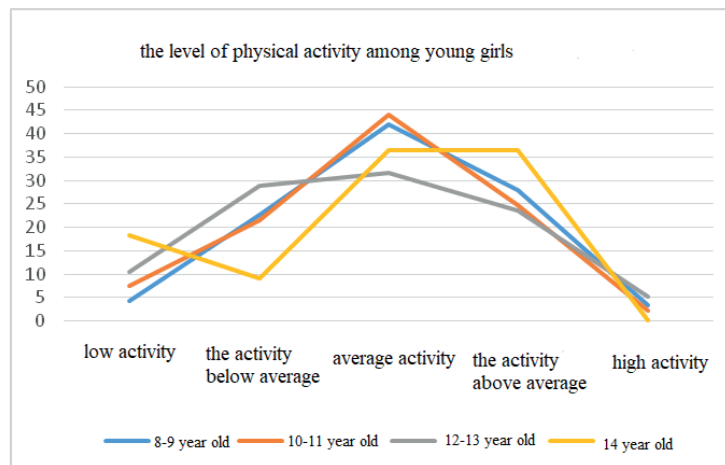


Table 2. The parameters of physical activity among students by age

Sample parameters	Amount of students, %			
	8-9 years	10-11 years	12-13 years	14 years
Low activity	7,8	8,8	7,2	10,5
Below average activity	21,0	21,0	20,6	15,8
Average activity	45,9	44,2	48,5	31,6
Above average activity	22,0	22,1	20,6	42,1
High activity	3,4	0,0	0,0	0,0

Table 3. The parameters of physical activity among students regardless of age

Parameter	Young men		Girls	
	Number of students	Amount, %	Number of students	Amount, %
Low activity	24,0	9,0	17,0	7,2
Below average activity	51,0	19,1	53,0	22,6
Average activity	131,0	49,1	96,0	40,9
Above average activity	51,0	19,1	62,0	26,4
High activity	10,0	3,7	7,0	3,0
Total	267,0	100,0	235,0	100,0

Table 4. The parameters of physical activity by total sample array

Parameter	Number of students	Amount, %
Low activity	41,0	8,2
Below average activity	104,0	20,7
Average activity	227,0	45,2
Above average activity	113,0	22,5
High activity	17,0	3,4
Total	502,0	100,0

The studies allowed us to draw the following conclusions about the expediency of fitness tracker use to solve such interrelated tasks as:

- the implementation of current and operational control of student physical activity volume and intensity, taking into account all forms of classes;
- evaluation of physical fitness level of students and the adequacy of their physical activity for a selected period of time;
- individualization of physical education classes;
- assessment of planned educational result achievement.

The data on quantitative and qualitative characteristics of the physical activity of schoolchildren of both sexes, regardless of age obtained using fitness trackers, showed that 28.9% of the examined need to increase the duration of their physical activity, recommending take into account the number of steps performed per day using gadgets and individual fitness trackers, bringing individual indicators to hygiene standards - 15-20 thousand steps per day. Regular aerobic exercise of medium and low intensity in the amount of hygiene standards will allow students to improve the tolerance of physical and mental stress, mood and mental state, will help strengthen the cardiovascular and respiratory systems.

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## Technological pedagogical and content knowledge among vocational special education teachers

Conocimientos pedagógicos y de contenido tecnológico entre los docentes de educación especial vocacional

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### ABSTRACT

Teachers play an essential function in implementing the ultimate goal of education by producing insightful human capital in line with the goals of the Pelan Pembangunan Pendidikan Malaysia (PPPM) 2013-2025. This effort is also the main responsibility of special education teachers in improving a learning process that satisfies the specific necessities of special needs students. Special education teachers require to furnish themselves with a wide assortment of knowledge and skills so that quality education can be applied to students with special needs. Therefore, this study investigates the level of technological pedagogical and content knowledge, teaching style, self-efficacy and competence of vocational special education teachers. This research employs a quantitative approach applying the survey method. In this research, 36 teachers from vocational special education school from the state of Selangor involved as a sample. The collected data were analysed, adopting the SPSS application to get the mean and standard deviation.

**Keywords:** Technological Pedagogical and Content Knowledge, Teaching Style, Self-Efficacy, Competence, Special Education Teacher.

### RESUMEN

Los maestros desempeñan una función esencial en la implementación del objetivo final de la educación al producir un capital humano perspicaz en línea con los objetivos del Pelan Pembangunan Pendidikan Malasia (PPPM) 2013-2025. Este esfuerzo es también la responsabilidad principal de los maestros de educación especial para mejorar un proceso de aprendizaje que satisfaga las necesidades específicas de los estudiantes con necesidades especiales. Los maestros de educación especial deben proporcionarse una amplia variedad de conocimientos y habilidades para que la educación de calidad se pueda aplicar a los estudiantes con necesidades especiales. Por lo tanto, este estudio investiga el nivel de conocimiento tecnológico pedagógico y de contenido, estilo de enseñanza, autoeficacia y competencia de los docentes de educación especial vocacional. Esta investigación emplea un enfoque cuantitativo aplicando el método de encuesta. En esta investigación, 36 profesores de la escuela de educación especial vocacional del estado de Selangor participaron como muestra. Los datos recopilados fueron analizados, adoptando la aplicación SPSS para obtener la media y la desviación estándar.

**Palabras clave:** Pedagogía tecnológica y conocimiento del contenido, estilo de enseñanza, autoeficacia, competencia, docente de educación especial.

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## 1. INTRODUCTION

Education is an important element in the development of countries and nations. The country's education system is intended to produce quality citizens and to fulfil the country's goals. Advances in the educational system are continually growing and necessary as there are differences and demands at the national level and swift growth globally (Zainal, Talib, Idris, Noor & Salleh, 2014). Influence of changes that will discursively impact student accomplishment, especially at school level and this involves special needs students. Consequently, the government has presented education in a manner to provide the needs of the students in line with the expansion of education at the national level. The curriculum is designed not only to produce knowledgeable citizens but also skilful in various fields. Malaysia Education Ministry provides the vocational education curriculum for special needs students as they have the physical capacity to be trained in order to practice the skills acquired after graduation (KPM, 2012). Trained teachers are required to actualize government goals. Besides, teachers must also have the confidence to keep up with the developments in the national education system. Teachers who teach special needs students in schools, especially in vocational education schools have to furnish themselves with a broad array of knowledge and skills. They should be informed of the technological pedagogical and content knowledge, teaching style, self-efficacy and competence as planned in the Standard Kualiti Pendidikan Malaysia Gelombang 2 (SKPMg2)(KPM, 2017).

Additionally, they need to possess the knowledge and skills in the subjects taught, even the teachers need to know about the special needs students themselves and the necessary learning support (Salleh, Hassan & Zainal, 2018). Teachers' mastery in integrating technological pedagogical and content knowledge is necessary because teachers are accountable for the learning activities of special needs students in schools. Previous studies reveal that special education teachers are less skilled in the adoption of technology in teaching which becoming less attractive and boring (Giles & Kent, 2016; Tondeur, Paraje, van Braak, Voogt & Prestridge, 2017). Knowledge in technology, pedagogy and content is important to integrate into special education so that the potential of special needs students can be improved and facilitate them to become independent (Liu, Wu & Chen, 2013). Teachers need to equip themselves with technology-related knowledge so that these components can be combined with pedagogy and content when teaching. Rather than that, teaching style also becomes one of the important elements to be included in teachers' daily teaching. Teachers are found to be less aware of the teaching objectives provided because they do not take into account the special needs students' ability (Sweigart, Landrum & Pennington, 2015). Teachers must change their teaching styles if they notice special needs students are starting to lose focus and become stultify (Gunarhadi, Sunard, Andayani & Supratiwi, 2018) during the teaching and learning process. Teachers need to diversify their teaching styles according to the needs and abilities of the special needs students so that the teaching environment is more enjoyable and active learning can be created.

Self-efficacy also plays a vital role because teachers' personal beliefs can positively impact students' achievement, especially special needs students. Teachers with low self-efficacy are incapable of presenting quality education in special education (Dunst & Brother, 2014). Conversely, if teachers have positive self-efficacy, teachers can offer better teaching strategies (Katz, 2015; Ramakrishnan & Salleh, 2018) and engaged special needs students in learning with more effective (Narkon & Wells, 2013). High self-efficacy of teachers can promote special needs students' eagerness to learn more. The same observation applies to competence that is being the principal pillar of the teaching profession. Teachers with less competence will negatively impact the social, emotional and behavioral of special needs students (Verschueren & Kooman, 2012). If teachers are profoundly competence, an excellent social relationship between teachers and students can be built (Breeman et al., 2015). Teachers need great levels of academic and professional skills so that special needs students can master new knowledge and practice it after school.

Ergo, research on the level of technological pedagogical and content knowledge, teaching style, self-efficacy and competence among special education teachers are explored. Four research questions were developed:

1. What is the level of technological pedagogical and content knowledge of teachers in vocational special education?
2. What is the level of the teaching style of teachers in vocational special education?
3. What is the level of self-efficacy of teachers in vocational special education?
4. What is the level of competency of teachers in vocational special education?

## 2. METHODOLOGY

The survey was done at a vocational special education secondary school in the state of Selangor. The study sample (N = 36) was selected as the sample for this pilot study. The sample selection was based on criteria that only teachers who teach in vocational special education schools are involved.

There were four research instruments applied and adapted in this study. The instruments are Technological Pedagogical and Content Knowledge (Hani, 2017), Grasha Teaching Style (Grasha, 1996), Teacher Sense of Efficacy Scale (TSES) (Nik Aida, 2016) and SKPMg2 Competence (KPM, 2017). This survey includes five parts. Part A is Respondent's Personal Profile Information with eight items. Part B is Technological Pedagogical and Content Knowledge with four constructs. The answer choices for each item were based on a five-point Likert scale, which strongly disagrees to strongly agree. Part C is a Teaching Style with five constructs. The answer choices for each item were based on a seven-point Likert scale, which strongly disagrees to strongly agree. Part D is Self-Efficacy with three constructs. The answer options for each item were based on a nine-point Likert scale, which is not very confident to very confident. Part E is Competence with five constructs. The answer choices for each item were based on a five-point Likert scale, which is not very confident to very confident.

### 3. DATA ANALYSIS

The pilot study ascertained that the Cronbach's Alpha for the instrument reliability level of technological pedagogical and content knowledge was .882, teaching style was .956, self-efficacy was .958 and competence was .945. Questionnaire responses were analysed using the Statistical Packages for the Social Sciences (SPSS) version 23.0. Descriptive statistics of mean and standard deviation were applied to analyse the results of this study. To define the level of each variable, mean values were categorized according to varying mean scores per section, as shown in tables 1 to 3.

Table 1 Interpretations of mean scores for the technological pedagogical and content knowledge and competence level of vocational special education teachers

Mean scores	Interpretations
1.00 – 1.89	Very low
1.90 – 2.69	Low
2.70 – 3.49	Moderate
3.50 – 4.29	High
4.30 – 5.00	Very High

Source: Adaptation from *Bahagian Perancangan dan Penyelidikan Dasar Pendidikan (BPPDP)* (KPM, 2006)

Table 2 Interpretations of mean scores for the teaching style level of vocational special education teachers

Mean scores	Interpretations
1.00 – 3.00	Low
3.01 – 5.00	Moderate
5.01 – 7.00	High

Source: Adaptation from Nik Yusof (2004)

Table 3 Interpretations of mean scores for the self-efficacy level of vocational special education school teachers

Mean scores	Interpretations
1.00 – 1.80	Very low
1.81 – 3.60	Low
3.61 – 5.40	Moderate
5.41 – 7.20	High
7.21 – 9.00	Very High

Source: Adaptation from Nik Aida (2016)

### 4. RESULT AND DISCUSSION

The results of this study are based on the research questions to study at the level of technological pedagogical and content knowledge, teaching style, self-efficacy and competence of vocational special education teachers.

#### a. Level of Technological Pedagogical and Content Knowledge

Table 4 Level of Technological Pedagogical and Content Knowledge

Constructs	Mean	Standard Deviation	Interpretations Level
Technological Pedagogical Knowledge	4.03	.777	High
Technological Content Knowledge	4.06	.611	High
Pedagogical Content Knowledge	4.27	.450	High
Technological Pedagogical Content Knowledge	4.06	.532	High

Table 4 shows the mean scores for the level of the technological pedagogical and content knowledge of vocational special education teachers. Generally, it was discovered that the level of technological pedagogical and content knowledge was high (mean=4.13, sd=.435). The technological pedagogical knowledge construct had a mean of 4.03 with a standard deviation of .777 while the construct of technological content knowledge had a mean of 4.06 with a standard deviation of .611. The pedagogical content knowledge construct had a mean of 4.27 with a standard deviation of .450 while the construct of technological pedagogical content knowledge has a mean of 4.06 with a standard deviation of .532. From the findings, teachers' level of knowledge was found to be higher in pedagogical content knowledge comparison to other constructs. This outcome signifies that teachers in vocational special education have good knowledge of technology, pedagogy and content.

### b. Level of Teaching Style

Table 5 Level of teaching style

Constructs	Mean	Standard Deviation	Interpretation Level
Expert	5.58	.735	High
Formal Authority	5.57	.754	High
Personal Model	5.63	.770	High
Facilitator	5.34	.827	High
Delegator	5.46	.845	High

Table 5 presents the mean scores for the teaching style of teachers in vocational special education. Overall it was found that the level of teaching style was high for all teaching styles (mean=5.52, sd=.703). The construct of expert had a mean of 5.58 with a standard deviation of .735 while an authority formal construct had a mean of 5.57 with a standard deviation of .754. The construct of personal model had a mean of 5.63 with a standard deviation of .770 while the facilitator construct had a mean of 5.34 with a standard deviation of .827. The construct of delegator had a mean of 5.46 with a standard deviation of .845. Based on the results, the level of personal model teaching style is found to be higher than other teaching styles. It points out that teachers in vocational special education specialize in teaching using variety of teaching styles.

### c. Level of Self-Efficacy

Table 6 Level of self-efficacy

Constructs	Mean	Standard Deviation	Interpretations Level
Student Engagement	7.22	1.082	Very High
Instructional Strategies	7.32	1.320	Very High
Classroom Management	7.44	1.103	Very High

Table 6 displays the mean scores for the self-efficacy level of teachers in special vocational education. Overall, teachers' self-efficacy was found to be very high (mean=7.33, sd=1.104). The student engagement construct had a mean of 7.22 with a standard deviation of 1.082 while the construct of instructional strategies had a mean of 7.32 with a standard deviation of 1.320. The classroom management construct had a mean of 7.44 with a standard deviation of 1.103. From the data obtained, the effectiveness of teachers in vocational special education is higher in the classroom management aspect.

### d. Level of Competence

Table 7 Level of competence

Constructs	Mean	Standard Deviation	Interpretations Level
Teacher as Planner	4.50	.561	Very High
Teacher as Controller	4.45	.470	Very High
Teacher as Adviser	4.56	.452	Very High
Teacher as Assessor	4.54	.445	Very High
Teacher as Motivator	4.56	.418	Very High

Table 7 exposes the mean scores for competence levels of teachers in vocational special education. Generally, teacher competence was found to be very high (mean=4.52, sd=.401). The construct as a planner had a mean of 4.50 with a standard deviation of .561 while the construct as a controller had a mean of 4.45 with a standard deviation of .470. The construct as an adviser had a mean of 4.56 with a standard deviation of .452 while the construct as an assessor had a mean of 4.54 with a standard deviation of .445. The construct as a motivator had a mean of 4.56 with a standard deviation of .418. From the findings, the level of competence of teachers in vocational special education is higher in terms of teachers as adviser and motivator in comparison to other constructs.

The teaching profession is a significant concern that every teacher should take into account. Teachers need to have knowledge from varying facets so that the quality education process can be conducted to the special needs students. Technological pedagogical and content knowledge is one of the components that should be incorporated into the daily teaching of all teachers. The outcomes of this study are parallel with previous research decisions such as Gómez-Ariza, Conejeras-Solar and Martín (2016) and Demirok and Bağlama (2018) which present that teachers' technological pedagogical and content knowledge is at a high level.

For the teaching style, the findings are similar to the study by Blândul and Bradea (2017) and Gunarhadi et al. (2018) who found that the teaching style of teachers who teach special needs students is at a high level. While Gunarhadi, Anwar, Andayani and Shaari (2016) proposed that the level of the teaching style of teachers was negative as teachers would regularly separate the special needs students with the typical students, in learning. Various teaching styles influence the presentation of these students in learning, both academically and psychologically (Gunarhadi et al., 2016). Teachers can motivate students by diversifying their teaching style to appropriate the level of special needs students.

Breeman et al. (2015) and Lowrey, Hollingshead, Howery and Bishop (2017) found that high levels of teacher self-efficacy actually had a strong impact on special needs students' stance. The findings of this study are parallel with their findings where the level of teacher self-efficacy is at a very high level. Teachers' high self-efficacy is required to diminish the weaknesses when teaching special needs students (Narkon & Wells, 2013; Yin, Loreman, Majid & Alias, 2019). Self-efficacy represents a vital position in every teacher because their confidence can grant an engaging learning atmosphere.

Blândul and Bradea (2017) emphasize the importance of the element of competence among teachers. According to their research, competence does not only needs attention in regards to the development of professionalism but also on ways in which a teacher should emphasize and asses the skills. This aspect is similar to this study where the level of teacher competence is very high as teachers can implement and evaluate teaching in the capacity special needs students.

## 5. CONCLUSION

Altogether, the research carried out among vocational special education school teachers is at a great level. Teachers are perceived to be aware of their respective responsibilities in reaching the significant aims of their teaching profession. Teachers need to keep striving for knowledge in all phases of academics and skills. Therefore, teachers need to be more conscious of the types and specifications of courses needed to keep up with the current momentum.

This study can be referred by disparate parties, especially policy practitioners, informing the implementation of vocational education for special needs students and the teachers. The elements of technological pedagogical and content knowledge, teaching style, self-efficacy and competence need to be highlighted in outlining a guide that will serve as reference material for teachers. Also, the findings present powerful implications for teachers who teach special needs students so that a quality education system can be provided to them. Implementation of quality vocational education needs to be practiced in daily teaching so that skillful and knowledgeable special needs students can be produced. The findings also highlight how the teaching profession can be enhanced in a better way. Teachers need to be more responsible towards their duties as an ideal teacher so that their services are optimized by everyone, including special needs students, parents, schools, community and the country.

As a suggestion for further research, studies related to technological pedagogical and content knowledge, teaching style, self-efficacy and competence of vocational special education school teachers could be expanded by looking at perspectives of educational options, gender and teaching experience. The dominant factors and the influence on the teaching profession can also be analyzed.

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## Ensuring sustainable development of the industrial enterprise by increasing its innovative potential

Garantizar el desarrollo sostenible de la empresa industrial aumentando su potencial innovador

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### ABSTRACT

The article considers the factors determining the strategic efficiency of industrial enterprises, criteria and ways of investment support of their sustainable development. It is also proved that at the intensive transformation of innovative activity into a determining factor of sustainable development the use of innovative potential is an effective means of increasing competitiveness of industrial enterprise. The author asserts that the sustainable development of the enterprise is provided with opportunities to accumulate resources in the innovation sphere, their rational use within the framework of the chosen priorities, that is, the increase of innovation potential. The modern model of sustainable development of the enterprises assumes system integration of scientific and technical sphere in processes of economic and social development. The main factor in the global economic dynamics of recent decades is the widespread use of innovation. Orientation on intellectual, instead of raw materials resources allows to provide high rates of economic growth, to keep natural ecosystem, to reduce number of harmful and dangerous manufactures, to reach the consistent economic, ecological and social purposes guaranteeing the self-sustaining, balanced development. For today it is generally recognized at the state level that increase of competitiveness of national economy of Uzbekistan in the world market is impossible without activation of innovative processes.

**Keywords:** industrial enterprises, innovative development, potential, sustainable development, investment support.

### RESUMEN

El artículo considera los factores que determinan la eficiencia estratégica de las empresas industriales, los criterios y las formas de apoyo a la inversión para su desarrollo sostenible. También se demuestra que en la transformación intensiva de la actividad innovadora en un factor determinante del desarrollo sostenible, el uso del potencial innovador es un medio eficaz para aumentar la competitividad de la empresa industrial. El autor afirma que el desarrollo sostenible de la empresa ofrece oportunidades para acumular recursos en el ámbito de la innovación, su uso racional en el marco de las prioridades elegidas, es decir, el aumento del potencial de innovación. El modelo moderno de desarrollo sostenible de las empresas supone la integración del sistema de la esfera científica y técnica en los procesos de desarrollo económico y social. El factor principal en la dinámica económica mundial de las últimas décadas es el uso generalizado de la innovación. La orientación hacia los recursos intelectuales, en lugar de materias primas, permite proporcionar altas tasas de crecimiento económico, mantener el ecosistema natural, reducir el número de manufacturas dañinas y peligrosas, alcanzar los objetivos económicos, ecológicos y sociales consistentes que garantizan el desarrollo autosostenible y equilibrado. Por hoy, se reconoce generalmente a nivel estatal que el aumento de la competitividad de la economía nacional de Uzbekistán en el mercado mundial es imposible sin la activación de procesos innovadores.

**Palabras clave:** empresas industriales, desarrollo innovador, potencial, desarrollo sostenible, apoyo a la inversión.

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Among the factors determining the strategic efficiency of enterprises, the central place is currently occupied by the level of innovation, which causes a fundamental renewal of production technology, production of new products. Possibilities of innovative development are defined not only by a financial condition and characteristics of resource potential of the enterprise, a level of development of innovative infrastructure in region, but, first of all, by existing management methods.

Innovation activity, as the most perspective type of change which brings the greatest contribution to increase the efficiency of activity of the enterprise, can serve as the basic factor of development. The level of development and dynamism of the innovation sphere - science, new technologies, high-tech industries and enterprises actively introducing innovations provide the basis for sustainable economic growth. In case of intensive transformation of innovation activity into a determining factor of sustainable development, the use of innovative potential is an effective means of increasing the competitiveness of an industrial enterprise. Sustainable development of the enterprise is provided with the possibility of accumulation of resources in the innovation sphere, their rational use within the framework of the chosen priorities, i.e. increase of the innovation potential. The modern model of sustainable development of the enterprises assumes system integration of scientific and technical sphere into the processes of economic and social development. At the same time, the process of increasing the innovation potential of national enterprises, which is considered as a prerequisite for sustainable development, faces a lack of formalized apparatus for effective decision-making in the field of innovation and assessment of their consequences.

In our opinion, the criteria for sustainable development of a modern industrial enterprise are:

High innovative potential, corresponding to the required pace of development;

the ability of the enterprise to manage intellectual property objects in accordance with strategic development goals;

Possibility of the introduction of innovative technology taking into account the prospects of development of the enterprise;

One of the important conditions for the formation of the innovative potential of the enterprise is the availability of planning and setting adequate goals of innovative activity, which require the use of specific measures (cost, natural), long-term intentions, achievability, synergy (Shaislamova M.R. 2013). Often, innovation activity at enterprises is a rather intense and conflicting process, which is implemented in the form of overcoming the resistance of personnel to change and the need for additional efforts. The loyalty of employees of any organization to innovations increases if they are familiar with its main goals (strategy) and represent their contribution to its implementation.

The strategy of sustainable development can be defined as a model of actions required to ensure sustainable development of the enterprise based on the selection of criteria for increasing its innovative potential. Thus, the implementation of the strategy is a controlled process of increasing the innovative potential of the enterprise in accordance with the current and strategic goals of sustainable development. Formation of the strategy of sustainable development provides the choice and justification of directions of innovation activity, volume and structure of innovation projects, terms of their implementation, assessment of the state of organizational structures of innovation management. The process of choosing the most rational strategy of sustainable development in specific economic conditions is based on the results of evaluation of all forms of innovation activity manifested in innovations of different types (Nasyrkhodzhaeva, D.S. 2010).

The most important factors for an effective, sustainable development strategy are:

Innovation potential, directions and scale of implementation of possible and potentially effective innovations, the readiness of the enterprise to implement innovations;

Flexible organizational forms, which allow to combine the decentralization of management, necessary for the effective development of innovations, and centralization, necessary for the development of innovative technologies; learning processes that provide an accumulation of specific competences as a result of experience, analysis of external and internal factors and phenomena, development of new technologies;

Availability of resources that meet the needs of sustainable development and the creation of opportunities for the future of the enterprise.

Application of the developed tools to ensure the sustainable development of the enterprise on the basis of the formation and use of the system of monitoring of innovative potential in practice allows to reasonably revise the strategic guidelines of the enterprise's activities on the introduction of innovations and get the economic effect, expressed in the provision of sustainable development of the enterprise, strengthening its position in the market, increasing the efficiency of its functioning.

The development of innovation activity requires the implementation of a set of various measures that form the basis of the innovation process, ranging from the generation of new ideas and the development of human resources to financial, material and technical, information, legislative, methodological and organizational support (Postyushkov A. V. 2009).

At the same time, the opportunities of innovative development of the enterprise are connected with the state of innovation infrastructure and innovation potential of higher-level systems. Introduction of innovations assumes reorganization of the basic and auxiliary processes of the enterprise, demands a change of the size and structure of the cost price, amortization deductions, changes external and internal logistical, marketing processes and management processes.

Considering the organizational aspect of innovation potential, it is necessary to point out that innovation activity is always associated with risk, which is caused by a number of factors, the impact of which can not be determined accurately in advance. In general, the risk in innovation activity can be defined as the probability of losses arising from investment in the

production of new goods and services, in the development of new equipment and technologies, which may not find the expected demand in the market.

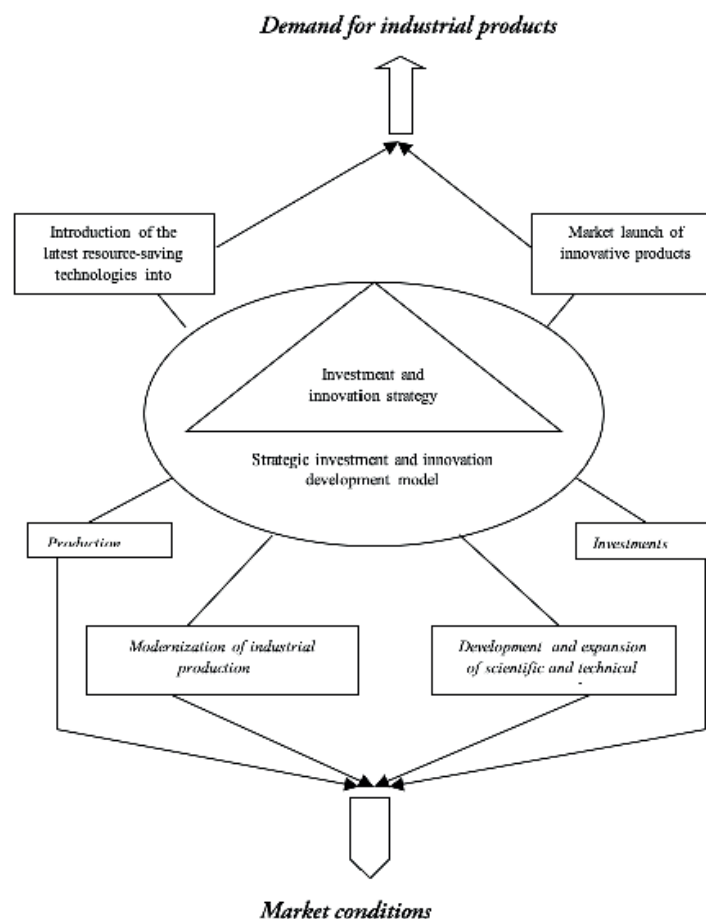
Investment activity is closely related to the objects of investment activity, which are newly created or upgraded fixed assets, working capital in industries and sectors of the economy, securities, targeted cash deposits, scientific and technical products, and other objects of property, including property rights and intellectual property rights.

In turn, the efficiency of investment activity of an industrial enterprise is naturally determined by the degree of improvement of the economy of the industry in a more favorable direction, which in turn directly affects the further improvement of the investment process.

One of the ways of investment support for the development of industrial enterprises could be the defrosting of most of the income from the export of raw materials, which is currently in the reserves, as a result of which the infrastructure and high technology are underfunded.

To increase the efficiency of investment activities of industrial enterprises, it is advisable to use a strategic approach that allows them to significantly enhance their investment attractiveness in a number of indicators (life cycle stages, profitability and efficiency, the level of prospects for their development).

It should be noted that the main purpose of investment and innovation development is the production of competitive products. To increase the demand for competitive products, the strategy should be based on four components: production, investment, modernization of production, development and expansion of scientific and technical potential (Fig. 1).



**Fig. 1. Model of strategic investment and innovation development of industrial enterprise.**

Source: Compiled by the author based on the study and synthesis of foreign literature.

Strategic investment and innovation activity of the enterprise assumes the formation of consistent, penetrating each other five main factors: the assessment of financial and production status of the enterprise, the selection of innovative projects, planning parameters of innovative monitoring and forecasting the implementation of innovative projects, analysis of current and future innovation activities, strategic orientation. The conducted monitoring will provide an opportunity to take into account the market conditions, the impact of inflation on the internal and external environment.

Sustainable development on the basis of increasing the innovation potential is a necessary condition for the effective operation of any business entity, as the use of innovations allows the effective implementation of the resources of industrial enterprise.

Assessment of resource opportunities for the implementation of innovative technologies, including the choice of the variant of technological innovation for the implementation of the analysis of the prospects for new technology in the market and consideration of alternative options, will effectively use the resources of the enterprise to ensure the sustainability of its development.

Modern industrial enterprises are characterized by a constant need for transformation, expressed in the implementation of various restructuring processes. Restructuring is carried out not only to overcome the crisis of the enterprise, as well as for timely and effective adaptation of the enterprise to changing market conditions. At present, the processes of restructuring, as well as innovative activities, are a constant component of sustainable development of the industrial enterprise.

The above proposals to ensure sustainable development on the basis of increasing the innovation potential in practice will reasonably revise the strategic guidelines of the industrial enterprise and increase its stability, expressed in the change of the level of innovation potential, strengthening the position of the enterprise in the market, increasing its efficiency of functioning.

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## Sustainable economic development model for agricultural holdings based on effective corporate governance

Modelo de desarrollo económico sostenible para las explotaciones agrícolas basado en un gobierno corporativo efectivo

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### ABSTRACT

During the last years of the post-crisis period, numerous barriers that have hindered the effective functioning of crisis integrated structures in the agro-industrial complex were especially hard. This situation forces top managers to apply the strategy of their division into highly specialized firms immediately after the consolidation of assets. The result of this situation is that the Russian agro-industrial complex loses the possibility of large-scale involvement of the scientific, technical and organizational potential of integrated structures, which, in theory, should act as the leaders in the modernization processes of the national agrarian economy. The next global economic crisis, weighed down by the sanctions of the United States, the EU and several other countries, exacerbated the problems of technological modernization temporary boundaries for agro-industrial complex, which at that time became a strategically important economy sector due to a significant decline of GDP in 2014-2015 and worsened the socio-economic situation of the Russian Federation in the international division of labor. All previous years, the approaches to the development of integrated structures were not of a systemic nature, were not always an effective result of random searches and the development of tools to increase their macroeconomic performance. This situation could not but veil the importance of large integrated formations in the implementation of agricultural sector modernization goals in the national economy.

**Keywords:** world economic crisis, production decline, agriculture, large integrated clusters, agricultural holdings

### RESUMEN

Durante los últimos años del período posterior a la crisis, numerosas barreras que han obstaculizado el funcionamiento efectivo de las estructuras integradas de crisis en el complejo agroindustrial fueron especialmente difíciles. Esta situación obliga a los altos directivos a aplicar la estrategia de su división en empresas altamente especializadas inmediatamente después de la consolidación de los activos. El resultado de esta situación es que el complejo agroindustrial ruso pierde la posibilidad de una participación a gran escala del potencial científico, técnico y organizativo de las estructuras integradas, que, en teoría, deben actuar como líderes en los procesos de modernización de la economía agraria nacional. La siguiente crisis económica mundial, agobiada por las sanciones de Estados Unidos, la UE y varios otros países, exacerbó los problemas de modernización tecnológica de los límites temporales del complejo agroindustrial, que en ese momento se convirtió en un sector económico estratégicamente importante debido a un disminución significativa del PIB en 2014-2015 y empeoró la situación socioeconómica de la Federación de Rusia en la división internacional del trabajo. Todos los años anteriores, los enfoques para el desarrollo de estructuras integradas no fueron de naturaleza sistémica, no siempre fueron un resultado efectivo de búsquedas aleatorias y el desarrollo de herramientas para aumentar su desempeño macroeconómico. Esta situación no podía sino la importancia de las grandes formaciones integradas en la implementación de los objetivos de modernización del sector agrícola en la economía nacional.

**Palabras clave:** crisis económica mundial, disminución de la producción, agricultura, grandes grupos integrados, explotaciones agrícolas.

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## INTRODUCTION

The problems of achieving the sustainability of the economic development of agricultural holdings are especially relevant for the domestic agricultural economy, because the formation and integration of corporate structures takes place in a difficult period. The integrated interaction of agricultural holdings allows them to provide more stable development in comparison with separately functioning enterprises. In modern realities, the agro-industrial complex of the Russian Federation has great economic potential, the management of which is extremely complicated by the highest degree of dependence on the geopolitical situation.

The economic sustainability of large agricultural holdings is quite strongly influenced by many factors, including the aggravation of the geopolitical situation, sanction barriers, price volatility, excessive tax burden, insufficient level of investment flow...

In conditions of economic instability and increasing competition, one of the key points of sustainable economic development provision for agricultural holdings is the creation of an appropriate corporate governance system. And this is natural, for nowadays corporate governance acts as the primary factor of building up the competitive advantages and sustainable economic development of Russian agricultural holdings, and engaging the country socio-economic potential.

The use of the corporate governance strategy allows not only to determine the financial results of agricultural holding activities, but also to build effective management decisions, etc. as the basis for final financial indicator improvement (Misakov et al, 2018; Misakov et al, 2019).

The analysis of the problems agricultural holding creation and development through the use of a modern corporate governance system shows the relevance of the research topic on the development of tools and the formation of organizational and economic conditions that allow to develop an optimal model of corporate relation management in order to ensure economic sustainability and balanced development of Russian agricultural holdings.

## STUDY METHODOLOGY

The theoretical and methodological basis of the study was the conceptual provisions of competitive development theory by Russian and foreign scientists, a number of the latest theoretical and applied research on the problems of corporate governance efficiency in the framework of integrated entities - agricultural holdings.

In the process of determination, analysis and diagnosis of the factors that have a multidirectional effect on the growth of agricultural holding competitiveness, they used the methods of comparison, expert assessment, classification, and modeling.

The empirical base of this scientific article was the statistical materials of the Federal State Statistics Service of the Russian Federation, as well as the data of agribusiness statistics on the production and financial activities of agricultural holdings in the North Caucasus.

## STUDY RESULTS

The sustainability of agricultural production structure development is characterized in addition to a high level of capitalization and profit, by the compliance with social and corporate responsibility to the state, society, and shareholders.

For more than a quarter of a century, Russian agricultural holdings have been using a corporate governance system.

The analysis of the specialized literature suggests that there is still no unified definition of “corporate governance” term. The generalization of various theoretical approaches to the concept of “corporate governance” allows us to consider it as a system for agricultural holding management, in order to ensure sustainable economic development of enterprises observing the interests of stakeholders through the development and implementation of effective management decisions implemented in the dynamic growth of operational, financial and economic, social, environmental and other indicators of the agricultural holding activity (Analysis and forecast of financial market development in Russia, 2003; Radygin et al, 2009).

Three corporate governance models are used in world practice: Anglo-American, Japanese and German. In principle, they differ only by the composition of participants in the corporate governance process. Russia is characterized by its own special model of corporate governance, as a whole, combining the characteristic features of the abovementioned models. As a rule, agricultural holdings use three-level management structure (board, board of directors, general meeting of shareholders).

Among the main problem areas of corporate governance in Russian agricultural holdings are the low level of freely circulating shares, the low amount of paid dividends, the lack of diversification in sources of profit, etc. Economic uncertainty and the difficult geopolitical environment hinder the processes of external borrowing and investment attraction. In these conditions, it is necessary to develop an effective corporate governance model promptly that would allow to obtain added value not only to some large shareholders, but to all ones. In our work, the conceptual basis for studying the effectiveness of integrated structure development, we have used the main provisions of the new institutional theory. Such an approach, for example, unlike the neoclassical theory of firms, allows us to consider the competitive environment in the form of a set of contracts, which gives great opportunities for new effective approach development to establish the patterns of various types and forms of integration.

The mechanisms for the formation of integrated corporate structures are the merger, acquisition and restructuring of the

business.

In developed countries, any transaction conducted through a tender offer (purchase and sale) is called a “takeover”. To participate in the stock market, you must submit a certain number of shares of a particular company with prices and its validity period. Acquisition is a type of tender offer, usually put forward by a stand-alone corporation for a controlling stake of ordinary voting shares of another company. These takeovers are both friendly and hostile (North, 1993).

In our work, we will consider the processes of mergers and acquisitions in a broad interpretation and will position them in the form of vertical integration within the format of new relationships between legal entities and other enterprises that go beyond market transactions. The analysis of special literature allows us to summarize many existing areas of merger and acquisition theory development and highlight the most popular of them:

- The approaches of neoclassical theory, linking integration processes with emerging opportunities for the growth of allocative efficiency and creation the barriers to entry on the path of potential competitors;
- Institutional analysis approaches which allow to consider the creation of corporate structures in the context of transaction cost reduction;
- The approaches of the theory of dynamic comparative advantages, which allow to consider economic integration in the context of its possible adaptation to the stages of the life cycle of products and technologies;
- The approaches to the theory of corporate finance, which allow to analyze the impact of vertical integration on the efficiency of financial flows and the market value of an enterprise (Radygin et al, 2009).

Under the conditions of Russian reality, during the analysis of vertical integration impact on economic efficiency, the first two approaches are the most adapted.

Even more than half a century ago, the supporters of the neoclassical theory justified that the use of vertical integration gives the advantage of profit increase by “double premium” problem solution.

Indeed, in parallel with the seller total profit increase, consumer win increase, which (in the traditions of the Chicago school) allow us to substantiate the approach to vertical integration.

The use of various forms of combining the stages of the technological chain allows for the growth of profits of the vertical pyramid of sellers.

There are many approaches at which, in accordance with the classical theory, the negative effects of vertical integration are studied, including vertical contracts, on the dynamics of economic efficiency, usually due to existing barriers to entry. At the same time, this approach is somewhat limited, because it does not pose and does not consider the problem of authority delegation, believing that the participants in this process have access to the same information.

However, this limitation can be overcome by the theory of information asymmetry.

In institutional theory, transaction costs are considered as one of the key factors of integrated corporation development. At the same time, the minimization of transactional and transformational costs of the neoclassical type acts as a guideline for the substantiated scale of economic integration.

As can be seen from the abovementioned, the theory of transaction costs regarding the problems of transition economy admits an excessively free interpretation of specific assets, because for some reason there are no specific financial assets among them. And this despite the fact that in the business relations of banks and firms, bank loans granted are transformed into idiosyncratic or specific assets. As a rule, they are not mobile, for example, low liquidity of overdue debts, etc., which limits the possibilities of transaction cost theory during the study of interaction factors between bank and industry capital.

When they analyze the activities of a corporation based on the principles that are different from those legally enshrined in property rights, the problem of the national economy industrial complex disorganization is especially acute. Disorganization occurs during the breakdown of established economic ties in the terms of imperfect market coordination mechanisms. There is some archaization of interaction forms and methods between business entities - it comes to in-kind settlements.

A separate topic is the use of the theory of agent relations between managers and employees during the analysis of integration in agro-industrial organizations. Involvement of bank representatives in the capital of the borrower is the factor of potential credit risk and the specificity of financial asset reduction (Guriev & Sonin, 2003; Misakov et al, 2017; Klochko et al, 2018).

Banks have a new quality - now they act both as a shareholder and as a creditor, which introduces an additional nuance in the relationship between a contractor and a guarantor. This is a very important circumstance, as it can be seen from Russian practice that shareholders quite often inflict a lot of damage on their own companies. This situation forces agro-industrialists to develop special partnerships with banks so that a corresponding decrease of transaction costs and the costs of borrowed capital will increase the losses from the transfer of controlling functions over financial flows to bankers.

All this forces us to seek actively some effective solutions in the distribution of property rights, taking into account the possible significant impacts of insiders.

As can be seen from the foregoing, the factor of property mergers and acquisitions is essential in transactional theory. The presence of a new quality - common ownership - is one of the guaranteed forms of contract execution.

Integrated corporate structures can be seen as a holistic system, any of which characterizes both internal relationships and contractual relations of partners in terms of increasing competition (Ugurchiev et al, 2018; Prokhorova et al, 2016; Kolomyts et al, 2019).

A conceptual approach to the problems of effective corporate governance development is based on modeling the sustainable economic development of an agricultural holding.

To study the level of corporate governance impact effectiveness on the sustainability of an agricultural holding development, we proposed an economic and mathematical model of linear regression using the least squares method with correction of observation heterogeneity.

As an object of research, we took a typical South Russian agricultural holding Niva. The sample size is 2013-2018. We used a number of quantitative indicators as dependent variables:

- The multiplier P/E, where

P is the market capitalization of a company; E is the net profit of the company.

ROAE - return on equity.

Tables 1 and 2 show the initial data for an economic-mathematical model development.

All this allowed us to analyze the effectiveness of the corporate management of the Niva agricultural holding.

Table 1. Initial data for economic-mathematical model development of P/E multiplier linear regression dependence on the coefficient of corporate governance efficiency

Period	/	Corporate Governance Efficiency Ratio
2013	7,2	99
2014	5,26	102
2015	6,18	97
2016	6,84	92
2017	7,15	95
2018	6,11	94

Table 2. Initial data for economic-static model development of linear regression dependence on the coefficient of corporate governance efficiency

Period		Corporate Governance Efficiency Ratio
2013	18	99
2014	18	102
2015	21	94
2016	19	95
2017	16	97
2018	15	83

The growth of P/E multiplier suggests that the increase of corporate governance efficiency leads investors to positive evaluation of the Niva agricultural holding operational effectiveness. This also indicates the correlation of the P/E multiplier with the corporate governance efficiency coefficient.

When they compile an economic-mathematical model of linear regression of P/E multiplier dependence on the corporate governance efficiency coefficient, the condition for correction was established.

Such calculations allow us to establish the correlation between the financial indicators of sustainable development of the agricultural holding and the corporate governance performance indicator, which objectively confirms the need to improve the quality of corporate management in order to increase the sustainability of the agricultural holding development.

## CONCLUSIONS AND OFFERS:

All business structures have their own “special” self-organization mechanism, operating in accordance with institutional agreements, that is, with a specific set of specific rules. One of the signs of perfect institutional orderliness is the presence of trust among all contract transaction partners (Moshkovich, 2002).

In accordance with the new institutional theory, in the process of economic development, the optimal ownership structure is changing, but there is no way to formulate and establish property rights in a perfect way. This is associated with significant transaction costs necessary to ensure and protect the individual rights of owners.

Thus, a sustainable model of corporate governance is very important as a specific institutional agreement.

Firstly, the development of a national model of this type of governance cannot be considered in isolation from current globalization changes, from internationalization and competition, the formation of new industries, etc.

Secondly, this is associated with the need to receive a standard set of formal market institutions that can provide not only economic, but also political support.

Thirdly, with the transplantation (import) of political and economic institutions (WTO, EBR, EU rules, etc.) of European and other corporate governance models that increase the transparency of companies, step up the fight against corruption, the introduction of coercive (legislatively introduced) norms takes place.

### Conflict of interest:

The authors confirm the absence of a conflict of interest.

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## The effects of Hayati Eksplorasi Berfikir Aras Tinggi (HEBAT)

Los efectos del módulo de Hayati Eksplorasi Berfikir Aras Tinggi (HEBAT)

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### ABSTRACT

The primary purpose of the study was to determine the effects of the HEBAT module (Change in Matter) in improving the understanding of matter concepts and higher-order thinking skills (HOTS). A sample consisted of 90 of form one students from several schools in Melaka, Malaysia. This study used the mixed-mode method and sequential explanatory design to obtain the required data. The pre-test and post-test (understanding the concept of matter test and HOTS achievement test) derived for quantitative data. While qualitative data derived from the interview protocol. For the analysis of the understanding of the matter concept, the paired T-test analysis found that there was a significant difference between the pre-test and the post-test score. While for HOTS achievement test, paired T-test showed that there was no significant difference between pre-test and post-test score. The results of the qualitative data found that the HEBAT module helped improve the concept of matter but did not improve students' HOTS. Based on the findings, suggestions will be made to improvise the current HEBAT Module.

**Keywords:** Science education, Higher order thinking skills, Understanding of matter concepts, HEBAT module.

### RESUMEN

El propósito principal del estudio fue determinar los efectos del módulo HEBAT (Cambio en la materia) para mejorar la comprensión de los conceptos de la materia y las habilidades de pensamiento de orden superior (HOTS). Se utilizó una muestra de 90 estudiantes de varias escuelas en Melaka, Malasia. Este estudio utilizó el método de modo mixto y el diseño explicativo secuencial para obtener los datos requeridos. La prueba previa y la prueba posterior (comprensión del concepto de prueba de materia y prueba de logro HOTS) derivadas de datos cuantitativos. Mientras que los datos cualitativos derivados del protocolo de entrevista. Para el análisis de la comprensión del concepto de materia, el análisis de prueba T emparejado encontró que había una diferencia significativa entre el puntaje previo y el posterior. Mientras que para la prueba de logro HOTS, la prueba T emparejada mostró que no había una diferencia significativa entre la puntuación previa y posterior a la prueba. Los resultados de los datos cualitativos encontraron que el módulo HEBAT ayudó a mejorar el concepto de materia pero no mejoró el HOTS de los estudiantes. En base a los hallazgos, se harán sugerencias para improvisar el Módulo HEBAT actual.

**Palabras clave:** educación científica, habilidades de pensamiento de orden superior, comprensión de conceptos de materia, módulo HEBAT.

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## 1. INTRODUCTION

The 21st-century education system is a transformation made in renewing existing educational standards around the world. Now education in Malaysia also moves towards 21st-century learning as outlined in the 2013-2025 Education Blueprint Malaysia. One of the 21st-century learning centres is through the application of Higher Order Thinking Skills (HOTS) elements. The Ministry of Education Malaysia introduced the implementation of HOTS in science subjects because of the bottom results of students' achievement in international assessments namely *Trends in International Mathematics and Science Study* (TIMSS) 2011 and *Programme for International Student Assessment* (PISA) 2009. Before starting the HOTS science program, a pilot test conducted to all school in October 2013. This pilot test used the TIMSS and PISA clone valuation instruments to assess the students' HOTS level for form one and form two students. Later, all schools have been ordered to start fully practicing HOTS in teaching and learning of science in 2014, starting with form one students. Introduction of some HOTS activities in teaching and learning of science subjects are by the use of 8 types of thinking map (iThink), project-based learning, discovery-based learning, inquiry-based learning, socio-scientific issue and problem-based learning.

Students' understanding of the concept of matter is usually logical but inconsistent with the right scientific concept (Denis et al., 2005). The problem of understanding the concept of matter becomes critical when the students are unable to answer the latest assessment questions regarding the concept of the matter when the application of HOTS questions introduced. The higher-order thinking skills (HOTS) refer to the thinking process of using high intellectual skills and the ability to master more than just read, write and count.

Learning about science subjects helps students to enhance the ability to use HOTS compared to most other subjects in school. It is because science subjects are not just about the facts, but science also represents the proposal process to improve the explanation of our world. Scientific knowledge is the result of the activities of scientists from ancient times to the present which comprise science process skills and manipulative skills (Nordin & Muhamad, 2010). Besides, the process of science skills emphasizes the findings of inquiries, problem-solving and scientific skills. Its enables the student's interest to stimulate, especially when conducting science experiments. This science process skill allows students to question something and find a precise answer.

In order to achieve the Ministry of Education's intention to improve the student's understanding of concept matter and HOTS in science, every school have introduced with the *Hayati, Explorasi, Berfikir, Aras, Tinggi* (HEBAT) modules in science subjects. HEBAT module contains 30 selected topics for science subjects. The topics contained in this HEBAT module are based on the curriculum syllabus of science subject from form one to form 3. One of the topics in the module is the change in the matter for form one. HEBAT module has just been implemented in all schools throughout Malaysia beginning in 2017. So, the effect of its use in improving understanding the concept of matter and HOTS for science learning still needs to be studied.

The preliminary study had been conducted on six science teachers in January 2018 about the use of HEBAT modules in science subjects. From the study reported that in secondary schools, teachers are less likely to used HEBAT module in the teaching and learning of science. Science teachers are more comfortable using their pedagogical approach, which also implements the HOTS elements in the teaching and learning process in the classroom. They love to use their ideas in planning daily lessons because they can adapt to the teaching aids supplied by the school and more appropriate to the environmental factors of the school.

From the preliminary survey also found that teaching and learning for the topic (the change of the matter concept) to the form one students in secondary school are usually through the use of textbooks, science practices, and reinforcement training. Teacher presentation techniques in explaining remarkable contents in textbooks are usually traditionally teacher-centred such as through oral descriptions without teaching aids or by using teaching aids such as using PowerPoint slides and fewer animations video.

One of the problem that student face during learning this topic are hard to understand about substances (except water) expand when heated and contract when cooled. This phenomenon is about the change in intermolecular distances but not with the change in volume or size of atoms and molecules. However, Griffiths and Preston (1992) found that 40% of students hold onto the conception that water molecules in solid-state (ice) are the largest. Some others believed that water molecules in the solid phase or the gaseous phase are the smallest. Many students who participated in Lee et al. (1993) study confused about observable properties of matter with properties of particles and attributed macroscopic changes to the changes in the particles themselves.

Higher-order thinking skills associated  
with applying, analyzing, evaluating and creating  
higher-order thinking skills associated  
with applying, analyzing, evaluating and creating  
higher-order thinking skills associated  
with applying, analyzing, evaluating and creating

Students are having problems to solve HOTS questions associated with analyzing, evaluating and creating. This statement support by the inferior science performance of Malaysian students in international student's tests, TIMSS and PISA (Nghah et al., 2017). It is due to analysis, evaluation and creation activities rarely trained to the students. According to Retnawati et al. (2018), the majority of students still did not know the whole concept of HOTS because their daily routine in class just sits, listen and note. Students also love to memorize facts and retelling something that heard which included in low-level thinking skill. That will make them have difficult to answer HOTS questions that need the process of deep thinking (Thomas & Thornes, 2009).

## 1.1 Research objectives

The objectives of this study are to:

- 1) Study the effect of using the HEBAT module in enhancing the understanding of the concept of matter (change of matter topic) among form one students in Malaysia.
- 2) Study the effect of using the HEBAT module in improving higher-order thinking skills (change of matter topic) among form one students in Malaysia.
- 3) Study the strengths and weaknesses of HEBAT modules in enhancing the understanding of matter concepts and higher-order thinking skills science (change of matter topic) among form one students in Malaysia.

## 1.2 Literature review

### 1.2.1 Status of students' understanding of matter concepts

According to Fisher and Lipson (1986), the concept of science that students formally bring to the classroom often misunderstood and inaccurate with the actual concepts mastered by scientists. One of the most critical concepts in science subjects is about the matter. According to the definition of science, the matter is something that has mass and occupies space. In secondary school, the matter hardly understood as something made up of very discrete particles. Students also do not understand the order, movement, and energy of particles in explaining phenomena involving matter state. They lack the basis for the concept of matter, which is the lack of understanding about matter that can categorize into solid, liquid and gas (Arshad & Soh, 1999). Griffiths and Preston (1992) asked 12th-grade students to sketch what they would see if they could look at a molecule of water under a microscope. Some of these students thought that a water molecule is spherical with particles spread throughout. While, some others believed that water molecules have different shapes depending on what phase they are in. The findings of another study revealed that 80% of students attributed a macroscopically observed color of various substances to their single particles (Albanese & Vincentini, 1997). Students also have a poor understanding of the state of matter which is when the matter is in hot and cold conditions. They though the particles contained in the matter to be heated and cooled, too (Chabalengula & Banda, 2014). Besides, most students also have problems describing the basic concepts of matter and particles. It is because the students involve in many elements that are abstract and invisible to their naked eye. It supported by a study conducted by Koba and Taylor (2011), the concept of matter being an abstract topic for primary school students and thus making students unable to imagine the concept through the senses, and having difficulty understanding the terms contained in the topic.

### 1.2.2 Status of students' higher order thinking skills

Implementation of the Higher Order Thinking Skills (HOTS) program in science subjects started when students were unable to answer HOTS questions. It resulted in the deterioration of student achievement in TIMSS 2011 and PISA 2009 for the science subject. Before the introduction of the HOTS program, a pilot test was conducted in October 2013 on form one and form two students in all schools using the TIMSS and PISA clone assessment. This instrument used to assess students' level of competency. The results of this pilot test show that students are still unable to master in HOTS (PPPM annual report, 2016). Next step, all schools have been ordered by the government to start fully implement the HOTS program in 2014, starting with form one students for science subject. The students have introduced with HOTS activities through the use of 8 types of mind maps (iThink), project-based learning, discovery-based learning, socio-scientific, and problem-based learning.

### 1.2.3 HEBAT module

HEBAT Module is available in the form of downloadable documents online via the link ([bit.ly/HEBATSCbm](http://bit.ly/HEBATSCbm)) for Malay language and ([bit.ly/HEBATSCbi](http://bit.ly/HEBATSCbi)) for English provided by the Secondary Science Unit, Science and Mathematical Sector, Development Division of Ministry of Education (MOE) as a guide in carrying out curriculum for the teaching and learning of science subjects. Teaching and learning resource materials contained in the HEBAT module referred from the British Council's Sheffield Hallam University source. This module has been developed using Model 5E (Engage, Explore, Explain, Elaborate, Evaluate) based on constructivism theory. This module contains 30 topics which covered science topic according to the science syllabus from form one till form three.

### 1.2.4 Use of modules in teaching and learning

A functional and complete module must meet some specific features. According to Hughes et al. (2002), a good module should have the following features:

- a) Individualize - Modules can be used personally or provide uniform instructions to individual groups individually depending on how the module used. The module provides learning based on the ability level and time to suit the needs of the students. The module requires external control according to the criteria or performance level.
- b) Freedom - The module can give students the freedom to learn according to their wants. Students take responsibility for learning. More emphasis on student learning over the teaching of teachers as content and self-teaching.
- c) Active participation - A module should provide an atmosphere where students are actively involved in passive reading or listening to teacher information only. The self-taught modules format allows students to control the alignment of whether to continue the lesson, repeat, do the exercises, and so on.
- d) Immediate reinforce responses - A good module can provide immediate feedback on each student's achieve-

- ment, and these benefits will stimulate motivation to continue learning.
- e) Utilization of a variety of media – A good module should be used in conjunction with other media, whether printed, audio and visual material, original material including human interaction. The use of these various media will make learning more interesting, fun and useful.
  - f) Student interaction - A module can be designed by providing learning activities that encourage interaction among students such as teamwork activities, discussion, game simulations, and seminars. Through this interaction, students can help each other to master certain materials and skills.
  - g) Teachers' role - Teachers can act as facilitators that promote learning as well as helping students to solve problems faced by them. Additionally, the role of the teacher will be more independent of repeat teaching activities using the same material. With a good module, teachers can focus on more essential teaching activities such as inspiring, preserving interest, determining the orientation and personal relationships.

### 1.2.5 The previous studies on the effect of using teaching and learning modules on understanding the concept of matter

The Tatar (2011) study through the development of the teaching and learning module, help to reduce the existence of an alternative student framework in the 'Basic matter concept'. He indicates that some respondents have an alternative framework in density concept. Density often regarded as a higher position concept (Kohn, 1993). Through this module can also overcome one of the most common alternative frameworks in the classroom that involves the amount of water and the soaked material. Students will state that if we put something substance into a more significant amount of water such as a pool, the material will float. It is in line with the study conducted by Duckworth (2001) on the concept of buoyancy and drowning, the idea that large amounts of water will affect the object. It is due to the existence of a student's alternative framework to the concept of density which is the fundamental nature of matter that students should associate with the concept of buoyancy and drowning. According to Kohn (1993), most students consider that the weight of an object affects the density of the object. Students assume that heavy and large objects have a high density, while lightweight and small objects have low density. So, Tatar (2011) study concluded that the existence of this alternative framework is because students do not take note of the weight per size of the object.

Bunce et al. (1991) have used learning strategies to facilitate students to understand the concept of matter through the construction of modules. This module using points or circles to represent atoms, ions and molecules as particles at the submicroscopic level. Other researchers also found that modules using submicroscopic animation strategies to represent the concept of matter could contribute to a better understanding of the nature of material matter (Stains et al., 2011). This opinion is also supported by Rodrigues (2004), which considers the creation of a mental model of the concept of science at the submicroscopic stage can pose a big problem to the students. Instead, submicroscopic animation is more appropriate to encourage understanding of the concept of change in matter. The use of information technology modules also benefits pupils to understand the content of science learning better because technology approaches are more appealing to students and teachers. Information technology is a motivational tool and enables higher quality science teaching (Sarabando et al., 2016).

### 1.2.6 The previous studies on the effects of teaching and learning modules in improving higher-order thinking skills

The previous studies by Abu (2016) developed a learning module to improve the achievement of the HOTS among students. This mathematical learning module on the topic of Money and Time for standard one of primary school using the Autonomic Assessment Module (M-PA) developed by using Russell model, Sharifah Alwiah model and Sidek Model involving 20 lesson plans. This study used a survey design involving a questionnaire and interview methods. A quasi-experimental design used to determine the effectiveness of teaching using the M-PA module. Teacher's opinions on that module are complete, structured and in line with the proposed authentic assessment process and can improve student HOTS achievement in Mathematics.

In a study conducted by Budiman (2008) using the Conflict Management Module (PKK) integrated with Cognitive Acceleration through Science Education (CASE). This study used the quasi-experimental approach to the 'unequal control group' of 130 students at a school in Negeri Sembilan to see the effects of the module on cognitive development, the achievement of the HOTS in science and cognitive conflict level stages. Three modes of instruction were carried out on the sample of the study namely PKK integrated with CASE (Module 1), CASE module without PKK (Module 2) and conventional teaching. The experimental group follows rooting either using Module 1 or Module 2, while control groups follow conventional teaching. His findings showed that both experimental groups showed a more significant improvement in cognitive development and science HOTS testing than the control group. At the same time, in comparison, the teaching using Module 1 was able to improve cognitive development and better HOTS test than Module 2. The conclusions of this study showed that the teaching using Module 1 helped to improve the cognitive level and the achievement of HOTS, especially students with the intermediate levels of operating concrete.

The study on the development of multimedia software modules for secondary students about the nature of the matter was conducted by Zuraidah (2006) as a teaching aid. In this study, researchers developed a module-based ASSURE-based software. The samples were 62 pupils (32 treatment groups and 30 control groups). The student's response to the use of the software is positive, and more than 72% agree that this software makes it easier for them to understand the concept. All interviewed teachers also showed a positive response and agreed that the developed software could be adopted in teaching and learning to improve students' HOTS.

The study conducted by Ali and Dalhar (2010) also involves computer-assisted teaching modules (CALs) for subject matter in science for the use of form four pupils. This software is developed based on cognitive theory and using the



ADDIE design model. Researchers use various interactive multimedia elements such as text, animation, audio graphics, and videos that have integrated into the software. The conclusions from this study show that students exposed to this module demonstrate the brighter achievement of HOTS.

In the subject of chemistry, there is a study conducted by Johari Surif (2010) regarding the effectiveness of learning using the Model of Scientific Thinking Development. This module helps in improving students' achievement, understanding and the level of mastering of students' scientific skills towards teaching and learning of science to improve their scientific thinking. The module also aims to help overcome the problem of the existence of an alternative student framework in the basic concept of matter, the kinetic theory of matter and the principle of mass immortality. This study was conducted qualitatively by using descriptive and experimental designs. The experimental approach was carried out using the Scientific Thinking Mastery Test Set. This module involved two groups of experiments, namely the experimental group and the control group involving 80 of form four students. The conclusion from this study shows that the experiment group is more successful in the scientific thinking mastery test set than the control group.

The teaching modules about the heated topic have also developed by Ismail et al. (2005). His study involved the use of conceptual teaching concepts in the topic of heat to improve student achievement. Problem-based Learning Module (PBM) that integrates cognitive deflection (PK) is developed systematically based on McGinn's teaching design model (1994). His research finds that the use of PK in PBM provides significant improvement in metacognition to high cognitive students but not for low cognitive students. Besides, PK in PBM did not provide significant increases in scientific reasoning towards the two groups of students. They also noted that there had been an increase in students' achievement in heat topics through PK in PBM. He recommends using a systematic module that integrates cognitive deflection in the PBM approach. However, should care about the student's personality differences in terms of the student's ability.

In biology, there is a study to study the effectiveness of building the BIO-I-THINK module in cell division and nutrients topic developed by Karagaratnan and Kavitha (2015) on the achievement and HOTS towards form four students. A quantitative approach with a quasi-experimental research method was selected to answer eight research questions and six hypotheses. The three sets of instruments used in this study are BIO-I-THINK Module, achievement questions and higher-order thinking skills questions (CogAT questions) to measure the teaching titled 'Cell division' and 'Nutrition'. A total of 30 students randomly selected as respondents. The results of these 30 students showed that the use of BIO-I-THINK modules could improve student achievement in HOTS.

The previous studies on the use of modules in learning are the study conducted by Saripah et al. (2013) on the effectiveness of the organic chemistry multimedia modules. These modules help students to visualize organic mechanisms and stereochemistry of nucleophilic fibre converters. The sample of the study consisted of two groups, namely the experimental and control group (conventional method). Involved 74 students from Universiti Pendidikan Sultan Idris, who took the course of chemical identification II. The findings show positive implications in which respondents have a positive perception of the suitability of IMCM modules for use in teaching and learning to enhance students' understanding of organic chemistry subjects.

### 1.2.7 Theoretical framework of the study

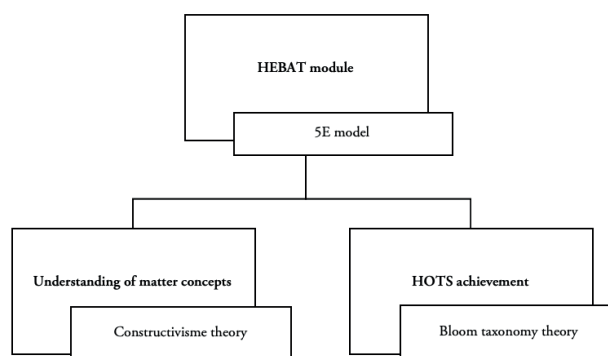


Figure 1. The theoretical framework of the study

Figure 1 shown the theoretical framework proposed in this study. First of all, the HEBAT science module in the change of matter topics for form one built by the Ministry of Education Malaysia based on the design of the 5E model. Furthermore, in assessing the improvement of understanding of the concept of matter, the conceptual understanding of the concept was constructed based on the theory of constructivism tested for the students. HOTS's achievement test was built by researchers based on Bloom's review of Bloom's taxonomy theory to evaluate the aspects of higher-order thinking skills,

## 2. METHODOLOGY

### 2.1 Research design

The study used mixed modes design through quantitative methods (understanding the concept of matter test and HOTS achievement test) and qualitative method (interview protocol). The explanatory design by Cresswell (2009) was used to analyze the findings of the study. This process involves the collection of both qualitative and quantitative data types one by one (consecutive) rather than simultaneously as shown in Figure 2.



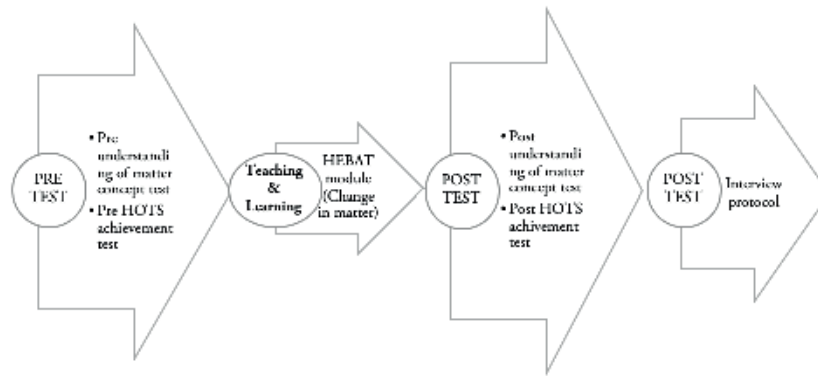


Figure 2. Sequential explanatory designs (Cresswell, 2009)

## 2.2 Sampling method

Group random sampling techniques used to select the students, where the sample of form one students involved in this study was around 90 students (quantitative studies) and three students (qualitative studies) in schools around Melaka.

## 1.3 Research instrument

### 2.3.1 Understanding the concept of matter test (UCM test)

Researchers developed this test from the adaptation of the concept of matter by Adadan (2006). This instrument contains seven subjective questions, with a total score of 100 marks. This test gives to students before and after the teaching and learning session of the HEBAT module. The reliability value of Cohen Kappa for the instrument is 0.89. The data obtained were then analyzed descriptively and inferred by using paired sample t-test. This t-test used to detect whether there is a significant difference in the students' achievement before and after using the HEBAT module in understanding the concept of matter.

### 2.3.2 HOTS achievement test

This instrument contains eight higher-order thinking skills questions with the total score of the test is 100 marks. This instrument gives to students before and after the teaching and learning session of the HEBAT module. The reliability value of Cohen Kappa for the instrument is 0.80. The data obtained were subsequently analyzed descriptively and inferred by using paired sample t-tests. The t-test used to detect whether there is a significant difference in the students' achievement of HOTS before and after using the HEBAT modules.

## 2.4 Quantitative data analysis techniques

Quantitative data were analyzed using SPSS version 24.0. Inference statistics used to test the study hypotheses paired sample t-tests.

## 2.5 Qualitative data analysis techniques (thematic analysis)

The qualitative data analysis was based on the approach by Bogdan and Biklen (1998) and using Nvivo 12.0 software to analyze the strengths and weaknesses of HEBAT modules from the interviews with students. The data analysis followed by Bogdan and Biklen (1998), as shown below.

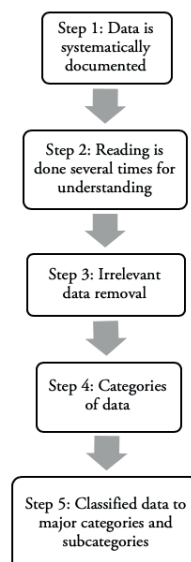


Figure 3. Data analysis (Bogdan & Biklen, 1998)

### 3. RESULTS AND DISCUSSION

#### 3.1 The effect of using the HEBAT module in enhancing the understanding of the concept of matter among form one students in Malaysia

Table 1. The paired samples t-test between the pre-test and post-test (Understanding of matter concepts test)

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
UCM test	-11.333	9.309	.981	-13.283	-9.384	-11.550	89	.000

A paired-samples t-test was conducted to evaluate the effect of using the HEBAT modules in enhancing the understanding of the concept of matter on students' scores on Understanding of matter concepts test (UMC test). There was a statistically significant decrease in UMC test score from pre-test ( $M=37.76$ ,  $SD=13.491$ ) to post-test ( $M=49.09$ ,  $SD=11.025$ ),  $t(90) = -11.55$ ,  $p < 0.005$ ). The eta square statistics (0.82) indicated a large effect size.

Based on the result obtained, it shows that the HEBAT module did affect the students' performance in understanding matter concepts. It is because of the learning strategies of the module using model activities. Bunce et al. (1991) show that the construction of the module using points and circles which presenting the ions and atoms helps the students to understand the concept matter more clearly. Other researchers also found that modules using submicroscopic animations strategies to represent the concept of matter could contribute to a better understanding of the nature of material matter (Stains et al., 2011). The only difference between the HEBAT module compare to the other researcher's techniques to increase the understanding of matter concepts was by using particle dance to represent the arrangement of solid, liquid and gas.

#### 3.2 The effect of using the HEBAT module in improving higher-order thinking skills (for the topic of change of matter) among form one students in Malaysia

Table 2. The paired samples t-test between the pre-test and post-test (HOTS test)

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
HOTS test	-.133	.889	.094	-.320	.053	-1.422	89	.158

A paired-samples t-test was conducted to evaluate the effect of using the HEBAT modules in enhancing the HOTS on students' scores on the HOTS test. There was no statistically significant difference in HOTS test score from pre-test ( $M=25.27$ ,  $SD=9.629$ ) to post-test ( $M=25.40$ ,  $SD=9.759$ ),  $t(90) = -1.422$ ,  $p > 0.005$ ). The eta square statistics (0.02) indicated a small effect size.

Based on the study, the result shows that the HEBAT module did not affect the students' HOTS performance. HEBAT module was designed to improve students' performance in terms of HOTS. However, the results show vice versa. It is because the pre-test and post-test that had been made by the researcher in this study were up to level 6 (creating) of taxonomy Bloom. While in the HEBAT modules questions tasks, the students had not been exposed to create a new thing. So, that means the HEBAT module was unable to guide students to improve their HOTS. According to Yee et al. (2014), HOTS was an intellectual process that should include the creating of information and generated through observation, experience, reflection, reasoning or communication. Robinson et al. (1999) also support by saying that higher-order thinking is a function of one's imagination of the ability to creatively design what has not yet become fact or knowledge.

#### 3.3 The strengths and weaknesses of HEBAT modules in enhancing the understanding of matter concepts and higher-order thinking skills (subject matter change) among form one students in Malaysia

There were several strengthens of the HEBAT module. From the interview with the informants, one of the strengths was the HEBAT module able to improve students understanding of matter concept effectively. It is because the module has been developed by using Model 5E (Engage, Explore, Explain, Elaborate, Evaluate) based on the constructivism theory. This module involves the activities that access the students' prior knowledge. It helps them become engaged in a new concept through the use of short activities that promote curiosity and elicit prior knowledge. While in the engagement phase, the activity's plan in the module had shown the picture of some materials such as water, oil, balloons, and fruits to introduce students with the related topic. The pictures able to connect between past and present learning experiences, expose prior conceptions, and organize students' thinking toward the learning outcomes of current activities. Next, in

the HEBAT module, students had involved in the exploration phase. For example, during the density activities, students need to calculate the density of each material. This activity can help them use their prior knowledge to generate new ideas and explore questions. Then, the student had exposed to the explanation phase in the HEBAT module, which provides teachers to directly introduce a concept of ion, atom, and molecules to the students. So that students can explain their understanding of the concept. An explanation from the teacher may guide them toward a more in-depth understanding, which is a critical part of this phase. During this phase in HEBAT module, students have some outdoor class activities instead of the indoor class only. It showed that when using the 5E learning cycle model students can increase their learning levels, as well as a more positive attitude about learning new material (Hicks Pries & Hughes, 2012).

Although this module had some strengthen, however, this module also had some weaknesses. From the interviews that had done, the informant said the instruction of the questions inside the question sheets of HEBAT module were not clear. It resulting the students had faced problems and difficulties in answering the questions. This is due to undefined specific instruction. When the instructions become too general without the specific needs, it leads the students to answer in different perspectives or methodologies against the module requirement. It is supported by Meyer (1988), where a good module needs to have clear instructions (Meyer, 1988). Besides that, students are also having problems in doing modelling activities. It is because of the lack of provision in teaching and learning time. It is due to the HEBAT module only contain ten periods for the concept matter. According to Husin (1988), a student cannot learn if they are giving with too much material at a time. The other weaknesses of this module were inadequate teaching and learning activities between teachers and students in order to make students clearly understand the topic, for example, by using slideshows as a medium of teaching and learning. Teachers cannot attract the student's attention because of the slideshows are less interesting and lack of visualization. It is supported by previous research done by Thomas and Thorne (2009) which stated that visualization is a very useful instrument for developing HOTS among students such as visual images as the picture in mind that is more meaningful than words.

According to previous research done by Hughes et al. (2002), a good module should have an exciting variety of media like audio and visual material in supporting students' understanding. Besides, the elaboration phase in 5E that been used in the HEBAT module is not able to extend students' conceptual understanding and skills because the elaboration given by the teachers is only described in wording without visualization. For example, the teachers' elaboration about particle arrangement and submicroscopic particles such as properties of crystalline solids are not interesting enough to the students. Due to less visualization, creative activities and interactions, the student cannot apply their higher-order thinking skills in understanding the matter concepts. It supported by Hughes et al. (2002) which said that a useful module should have student's interaction to encourage participation among students such as game simulation, discussion and teamwork activities. Students should use previous information to ask questions, propose solutions and make a decision. Lastly, HEBAT module had an evaluation phase but did not encourages students to assess their understand and abilities in matter concepts by using higher-order thinking skill. It is because, during the evaluation phase, teachers do not have opportunities to evaluate student progress toward achieving the educational objectives. Students also are not encouraged to conduct future investigations. That is the reason why the HEBAT module does not effectively improve the students' higher-order thinking skills. The informant also said that they had less freedom to learn something because everything they did was under control by the teacher. A useful module can give students the freedom to learn according to their desire, which is more emphasis on self-directed student learning over their teacher teaching. of visualization, creative activities and interactions, the student cannot apply their higher-order thinking skills in understanding the matter concepts. It supported by Hughes et al. (2002) which said that a useful module should have student's interaction to encourage participation among students such as game simulation, discussion and teamwork activities. Students should use previous information to ask questions, propose solutions and make a decision. Lastly, HEBAT module had an evaluation phase but did not encourages students to assess their understand and abilities in matter concepts by using higher-order thinking skill. It is because, during the evaluation phase, teachers do not have opportunities to evaluate student progress toward achieving the educational objectives. Students also are not encouraged to conduct future investigations. That is the reason why the HEBAT module does not effectively improve the students' higher-order thinking skills. The informant also said that they had less freedom to learn something because everything they did was under control by the teacher. A useful module can give students the freedom to learn according to their desire, which is more emphasis on self-directed student learning over their teacher teaching.

#### 4. CONCLUSION

Based on the findings of the study, the HEBAT modules (change of matter topic) are only sufficient to improve understanding of the concept of matter but cannot improve the students' HOTS. Through this study, it hoped that it would guide the Ministry of Education to formulate an educational policy of 21st-century teaching and learning strategy through the provision of appropriate teaching aids to students. This study is also expected to identify and create an alternative framework for strengthening the HEBAT module in the change of matter topic. The proposal for this module's HEBAT improvement proposal is expected to stimulate a first-rate pupil to study science, further enhancing the HOTS.

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## The use of multivariate statistical analysis methods as an effective tool for investment attractiveness

El uso de métodos de análisis estadístico multivariante como una herramienta efectiva para el atractivo de la inversión

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### ABSTRACT

In the terms of sanctions and the need to strengthen the import substitution policy, the issues of effective investment attraction in the agrarian-oriented republics of the North Caucasus are especially relevant. Due to the underinvestment of the agro-industrial complex in these depressed republics, diversified enterprises of the agro-industrial complex sectors generated a large amount of physically and morally worn-out equipment, economic entities of the industry are not able to function efficiently and develop properly, which ultimately does not allow them to produce competitive products. Undoubtedly, we need new practical recommendations and directions to improve the management of investment attractiveness to mobilize various sources of investment. There are many methods for assessing the rating attractiveness of enterprises. But all of them have a common drawback - rating evaluations are usually given simultaneously for the entire data set, which, in general, significantly complicates and even excludes the possibility of an objective assessment of the investment attractiveness for an economic entity not previously included in the list of enterprises under study (Dougherty, 1997; Roizman et al, 2001). Another significant drawback is the lack of validity for the selected indicators of the final rating.

**Keywords:** economic crisis, sanctions, increasing competition, agro-industrial complex, modeling and forecasting.

### RESUMEN

En términos de sanciones y la necesidad de fortalecer la política de sustitución de importaciones, los temas de atracción efectiva de inversiones en las repúblicas orientadas a la agricultura del norte del Cáucaso son especialmente relevantes. Debido a la baja inversión del complejo agroindustrial en estas repúblicas deprimidas, las empresas diversificadas de los sectores del complejo agroindustrial generaron una gran cantidad de equipos desgastados física y moralmente, las entidades económicas de la industria no pueden funcionar de manera eficiente y desarrollarse adecuadamente, lo que finalmente no les permite producir productos competitivos. Sin lugar a dudas, necesitamos nuevas recomendaciones prácticas y direcciones para mejorar la gestión del atractivo de la inversión para movilizar diversas fuentes de inversión. Existen muchos métodos para evaluar la calificación de atractivo de las empresas. Pero todos tienen un inconveniente común: las evaluaciones de calificación generalmente se realizan simultáneamente para todo el conjunto de datos, lo que, en general, complica significativamente e incluso excluye la posibilidad de una evaluación objetiva del atractivo de la inversión para una entidad económica no incluida previamente en el lista de empresas en estudio (Dougherty, 1997; Roizman et al, 2001). Otro inconveniente importante es la falta de validez de los indicadores seleccionados de la calificación final.

**Palabras clave:** crisis económica, sanciones, aumento de la competencia, complejo agroindustrial, modelización y previsión

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## INTRODUCTION

From the presence of many different types of models, we want to dwell on econometric models that are statistical in nature.

Econometrics is the science that involves the empirical derivation of economic laws; it uses the method of observation to establish dependencies for economic relationships (Dougherty, 1997).

In general, it can be noted that the totality of statistical techniques and methods used for this purpose constitute econometrics.

Through the use of econometrics, it is possible to study and explore all kinds of econometric models, during which an analyst (econometrician) not only analyzes and forms econometric models, but also, based on economic theory and (or) empirical data, estimates unknown quantities (parameters) in these models, predicts their accuracy, develops practical recommendations on the current economic policy.

Most modern development models are characterized by a common goal of the next deep structural crisis consequence elimination that the domestic agricultural economy is undergoing, and through the use of a real mechanism of innovative process activation in the agricultural sector, it allows to overcome the situation of low investment attractiveness of agricultural entities. And this is natural, because only effective innovative activity is able to create the necessary basis quickly to build a new technological structure in the industry and thereby increase the potential for economic growth of the national economy (Demchenko, 2015; Misakov et al, 2018; Misakov et al, 2019).

Indeed, it is impossible to achieve the appropriate level of innovativeness of a competitive business in modern realities, without involving third-party innovative resources. On the other hand, the borrower is always exposed to credit risk in the form of the possibility of improper fulfillment of his obligations. In such cases, to assess the investment attractiveness of a particular borrower, the system of assessment indicators is used (the purpose of loan, its amount, the borrower's reputation, the financial situation of his business, etc.). It is clear that subjectivity can appear during assessment, which must be neutralized.

Numerous methods have been developed to evaluate investment projects, including simple accounting rate of return method; payback calculation method; NPV; IRR and others.

The integrated use of these and other similar methods allows a sound analysis of investment projects, to establish specific project characteristics and its inherent features, etc., which, ultimately, allows you to evaluate the final results of business objectively.

The market, acting as an original mechanism, distributes investment resources itself, changes the correlation existing between budgetary and extra-budgetary sources of capital investments, increases the share of banking and other investments provided for use in agricultural enterprises, and also allocated for sustainable development of rural social infrastructure.

## STUDY METHODS

The theoretical and methodological basis of the study was the scientific work of foreign and Russian researchers on the problems of the theory and practice development concerning evaluation and management of the investment attractiveness of diversified enterprises, the theory of investment analysis, the economic potential and the risks of agricultural enterprise evaluation and diagnosing.

In the course of the study, they used such scientific methods as comparison, system, statistical and economic analysis, generalization and groupings, etc.

## STUDY RESULTS

There are many models in the specialized literature that can be used to study various aspects of economic life, such as the Cobb-Douglas production function, the consumption function (it shows the relationship between food costs and the personal income of the consumer (Engel function); the models of the exponential time trend of spending on food and other models (Dougherty, 1997; Shumetov, 2001; Ugurchiev et al, 2018).

One of the most important factors during a model development is their complexity (due to the large number of features and the complexity of the mathematical form), or their simplicity.

There are many answers and solutions to these questions. So, in (Shumetov, 2001), the problem under consideration is positioned as the function of consumption:

$$I_n C = I_0 + I_1 Y + I_2 P \quad (1)$$

where C is the consumption of a specific food product per capita during the reporting year;

Y - real income per capita during the reporting year;

P - the price index for this product, adjusted for the general index of the cost of living;

$a, \beta_1, \beta_2$  – the constants that must be estimated by observation data.

It should be noted that the abovementioned equation (1) describes the general consumer behavior due to the acquisition of a given food product, taking into account the price level of the product and the real product per capita. The law will be established when the coefficients of equation (1)  $\beta_0, \beta_1, \beta_2$  are known. In this case, the analyst needs to make an assessment of these coefficients by conducting a suitable set of observations.

Let us turn to the description of the types of econometric models, with the help of which it will be possible to predict the value of the dependent variable in the future.

Three main classes of models are used in the analysis and forecasting.

Time Series Models.

They consist of simple models:

$$\text{- Trend: } y(t) = T(t) + E_t, \quad (2)$$

where  $T(t)$  – the time trend of a given parametric form;  $E_t$  is a random component;

$$\text{- Seasonality: } y(t) = S(t) + E_t, \quad (3)$$

where  $S(t)$  – the seasonal component;

- Trend and seasonality:

$$y(t) = T(t) + S(t) + E_t \text{ (additive)} \quad (4)$$

$$y(t) = T(t) \cdot S(t) + E_t \text{ (multiplicative)} \quad (5)$$

Time series models consist of more complex models (such as adaptive forecasting, autoregression, moving average, etc.). Characteristic of these models is the fact that the behavior of the time series is described using the previous values. It is advisable to use such models during ticket sale prediction for various vehicles, the demand study for seasonal goods, short-term forecast of interest rates, etc.

In regressive models with one equation, the dependent variable can be expressed by the following function:

$$y = f(x_1, x_2, \dots, x_k) = f(x_1, x_2, \dots, x_k), \quad (6)$$

where  $x_1, x_2, \dots, x_k$  are independent (combining) variables;

$\beta_1, \beta_2, \dots, \beta_k$  – the parameters determined from observations (empirical data).

The form of the function  $f(x_1, x_2, \dots, x_k)$  determines linear (by parameters) and nonlinear models. The latest types of models are used more often than linear ones. So, for example, the models of type (6) should be used in the development of initial econometric models of investment attractiveness of economic entities of the regional agro-industrial complex (the so-called spatial models).

The spatial econometric models of type (6) are developed using multiple linear regression analysis. The economic variables are established by establishing the impact of a group of explanatory factors. The influence of the main factors  $x_i$  can be determined through the following model:

$$Y = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \dots + \beta_m x_m + E \quad (7)$$

The parameters of the model (7) can be estimated using the least squares method. At that, the main goal of multiple regression is to build a model with a large number of factors, taking into account the influence of each factor both individually and in combination. The factors themselves, which are in multiple regression, must meet a number of requirements, including quantitative measurability, uncorrelated nature, the lack of functional relationship.

In practice, due to the complexity, the possibilities of the regression model for factor accounting are not fully used.

The selection of factors occurs with the help of qualitative economic analysis. Moreover, based on the fact that the theory of analysis does not allow us to establish a quantitative relationship between the studied features and the inclusion of some factor in a model, this procedure takes place in two stages.

At the first stage, factors are selected, at the second it is determined - the statistics for the regression parameters based on the matrix of correlation indicators.

The use of intercorrelation coefficients allows to get rid of duplicating factors in the model. Two variables are usually clearly collinear if the inter-correlation coefficient is  $\geq 0.7$ . Variables duplicate each other with obvious collinearity of factors. Thus it is necessary to remove one of the factors from the regression equation - the factor that has the least relation with others is left. This is a distinctive feature of regression as a method - it explores the total influence of factors when they are independent of each other.

One should also note the role of factorial and cluster analysis, which are multidimensional statistical analysis, through which you can derive the final results on a wider range of objects (general population).

Multidimensionality is manifested in the fact that a combined analysis of all the factors that form the process under study is carried out simultaneously. The use of factor analysis allows you to “compress” the matrix of features into the matrix with the least number of variables, moreover, with the same information base as in the original matrix. The model of factor analysis itself is based on the hypothesis that takes the studied variables for the indirect manifestation of a small number of hidden factors (the principal component method) (Besedin, 2003; Roizman, et al, 2001).

Cluster analysis allows you to provide the following:

- Formation of typology (classification);
- The study of the necessary conceptual schemes for object grouping;
- Hypothesis development (based on structural data);
- hypothesis testing, etc.

When they choose a specific cluster solution, it is necessary to determine the number of clusters - the groups of elements that have one characteristic trait (common property). But here one rather complicated problem arises - there is still no mathematically reasoned method that would allow us to establish the number of clusters reasonably, which are the fundamental component of the cluster structure. Under these conditions, the analyst has only one thing - to use a priori attitudes and own assumptions. It is also advisable to conduct a visual analysis of the dendrogram; the comparative analysis of the results of clustering, the visual assessment of merger coefficient function dependence graphs on the number of clusters ( Zybliceva, 2015; Serkova-Zhogoleva, 2003; Misakov et al, 2017).

Thus, investment attractiveness should be considered as a multidimensional process. Hence, it is expedient to perform the processes of its modeling and forecasting for diversified agricultural enterprises using multivariate statistical analysis methods consisting of multiple linear regression, discriminant, cluster and factor analyzes.

## CONCLUSIONS AND OFFERS

1. The analysis of the problems performed during the study of investment attractiveness management at agricultural enterprises in the depressed republics of the North Caucasus made it possible to establish the absence of a strategic planning system and a strategy for competitiveness provision on the vast majority of business entities of the industry. At that, they observe information closure of agricultural enterprises, increased physical and moral depreciation of equipment, inadequate storage and logistics infrastructure for the movement of food products, etc.

The presence of these and other similar problems makes the agricultural enterprises of the depressed republics of the North Caucasus uncompetitive and unattractive to potential investors.

2. Under these conditions, it is advisable to develop a “proprietary” investment attractiveness management algorithm for each household, based on its capabilities and existing economic potential, on a marketing study of the economic entity competitiveness. Such an approach will allow to develop reasonable measures to find a potential investor and form a real package of proposals taking into account the mutual expectations of both the enterprise and the investor.

3. The complexity of taking into account the characteristics of investment attractiveness development for economic entities of the agro-industrial complex makes us talk about basic models. We justifiably believe that multidimensional statistical analysis methods can be used as an effective tool for modeling and forecasting the investment attractiveness of agricultural enterprises (including such methods as correlation-regression, discriminant, factorial and cluster one).

## Conflict of interests

The authors confirm the absence of a conflict of interest.

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## Forecasting of indicators of inclusive growth from agriculture in Uzbekistan

Estimación de indicadores de crecimiento inclusivo desde la agricultura en Uzbekistán

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### ABSTRACT

This article examines the scientific, methodological and practical issues of inclusive growth of agriculture. In particular, various methodological approaches to the definition of inclusive growth are given, as a result of the analysis of these approaches, it is concluded that inclusive growth implies not so much economic as social growth, i.e. it implies reducing the difference between the richest and the poorest population. On this basis, the necessity of taking it into account in the development and forecasting of agriculture as the basic branch of the economy of Uzbekistan is justified. In addition, the problems that Uzbekistan may face in the future are being investigated. These problems can be attributed to the rapid growth of the population in agriculture, which in the context of limited land resources will lead to a decrease in agricultural land per inhabitant, which can lead to an aggravation of the food issue and employment in the country.

**Keywords:** inclusive growth, unemployment, employment, rural population, agricultural products.

### RESUMEN

Este artículo examina las cuestiones científicas, metodológicas y prácticas del crecimiento inclusivo de la agricultura. En particular, se dan varios enfoques metodológicos para la definición de crecimiento inclusivo, como resultado del análisis de estos enfoques, se concluye que el crecimiento inclusivo implica no tanto el crecimiento económico como el social, es decir, implica reducir la diferencia entre los más ricos y los más pobres. Sobre esta base, se justifica la necesidad de tenerlo en cuenta en el desarrollo y la previsión de la agricultura como rama básica de la economía de Uzbekistán. Además, se están investigando los problemas que puede enfrentar Uzbekistán en el futuro. Estos problemas pueden atribuirse al rápido crecimiento de la población en la agricultura, que en el contexto de los recursos limitados de la tierra conducirá a una disminución de la tierra agrícola por habitante, lo que puede conducir a un agravamiento de la cuestión alimentaria y el empleo en el país.

**Palabras clave:** crecimiento inclusivo, desempleo, empleo, población rural, productos agrícolas.

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## 1. Introduction

It is known that in Uzbekistan “Strategy of development of agriculture of Uzbekistan till 2030” is developed. Also, the resolution of the Cabinet of Ministers of the Republic of Uzbekistan in accordance with resolution No. 70 of the United Nations General Assembly adopted at the summit on sustainable development in September 2015, as well as in order to organize systematic work on the consistent implementation of the sustainable development Goals of the UN global agenda for the period up to 2030, approved 17 national goals and objectives in the field of sustainable development for the period up to 2030, and approved the “Road map” for their implementation. At the same time, the task of entering the Republic of Uzbekistan by 2030 into the 50 leading countries of the world according to the rating of the Global innovation index is set. One of the national goals is “to Strengthen food security, improve diets and promote sustainable agriculture”. In order to achieve this goal, 5 tasks have been set.

At the same time, the sustainable development of the country’s economy, including its key sector – agriculture, should take into account its inclusive growth. Inclusive growth is a multidimensional concept that encompasses not only economic but also social growth.

## 2. Literature review

The gap between the poor and the rich is now widening everywhere. For example, in OECD countries it is the largest in 30 years. Increasing inequality is important because, according to a world Bank study, a one percent increase in income can reduce poverty by 4.3% in countries with lower income inequality, while those with greater income inequality by only 0.6%. Inequality is closely linked to economic and political instability.

Among the measures proposed to address the above problems is the well-known concept of inclusive sustainable growth abroad. Its basic provisions were initially developed by a number of scientists from academia. These provisions were, in particular, developed by the participants Of the Commission on growth and development, which was headed by Nobel laureate M. Spence and which released in 2008 the report “The growth report. Strategies for Sustained Growth and Inclusive Development”.

Although the concept of inclusive growth was quickly adopted by a wide range of specialists, today there is no single definition of “inclusive growth”. For example, the world Bank defines inclusive growth as high and sustainable (an important condition for poverty reduction), widespread across all sectors of the economy, involving a large part of the labour force and characterized by equality of opportunity in access to markets and resources. The main focus of this definition is on productive employment for all population groups, including women, rather than on income distribution.

The European Commission in the preparation of the strategy “Europe 2020” indicates that inclusive growth includes: the full use of labor potential, poverty reduction and its consequences, the development of social inclusion, the elimination of regional disparities.

Perhaps most consistently, the Organization for economic co-operation and development (OECD) studies, in particular the report “the link between productivity and inclusiveness”, present this thesis. Its authors consider the key challenge facing the developed countries to reduce the growth rate of labor productivity, and the main way of its activation – the creation of equal conditions for all economic agents, conducive to the formation of an atmosphere conducive to increased investment and the development of human capital.

The results of a study of the scientific literature on inclusive growth also showed that there are differences in the definition and interpretation of the term “inclusive growth”. So, let’s imagine some of them:

inclusive growth is long-term growth that focuses on generations. That is, it is productive employment instead of direct redistribution of income. However, some redistribution schemes may be made in the short term (Ianchovichina and Lundstrom, 2009).

inclusive growth is growth that not only creates new economic opportunities, but also ensures equal access to opportunities created for all segments of society, especially among the poor (Ali and Hwa Son, 2007).

inclusive growth implies Pro-poor growth; it includes income growth and economic support for the middle class. Growth, which is favourable to the vast majority of people in developing countries, is expected to be more likely to be economically and politically sustainable (Birdsall, 2007).

The literature provides a wide range of strategies to promote inclusive growth. These include:

Enabling environment: government should create and maintain an enabling environment for business and investment in technology and innovation. Competitive exchange rates can also contribute to inclusive growth by increasing exports of manufactured goods. Such exports are often associated with investment in new enterprises and job creation for semi-skilled workers (Birdsall, 2007). Governments also need to promote conditions for equal participation. Effective legal institutions and the rule of law are important for ensuring people’s rights to participate in economic growth (Rauniyar and Kanbur, 2009).

Reorientation of public expenditures and social protection: inclusive growth can be achieved through progressive tax systems and expenditures-including short-term transfer policies and greater expenditures on health, education and public infrastructure (Birdsall, 2007; McKay, 2008; Higgins and Prowse, 2010).

Improved access to education and health care could enhance access and participation of the poor in employment and growth opportunities (Ianchovichina and Lundstrom, 2009). Targeted social protection programmes can also provide the poor and vulnerable groups with greater economic security, which can be reduced for greater risk (Rauniyar and Kanbur, 2009).

Human capital and job creation: supporting human capital and capacity building are essential for inclusive growth (Rauniyar and Kanbur, 2009). In addition, increased job creation through growth is necessary to enable people to pursue higher education and exit agriculture (McKay, 2008).

Broad-based sectoral growth: since job creation may still not directly benefit the poorest, it is important to adopt a growth model that is broad-based in terms of sector, region or population coverage. This includes the agricultural sector if it is one in which the poor are disproportionately represented (McKay, 2008). For example, in many Asian countries, a large proportion of the population lives in rural areas and depends on agriculture. Rural infrastructure and agricultural technologies are essential for the development of the rural economy and the provision of rural populations with access to markets, basic services and employment and income opportunities (Rauniyar and Kanbur, 2009).

Infrastructure development: infrastructure quality is the driving force behind inclusive growth (Rauniyar and Kanbur, 2009). Direct targeting of business and trade infrastructure (e.g. transport, energy and telecommunications) to vulnerable and poor groups can improve their access to and participation in growth. Rural women in many countries, for example, spend significantly more time and income on transport, which reduces their ability to invest in higher value-added activities (Higgins and Prowse, 2010).

Government-private sector partnerships: a growing number of profitable and non-profit businesses are taking advantage of opportunities to serve most of the low-income population and those living in more remote areas. It is important that the government has worked with such entities and support businesses in expanding services for the poor and vulnerable (Mendoza and Thelen, 2008; Rauniyar and Kanbur, 2009; Chakrabarty 2009).

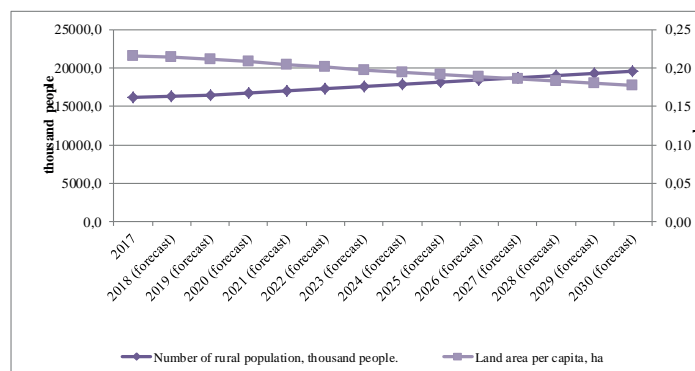
Assessment and monitoring: it is necessary to assess the constraints to sustained high growth for all groups of society and to determine how this affects different segments of society. Governments need to be supported so that they can collect disaggregated data and adopt a comprehensive approach (Higgins and Prowse, 2010; Ianchovichina and Lundstrom, 2009). It is also important to develop ways to measure inclusive growth and the extent and extent to which inclusion is achieved (Ali, 2007; Higgins and Prowse, 2010).

In General, inclusive growth is a multidimensional concept encompassing not only economic but also social growth. The main indicators of inclusive growth are: (1) improving the living standards of the population; (2) reducing income inequality; (3) reducing poverty; and (4) increasing opportunities for equitable use of social and environmental benefits.

On this basis, the medium-and long-term perspective of any country is inclusive economic growth, which reduces the gap between rich and poor and creates opportunities to increase employment and job competitiveness. One of the key sectors of Uzbekistan's economy is agriculture, which employs almost half of the population and provides food security and population, as well as raw materials processing enterprises. Therefore, when developing strategic programs for the further development of the economy, including inclusive growth, it is advisable to start with its basic sectors, such as agriculture. With this in mind, we have tried to forecast some indicators of inclusive growth in Uzbekistan until 2030.

### 3. Problem statement

It should be noted that our country is rapidly growing population, especially rural. Thus, for the period 2011-2017 the number of rural population increased by 13.3 % or by 1894 thousand people, and amounted to 16120.0 thousand people. There is a high probability that this trend will continue in the future. According to our calculations, by 2030 the population may increase by 24.1 percent, i.e. it will approach the level of 20 million people (Fig.1).



**Rice.1** Forecast of growth of rural population and land area per capita<sup>1</sup>

<sup>1</sup> All calculations in this article are made by the authors on the basis of statistical data using Microsoft Excel software.

At the same time, there is a degradation of the land Fund, as well as an increase in the unemployment rate, especially in agriculture.

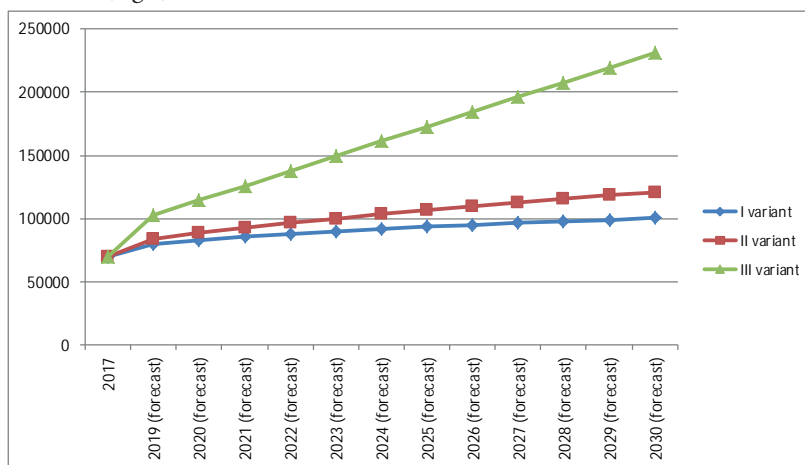
#### 4. The direction of solving the problem

For the purpose of rational use of land resources, solving the problem of unemployment, as well as increasing the income of the population in agriculture of Uzbekistan, it is advisable in some regions of the country to transform farms (in accordance with the legislation the farm is recognized as a business entity engaged in the production of agricultural products using (up to 30 hectares depending on specialization) land plots leased (from 30 to 50 years), in dekhkan farms (which is understood as a family small-scale farm that produces and sells agricultural products on the basis of personal labor of family members on the land plot provided to the head of the family for life inherited possession), since it is in these farms that there is a high efficiency of land use (high yield and growth rate of agricultural production). This situation can be associated with the fact that informal institutions work in dekhkan farms (oral orders, tasks, orders of the head of the economy are executed by family members unconditionally on the basis of centuries-old traditions), which reduce transaction costs.

#### 5. Analysis of forecast parameters

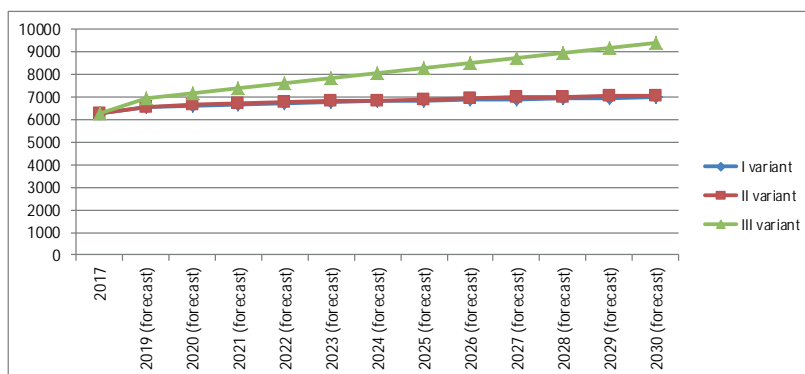
In this regard, taking into account the criteria of inclusive growth, we made a forecast of the volume of agricultural products, the number of employees in agriculture and per capita income employed in agriculture. We made these forecasts according to 3 variants, which correspond to pessimistic, realistic and optimistic scenarios.

According to our calculations, the volume of gross agricultural product in Uzbekistan by 2030 could increase by: I-variant - 10383,6 billion soums, according to the II variant - 120841, billion soums, according to the III variant 114341,0 billion soums (Fig.2).



**Rice. 2.** Forecast variants of the volume of gross agricultural production in Uzbekistan, billion UZS<sup>2</sup>

Due to the increase in the number of dekhkan farms, the number of employed in agriculture will increase. So, according to our calculations, by 2030 the number of people employed in agricultural production will be: I –variant - 6991,2 thousand people in II-variant - 7068,3 thousand persons in the III-variant - 9427,6 thousand people (Fig.3).

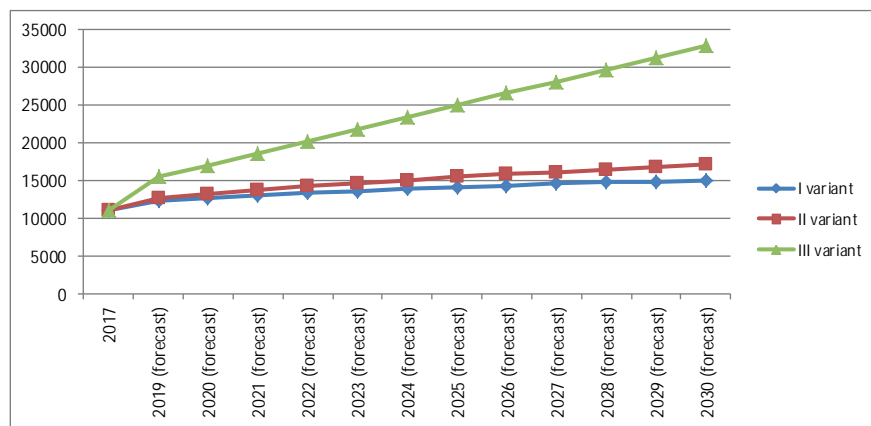


**Rice.3.** Forecast variants of the number of employed in agriculture of Uzbekistan, thousand people

Another indicator of inclusive growth is the well-being of the population, i.e. the income of the rural population, including the employed. According to our calculations, by 2030 the income of the employed population in agriculture

<sup>2</sup> The Central Bank of the Republic of Uzbekistan as of 19.08.2019, the exchange rate was set at \$ 1 = 9061.00 UZS, 1 euro = 100921.14 UZS.

will increase: by I-variant – up to 15109.0 thousand sums, by II-variant – up to 17096.2 thousand sums, by III-variant – up to 32904.9 thousand sums (Fig.4).



**Rice.4.** Forecast variants of income per capita employed in agriculture of Uzbekistan, thousand UZS

Table 1 below shows the quantitative indicators of the forecast for the three above-mentioned indicators of inclusive growth in agriculture, the functions (models) for which the forecast is made, as well as the indicator of their reliability (coefficient of determination).

Table 1 Forecast options for some indicators of inclusive growth of agriculture in Uzbekistan

Years	Volume of agricultural products, billion UZS			Number of employed in agriculture, thousand people			Income per capita employed in agriculture, thousand UZS		
	I variant	II variant	III variant	I variant	II variant	III variant	I variant	II variant	III variant
2017	69504,2	69504,2	69504,2	6269,1	6269,1	6269,1	11086,8	11086,8	11086,8
2018 (forecast)	76020,7	78567,4	90953,0	6488,5	6503,1	6743,8	11855,5	12081,4	13912,5
2019 (forecast)	79650,3	83771,9	102647,0	6563,4	6584,3	6967,4	12340,2	12722,8	15495,2
2020 (forecast)	82719,2	88440,3	114341,0	6626,7	6653,8	7191,1	12750,0	13291,5	17077,9
2021 (forecast)	85377,5	92694,0	126035,0	6681,6	6714,6	7414,7	13105,0	13804,7	18660,6
2022 (forecast)	87722,3	96615,6	137729,0	6730,0	6768,7	7638,4	13418,1	14273,8	20243,3
2023 (forecast)	89819,9	100263,9	149423,0	6773,3	6817,4	7862,0	13698,3	14706,9	21826,0
2024 (forecast)	91717,3	103682,8	161117,0	6812,4	6861,8	8085,7	13951,6	15110,0	23408,7
2025 (forecast)	93449,5	106905,6	172811,0	6848,1	6902,6	8309,3	14183,0	15487,6	24991,4
2026 (forecast)	95043,0	109958,8	184505,0	6881,0	6940,3	8533,0	14395,8	15843,3	26574,1
2027 (forecast)	96518,4	112863,2	196199,0	6911,5	6975,4	8756,6	14592,8	16179,9	28156,8
2028 (forecast)	97891,9	115636,1	207893,0	6939,8	7008,3	8980,3	14776,2	16499,8	29739,5
2029 (forecast)	99176,7	118291,6	219587,0	6966,3	7039,1	9203,9	14947,8	16804,6	31322,2
2030 (forecast)	100383,6	120841,6	231281,0	6991,2	7068,3	9427,6	15109,0	17096,2	32904,9
The trend equation	$y = 19908\ln(x) + 43980$	$y = 44601x0,3518$	$y = 11694x + 32483$	$y = 410,78\ln(x) + 5827,4$	$y = 5828x0,0681$	$y = 223,65x + 5625,5$	$y = 2658,6\ln(x) + 7576,6$	$y = 7652,8x0,2837$	$y = 1582,7x + 5999$
Determinant ratio	$R^2 = 0,8264$	$R^2 = 0,8586$	$R^2 = 0,9237$	$R^2 = 0,9966$	$R^2 = 0,9955$	$R^2 = 0,9572$	$R^2 = 0,7651$	$R^2 = 0,7877$	$R^2 = 0,8786$

In General, as our forecasts have shown, in the future, the shortage of land resources and employment problems will be more acute. In order to effectively solve these problems, namely, effective and productive land use, pre-employment, the development of family business, reducing the migration process, it is advisable to carry out institutional reforms. One such process could be the transformation of some farms into dehkan farms that effectively use the land leased to them and provide employment for the whole family. To do this, it is necessary to develop an institutional and legal framework to regulate this process, as well as to reflect this in the strategic government document “Strategy for the development of agriculture in Uzbekistan until 2030”, which is at the stage of adoption.

## 6. conclusion

As the results of our study showed, the growth of the population in agriculture, the degradation of land resources, as well as the increase in the number of unemployed in agriculture, requires a review from the institutional point of view of the guidelines for further development of the sphere. At the same time, the key point is to take into account the criteria of inclusive growth, to which the international community will increasingly pay attention. Taking this into account, we have predicted the main indicators of inclusive growth. According to our estimates, in Uzbekistan by 2030, the growth in agricultural output is expected to grow at 10383,6-114341,0 billion soums, the number of people employed in agriculture – 6991,2-9427,6 thousand people, the size of the income per capita of the population employed in agricultural production – 15109,0-32904,9 thousand soums. One of the ways to achieve these parameters may be the partial transformation of less efficient, in terms of land use, in our case, farms, into dehqan farms, in which there is an increase in agricultural productivity, and in which informal institutions are developed. In this regard, it is necessary to create an institutional framework for the implementation of this process, as well as to reflect this in the strategic document “Strategy for the development of agriculture in Uzbekistan until 2030”.

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## Fixation of administrative offenses in Russia and foreign countries: the legal and social aspects

Fijación de infracciones administrativas en Rusia y países extranjeros: aspectos legales y sociales

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### ABSTRACT

We analyze the experience in fixing administrative offenses. The article also raises the problems of using automatic fixation as a source of evidence in cases of administrative offenses. We gave an examples of the positive impact of automatic fixation of administrative offenses on road safety, in particular we proved that the use of administrative fixation tools should also be the preventive measure that helps to regulate traffic. The problem of using the means of fixing administrative offenses on cars with foreign state marks, which are increasingly appearing on roads, is becoming more relevant. We also considered the sociological aspect in order to understand how the society relates to this activity and correct its direction.

**Keywords:** Means of fixing administrative offenses, traffic rules, experience of use in foreign countries.

### RESUMEN

Analizamos la experiencia en la reparación de infracciones administrativas. El artículo también plantea los problemas de utilizar la fijación automática como fuente de evidencia en casos de infracciones administrativas. Dimos ejemplos del impacto positivo de la reparación automática de infracciones administrativas en la seguridad vial, en particular demostramos que el uso de herramientas de reparación administrativa también debería ser la medida preventiva que ayude a regular el tráfico. El problema de utilizar los medios para reparar infracciones administrativas en automóviles con marcas de estado extranjeras, que aparecen cada vez más en las carreteras, se está volviendo cada vez más relevante. También consideramos el aspecto sociológico para comprender cómo la sociedad se relaciona con esta actividad y corregir su dirección.

**Palabras clave:** Medios para corregir infracciones administrativas, normas de tránsito, experiencia de uso en países extranjeros.

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## INTRODUCTION

The system of automatic video recording of offenses in the field of road transport regulation takes its history in the West. Interesting is the fact that the first surveillance cameras were invented in the 1950s in Holland.

In Russia, the use of video recording cameras is associated with the Federal Target Program “Improving Road Safety in 2006-2012”. And already by July 1, 2008, complexes of photo and video recording of administrative offenses in the field of traffic were put into effect on the territory of our country (Agapov, 2015).

Thus, the Federal Law of July 24, 2007 No. 210-FL introduced changes to the basis and procedure for bringing offenders in the field of traffic rules to administrative responsibility if they are fixed by automatically operating special technical means having photo and video fixation functions. In particular:

- The basis for initiating a case of an administrative offense may be the fixing of an administrative offense in the field of traffic committed with the use of a vehicle, working automatically in special technical means having the functions of photo and video recording;
- A protocol on an administrative offense is not drawn up, and a decision on an administrative offense is made without the participation of the person in respect of whom an administrative offense has been instituted (part 3 of article 28.6 of the Code of Administrative Offenses of the RF);
- The subject of such an offense is the owner (owner) of the vehicle, which can be both an individual and a legal entity, which is enshrined in part 1 of article 2.6.1 Administrative Code of the Russian Federation.

## DEVELOPMENT

### Methodology

Theoretical and methodological basis of the research includes the leading domestic and foreign papers in the field of administrative offenses, including monographs, articles, and analytical reviews. The research is based on common methods, like methods expert analysis, statistical analysis and comparative analysis, a system approach, synthesis, expert assessments, tabular and graphical data visualization techniques.

### Discussion

Since 2007, there has been a steady tendency in Russia to reduce the number of accidents with injuries. In 2000, there were 157.6 thousand such accidents, but then, due to the rapid growth in car use, their number in 2005 exceeded 220 thousand

According to the data of the State traffic inspectorate of the Russian Federation, in 2015 in Russia there were 184 thousand traffic accidents with victims, which killed 23 114 people, 231 197 people were injured and injured. For comparison, in 2005 the number of accidents amounted to 223,342 (a decrease of 17.6%), 33,957 people died (-31.9%), 274,865 people (-15.9%) were injured (Figure 1).

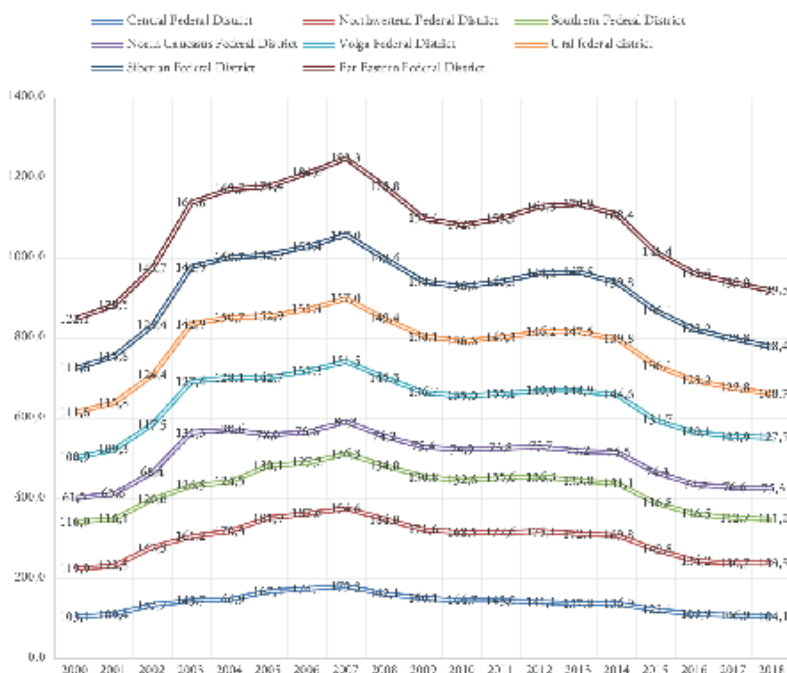


Fig. 1. The number of road traffic accidents with victims in the constituent entities of the Russian Federation, units per 100 thousand population

As of the beginning of 2019, in the constituent entities of the Russian Federation, there are 10.8 thousand stationary and 3.9 thousand mobile complexes for automatically recording violations of the rules. Over the past year, the number of stationary complexes increased by 20 percent, mobile - by 1 percent.

Almost 106 million decisions on violations of the rules were made in relation to vehicle owners precisely on the basis of materials obtained using automatic photo and video recording systems. This is 82.7 percent of the total number of decisions issued over the past year.

Now more than 11.2 thousand of all available systems in operation reveal violations associated with exceeding the set speed. In this case, one thousand of them reveals an excess of the so-called average speed. That is, when one camera records the time of entry to the site, the other - the time of departure from it. The time to overcome the site is known, so the average speed is not a problem to calculate. And if it is higher than the established one, it means that somewhere the person was overly accelerated. And for its oversight, it means that it will receive a fine soon.

It is stabilization of high-speed modes that reduces the severity of the consequences of accidents and mortality on the roads. In total, according to Russian statistics, 89 million cases of speeding were detected. By the way, this is 84 percent of the total number of offenses recorded by the automated system. It is worth noting that thanks to the installation of cameras in 2018, more than 1.3 thousand hazardous areas were eliminated on the country's roads.

In this connection, the experience of the Republic of Kazakhstan will be interesting, which gives a clear definition of automatic means of fixing administrative offenses. So article 34-1. The Code of Administrative Offenses of the Republic of Kazakhstan fixes: "certified special control and measuring equipment and instruments in the articles of this Code should understand the technical means and instruments for monitoring and recording offenses that have passed metrological verification, photo and video equipment that record the fact and time of the offense, type, brand, state registration number plate, as well as the speed and direction of movement of the vehicle". In this case, there are much more signs of such a tool, which clarifies the definition of such tools (Lytkin, 2012).

The next thing that deserves attention will be that moment, which is caused by the complication of the administrative-legal procedure for imposing a fine, by a foreign entity (citizen of another country) (Carter et al., 2014)., for example, the capture of an administrative violation in the field of traffic by means of automatic fixation of cars bearing foreign state signs (Delhomme, 2014). To date, the Convention on Mutual Recognition and Enforcement of Decisions in Cases of Administrative Violations of the Rules of the Road dated March 28, 1997, article 3 of which states: If a person residing in the territory of one of the Contracting Parties has violated the rules of the road in the territory of another Of the Contracting Party, the Contracting Party of the place of the offense may request the Contracting Party of the place of residence to institute administrative proceedings against this person and before be the case of a Contracting Party to the place of residence for the purpose of a final administrative penalty. But at the same time, these rules apply only to the list of administrative offenses that are enshrined in this convention. This list does not contain those offenses that can be recorded on special means. Therefore, these standards cannot be applied.

The problem posed earlier is due to the fact that law enforcement agencies of various countries have their own databases with car signs (Freydier, 2016). At the same time, if a person violates another state, for example, the rules of the road in Russia, the means of fixation establish an offense, however, it is not possible to identify the owner of the vehicle, since there is no single database. In this regard, law enforcement agencies of Russia, Belarus and Kazakhstan plan to establish an exchange of information about violators. A draft of an intergovernmental agreement is being prepared by the countries of the Customs Union. From the draft agreement it follows that if a vehicle with Belarusian and Kazakh license plates is detected, the traffic police will draw up a decision on bringing to administrative responsibility and send it to the owner. If he fails to pay the fine on time, the materials will be sent to the authorized body for the enforcement of the fine (bailiffs). The annex to the agreement contains a list of offenses recorded by cameras that will be recognized by countries. There should be a violation of the speed limit, exit to the oncoming lane, exit to the designated lane and other trains. Information on non-payment of the fine on time will be transmitted to the bailiffs of the Russian Federation, the Republic of Belarus and Kazakhstan. The same fate awaits Russian drivers traveling abroad.

## Results

An important problem is the problem of proving the offense recorded on the means of fixation. So in the note to article 1.5 of the Administrative Code of the Russian Federation indicates that in the case of fixing an administrative offense by special means of fixation, the person called to account must prove his innocence. Therefore, the presumption of innocence does not apply in this case. However, in a number of foreign countries, the law indicates the need, in addition to data from such funds, additional evidence.

The doctrinal proposes to distinguish two models of legal regulation of this issue. Klimovich E.V. indicates that the data from the fixing means of administrative offenses is not enough to bring to legal responsibility and provides for the mandatory participation of the policeman in the process of processing the materials of the case on the offense (Klimovich, 2010). So, in Scotland, when working with devices for recording violations, the testimonies of two witnesses who are present during the violation are necessary (in this capacity are the policemen who work with

the equipment) (Haeger, 2018). In Sweden, a policeman is required to stop the perpetrator and inform him of the violation (Gaymard, 2017).

The second model, according to the author, is more progressive, since it takes into account the level of technological development and the intensity of traffic flows. It seems that, according to the second model, the presumption of the vehicle owner applies to offenders (Hatfield et al., 2018; Tronsmoen, 2008); Wu et al., 2018).

For a more accurate analysis of the work of these funds, it is necessary to consider the attitude of the public when considering problems associated with the functioning of means of fixing administrative offenses (Hayes, 2017; Lytkin, 2012). It is worth saying that the official traffic police statistics show a positive trend towards a decrease in the number of road accidents. So, in 2017, the number of deaths decreased by 6% (19 088), the wounded - by 2.6% (215 374), and the number of accidents decreased by 2.5% (169 432). This is facilitated by the work of fixing administrative offenses, since these devices have not only a punitive function, in the form of a fine on the offender, but also have a preventive effect on him (Isler, 2011).

However, we have to admit the fact that the number of traffic accidents is large (Lang, 2018), which raises the need for better control over traffic rules. In this regard, a survey was conducted in which 50 respondents participated, the main selection criterion of which is the presence of a driver's license.

The first question that was asked is as follows: "Do you have any offenses recorded on the means of fixing administrative offenses?" A positive answer was given by 16 percent, this indicates that the respondents have a fairly high level of legal awareness and have a serious attitude to the rules of the road.

The second question was composed as follows: "Is it necessary to develop legal regulation in this area?" The answer "yes" was chosen by 80 percent of respondents, this result was caused by a lack of legal certainty, in particular, a gap is seen in the legal consolidation of the concept of means of fixing administrative offenses, as well as their types.

The third question is as follows: "Are the means of fixing administrative offenses positively influencing the maintenance of the rule of law?" Most of the respondents, namely 75 percent answered positively. Based on this, it can be concluded that most respondents have a positive attitude to these funds as one of the regulators of law and order on the roads.

It is important to emphasize that the practice of bringing to administrative responsibility for violation of traffic rules recorded using automatic fixation devices in different regions is developing ambiguously. However, in general, there is an annual increase in the number of persons held administratively liable for traffic offenses recorded using automatic photo and video recording devices (Markšaityte et al., (2017). Statistics in this aspect seems quite serious. So, the employees of the Center for the automated fixing of administrative offenses in the field of traffic police for violations of the Traffic Rules of the Russian Federation identified using special technical means of photo and video recording, working in automatic mode, processed 75,116 photo materials for individuals and legal entities for 3 months of 2016, 69364 were issued decisions on cases of administrative offenses (Petrov, 2017). The total amount of fines imposed amounted to 39286300 rubles (Novaco, 2015).

But, these devices are not perfect. Indeed, no measurement can be performed absolutely accurately, therefore, the desired value in the measurement process has some error. No matter how small this error may be, its knowledge is necessary for a correct assessment of the results obtained (Pyankova et al., 2017). This is especially important for measurements carried out in the process of identifying administrative offenses, since the results obtained are used in the process of proving and in many respects form the basis of the decision on the case (Regan et al., 2011; Rossinsky, 2004; Shimada et al., 2018; Tan et al., 2017; Taubman-Ben-Ari, 2010. Young Note that the fundamental goal of automatic fixation is that when a certain electrical impulse is received from the sensor, the device is triggered. This is what allows us not to record what is happening during the entire time of observation, but to take the corresponding picture exactly at the time of the administrative offense.

Currently, the most developed systems that receive such an impulse are vehicles measuring the speed of vehicles that not only measure the speed of a particular object, but are also able to compare it with a limit set by the operator in advance and send a signal directly if this limit is exceeded. This signal also helps to trigger the camera shutter. It is advisable to assume that the response time of the camera shutter after receiving the signal from the measuring device is important. Since in the case, for example, if the time is long, the camera will not record the car of the intruder, but another vehicle. When a dense stream of vehicles moves at a speed of 60 km / h, a camera's delay of 1 second will cause the car to be almost 17 meters from where the lens is aimed at taking a picture. Therefore, it is likely that the next vehicle will be located at this place.

## CONCLUSION

Thus, the use of special means of fixing administrative offenses is becoming more common every day. Firstly, this is due to a possible reduction in the number of officials performing similar work. Secondly, a mistake in qualifying an offense is minimized. However, further development of these means is necessary: the creation of a unified database of offenders, a clear legal definition of the means of fixing administrative offenses.

The process of optimizing the legislation on administrative offenses in the field of traffic is necessary and this need is supported by constantly improving technical regulation of traffic, reform of the system of governing bodies in this sphere of legal relations.

Ensuring the safety of road users in administrative legal terms should be a set of measures aimed at implementing the rules governing the emergence, development and protection of public relations that form it.

In the end, it is important to pay attention that the situation with the use of special technical means is changing for the better. Fixing aids are being used more and more often and are being introduced into the road sector. Consequently, the need to improve both legislation by eliminating the gaps and contradictions that arise, as well as introducing innovations in line with the development of legal relations, based on law enforcement practice, and technical means by introducing new technologies.

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## The effect of emotional intelligence as a mediator of the relationship between transformational leadership and professional learning community

El efecto de la inteligencia emocional como mediador de la relación entre el liderazgo transformacional y la comunidad de aprendizaje profesional

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### ABSTRACT

A drastic national education transformation requires leaders that can shape high-quality teachers. Professional Learning Community (PLC) is a strategy introduced by the Teacher Education Division or *Bahagian Pendidikan Guru (BPG)* to improve the quality of teachers. In ensuring the successful implementation of this strategy, an effective principal leadership style should be practised in every organisation. Besides, emotional intelligence plays a role in assisting leaders to improve the effectiveness of their leadership. This study aims to examine the effect of emotional intelligence as a mediator of the relationship between principals' transformational leadership and teachers' professional learning community practice in High Performance Schools (HPS) in the state of Selangor. A total of 364 teachers were selected from 34 high-performance secondary schools in Selangor.

**Keywords:** Emotional Intelligence, High Performance School (HPS), Professional Learning Community Practice (PLC), Transformational Leadership.

### RESUMEN

Una transformación educativa nacional drástica requiere líderes que puedan formar maestros de alta calidad. La Comunidad de Aprendizaje Profesional (PLC, por sus siglas en inglés) es una estrategia introducida por la División de Educación Docente o el *Pendidikan Guru de Bahagian (BPG)* para mejorar la calidad de los maestros. Para garantizar la implementación exitosa de esta estrategia, se debe practicar un estilo de liderazgo principal efectivo en todas las organizaciones. Además, la inteligencia emocional juega un papel en ayudar a los líderes a mejorar la efectividad de su liderazgo. Este estudio tiene como objetivo examinar el efecto de la inteligencia emocional como mediador de la relación entre el liderazgo transformacional de los directores y la práctica comunitaria de aprendizaje profesional de los maestros en las Escuelas de Alto Rendimiento (HPS) en el estado de Selangor.

**Palabras clave:** Inteligencia emocional, Escuela de alto rendimiento (HPS), Práctica comunitaria de aprendizaje profesional (PLC), Liderazgo transformacional.

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## 1. INTRODUCTION

Currently, transformational leadership is a practical leadership practice which to be adopted in educational organisations since the education system emphasises on transformation and innovation in implementing the Malaysia Education Blueprint 2013–2025. It is not easy to implement changes in educational organisations because the success of a change depends on the leadership of school leaders (Mohd Izham & Norzaini, 2009). A transformational leader supports the intellectual development of teachers as well as generating excitement and enthusiasm to implement the transformation. The transformational leader can create a positive organisational climate and accomplish goals easily. Besides, the transformational leader increases the motivation and instills the interest among followers (Ayhan Aydin, Yllmaz Sarie, & Sengul Uysal, 2013). Many research findings have shown that transformational leadership is highly relevant to be practised in education field. It has the ability to improve teachers' potential (Asiah, 2012), and teachers were found to be more motivated to implement changes in school to the extent of improving self and school performance (Hazlina, 2013; Mohd Zabedi, 2014; Siti Nadya & Mohd Izham, 2017). Also, transformational leadership can enhance organisational performance through motivation and increase the effective learning orientation in organisations (Bass & Riggio, 2006). It is supported by Amitay et al. (2006), which stated transformational leadership is highly associated with organisational learning.

The Professional Learning Community (PLC) is one of the changes introduced by The Teacher Education Division or *Bahagian Pendidikan Guru* (BPG) in the Continuous Professional Development Plan or *Pelan Pembangunan Profesional Berterusan* (PPPB) since 2013. The initiative is implemented to improve the quality of teachers and the excellence of schools as announced in Wave 3 (2020–2025), which aims to enhance the professional excellence of teachers especially novice teachers. Previous studies have found that, they having a problem with classroom management and need support from expert teachers in order to help them to improve their teaching and learning quality (Fariza & Hazrati, 2109). In order for each student to succeed, the education system must have the best quality. The quality of education is determined by teacher's quality of the teaching, which thus leads the element to be put into highest consideration. (Zanaton, 2017). Indirectly, teacher professionalism can be enhanced when teacher's quality of teaching and student's quality are emphasized. PLC is a concept of collaborative learning of teachers (Mohd Faiz et al. 2016); and administrators explore and share the learning continuously followed by taking actions based on their learning. Giles and Hargreaves (2006) described PLC as the practice of teachers who frequently engage in discussions, by consistently paying attention to the teachers' teaching and learning process. Zuraidah (2012) considered PLC as a community that shapes a learning culture in an educational organisation where not only students learn in the community, but everyone also has a responsibility in implementing PLC in the community. The PLC practice needs support from committed leaders in shaping PLC in schools. An effective leadership style can affect PLC implementation, thus enhancing teachers' quality and student's excellence. Azlin Norhaini et al. (2014) stated that effective leadership associated with specific leadership styles such as transformational and transactional, which carry out activities to enhance teacher and student's achievement.

The emotional intelligence of a leader refers to the ability to identify and control the emotions of self and others, to motivate self, to manage one's emotion, and to manage the relationships with others (Goleman, 2001). Goleman (1988) stated that it refers to a leader's ability in managing conflicts. It is also associated with self-awareness and social relations. Emotional intelligence is a job-related skill that can be learned and should be mastered by leaders to enhance the effectiveness of their leadership in managing an organisation. A leader with high emotional intelligence can build an organisational climate that forms the foundation of organisational effectiveness, such as establishing effective communication, able to innovate, and creating a competitive culture to accomplish the organisational goals to the specified level (Yahya Don et al., 2016). The statement was also supported by Norasmah and Tengku Nor Asma (2018), by stating that individuals who can manage their emotions efficiently usually have the ability to direct their emotions towards their desired behaviours and maintain the effectiveness of their actions.

## 2. CONCEPTUAL FRAMEWORK

This study is based on three main theories, namely, i) Transformational Leadership Theory (Bass & Riggio, 2006); ii) Emotional Intelligence Theory (Goleman, 2001), and iii) Learning Organisation Theory (Senge 1990; 2012). Besides, the Professional Learning Community model (Hord, 2003) is also utilised within PLC strategy, as that has been implemented in Malaysia to create a learning organisation in schools. Figure 1 shows the measured constructs in this study. The Rational Leadership Construct of this study applied the professional learning community model (Hord, 2003). The model is highly geared to the education field and is consistent with the latest developmental needs of the Malaysian education system towards professional learning community practice in schools, which started in 2016. In this study, transformational leadership is performed as the independent variable, the professional learning community construct as the dependent variable, and the emotional intelligences construct is the mediator.

The figure on the conceptual framework of this study shows the entire elements in the three constructs. The transformational leadership construct has four elements: i) idealised influence; ii) inspirational motivation; iii) intellectual stimulation, and iv) individual consideration. The professional learning community construct consists of five elements: i) shared and supportive leadership; ii) shared values, goals, mission, and vision; iii) collective learning and application of learning; iv) shared personal practice, and v) supportive conditions. Finally, the emotional intelligence construct comprises four elements: i) self-awareness; ii) self-management; iii) social awareness, and iv) relationship management.

Sources: Combined Transformational Leadership Theory (Bass & Riggio, 2006), Emotional Intelligence Theory (Goleman, 2001), and Professional Learning Community Model (Hord, 1997, 2003; Senge, 1990; KPM, 2011)

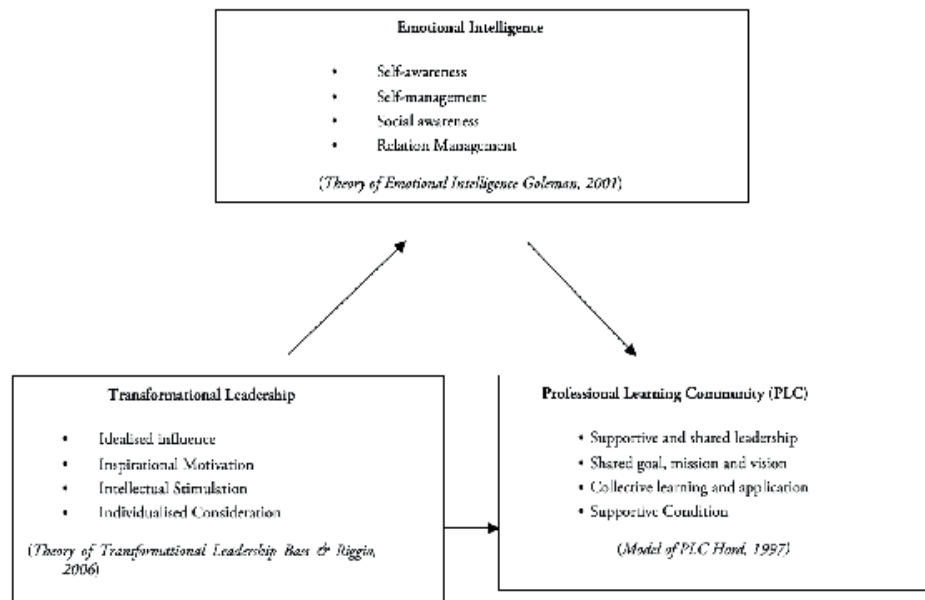


Figure 1. Conceptual Framework

### 3. RESEARCH PURPOSES

The study aims to identify the levels of transformational leadership and emotional intelligence of principals and their relationship with teachers' professional learning community practice in High Performance Schools (HPS).

### 4. RESEARCH OBJECTIVES

1. To determine the level of principals' transformational leadership practice through the dimensions of idealised influence, inspirational motivation, intellectual stimulation, and individual consideration in HPS.
2. To determine the level of principals' emotional intelligence in the aspects of self-awareness, self-management, social awareness, and relationship management in HPS.
3. To identify the relationship between principals' transformational leadership and teachers' PLC practice in HPS.
4. To identify the effect of emotional intelligence as a mediator of the relationship between transformational leadership and teachers' PLC practice in HPS.

### 5. RESEARCH QUESTIONS

1. What is the level of principals' transformational leadership practice through the dimensions of idealised influence, inspirational motivation, intellectual stimulation, and individual consideration in High Performance School (HPS)?
2. What is the level of principals' emotional intelligence in the aspects of self-awareness, self-management, social awareness, and relationship management in HPS?
3. Is there a relationship between principals' transformational leadership and teachers' PLC practice in HPS?
4. Does emotional intelligence have a mediating effect on the relationship between principals' transformational leadership and teachers' PLC practice in HPS?

### 6. HYPOTHESES OF THE STUDY

Ho1: There is no significant relationship between principals' transformational leadership and teachers' professional community practice in HSP.

Ho2: Emotional intelligence does not have a significant mediating effect on the relationship between principals' transformational leadership and teachers' PLC practice in HPS.

### 7. METHODOLOGY

The respondents consisted of secondary school teachers in the High Performance School (HPS) category in Malaysia. To generalise the respondents, the researcher used the clustered random sampling method by dividing the population into four zones, namely, the central zone, south zone, east zone, and north zone. The total number of respondents is 364. The number of samples by zone is shown in Table 1.1.

**Table 1. Sample Distribution According to Zone**

Zone	Samples
Central	52
North	95
East	82
South	100
Sabah/Sarawak	35
<b>TOTAL</b>	<b>364</b>

The transformational leadership instrument consisted of 26 items that were adapted from the Multifactor Leadership Questionnaire instrument (MLQ) (Bass & Avolio, 2000). Emotional intelligence was measured using 27 items, which were adapted from the Hay Group's Emotional Competencies Inventory (ECI-V2) instrument by Boyatzis, Goleman, and Hay Group (2001). Next, the teachers' professional learning community construct was measured using the instrument adapted from Zuraidah (2016) by consisting of 28 items.

## 8. FINDINGS AND DISCUSSION

**RESPONDENTS' PROFILE.** Table 2 depicts the statistical analysis in the form of frequency and percentage to describe the profile of the study's respondents. The respondents consisted of teachers, who the majority have served for 21 years and above (104 respondents, 28.6%), while the minority comprised those who have served for less than 5 years (13.5%). The rest is made up of teachers who have served for 6 to 10 years (70 respondents, 19.2%), 11 to 15 years (82 respondents, 22.5%), and 16 to 20 years (59 respondents, 16.2%). In terms of their academic level, the category with the most respondents is the bachelor's degree academic qualification (310 respondent, 85.2%), while the PhD category has the fewest number with only three respondents (0.8%), and the remaining have a diploma (four respondents, 1.1%) and a master's degree (47 respondents, 12.9%).

**Table 2. Respondent's Profile**

Variables	Frequency	Percentage
<b>Service Duration</b>		
Below 5 years	49	13.5
6–10 years	70	19.2
11–15 years	82	22.5
16–20 years	59	16.2
20 years above	104	28.6
<b>Academic Level</b>		
PhD	3	0.8
Master's degree	47	12.9
Bachelor's degree	310	85.2
Diploma	4	1.1
<b>Total</b>	<b>364</b>	<b>100</b>

### Descriptive Analysis

i. What is the level of principals' transformational leadership practice based on the dimensions of idealised influence, inspirational motivation, intellectual stimulation, and individual consideration in HPS?

**Table 3. Mean and Standard Deviation Values and Interpretation of Scores for Principals' Transformational Leadership.**

Variable	Mean	Standard Deviation	Interpretation of Score
Idealised Influence	4.33	0.468	Very High
Inspirational Motivation	4.35	0.483	Very High
Intellectual Stimulation	4.15	0.496	High
Individual Consideration	4.23	0.532	Very High
<b>Overall</b>	<b>4.27</b>	<b>0.439</b>	<b>Very High</b>

Table 3 shows the descriptive analysis results based on the respondents' information involving mean and standard deviation values. These findings answer the first research question, which is to identify the level of transformational leadership practice based on the elements of idealised influence, inspirational motivation, intellectual stimulation, and individual consideration. Overall, principals' transformational leadership practice is at a very high level (mean=4.2723, SD=0.439). The inspirational motivation element shows the highest mean score (mean=4.35, SD=0.483), followed by ideal influence (mean=4.33, SD=0.483) and individual consideration (mean=4.23, SP=0.532). Meanwhile, the mean score for intellectual stimulation (mean=4.15, SP=0.496) is the lowest compared to those of other elements.

ii. What is the level of principals' emotional intelligence in terms of self-awareness, self-management, social awareness, and relationship management in HPS?

**Table 4. Mean, Standard Deviation Values and Interpretation of Scores for Principals' Emotional Intelligence.**

Emotional Intelligence	Mean	Standard Deviation	Interpretation of Score
Self-awareness	4.23	0.501	Very High
Self-management	4.32	0.470	Very High
Social Awareness	4.14	0.580	High
Relationship Management	4.22	0.513	Very High
<b>Overall</b>	<b>4.24</b>	<b>0.467</b>	<b>Very High</b>

Table 4 shows the descriptive analysis results based on the respondents' information involving mean and standard deviation values. These findings answer the second research question, which is to identify the level of principals' emotional intelligence based on the elements of self-awareness, self-management, social awareness, and relationship management. Overall, principals' emotional intelligence is at a very high level (mean=4.24, SD=0.467). The self-management element shows the highest mean score (mean=4.32, SD=0.470), followed by self-awareness (mean=4.23, SD=0.501) and relationship management (mean=4.22, SD=0.513). Meanwhile, the mean score for the social awareness element (mean=4.14, SD=0.580) is the lowest compared to those of other elements.

#### Inference Analysis

i. Ho1: There is no significant relationship between principals' transformational leadership and teachers' professional learning community practice in HSP.

**Table 5. The Relationship between Transformational Leadership and Professional Learning Community**

		Transformational Leadership	Professional Learning Community
Transformational Leadership	Pearson	1	0.790**
	Correlation Sig. (2-tailed)		0.00
	N	364	364
Professional Learning Community	Pearson	0.790**	1
	Correlation Sig. (2-tailed)	.000	
	N	364	364

\*\* significant 0.01

To examine Ho1, the researcher performed Pearson's correlation analysis. This analysis provided the findings on the relationship between transformational leadership and teachers' professional learning community. Based on Table 5, there is a significant positive relationship between transformational leadership practice and professional learning community ( $r=0.790$ ;  $p=0.000$ ). The value of  $r$  indicates that there is a strong relationship between transformational leadership and professional learning community (Jackson, 2006). Thus, the null hypothesis, Ho1, failed to be accepted.

iii. Does emotional intelligence have a mediating effect on the relationship between the principals' transformational leadership and teachers' PLC practice in HPS?

To see the indirect effect of emotional intelligence as a mediator of the relationship between principals' transformational leadership and teachers' professional learning community (PLC) practice in HPS, the bootstrapping procedure was conducted. Before identifying the mediating effect by using the PLS-SEM software, the cleaned data is needed in order to achieve the criteria set by PLS-SEM, namely, internal consistency reliability, convergent validity, and discriminant validity.

Internal consistency reliability is intended to examine the extent that the developed indicators are able to measure for each construct. It can be determined by using the values of Cronbach's alpha and composite reliability ( $CR>0.7$ ). Convergent validity ensures that there are no overlapping meanings among indicators. It can be confirmed by the average variance extracted value ( $AVE>0.5$ ) (Bryne, 2016). If there is value lower than the set value, that indicator will be removed.

Discriminant validity refers to the degree of incompatibility among the constructs that should not be measured by the indicators. It is measured by using the Fornell-Larker, cross-loading, and Heterotrait-Monotrait (HTMT) values. However, according to Henseler, Ringle, and Sarstedt (2015), cross loading and HTMT values are sufficient for measuring discriminant validity. An HTMT value that exceeds the value set by Kline (2011) of 0.85 or Gold, Malhotra, and Segars (2001) of 0.90 is considered to have a discriminant validity issue.

i) Internal Consistency Reliability for TL and PLC Constructs

**Table 6 Composite Reliability and Cronbach's Alpha Values for Each Construct**

Matrix	Composite Reliability	Cronbach's Alpha
TL	.969	.966
PLC	.966	.964
EI	.975	.973

Based on Table 6, all the values met the set criteria of the composite reliability, and Cronbach's alpha values must be equal to or exceed 0.7 (Hair, Hult, Ringle, & Sarstedt, 2017). The Cronbach's alpha value for transformational leadership is .966, professional learning community is .964, and emotional intelligence is .974. Meanwhile, the composite reliability values for transformational leadership and professional learning community are .969 and .966, respectively.

ii) Convergent Validity

**Table 7 Average Variance Extracted for Each Construct**

Matrix	Average Variance Extracted (AVE)
TL	.544
PLC	.519
EI	.582



Based on Table 7, the AVE values for transformational leadership (.544), professional learning community (.519), and emotional intelligence (.582) exceed .5. It indicates the items as suitable for measuring both the constructs.

iii) Heterotrait-Monotrait (HTMT)

Table 8 HTMT Value for Each Construct

	TL	PLC
TL		
PLC	.820	
EI	.880	.819

Referring to Table 8, the Heterotrait-Monotrait (HTMT) value for the construct of transformational leadership-professional learning community is .820, transformational leadership-emotional intelligence is .880, and professional learning community-emotional intelligence is .819. All the values do not exceed .90 (Gold et al. 2001). Hence, it shows that the items have satisfied with the discriminant validity condition.

Mediating Effect Analysis

To examine the mediating effect by using PLS-SEM, the bootstrapping procedure is the correct procedure to be applied (Hayes, 2009; Zhao et al. 2010) by looking at the indirect effect among the variables.

Table 8 Beta and t-values for Each Construct Relationship

Relationship	Std. Beta	Std. Error	t-value	Confidence Interval (BC)		Decision
				LL	UL	
TL>EI	0.855	0.019	44.78**	0.817	0.887	Supported
EI>PLC	0.437	0.075	5.802**	0.287	0.591	Supported
TL>PLC	0.419	0.074	5.635**	0.272	0.564	Supported

Table 8 shows the bootstrapping analysis is used to examine the effect of emotional intelligence as a mediator of the relationship between transformational leadership and professional learning community. The findings show three indirect effects, TL>EI ( $\beta=0.855$ ,  $t=44.786$ ), EI>PLC ( $\beta=0.437$ ,  $t=5.802$ ), and TL>PLC ( $\beta=0.419$ ,  $t=5.635$ ), where the t-value >1.96 is significant. The indirect effects of 95% Boot CI Bias Corrected [LL = 0.817, UL=0.887], [LL=0.287, UL=0.591], and [LL=0.272, UL=0.564] do not straddle 0 in between (Preacher, 2004; Hayes, 2008). Thus, it shows that there is a relationship between transformational leadership and professional learning community mediated by emotional intelligence.

The findings show that principals' emotional intelligence is one of the mediators of the relationship between principals' transformational leadership and teachers' professional learning community. The results suggest that the principals of high emotional intelligence are capable to increase the level of principals' transformational leadership practice and hence, can enhance teachers' professional learning community practice in HPS. The emotional intelligence elements, which consisting of self-awareness, self-management, social awareness, and relationship management are capable to enhance the effectiveness of principals' leadership.

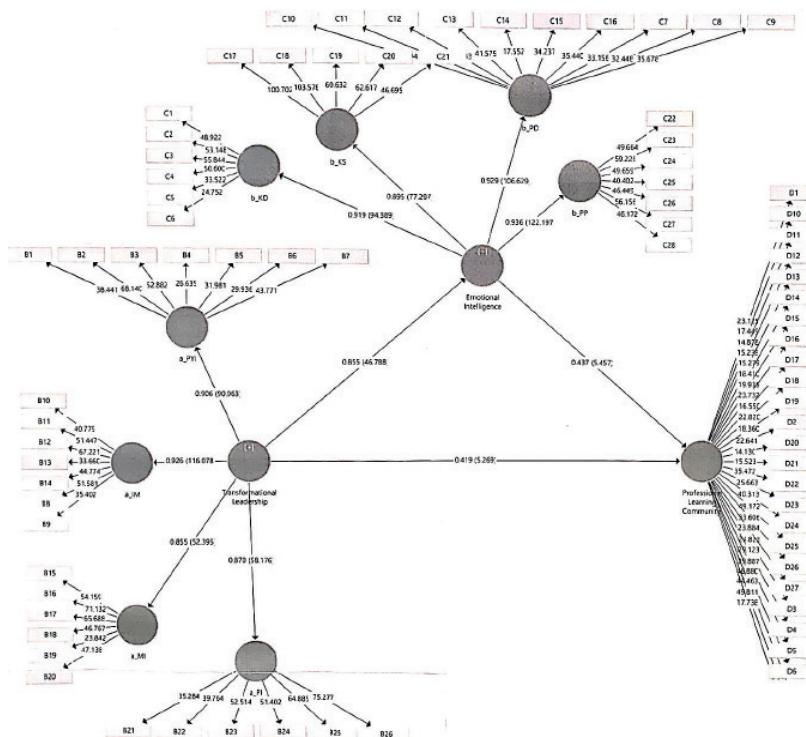


Figure. 2 Structural Model

## 9. IMPLICATION

This study provides a meaningful contribution to the literature on principals' leadership practice in the contexts of transformational leadership and teachers' professional learning community in schools. Despite many existing studies on transformational leadership, research on the effect of a mediator on transformational leadership is still lacking. Besides looking into the levels of principals' transformational leadership practice and emotional intelligence and their relationship with teachers' professional learning community, this study focuses on the role of emotional intelligence as a mediator of the relationship. The implication of the study supports the importance of principals' emotional intelligence in leading the organisation to be able to practise transformational leadership more effectively, thus providing a positive impact on the professional learning community practice towards high-quality and world-class teachers.

## 10. CONCLUSION

Based on the research results, it was found that principals' transformational leadership practice and emotional intelligence were very high. Besides, there was a strong relationship between principals' transformational leadership practice and teachers' professional learning community practice. Principals' emotional intelligence was found to have a mediating effect on the relationship between principals' transformational leadership and teachers' professional learning community practice in HPS. To obtain a different and comprehensive perspective, it is recommended to conduct research on boarding schools and Mara Junior Science College or *Maktab Randah Sains Mara* (MRSM) by focusing on the level of leadership practice, principals' emotional intelligence, and the effect on teachers' PLC practice in those schools.

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## Current issues on fine arts education: continuity and prospects for development

Temas actuales sobre educación en bellas artes: continuidad y perspectivas de Desarrollo

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### ABSTRACT

The article analyses contemporary issues and the prospective development of fine art education. As we know, Education at all times exists in close connection with the social, economic and cultural component of society. Modern culture, characterized by constant acceleration, expansion and updating of the information space, forms a new person who differs psychologically, socially, culturally, professionally from previous generations. The author examines in detail the issues of the methodology of art education in the disciplines of art, draws attention to pre-vocational programs in the field of art and general artistic development programs, emphasizes the importance of art education, deals with the history of developing art education in Uzbekistan and shows the need to promote scientific knowledge about the positive the impact of art and its intellectual resources.

**Keywords:** art education, fine and applied art, socio-economic development, visual and applied design

### RESUMEN

El artículo analiza cuestiones contemporáneas y el desarrollo prospectivo de la educación artística. Como sabemos, la educación existe en todo momento en estrecha relación con el componente social, económico y cultural de la sociedad. La cultura moderna, caracterizada por la constante aceleración, expansión y actualización del espacio de información, forma una nueva persona que difiere psicológica, social, cultural y profesionalmente de las generaciones anteriores. El autor examina en detalle los temas de la metodología de la educación artística en las disciplinas del arte, llama la atención sobre los programas pre-vocacionales en el campo del arte y los programas generales de desarrollo artístico, enfatiza la importancia de la educación artística, aborda la historia del desarrollo La educación artística en Uzbekistán y muestra la necesidad de promover el conocimiento científico sobre el impacto positivo del arte y sus recursos intelectuales.

**Palabras clave:** educación artística, bellas artes y artes aplicadas, desarrollo socioeconómico, diseño visual y aplicado.

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*“We have great ancestors who deserve admiration. We have so many treasures which are valuable. And I believe that there will be great future, great literature and art, which we can be proud of them.”*

**Sh.M.Mirziyoev**

**The President of the Republic of Uzbekistan**

President of the Republic of Uzbekistan Shavkat Miromonovich Mirziyoev at a meeting with representatives of education and science on May 24, 2019, at the National University of Uzbekistan identified future tasks for radical improvement of the activities of higher education institutions in the country, increasing the effectiveness of research and innovation activities in the country.

With the achievement of certain achievements in the field of artistic education in order to fulfill the above objectives, based on culture and art reforms, cardinal improvement of the processes of training highly competitive, highly innovative personnel in the field of modern visual and applied design in determining the prospects for socio-economic development, implementation of advanced foreign experience, expansion of mutually beneficial relations with leading foreign higher education institutions, improvement of research activity based on specialties within the exchange of experience is becoming more and more useful.

The education system in Uzbekistan, specializing in fine and applied art, has been formed in the 20th century, in spite of its historical traditions, in keeping with the modern education system. Students wishing to pursue a career in art and culture had a degree in the Tashkent Theater and Art Institute, as well as in Moscow, St. Petersburg and other cities.

The Academy of Arts of Uzbekistan was established in 1997, and one of the main directions of its activity was the formation of a system of continuous art education. Also, the National Institute of Arts and Design named after Kamoliddin Bekhzod was established on the basis of the Faculty of Art, which was opened at the Tashkent Institute of Theater and Art in 1954.

The history and development of art education in this institution are inextricably linked with the work of older generations of great artists R.Ahmedov, O.Totevosyan, M.Saidov, N.Kuziboev, T.Reshetnikov, G.Brimm, E.Kalantarov, T.Oganesov, N.Pak, I.Limakov, I.Rubin, V.Nechaev, I.T. Enin, Ch. Akhmarov, V. Zhmakin, V. Sosodov, I. Yurovsky, V. Parshin, D. Afuksinidi, K. Basharov, A. Egamov, I. Grishenko, K. Salohiddinov, A. Boymatov, A. Ahmedov, I. Yaravoy, S. Bondareva, R. Rempel, L. Shostko, R. Taktash, V.Lakovskaya, R. Tagirova, I. Bulkina and a number of other artists.

On August 3 in 2017, The President of the Republic of Uzbekistan Shavkat Miromonovich Mirziyoev at a meeting with the creative intelligentsia of Uzbekistan emphasized that important measures are being taken to develop culture, art and literature and have begun a period of radical changes in these areas. As a result of the meeting, entrance exams were canceled at the universities of arts and culture, as well as at the National Institute of Arts and Design named after Kamoliddin Bekhzod and now students can enter to the institute only through results based on creative exams.

The National Institute of Art and Design is the only higher education institution in Central Asia, providing education in all areas of fine and applied arts and design.

Well-known masters of art, academics of the Academy of Arts of Uzbekistan B.Jalolov, J.Umarbekov, A.Mirzaev, A.Nuriddinov, I.Jabborov, A.Ikromjonov, S.Abdullaev, S.Rahmetov, Y.Tursunnazarov, G.Kodirov, F.Ahmadaliev, People's Painters and Artists of Uzbekistan R.Khudoyberganov, O.Kozokov, A.Alikulov, Sh.S.Aliyeva and many other experts contribute to the development of art education.

Currently, the number of the teachers of the Institute is 200, including 10 academicians, 9 professors, 6 doctors, 33 candidates and associate professors. 46 people were awarded state awards, titles and medals.

The Institute has signed 32 memorandums with 15 countries. On the basis of these memorandums, more than 20 students and faculty participate in creative exhibitions, master classes and refresher courses each year through exchange programs. (Switzerland, Germany, UK, Japan, China, South Korea, Kazakhstan, Ukraine, Russia, Tajikistan, Azerbaijan, Poland, Romania, Malaysia, Kyrgyzstan)

In addition, a joint faculty has been opened in conjunction with Chanapatana International Design Institute (Thailand) in the fields of “Design clothes and fabrics” and “Interior Design”, and there are currently 20 students.

Nowadays 6 research projects with foreign partner universities are being implemented. In particular, the Institute in cooperation with Japan, South Korea and the People's Republic of China is conducting research within the framework of the international scientific project “The study of cultural and artistic significance of modern handmade paper”.

The peculiarity of the Institute is that professors and teachers carry out both pedagogical and creative activities at the same time. Their valuable works are displayed in prestigious exhibition halls not only in the Republic, but also abroad, and are kept in private collections and galleries.



There are 5 faculties: “Fine Arts”, “Applied Arts”, “Design”, “Art Studies” and “Advanced Training”. Moreover, there are other degrees of education after getting bachelor’s degree. Presently, Doctors of philosophy (PhD) and doctoral students (DSc) in 5 specialties are conducting research.

In order to develop a leading strategy for art and artistic education, the role of internal development as a highly skilled specialist and creativity system must be taken into account, as well as its role in the development of society. This is the particular importance for the Republic of Uzbekistan, which has chosen the modernization in all spheres of economic and social life.

The peculiarity of education in the field of fine and applied arts in the National Institute of Arts and Design named after Kamoliddin Bekhzod is manifested in two directions - professional and general artistic education.

Today, the development of the information space and the introduction of new modern technologies - that is, the innovative processes of the 21st century - are one of the most important factors in improving the field of art education, with a focus on effective interaction, while preserving the existing school of artistic education.

The following should be considered when developing criteria for evaluating and analyzing the effectiveness of the existing system of art education- participation and achievements of young artists in international and national competitions, exhibitions, festivals and other events; the compliance of forms of artistic education with international norms and practice; The level of innovation and participation of the younger generation in the modern art practice of Uzbekistan; balancing national and universal values in curriculum used in art education, etc.

As it is known, 5 important initiatives of the President of the Republic of Uzbekistan Shavkat Mirziyoev have been put forward to increase the level of attention of young people, development of spirituality, meaningful organization of their free time, wide involvement of them in culture, art, physical education and sport, formation of skills in using information technologies, promotion of reading among youth and increase women’s employment.

In order to systematically implement the 5 initiatives at the National Institute of Arts and Design named after Kamoliddin Bekhzod, an action plan, content and forms of their organization were developed. The plan outlines such tasks as spiritual-enlightenment work, educational process, leisure activities for students, physical education and sports, book promotion, mastering modern information technologies. In order to study the interests of students of the Institute and direct them according to their interests, a questionnaire was conducted among the students. As a result, 22 clubs and hobby groups, 17 competitions, exhibitions and 7 promotions have been planned.

In addition, about 10 schools and particular areas attached to the Institute, based on the specialization of the institute, organized a circle dedicated to the fine and applied arts during the summer holidays of the students.

Furthermore, more than 20 master classes and meetings were organized by faculty and talented students of the Institute in about 10 camps in Bostanlyk district.

In conclusion, the National Institute of Arts and Design named after Kamoliddin Bekhzod pays special attention to the improvement of artistic education, development of scientific and creative processes in accordance with modern requirements, improving the quality and effective organization of artistic education and strengthening its material and technical basis. The main task of today is to train highly qualified and competitive specialists with widened horizon and independent thinking.

## The Impact of Resource Enhancement Strategy on Small Business's Performance

El impacto de la estrategia de mejora de recursos en el rendimiento de las pequeñas empresas

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### ABSTRACT

The objective of this study is to examine the impact of resource enhancement strategy in improving the performance of small business firms in Malaysia. A self-administered survey and simple random sampling technique were conducted by making 221 owners-managers of small business firm as a sample of the study. The data were analysed using a two-stage approach of structural equation modeling (SEM). The results indicated that resource enhancement strategy has a positive and significant impact in improving small businesses performance. The practical findings provide a much clearer conceptualization of how resource enhancement strategy overcomes the issue of competitiveness in a new venture and small business firms.

**Keywords:** Resource enhancement strategy, Small business performance, Small business resources.

### RESUMEN

El objetivo de este estudio es examinar el impacto de la estrategia de mejora de recursos en la mejora del desempeño de las pequeñas empresas en Malasia. Se realizó una encuesta auto administrada y una técnica de muestreo aleatorio simple al hacer 221 propietarios-gerentes de empresas pequeñas como muestra del estudio. Los datos se analizaron utilizando un enfoque de dos etapas del modelado de ecuaciones estructurales (SEM). Los resultados indicaron que la estrategia de mejora de recursos tiene un impacto positivo y significativo en la mejora del rendimiento de las pequeñas empresas. Los resultados prácticos proporcionan una conceptualización mucho más clara de cómo la estrategia de mejora de recursos supera el problema de la competitividad en una nueva empresa y pequeñas empresas.

**Palabras clave:** estrategia de mejora de recursos, rendimiento de pequeñas empresas, recursos para pequeñas empresas.

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## 1. INTRODUCTION

Small and medium enterprises (SMEs) have been recognized as one of the key contributors to the economic developments of a country. In fact SMEs represent 90 percent of businesses population worldwide; contributes 65 percent to employment; and more than 50 percent contribution in gross state output (Alam, Bhuiyan, Jani, & Wel, 2016; Aquilina, Klump, & Pietrobelli, 2006; Sahid & Habidin, 2018; Sahid & Hamid, 2019). While in Malaysia, SMEs represent 97 percent of total business establishment; contributes 60 percent employment and 32 percent in overall gross domestic product (SME Corporation Malaysia, 2012). Thus, SMEs become the significant industry for economic growth in both developed and developing countries. Nevertheless, despite the significant role and contribution of SMEs to the economy, SMEs face various constraints and challenges which directly impact their resilience, growth and business performance. Hence, this paper discusses the firm resources in small business firm and the impact of resource enhancement strategy in improving small businesses performance.

### Resource-based View

Resource-based view (RBV) is a theory that is derived from the strategic management literature. RBV has been used in management studies to discuss the resources of a firm that have the potential in gaining and sustaining firm's competitive advantage; which directly as a key to superior firm performance (J. B. Barney, 2010; Hoopes, Madsen, & Walker, 2003; Sheehan & Foss, 2007; Zubac, Hubbard, & Johnson, 2010). The RBV theory was founded by Penrose (J Barney, Wright, & Ketchen, 2001; Hoopes et al., 2003; Wernerfelt, 1984) which discusses that a firm or business is a "resource group" that plays an important role in competitive strategy. Furthermore, RBV is a strategic management concept that emphasizes the importance of correlation between firm's performance with the resources it has, and how the firm manages its resources to overcome and winning fierce competition in the industry. Among the key discussions of the RBV theory are how the firm's resources can be a tool to the creation of a firm's competitive advantage. RBV focuses on the sources of firms that can differentiate the level of success or business performance among firms competing in the same industry.

The main assumption of RBV holds that resources with characterized as (1) valuable, (2) rare, (3) inimitable and (4) difficult or irreversible; is a key determinant of a firm's success and lead to competitive advantage (Andersén, 2011; J. B. Barney, 2010; JB Barney & Clark, 2007). The firms' sources not only in the form of tangible assets, may also be in the form of intangibles such as knowledge (know-how), reputation, legitimacy, as well as organizational skills capabilities (Newbert, 2007; Ray, Barney, & Muhanna, 2004). While (J. Barney, 1991) states that firm resources include all assets, capabilities, organizational processes, information, and knowledge owned by firms that can be used as a competitive advantage. (Mahoney & Pandian, 1992) argues firms be able to generate better business performance through the resources and capabilities they have. Hence, firms with the ability to analyze and evaluate their strengths and weaknesses will become the basis for their competitive advantage. The ability to identify the potential strategic resources and capabilities allows a firm to differ from its competitors. The advantages in capabilities and information resources may help in generating a unique management capabilities and technical know-how. Hence making it a competitive advantage that needs to be maintained to enable firms to enjoy better business performance. (Chmielewski & Paladino, 2007; Schroeder, Bates, & Unttila, 2002; Tan, Mavondo, & Worthington, 2011) are among the studies that proved positive relationships and significant impacts of the firm's resources and capabilities in improving business performance.

### Resource-advantage Theory

Resource-advantage theory (R-A) is a competition theory introduced by Hunt and Morgan (1995), and has been used in several different disciplines such as marketing, management, economics as well as general business as the basis for discussion of firm competition (Shelby D Hunt, 2012). The aim of R-A is to replace the assumptions that have underlying the economy theory of 'perfect competition' with a set of more realistic conditions (as demand is assumed to be heterogeneous and dynamic; the sources are also heterogeneous and not all are mobile; information is imperfect and costly to get it). R-A theory is one of the theoretical processes of evolving processes in which every firm in an industry is assumed to be a unique entity (S.D. Hunt & Morgan, 1996). Based on R-A theory, competition is a persistent rival among firms to achieve a resources comparative advantage that eventually become a competitive advantage in the market (Morris, Schindehutte, & LaForge, 2002). (Morris et al., 2002) argues that basis of resource advantages is the existence of innovative approaches, which are endogenous or factors to industry competition.

Competition in R-A theory is defined as a process of exploration of knowledge and information. Positions in the market as a result of competition interactions among firms will reflect the efficiency and effectiveness of each firm in the industry. This situation allows firms (with small market shares) to learn how to acquire and mobilize additional resources or how to use existing resources in a more efficient and effective manner (Morris et al., 2002). Hence, motivating firms to neutralize or overcomes competitors in a more efficient manner in managing existing resources as well as acquiring, mobilizing, replicating, and replacing external sources. R-A theory also defines sources as an organizational culture, knowledge, skills, and competencies, and most of these resources can be replaced instead of limited (Morris et al., 2002). While (S.D. Hunt & Morgan, 1996) stated that the comparative advantages in intangible resources (such as competence or new organizational models) able to generate shares or market positions as a competitive advantages to firms. Hence, it helps firms in creating new sources which in turn as a motivation for innovation in the market. R-A theory encourages firms to gain new sources and enhance productivity of existing resources. This can be achieved by; (1) leveraging the external resources, (2) optimization of innovation through a combination of new and current sources (Morris et al., 2002). R-A theory suggests firms need to learn and then improve their capabilities if the existing resources unable to help in the creation of competitive advantages. This means that, in circumstances where the existing resources unable to create competitive advantage, firms need to be able to demonstrate their strategic flexibility, by justifying the role of marketing to enhance firm's strategic flexibility.

### Resource Enhancement Strategy

Firm's resource is one of the main factor to the success of firms in exploiting business opportunities (Karia, Wong, & Asaari, 2012; Li, Lam, Karakowsky, & Qian, 2003; Niu, Wang, & Dong, 2013; Zheng, 2013). Resources will differentiate the success of a firm compared to other firms (Karia et al., 2012). The capabilities of firm's resources is a comparative advantage that has a significant impact on the firm's success (J. B. Barney, 2010). Therefore, high performing firms are often associated with high and diverse resource capabilities (Karia et al., 2012; Sahid, Abdul Hamid, & Md Latip, 2015). Means that firms wanting to remain competitive in the industry need to diversify and enhances their resources. Lack of resources causes firms unable to exploit business opportunities that exist in the market. Resource constraints need to be addressed to ensure the sustainability of SME businesses remain in the industry (Gruber, 2004; Morris et al., 2002).

The uncertain business environment has forced SMEs to learn the market faster to exploit business opportunities (Baron, 2006; Mort, Weerawardena, & Liesch, 2012; Spinelli & Adams, 2012). This situation requires SMEs to be more creative in using resources or business assets, namely by mobilizing, enriching and combining resources (Mort et al., 2012). (Mort et al., 2012) classifies these resources as expansion and merger of resources as a resource enhancement; "[...] ability to identify and mobilize resources from external sources, enrich and extend existing internal resources and to recombine these in novel, elaborated ways with a strategic purpose" [29, p. 552].

The enrichment of internal resources can be achieved by using the proposed approach in RBV theory. The literature shows there is an increase in research that examines how to use RBV theory in exploiting business opportunities (Calantone, Kim, Schmidt, & Cavusgil, 2006; Coombs & Bierly, 2006). The RBV theory suggest that firms should utilize their resources to improve and create their own value. (Penrose, 1959) focusing on the firm's ability to use resources in the creation and performance of competitive advantages. Hence the performance of firms compared to other firms is determined by their ability to develop and maintain competitive advantage over a long period of time. While (J. Barney, 1991) who is also among the pioneers of the RBV theory, stated that RBV is not solely based on business' activity or strategy, but it is a group of tangible and intangible resources owned by the firm. RBV is not build unique thinking, business skills, and capabilities required by a firm to gain competitive edge. (J. Barney, 1991) noted that potential assets or resources of the organization includes specialized knowledge of manufacturing, teamwork, as well as the unique combination of business experience that can assist firms in maintaining their competitive advantage.

Resource mobilization is a resource sharing process between two or more firms to achieve a business objective that may not be possible if only using its own resources (Villanueva, Van de Ven, & Sapienza, 2012). Resource constraints faced by SMEs require them to establish cooperative relationships with other firms to gain access to the resources required. SMEs need to build and maintain a symbiotic or complementary relationship with other firms to gain access to external resources (Izquierdo & Cillán, 2004; Villanueva et al., 2012). SMEs need to maintain strategic relationships by building a mutual dependence and sharing of resources with other larger organizations in achieving common goals.

Relationships with other firms will not only provide market information and resource sharing, but also a platform to gain access to potential customers. Resources within the networking firms enables them in managing business risks and help in distributing resources effectively (Dew, Read, Sarasvathy, & Wiltbank, 2009). Therefore, it can be concluded that entrepreneurship networks are not limited to relationships with suppliers and customers, but also involve competitors in the industrial market. Competitive industry competition is a big challenge for SMEs. Competition not only in the local industry, but also the entry of competitors from global or multinational industries. To compete in such a situation, firms need to have strong resources.

Lack of resources demands SME firms to integrate existing resources to remain competitive in the industry. RBV theory suggests the integration of resources as a firm's ability to build, acquire, and use their resources more efficiently through partnerships between firms (Peteraf, 1993). The ability of SMEs to share resources for mutual benefits in their business network environment depends on how compatible and complementary sources are among firms. Earnings or resource mobilization can also be obtained through strategic alliances. With strategic alliances, firms are capable of expanding their capabilities and knowledge in an effort to increase their market share in the industry (Harris & Wheeler, 2005)

SMEs are usually in short supply, especially when SMEs are eager to expand their business to overseas markets. They also lack experience in technology capacity, management skills and lack of knowledge about global markets. Hence, these problems can be mitigated or overcome by strategic alliances or network connections. Strategic alliances need to be done by SMEs to enable them to mobilize the innovation capabilities and technology capacities owned by the business network. In this way, SMEs can enhance and fortify business resources to remain competitive in the market for a long time.

(Mort et al., 2012) suggesting that the enrichment process of SME resources can be achieved using the efficacy theory introduced by (Sarasvathy, 2001). According to the theory of efficacy, entrepreneurs begin with three categories of "meaning" ie they know who they are, what they know, and who they know. It means entrepreneurs know their character or character, their tastes and their capabilities; know how much knowledge it has; and know the network or social network it owns. At the firm level, the three categories are the physical resources they possess; owned human resources; and organizational sources. With the efficacy approach, SMEs can understand the capabilities and capabilities they have. This will enable SMEs to develop businesses by developing and leveraging resources to create and exploit opportunities. Therefore, the above argument would lead to the following hypothesis:

H1: Resource enhancement strategy has a positive and significant impact on small business performance.

## 2. METHODOLOGY

### Population and Sample

The study was based on quantitative approach using self-administered survey involving owners-managers of small business in Malaysia. The target population considered in this study was all the owner-manager of small business firms appeared on the database supplied by SME Corporation Malaysia, which is the most comprehensive list of SMEs databased in Malaysia. The respondents were randomly selected where each respondent had an equal opportunity to be selected. Thus, the inference process for the study of this specific population could be performed (Saunders, Lewis, & Thornhill, 2009; Sekaran, 2000). The questionnaires were sent to the respondent via mail and online survey with a personalised link. A total of 221 usable questionnaires were return, yielding a response rate of 24 per cent. 70% of respondents are SME owners-managers who have been operating between 5 to 10 years. Majority or 60% of firm earn less than RM 500 thousand sales per year, while the other 40% are companies with annual sales ranging from RM 500 thousand to RM 1 million per year. The details distribution of respondent in the sampling frame and our sample can be seen on Table 1.

Table 1

#### *Responden Profile*

Variable	Frequency	Percentage (%)
<i>Educational Background:</i>		
Primary school	63	28.5
Secondary school	74	33.4
Undergraduate	62	28.1
Postgraduate	22	10.0
<i>Sex:</i>		
Male	137	62.0
Female	84	38.0
<i>Industry:</i>		
Manufacturing	154	69.7
Agriculture	16	7.2
Services	39	17.6
ICT	12	5.5
<i>Age of firm:</i>		
Less than 5 years	73	33.0
5 – 10 years	93	42.1
11 – 20 years	55	24.9
<i>No. of employee:</i>		
Less than 5	86	38.9
5 – 74	117	52.9
75 – 200	18	8.2
<i>No. of sales per year:</i>		
Less than MYR 300k per year	133	60.2
MYR 300k– 14 million per year	73	33.0
MYR 15 m – MYR 50 m per year	15	6.8

### Measurement of variables

Business performance (dependent variable) was measured on a 10 items scale based on Chen and Huang (2009). The 10 items were supposed to measure the respondents' perceptions on both financial and non-financial performance measurement. Some of the items in the questionnaire were modified into a new format and were not taken as they in the original instruments. Resource enhancement (independent variable) measures were assessed using 11 items. The 11 items were developed by the author based on the literature related to. The items have been through three stages of evaluation; [1] sent to 6 experts to evaluate the validity of the content, [2] a pilot study to examined instruments' internal consistency (using an exploratory factor analysis or EFA), and [3] a confirmatory factor analysis or CFA to confirm the items that was measured what it is supposed to measure. The format of the instrument consisted of Likert scale of 7-point with endpoints of "Strongly disagree/Strongly agree"

### Statistical analysis

Data were analyzed using two-stages of Structuring Equation Modeling approach as suggested by Anderson and Gerbing (1988). Stage one involving a confirmatory factor analysis (CFA) to assess the model fitness as well as the reliability and validity of the measurement model. Then, stage two involving structural modeling to assess the hypothesized model



which is an impact of resource enhancement strategy on business performance. To examine the fit of the model to the data, we used the comparative fit index (CFI), the Tucker-Lewis Index (TLI), Chi-Square divided with degree of freedom (ChiSq/df), and the root mean square error of approximation (RMSEA). In general, models with fit indices of .0.90 and a cut-off value close to 0.08 for RMSEA indicate a close fit between the model and the data, whereas fit indices between 0.90 and 0.95 represent a reasonable fit (Byrne, 2010; Hair, Black, Babin, & Anderson, 2010). In line with Anderson and Gerbing's (1988) approach, first we tested the fit of the model's measurement components. The convergent and discriminant validity of the multiple-item measures was assessed by confirmatory factor analyses. All items of each latent variable were included in this measurement model. When this fit was acceptable, we tested the fit of the structural model, including causal pathways between constructs.

### 3. RESULT

#### Assessment of measurement model

Table 1 is the CFA for the measurement model, where the results were revealed to fit the required fit index value criteria. The fit values for Tucker-Lewis Index (TLI) and Comparative Fit Index (CFI) achieved the recommended fit values of .90 and above. The index value for Root Mean Square of Error Approximation (RMSEA) was lesser than .08 and the index value of  $\chi^2/df$  (ChiSq/df) was lesser than 5.0, which also implied that the fit value criteria for each category was achieved. Meanwhile Table 2 is the reliability and validity for the measurement model, requirement for reliability and validity was achieved through the process of; [1] all items was equal or greater than .70 to fulfilled the requirement for unidimensionality, [2] the Cronbach's alpha (AC) values exceeded the criteria of .70 to indicates the internal consistency of items, [3] the composite reliability (CR) values were above the cut-off point of .60, [4] the factor loadings of most items had exceeding .70 and the AVE of all constructs were above the cut-off point of .50 to fulfilled the requirement for convergent validity, [4] the correlation values of both construct were less than 0.85, indicated that the measurement model did have good evidence of discriminant validity. In sum, both constructs in the measurement model had achieved all the requirement for construct reliability and validity and can be proceed to

Table 1. Measurement model

df	$\chi^2$	$\chi^2/df$	RMSEA	CFI	TLI
73	193.575	2.652	0.080	0.951	0.939

Table 2 Reliability and Validity

Construct	Item	Factor loading	CA ≥0.70	CR ≥0.60	AVE ≥0.50
Resource Enhancement (RE)	re2	0.77	0.910	0.930	0.656
	re3	0.86			
	re5	0.72			
	re6	0.84			
	re7	0.81			
	re8	0.87			
	re9	0.79			
Business Performance (BP)	bp1	0.74	0.927	0.960	0.774
	bp3	0.94			
	bp4	0.96			
	bp5	0.87			
	bp8	0.89			
	bp9	0.92			
	bp10	0.82			

Nota: AC: Alfa Cronbach CR: Composite Reliability, AVE: Average Variance Extracted

#### Assessment of structural model (hypothesis testing)

After we had addressed the requirement for unidimensionality, validity and reliability of the latent construct involved in the study, the next step is to model these constructs into structural model or causal path analysis. Before proceeding to structural model assessment, we had been examined the normality of the data set as a part of parametric statistics basic assumptions. The normality assessment can be made by assessing the measure of skewness for every item. The absolute value of skewness in our data set was passed the cut-off values of skewness, which is not exceeding  $\pm 1.0$  to indicates the data is normally distributed (Zainudin, 2014). Objective of the study is to examine the impact of resources enhancement strategy on small business' performance. Thus, the following hypothesis has been tested;

*H1: Resource enhancement strategy has a positive and significant impact on small business performance.*

The result of the structural model is shown below in Figure 1 along with a summary of hypothesis testing in Table 3. The coefficient or  $R^2$  is 0.28, indicates that the contribution of exogenous variables in estimating endogenous variables is 38 percent. While RE's standardized beta estimate on business performance is 0.53, indicates that when RE increases

by 1 standard deviation, business performance increases by 0.53 standard deviation. An unstandardized estimate of 0.997 indicates that when RE increase by 1 unit, business performance will increase by 0.997 units. The probability of getting a critical ratio of 5.914 in absolute value was less than 0.001. In other words, the regression weight for resource enhancement strategy in the prediction of small business performance was significantly different from zero at the  $P < .001$  (two-tailed). Thus, the hypothesis that resource enhancement strategy has a positive and significant impact on small business performance is failed to reject. This result provides sufficient evidence that resource enhancement strategy contributes significantly in improving small business performance in Malaysia. Therefore, this finding supports the research objective and hypothesis of the study.

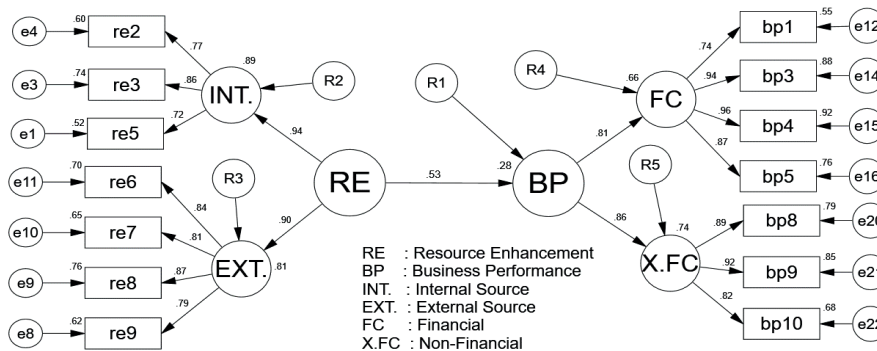


Figure 1 Structural model

Table 3 The Regression Weight for Resources Enhancement in predicting Business Performance

Regression Path	Standardized estimate	Unstandardized estimate	S.E.	C.R.	P
RE → BP	0.533	0.997	0.619	5.914	***

S.E (Standard Error), C.R (Critical Ratio)

\*\*\* indicate a highly significant at  $P < .001$

#### 4. CONCLUSION

The results relating to hypothesis in this study show that the resource enhancement strategy is significantly have impact in improving business performance of small business firm. These results provide a much clearer conceptualization of how resource enhancement strategy overcomes the issue of competitiveness in a new venture and small business firms. The results imply that under condition of lack of resource, small firms need to have a strategic partner to mobilize the external resources for the strategic purposes. A new venture and small business firm need to diversify their resources by growing dan enhancing their existing resources and mobilizing the potential external sources. To enhance firms' resource and capability, one firm need to work together in a strategic way in exploiting a business opportunity that may not be realized if they rely on their own resources. Therefore, builds and maintaining symbiotic relationships with the firm that has a strategic capability will help in sustaining small firms' competitiveness. Through this relationship, both parties have an access on the resources they need. The acquisition or consolidation of resources may also be achieved through strategic alliances. Strategic alliances allow small firm or new venture to develop their capabilities and knowledge to increase their market share in the industry. In fact strategic alliances are needed by small firm and new venture to enable them to leverage the innovation capabilities and technological capabilities of the business network. In this way, they able to enhance and enrich their business resources to remain competitive in the dynamic industry. The findings particularly indicate that the influence of resource enhancement strategy is a strategic way in overcoming not only resource limitations but also liabilities of the smallness and newness of a firm, that is associated with being unknown entities in which there is a lack of trust.

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## Artificial intelligence impact on the legal sphere

Impacto de la inteligencia artificial en la esfera legal

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### ABSTRACT

The research is devoted to the analysis of the opportunities and prospects for the implementation of artificial intelligence in the legal system. The purpose of the study is to analyze the advantages and disadvantages, opportunities and limits of introducing digital technologies into the legal environment. The study analyzed the points of view about the theme of research among the national and foreign scientists, assessed the influence of the artificial intelligence influence on the legal sphere. We also studied the opportunities for regulation connected with digital technologies in current Russian legislation, the advantages, and disadvantages of new categories in the Civil Code of the Russian Federation. We presented examples of the negative impact of legal vacuum on the law enforcement practice and suggested the ways for its overcoming. The current trends in the incorporation of digital technologies into the legal sphere of the Russian Federation and other countries were also studied.

**Keywords:** Digital law, legal regulation, artificial intelligence, cyberspace, robots, cryptocurrency.

### RESUMEN

La investigación está dedicada al análisis de las oportunidades y perspectivas para la implementación de inteligencia artificial en el sistema legal. El objetivo del estudio es analizar las ventajas y desventajas, oportunidades y límites de la introducción de tecnologías digitales en el entorno legal. El estudio analizó los puntos de vista sobre el tema de la investigación entre los científicos nacionales y extranjeros, evaluó la influencia de la inteligencia artificial en la esfera legal. También estudiamos las oportunidades de regulación relacionadas con las tecnologías digitales en la legislación rusa actual, las ventajas y desventajas de las nuevas categorías en el Código Civil de la Federación Rusa. Presentamos ejemplos del impacto negativo del vacío legal en la práctica de aplicación de la ley y sugerimos las formas de su superación. También se estudiaron las tendencias actuales en la incorporación de tecnologías digitales en la esfera legal de la Federación de Rusia y otros países.

**Palabras clave:** derecho digital, regulación legal, inteligencia artificial, ciberespacio, robots, criptomoneda.

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## INTRODUCTION

The development of the artificial intelligence leads to the significant transformation in the whole social sphere. Undoubtedly, artificial intelligence becomes the indicator of success and permeates much of modern business, because it is rapidly becoming the powerful tool of innovation. Firstly, W. Michael Schuster researches the problems of interaction between the artificial intelligence and patent ownership, whose cooperation leads to maximize economic efficiency, but face to legal problems (Schuster, 2018). Secondly, the research work of W. Nicholson Price II describes the concept of artificial intelligence in medicine, including several possible applications, and then considers its legal implications in four areas of law: regulation, tort, intellectual property, and privacy. But he also points legal obstacles for full implementation of such technologies (Nicholson 2017).

As a result, the international scientific community is rapidly filling the legal vacuum, which hinders technological progress implementation. There are lots of model projects of legal acts, which are regulating the creation and use of digital technologies, now.

In the countries, where digital technologies are most actively using, the legal conditions for the use of artificial intelligence are just as actively created. South Korea became one of the pioneers in this field. In 2008 the Law, which was devoted the promotion of development and distribution of smart robots, was adopted in this country.

In 2012, the European Commission launched the RoboLaw project (Regulating, 2018), whose main goal was the establishment an appropriate legal environment for the development of robotic technologies in Europe.

In the United Arab Emirates, the Ministry of Artificial Intelligence was created for the first time in the world. In 2017, the Strategy for Artificial Intelligence was adopted here. It was aimed to implementation the artificial intelligence in the field of transport, education, space, production.

Estonia became the first country in the world, which legalizes the rules for robots movement.

Japan, which secured its status as the leading robot power, approved the five-year “New Robot Strategy” in 2015 (Robots, 2018).

In Russia, the Research Center for the Regulation of Robotics and Artificial Intelligence (Research, 2018) proposed the Model Convention “Rules for the Creation and Use of Robots and Artificial Intelligence”. The document proposes the rules for the development, creation, use the robots of all categories, despite their purpose, degree of danger, mobility or autonomy. The Convention aims to combine the main approaches to regulation and initiate the adoption of the first international act in this area. However, despite the qualitative content, the Convention remained the declarative model project.

These are the first steps, which are undertaken by the lawyers all over the world. At the same time, it has to be confessed that the legal regulation of this sphere remains as a vacuum. The main causes are: contradictions between the liberty, immunity, inviolability and other constitutional rights and boundless opportunities of artificial intelligence.

Thus, the purpose of this research is the analysis permissible limits of artificial intelligence implementation.

## DEVELOPMENT

### Materials and methods

There are some directions of the research: robots in the legal sphere, regulation of cryptocurrency exchange and the legal regulation of smart contracts.

Firstly, it should be pointed that the popular tend is: robots will replace lawyers in the nearest future.

So, there is an indisputable argument in favor of this thesis. In Great Britain, the system with artificial intelligence – Smartsettle ONE –has been already developed. This is the kind of mediator-robot that is able to build the negotiation tactics of the parties to achieve the optimal agreement.

In 2019, for the first time in the history of civil proceedings, the dispute between the parties was settled in pre-trial procedure by the mediator-robot.

By the way, the robot solved the problem for which the person used three-month negotiations in one hour. Thus, the introduction of artificial intelligence in legal proceedings involves the significant reduction in the burden on the judiciary, increasing the efficiency of the administration of justice, overcoming the problems of judicial red tape and corruption (Robot, 2019).

Also in Great Britain the model program has been created that can predetermine decisions of the European Court of Human Rights. It is known that the European Court of Human Rights has strict requirements for compliance with formal criteria for filing and processing complaints. It was not difficult for programmers to algorithmize this set of formal criteria. As a result, out of 584 appeals to the ECHR, the decision on consideration of appeals made by the program in 79% of cases coincided with the court decision.

In the Russian Federation attempts to organize the debate between the robot and the human are being made. Despite the fact that robot's opponent R.S. Bevzenko won the dispute with the robot-lawyer, he praised the skill of legal thinking of the bot. For the first time, the robot showed excellent results, confirming the potential, prospects and the real possibility of introducing robot-lawyers (The legal, 2018).

Thus, if the category "judge-robot" still seems to be a vast future, then the category "lawyer-robot" takes on more and more visible outlines. Widespread are online platforms that specialize in providing consumers with legal services using information technology. Examples of such resources: projects that offers lawyers to create their own legal bots to automate routines; resources, equipped with the ability of the robot to independently answer typical questions; application that allows to create contracts yourself, without resorting to a lawyer and changes the principle of concluding contracts; resource for automatically preparation the standard complaints for typical situations and others.

It should be also mentioned that in the Russian judicial practice, there are practically no cases involving robots due to the uncertainty of their legal status. In foreign scientific papers there is the proposal to give robots an independent status of an "electronic person", along with individuals and legal entities. However, the majority of Russian theorists and practitioners tend to endow the rights, duties and responsibilities of not the robot, but its owner. This view is held by the judicial practice.

The judicial case, in which the participant is robot, connects with the Google's lawsuit over company's privacy violation.

So, while reading personal e-mail, the mail user (Claimant) found that the advertising slogans embedded in the text of the letter correspond to the content of his correspondence. It turned out that the Respondent reads correspondence using robots to place advertisements in letters corresponding, That is why, the content of the letter conform to the advertisements content. Thus, by his actions, the Respondent violates the constitutional right to privacy and confidentiality of correspondence.

First court decision bases more on that the jurisdiction of the lawsuit against the foreign corporation. So, the trial court pays little attention to the issue of violating the secrecy of correspondence by robots.

The appellate court upholds the plaintiff's claim and prohibited Google from reading personal correspondence through the use of robots. [7]

Thus, the robot on its own turns out of the legal field. Responsibility for the offence can be shared between producer and exploiter of the robot.

Secondly, the Russian arbitrage practice, connected with legal regulation of the cryptocurrency, is more various than the legal regulation of robotization.

So, on May 15, 2018, the Russian Ninth Arbitration Court of Appeal for the first time in judicial practice qualified cryptocurrency as property.

By the decision of the court of first instance, the financial manager was denied the requirement to include the contents of the crypto wallet in the bankruptcy estate of the citizen - the debtor and the obligation of the citizen - debtor to transfer access to the crypto wallet to the financial manager (transfer the password).

The court of first instance proceeded from the fact that cryptocurrency does not apply to objects of the Russian civil rights. So, the cryptocurrency is located outside the legal field on the territory of the Russian Federation, transactions with cryptocurrency, its transactions are not provided by the compulsory force of the state. The absence of the controlling center in the cryptocurrency system and the anonymity of cryptocurrency users, in the court's opinion, does not allow us to determine with certainty whether the cryptocurrency belongs to the specific person in the cryptocurrency wallet.

The Russian Ninth Arbitration Court of Appeal concluded that the decision of the court of first instance is illegal. The court considers that, due to the dispositive nature of civil law, the Civil Code of the Russian Federation does not have the closed list of the objects of civil law. Since the current Russian civil law does not contain the concept of "other property", taking into account modern economic realities and the level of development of information technologies, widest interpretation of this term is permissible.

According to the decision of the Russian Appeal court, cryptocurrency should be regarded as other property (The resolution, 2018).

The next object for research is the decision of the Ryazhsky District Court of April 26, 2017.

The plaintiff transferred the cryptocurrency to the wallet of the "online exchanger", in order to exchange cryptocurrency for rubles at the exchange rate indicated on the website of the "online exchanger". Rubles must be transferred by bank transfer to the plaintiff's account. However, the amount was not transferred in full.

The reasoning part of the court decision states that since practically in the Russian Federation there is no legal basis for regulating payments made in “ virtual currency ”, in particular, Bitcoin, and there is no legal regulation of trading Internet sites, bitcoin- exchanges, all operations involving the transfer of bitcoins are carried out by their owners at their own risk.

So, the “ Claimant ”, agreed to the terms of the provision of electronic currency exchange services, assumed the risk of any financial loss and / or damage that might have been caused to him as a result of the delay or inability to make electronic transfers.

That is why, the Russian court considers insolvent the plaintiff's arguments that the indicated has violated his rights. By the way, the presence of cryptocurrencies outside the legal field does not provide the possibility for the plaintiff to implement the legal mechanisms for imposing liability on the defendant in the form of payment by the latter of the penalty, compensation for moral damage and the fine provided by the Law on Protection of Consumer Rights (Decision, 2017).

So, in the period from January 1, 2009 to November 20, 2017, courts of general jurisdiction prepared the total of 46 court decisions on the subject of cryptocurrencies. There is 1 judgment of the Intellectual Property Rights Court. However, 43 out of 46 court decisions relate to blocking resources on the Internet due to the dissemination of information containing advertising of services and services related to cryptocurrencies (RTM, 2018).

According to the report of the Forensic Expertise Center RTM Group (the group of expert law firms specializing in legal and technical issues in the field of information technology and information security), enforcement statistics show that it is impossible to protect the interests of individuals who invest or use cryptocurrencies due to the lack of legal regulation of cryptocurrencies in the Russian Federation.

Thus, judicial practice indicates that legal regulation of a transformed financial market without an appropriate update of legislative provisions is ineffective. Today, diametrically opposite models of legal regulation have formed - from the complete ban on cryptocurrencies to giving them the status of an official means of payment.

The gradual spread of litigation related to the circulation of cryptocurrencies confirms the urgent need for normative consolidation of the status of cryptocurrencies.

Thirdly, researching the formation of contracts in open electronic networks becomes very popular. The open electronic networks create the new transacting environment, which modifies the features of contractual intention and put strain on traditional analytical models. Contract law evolved on such basis as the model of face-to-face communications between humans and the existence of tangible carriers. Instead of it, open electronic networks encounters numerous difficulties new problems, which have no equivalents and which do not easily fit in the framework of traditional legal institutions.

Firstly, it is the lack of tangible carriers and the fact that interactions over open electronic networks are the hybrid between conduct, writing and electronic documents.

Secondly, it is the fact that contractual statements are not only transmitted but also processed by various intermediating systems and the system of the addressee. This results in a number of inherent risks, which must be allocated using traditional principles.

Thirdly, there is hype. The impact of certain technologies is being overstated while the importance of others is being played down or ignored. These results in misplaced focus: much legal analysis was devoted to so-called digital signatures and their role in fulfilling formal requirements. Little attention was directed to the contractual implications of hypertext or how differences between network environments affect the ability to communicate intention (Mik, 2007).

## Results and discussion

Robotisation, cryptocurrencies exchange, smart contracts are the effects of artificial intelligent implementation in the social sphere and the challenge for legal science. The results of study these three objects shows the problems in their legal realization. Robots are the indefinite subject of the legal relationship. Cryptocurrencies are the indefinite object of the legal relationship. And smart contracts are the indefinite procedure of entry into legal relationship.

Thus, the necessarily of legal regulation of these objects is evident. This thesis is confirmed not only the Russian judicial practice, which are presented above, but also the opinions between scientists all over the world.

Firstly, unanimously point of view is that robotication is inevitable process. However, this category is ambiguously interpreted in the legal field by different scientists.

Tyler Jaynes suggests the original concept of legal personhood for artificial intelligence, according to which artificial intelligence can possess citizenship with specific civil duties and protections. The author is surprised that the concept of computational artificial artefacts is created, but law makers internationally have come to a standstill

to protect our silicon brainchildren. Thus, lots of researches aim to provide international jurisprudence evidence for importance non-biological intelligence protection (Tyler, 2019).

Milan Markovic is sure that the advent of artificial intelligence has provoked considerable speculation about the future of the workforce, including highly educated professionals such as lawyers. Although most commentators are alarmed by the prospect of intelligent machines displacing millions of workers, this is not so with respect to the legal sector. Media accounts and some legal scholars envision a future where intelligent machines perform the bulk of legal work, and legal services are less expensive and more accessible. The author challenges the notion that lawyers will be displaced by artificial intelligence. Most legal tasks are inherently abstract and cannot be performed by even advanced artificial intelligence relying on deep-learning techniques. In addition, lawyer employment and wages have grown steadily over the last twenty years, evincing that the legal profession has benefited from new technologies, as it has throughout its history. Lastly, were large-scale automation of legal work possible, core societal values would counsel against it (Markovic, 2019).

Ying Hu discusses the responsibility of robots, when a robot harms humans. He suggest that there are any grounds for holding it criminally liable for its misconduct, provided that the robot is capable of making, acting on, and communicating the reasons behind its moral decisions (Ying, 2019).

If such a robot fails to observe the minimum moral standards that society requires of it, labeling it as a criminal can effectively fulfill criminal law's function of censuring wrongful conduct and alleviating the emotional harm that may be inflicted on human victims. Imposing criminal liability on robots does not absolve robot manufacturers, trainers, or owners of their individual criminal liability.

The former is not rendered redundant by the latter. It is possible that no human is sufficiently at fault in causing a robot to commit a particular morally wrongful action. Additionally, imposing criminal liability on robots might sometimes have significant instrumental value, such as helping to identify culpable individuals and serving as a self-policing device for individuals who interact with robots. Finally, treating robots that satisfy the above-mentioned conditions as moral agents appears much more plausible if we adopt a less human-centric account of moral agency.

R. George Wright also considers that most of the existing discussions of advanced robots as potential rights-bearers focus on the idea of some degree of consciousness, or at best, of self-consciousness with or without a capacity for sentient experience (Wright, 2019).

Secondly, the legal regulation of cryptocurrencies is unanimously received by the scientific community. So, at less than a decade old, Bitcoin and other virtual currencies have had the major societal impact, and proven to be the unique payment systems challenge for law enforcement, financial regulatory authorities worldwide, and the investment community. Rapid introduction and diffusion of technological changes throughout society, such as the blockchain that serves as Bitcoin's crypto-foundation, continue to exceed the ability of law and regulation to keep pace. During 2017 alone, the market price of Bitcoin rose 1,735%, from about \$970 to \$14,292, causing an investor feeding frenzy. As of September 11, 2018, a total of 1,935 cryptocurrencies are reported, having an approximate market capitalization of \$191.54 billion at that date. A brief history of the fast moving adoption of blockchain-based technology is provided, along with a look at the efforts of regulators to keep up with the staggering worldwide growth in the usage of virtual currencies (Trautman, 2018).

By the why, there are lots of cases, when market participants engage in fraud under the guise of offering digital instruments, especially with the use of virtual currencies. Though, the law enforcement has no opportunity to stop and prevent fraud in the offer and sale of digital instruments.

Nima Zahadat points that despite the phenomenal growth in the digital world and crimes committed using digital techniques and tools, there are literally no foundational requirements to perform digital forensic investigations. While there are several private and mostly for-profit organizations that "sell" training and certifications regarding digital forensics credentials, at the international and state level, there seem to be nothing of the kind. However, digital forensic investigation is one of the prominent fields emerging from the broad discipline of forensic science (Zahadat, 2019).

Thirdly, smart contracts may prove the powerful way to license copyright material and to provide higher levels of transparency in financial flows to creators. However, these achievements and the promise they hold are largely dependent on blockchain technologies achieving a degree of development, scalability, reliability and market adoption difficult to foresee at this stage. Still, should blockchain technology reach its market potential, it may have significant—perhaps transformative—impact on copyright in the digital environment (Bodó et al., 2018).

Also smart contracts suppose the specific procedure of personal identification. That is why, Lauren Stewart insists on that biometric identification technology is playing an increasingly significant role in the lives of consumers all over the world today. However, despite the benefits of increased data security and ease of consumer access to businesses' services, lack of widespread biometric data regulation creates the potential for commercial misuse. Although some states of the United States of America, such as Illinois, Texas, and Washington, have adopted comprehensive biometric data regulation statutes, the statutes do not offer the consistent approach. Therefore, as

more states are going to regulate businesses' collection and use of biometric data, they should enact statutes that seek to balance protecting consumers' biometric data from discriminatory use and businesses' use of biometric data to enhance security and provide improved products and services (Stewart, 2019).

## CONCLUSION

Human element in the artificial intelligence is above everything else. As Joshua A.T. says, blockchain technologies are about one-third math and two-thirds game theory (Joshua, 2019). The main player in this game is human, and its basic duty – to control the process of challenging game.

The research has shown that new scientific revolution significantly has changed the world. Three results of innovate changes were analyzed: robotisation, cryptocurrencies exchange, smart contracts. Both the Russian judicial practice and the national and international literature were studied.

As a result, most scientific opinions support the necessarily of the digital law formation. It means that robots must be regulated as a subject; cryptocurrencies are reflected in the Civil Code as the object of the civil rights; the procedure of the smart contracts realization is also fixed in the Civil Code.

By the way, some authors express categorically position about the current state of information technology. Some of them even call that it is time to requiem for cyberspace. Lots of opposite points of view is caused the discussion about the General Data Protection Regulation (GDPR). It is a piece of legislation that was approved by the European Union Parliament in April 2016. It aims to give consumers control of their personal data collected by companies. Not only does it affect organizations located within the European Union, but it also applies to companies outside of the region if they offer goods or services to, or monitor the behavior of, people in the European Union (Avakian et al., 2018).

Scientists express different points. One of them are support such global project. For example, Alex Alben is sure that broad regulatory regimes – such as the European Union's General Data Protection Regulation – will probably have a net positive effect for both freedom and democracy, to the extent that individuals regain control over their personal information and such information becomes less vulnerable to manipulation. Yet the threat will be with us for many years to come; advocates of privacy and democracy must remain vigilant (Alben, 2019).

Others (for instance, Steven P. Tapia) – are against. In his opinion, the Internet seemed to be the closest incarnate approximation developed of a dimension beyond the bounds of time, space, and the laws of nature. It is no surprise, therefore, that for almost a quarter of a century, the fear of losing this seemingly limitless and boundless creation has been the primary metaphysical driver of policies and legislation worldwide. In short, for a long time, the governing entities in the world took a “hands-off” approach to regulating this universal construct called “the Internet.” However, the General Data Protection Regulation's broad reach has effectively diminished what Internet content is available in the European Union and has made a smaller, European-only Internet. As a direct consequence, the “cyberspace” ideal of a universal place where ideas can be freely exchanged without restriction is dead, and the migration of thoughts, ideas, and viewpoints from outside Europe faces a substantial barrier to entry (Steven, 2019).

Thus, the problem of artificial intelligence implication in the legal sphere is wildly-spread and challenging.

Undoubtedly, the gradual introduction of the latest technologies in legal proceedings and a smooth transition to the digital era is coming. In this regard, it is necessary to establish limits on the digitalization of the legal system, which should be limited to the improvement of electronic codes, the generation of standard court decisions, the creation of an automated system for monitoring judicial practice and other means that will reduce the burden on the legal system, speed up and improve administration of justice, to overcome the problems of judicial red tape and corruption, to reduce the significant burden on the judicial apparatus. The benefits of spread the information technologies must combine and balance with the constitutional rights.



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## Multisensory Approaches to Enhancing Students' Readiness for Special Education Learning Disabilities

Enfoques multisensoriales para mejorar la preparación de los estudiantes para discapacidades de aprendizaje de educación especial

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### ABSTRACT

A multisensory approach is a necessary component of special education learning that can enhance children's sensory capabilities such as vision (visual), auditory (hearing), kinaesthetic (movement) and textile (touch) to focus more on learning. The purpose of this study was to see how effective the multisensory approach in Special Education Learning Disabilities is to students with learning problems' willingness involving cognitive, physical, emotional and social domains to help them learn in the classroom during the learning and teaching process. The researcher used qualitative methods using observation, document analysis and structured interview protocols as instruments in this study. The results show that the multisensory approach can accelerate the thinking process and enhance the learning readiness of special education students especially for autism students. Implications and suggestions, the researchers suggest that further studies may be conducted on students with different disabilities such as special education students with visual impairments, special education students with hearing problems, pre-school and mainstream students.

**Keywords:** multisensory, visual, auditory, kinesthetic, tactile, qualitative, learning disabilities, autism.

### RESUMEN

Un enfoque multisensorial es un componente necesario del aprendizaje en educación especial que puede mejorar las capacidades sensoriales de los niños, como la visión (visual), auditiva (auditiva), cinestésica (movimiento) y textil (tacto) para enfocarse más en el aprendizaje. El propósito de este estudio fue ver cuán efectivo es el enfoque multisensorial en las Discapacidades de Aprendizaje de Educación Especial para los estudiantes con problemas de aprendizaje y su disposición que involucra dominios cognitivos, físicos, emocionales y sociales para ayudarlos a aprender en el aula durante el proceso de aprendizaje y enseñanza. El investigador utilizó métodos cualitativos utilizando la observación, el análisis de documentos y los protocolos de entrevistas estructuradas como instrumentos en este estudio. Los resultados muestran que el enfoque multisensorial puede acelerar el proceso de pensamiento y mejorar la preparación para el aprendizaje de los estudiantes de educación especial, especialmente para los estudiantes de autismo. Implicaciones y sugerencias, los investigadores sugieren que se puedan realizar más estudios en estudiantes con diferentes discapacidades, como estudiantes de educación especial con discapacidad visual, estudiantes de educación especial con problemas de audición, estudiantes de preescolar y de educación general.

**Palabras clave:** multisensorial, visual, auditiva, kinestésica, táctil, cualitativa, discapacidades de aprendizaje, autismo.

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## 1. INTRODUCTION

According to the statistics released by the Social Welfare Department until March 31, 2017, the state of Selangor registered the highest number of disabled people with Special Education Learning (146,809 people) compared to other states. As such, schools in Selangor which have large numbers of pupils in the Special Education Learning program have caused a variety of behaviours, tantrums and lack of focus, which is a challenge for teachers in addressing these problem areas that could interfere with their students' learning readiness. In this regard, several schools of Special Education Learning in Selangor are exposed to a multisensory approach through sensory parks through five basic stimuli which include vision, hearing, touch, smell and taste to enhance student readiness and focus.

In opinion of domestic studies such as Manisah and Norizza (2016), students with learning disabilities are also at risk in terms of understanding and storing information because of their poor focus. Overseas studies such as Dogru's (2014) study suggest that this problem also affects learning skills including teaching and learning processes as well as frequent mistakes in school and homework. This is one of the factors that make students' readiness level of learning very limited.

Next, there have been some studies that multisensory approaches through sensory gardens can enhance stimulus sensitivity such as touch, visual, auditory, kinesthetic and tactile. For example, a study by Pauline (2013) states that outside classroom learning is more important than reading a book. Children learn through a variety of activities and experiences. This is because multisensory through the sensory garden can be a place to stimulate the basic senses and learn other subjects. Similarly, a study by Linda Balode (2013) stated that many multisensory through the park provides sensory and therapeutic garden aesthetics to enhance all five of the human senses - vision, touch, smell, taste and hearing. Hazreena Hussein's (2014) study, however, explores that playing outside promotes sensory stimulation, physical mobility and social skills among children with special needs. A multisensory approach to helping children with sensory processing problems tend to have extreme reactions to sensory stimulation whether stimulated too much or too little.

The multisensory sensory approach in teaching is a learning process that utilizes visual sensory (vision), auditory (hearing) and kinaesthetic-textile (movement, textile) to enhance memory and learning process. According to Delaney (2010), the sensory systems in the human body such as, vestibular (movement-balance), proprioceptive (muscle-motor), visual (vision), auditory (hearing), tactile (touch), gustatory (observation) and olfactory (smell) can stimulate all these senses through the sensory garden. Therefore, the multisensory approach through the sensory garden stimulates the five senses of the human being to be more sensitive (Sensory Trust, 2013; Worden and Moore, 2013). This finding is also supported by Sibermann (2010) who stated that multisensory use is excellent because it supports each other in the weaker sensory parts.

### 1.1 Model VAKT

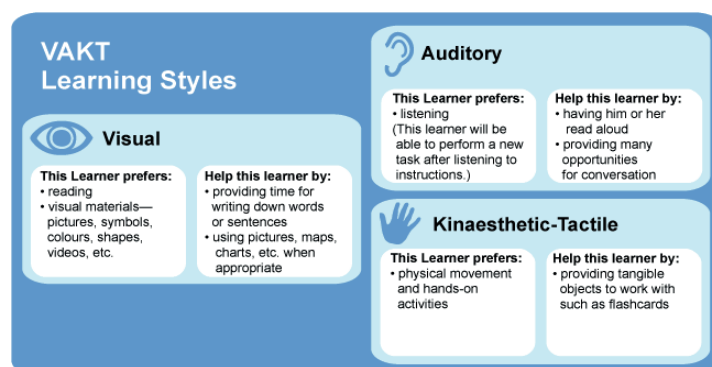


Figure 1: Model VAKT (Visual, Auditory, Kinesthetic dan Tactile)

(Adapted from Model VAKT, Neil Fleming, 1987)

This study uses VAKT Model (Visual, Audio, Kinaesthetic and Textile) introduced by Neil D. Fleming who was a teacher from New Zealand in 1987. Not only he introduced the VAKT model in the learning process but also introduced the VARK model (*visual, auditory, reading and writing, kinesthetic*).

Based on the VAKT (Visual, Audio, Kinaesthetic and Textile) model it is suitable for researchers in the sensory garden using 5 multisensory senses namely vision, hearing, touch, smell and taste. For example, the Putnam L. R 1996 study used VAKT (visual, audio, kinaesthetic and textile) models as multi-sensory learning potentially enhancing memory and language learning. This VAKT model focuses on three aspects: visual (what is seen), audio (what is heard) and kinaesthetic-textile (movement, taste, touch) that are factors in impacting learning outcomes.

Next, the Ayoob Barbar (2018) study also used the VAKT model in multisensory learning involving two or more senses with similar activities. This multisensory approach is also known as VAKT (Visual, Audio, Kinesthetic and Textile) where students learn when information is conveyed in different modalities. Students with learning difficulties often experience difficulty in one or more areas of reading, spelling, writing, listening comprehension and expressive language. Multisensory techniques allow students to use any of the above areas to help them prepare for learning. According to Ayob Barbar (2018), the following are the senses that we can learn or remember that are 20% reading, 30% listening, 40% watching, 50% talking, 60% treatment and 90% (see, hear, talk and do).

According to Jeyasekaran (2015) study examined visual, auditory, kinesthetic and textile (VAKT) effectiveness among

children with reading disorders at the Helikx Open School and Learning Centre, India. Thirty subjects were selected using purposive sampling technique. The combination of VAKT Techniques and Word Schonell Reading Test was used in the study where the 30-day period was followed by a post-reading assessment. The results show that the mean percentage reading level increased by 12% after incorporation and there were statistically significant differences before and after the intervention at the  $p < 0.05$  level. This indicates that the VAKT technique is effective in improving reading levels among dyslexic children.

For the study of Mehrabi et al. (2014), studied the effect of multisensory teaching methods using Sina educational instruments to measure the reading and writing levels of children with learning disabilities in the city of Tonekabon, Iran. A study sample of 30 randomly selected students with reading and writing disabilities. They are divided into two groups namely experimental and control groups. To collect data, students with reading dysfunction (NAME), test (spelling) and Wechsler Intelligence for Children (WISC-R) Scales were used. The experimental group participated in 45 weeks of structured training for 13 weeks. The results show that Sina's multisensory teaching methods can improve the reading and writing of children with learning disabilities.

Besides that, Nourbakhsh (2014) studied the effect of multisensory and cognitive methods on interventions training on the reading ability of dyslexic students in Iran. The study sample of 60 dyslexic students was divided into three experimental groups with 20 dyslexic students in the first experimental group (E1), 20 dyslexic students in the second experimental group (E2) and 20 dyslexic students in the control group (C). The researcher took 16 weeks to teach reading and test, the Gestalt Visual-Motor Bender Test, and the Rorschach test. Findings indicate that both groups (E1 and E2) improved from pre-intervention. However, both groups significantly improved their perceptual performance in reading and dyslexia tests.

Therefore, researchers apply this model to the learning process of students with learning problems through exposure to the Sensory Garden environment to enhance their learning readiness as an educational process.

## MULTISENSORY

### 1.1.1 Visual

Through the eyes the child can see what is them playing so that they can feels the experience (Hughes 2001). Elements such as colour, visual texture, shape, movement, light and shadows are essential to stimulate students' visual senses. Colour provides visual stimulation as well as balances elements in the sensory garden that can attract students' attention to the variety of colours available so that students are excited with the colours. As such, important visual sensory stimulation is taken into account as multisensory through colourful plant and flowers, foliage and tree trunks can enhance the visual appeal of the garden.

### 1.1.2 Auditory

Listening to the sounds of the garden can enhance the hearing. Examples include breeze, bird chirping, squirrel sounds can enhance the stimulation of hearing. With this, the bird's nest can also be hanged in the trees to make the sensory garden look attractive with various elements. Likewise, fountains, harp and pools can soothe the surroundings of the garden. In addition, sounds can also influence children especially in the emotions they feel (Day 2007). In opinion of Broto (2010), sensory experiences such as friction between thatch and bamboo stalks enhance children's curiosity to seek the direction of the sound.

### 1.1.3 Kinesthetic

The kinesthetic sense is movement. It is the ability to process and make meaning of an environment or perception using fine and gross motor skills (Block, 2015). In a school setting, kinesthetic engagement involves students' physical actions used to create something of meaning. This may look like students acting upon a task or physically completing an assignment.

### 1.1.4 Tactile

According to Bergstrom (1995) touch experiences provide more stimulation than visual sensation for children. Materials such as stone, wood and clay provide more stimulation of textiles than industrial products such as plastics, concrete, MDF wood and so on although they are more visually appealing (Day 2007). According to Masiulanis and Cummins (2017), outdoor areas can be divided into pavement (concrete and stone), small areas (rubber, sand and pebbles) and garden areas (grass, shrubs and other plants). These elements stimulate the children's sense of touch in the garden. Broto (2010) stated that differences in the garden area based on its texture can provide information about the differences in space and provide children with play elements.

## 1.2 Research questions

The questions raised in this study are:

- 1.2.1 What are the levels of readiness and concentration for student with learning disabilities?
- 1.2.2 How are multisensory activities carried out in the sensory garden?

## 2. METHODOLOGY

This study uses qualitative methods to determine the effectiveness of multisensory approaches through the sensory garden on the level of student learning preparedness and focus during the teaching and learning process for students with special learning needs. The researcher uses observation (written record, video and image), document analysis (workbook results) and structured interview protocols as instruments. The Pre-test was conducted into two group.

They are control group and treatment group that consists of 9 respondents. Subsequently, the Post Examination was conducted after a period of 2 weeks to 9 respondents in the treatment group. The Pre-test and Post-test questions given by the respondents are the same. Data collection is based on the score difference obtained during the Pre and Post Examinations.

According to Creswell (2003) stated that research is the exploration of a unit or system through data collection and data analysis using various methods. The use of various sources of data collection method is known as triangulation (Bogdan & Biklen 2007; Robson 2002). Triangulation is a strategy that reduces the risk of bias against a single data source (Maxwell 2005).

In that regard, the researcher used structured observations and interview protocols as instruments in this study. The checklist instruments for the observations and sets of interviews were reviewed and validated by two specialists in the special education field of higher education institutions. The researcher developed the field notes form based on the fetterman's (1989) description of the classroom observation form used when studying dropout students. Further, the researchers collected observation data, checklists and recordings using video recorders to further strengthen observation data (Miles et al. 2014).

Researchers self-administer interview guides that contain structured semi-structured interview questions in line with Stewart and Cash's (2000) opinion that before beginning a research topic, the researcher should develop an interview guide or question. According to Denzin (2001), interviews should be used more than once as a tool for information collection, interviews need to be reflective and can reflect the categorization of three semi-structured and non-structured interviews (Chua Yan, 2006) of the life and circumstances of a phenomenon: type interview namely structured interviews (Piaw, 2014). The data were analysed using descriptive statistics for frequency, percentage and mean to see how effective the multisensory approach to readiness and interest in learning can be in the social, cognitive, communication and psychomotor aspects of students.

Table 1: Background of Student Learning Disabilities

Interview code	Category	Gender
S_1	Autisme	L
S_2	Cerebral Palsy	L
S_3	Dyslexia	P
S_4	Dyslexia	L
S_5	Syndrom Down	L
S_6	ADHD (Attention Deficit Hyperactive Disorder)	L
S_7	ADHD (Attention Deficit Hyperactive Disorder)	L
S_8	Slow Learner	P
S_9	Slow Learner	L

#### Code S – Research Sample

The special education students involved in this study were 9 people from class 5 Aman and they are in treatment group. There were 1 autism student, 1 cerebral palsy, 2 people with dyslexia, 1 down syndrome, 2 ADHD and 2 people that are slow learner. Students from this class consist of 2 girls and 7 boys. A Science subject teacher was also involved as the respondents of this study.

### 3. RESULT AND DISCUSSION

#### 3.1 Pre Test

Pre-tests were conducted on the sample of the two treatment groups and the control group in this study. The following is the data of the study sample achievement in the pre-test.

Table 2. Achievement of Study Samples in Pre Test

Group	Sample	Score	Percentage	Rating	Grade/ Level
Treatment Group	F	6/15	40%	Fair	D
	G	5/15	33%	Poor	E
	H	7/15	47%	Fair	D
	I	6/15	40%	Fair	D
	J	5/15	33%	Poor	E
	K	7/15	47%	Fair	D
	L	10/15	67%	Good	B
	M	8/15	53%	Good	C
	N	4/15	27%	Poor	E
Control Group	O	7/15	47%	Good	D
	P	6/15	40%	Poor	E
	Q	5/15	33%	Poor	E
	R	9/15	60%	Good	B
	S	10/15	67%	Good	B
	T	7/15	47%	Fair	D
	U	8/15	53%	Good	C
	V	6/15	40%	Fair	D
	W	8/15	53%	Good	C

Table 2 above shows the data of the study sample results for the treatment and control groups in the Pre-Test. The highest score recorded for the treatment group was Sample L with 67% (Honors) while the lowest was Sample N with



27% (Minimum). The differences of highest and lowest scores for the treatment group were 40%. Next, in the control group, the highest score was Sample S with 67% (Honors) and lowest was Sample Q with 33% (Minimum). The range between the highest and lowest scores for this control group was 34%.

### 3.2 Post-test

The implementation of post-test is one of the data collections conducted on the study sample. For the treatment group even during the 2-week treatment period conducted on the study sample in the control group, the study still used conventional methods. The treatment group received guidance in learning in the Sensory Garden through a multi-sensory stimulus for the core subject that is Science related to the Learning Content Standards for 2 weeks in stages.

Based on the following Table 3 it is seen that the performance of the Treatment Group in the Post-test was better than the Control Group. This is because based on the number of achievements shown, the sample is at three times higher satisfaction level than the control group. The treatment group had the highest score of 14 with 93% while the lowest recorded 8 points with 53%. Comparison of the highest and lowest scores for the intervention group was 40%. For the control group, the highest score was 10 marks with 67% and the lowest was 5 marks with 33%. It can be seen that the comparison between the highest and lowest scores for this group is 34%.

Table 3 Achievement of Study Samples in Post-Examination

Group	Sample	Score	PercentageRating	Rating	Grade/ Level
Treatment Group 9/9 students	F	12/15	80%	Very Good	B
	G	9/15	60%	Good	C
	H	10/15	67%	Very Good	B
	I	12/15	80%	Very Good	B
	J	9/15	60%	Good	C
	K	11/15	73%	Very Good	B
	L	14/15	93%	Excellent	A
	M	13/15	87%	Excellent	A
	N	8/15	53%	Good	C
Control Group 9/9 students	O	8/15	53%	Good	C
	P	6/15	40%	Poor	E
	Q	5/15	33%	Poor	E
	R	9/15	60%	Good	B
	S	10/15	67%	Good	B
	T	7/15	47%	Fair	D
	U	8/15	53%	Good	C
	V	6/15	40%	Fair	D
	W	8/15	53%	Good	C

It is noted that there were two samples from the Treatment Group that achieved an Excellent rating during the Post-Examination. The number of samples at the Honors level for the intervention group was four times greater than the control group with only two samples.

### 3.3 Comparison of Achievements in Post-Tests

The table below is a data comparison of the sample achievement in the Pre and Post-Examination as shown in Table 2. The differences noted indicate the total increase in test scores after the treatment process. The sample showed the highest differences is sample F and I from the treatment group by 40% while the lowest in the treatment group was sample H.

Table 4 Comparison of Sample Achievement in the Pre and Post-Test

Sample	Pre Test (%)	Post-Test (%)	Difference (%)
F	40	80	40
G	33	60	27
H	47	67	30
I	40	80	40
J	33	60	27
K	47	73	26
L	67	93	26
M	53	87	34
N	27	53	26

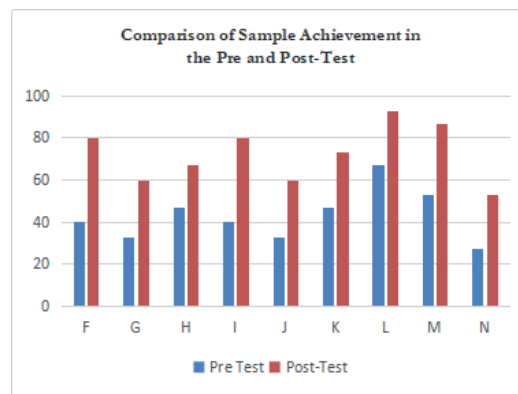


Figure 2 Comparison Graph of Pre and Post Tests

Comparison of achievement differences between study samples was done as in Figure 3 above. Sample L recorded the highest score compared to the other samples followed by sample M with the second highest. Samples F and I were in third place with a same total test value of 80%. Then in fourth place is sample K, followed by the fifth-place sample H. For sample G and Sample J they got the same test volume (jumlah), that was 60% and in sixth place. Finally, the sample N recorded the lowest but showed a good improvement. Nine of these samples were samples from the treatment group.

### 3.4 Level of readiness and learning focus

Based on the data collection method, the researcher found that all the data obtained supports each other. The results obtained show that all respondents achieved an increase in student learning readiness after the study period was completed. The results obtained were positive and it gives a great impact and effective to the respondents. Students' focus on learning is also more focused and sensitive to learning activities. Students are more prepared before learning and excited about activities that are conducted in or out of the classroom.

The concept of learning readiness refers to three main domains that are cognitive, emotional and social domains that aid a student's learning process. Without this readiness to learn, the learning objectives that the teacher is aiming for cannot be achieved. Therefore, preparing students for learning is important and is a key element that teachers need to emphasize in order for learning to work effectively and to achieve its goals. Willingness to learn is one situation that enables one to learn. As they learn, their interest in learning will increase.

### 3.5 How to implement multisensory activities carried out in sensory gardens

This finding shows that the manner in which activities carried out in the Sensory Park has a positive impact on all students of special education in 5 Aman class learning. If students have been studying in the classroom before and many problems have arisen such as boredom, discomfort, misunderstanding and loss of attention but after careful exercise in the sensory garden, many positive effects can be seen.

Multisensory learning activities in the sensory garden that have been implemented through multisensory stimulation not only have a positive impact on students' level of readiness and focus but socialization and communication skills also have a positive impact on students. According to Baker J.E (2010) social skills are focused on enhancing social interactions with peers. Her research uses peers to help children with autism improve social skills through playing. Therefore, the development of socialization, cooperation and friendship are indirect aspects of social skills. Therefore, it is recommended that teachers use a multisensory approach in the sensory garden to improve the communication skills of students with speech, reserved and emotional problems.

In this regard, a dedicated teacher needs to be aware of their role in shaping and transforming students' learning problems in improving students' readiness and focus. In addition, teachers can also enhance their knowledge to ensure that the quality of teaching and learning in and outside the classroom is enhanced in a more effective way. Mohamad Jackie et. al (2016) stated that quality teaching encompasses a variety of teaching methods using the latest and applying hands-on teaching methods. Therefore, a multisensory approach through the sensory garden can benefit students' and teachers' learning and teaching.

### 3.6 Discussion

Ross R.H et al. (2011) states that learning through playing is a well-planned and structured approach that gives students the opportunity to learn in a fun and engaging environment. The approach to learning through play in the sensory garden emphasized the process of teaching and learning as playing is what children do.

The researchers suggest that further studies may be extended to such subjects such as special education students with visual impairments, special education students with hearing problems, pre-school students and mainstream students. Because multisensory stimulation is appropriate for all children to achieve meaningful learning. Research on other research subjects will be able to prove whether this study is effective in the field of education as a whole.

Besides that, teacher suggestions can diversify the multisensory activities of the sensory garden through play, exploration, project and hands-on activities. Outside of classroom learning not only allows students to explore the environment but these various activities can enhance the development of their self-esteem and make the learning problem enjoyable for the students. This statement is supported by Summer L. Esseff (2016) explaining that these small successes will lead

them to readiness to try new things and hopefully lead them to a more independent life and participate in many other activities.

In this regard, researchers recommend that all special education schools throughout the country have a sensory garden as a multisensory approach within the PdP that can help teachers improve their students' learning readiness. In fact, the design of beautiful, organized and safe sensory parks should be undertaken by the school authorities. Even the Ministry of Education Malaysia should give allocation and goes to the sensory garden to take a look at the sensory garden's needs. Art elements such as textures, pathways, reflexology sites, colours, herbs and so on are needed to bring the atmosphere of the garden environment to the attention and interest of all students.

In short, this study should be a practical exercise in schools to ensure that the education system can be improved in a better way. This study is not only used as a study material but also to be applied by teachers in PdP if it is found to have a positive impact on student achievement. In this regard, the education system can be enhanced in a more optimistic way. Furthermore, the Malaysia Ministry of Education can produce a Sensory Park implementation module for all special education students in schools across the country on the importance of learning in Sensory Park to improve the level of student learning.

In conclusion, this proposal is expected to have a positive impact on improving the level of student learning preparedness of learning problems that can be applied in schools across the country.

#### 4. CONCLUSION

Students Learning Disabilities in a variety of categories often tends to have the emotional, behavioural, developmental and communication problems that make it difficult for them to learn. Thus, these special education students need a more enjoyable learning environment to achieve their learning objectives. These include to attract their attention, teachers need to introduce effective learning and teaching methods through strategies, using technology, rewarding students for good performance as a motivating factor and when they reach low grades, they often tend to work more to make improvements (Nyagosa, 2011).

As such, the multisensory approach in the sensory garden is one of the ways to increase the readiness, interest and focus of students with learning disabilities. In conclusion, the willingness to learn and the interest of special education students are inconsistent and sometimes good or bad. As a teacher, they need to be aware of how to increase the children's readiness and interest in learning while also improving in other aspects such as social, cognitive and psychomotor. Therefore, teachers need to have the knowledge and variety of techniques and learning methods that suit the diverse abilities and abilities of students.

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## Formation of the communicative competence of students in the process of teaching a foreign language in a non-language university

Formación de la competencia comunicativa de los estudiantes en el proceso de enseñanza de una lengua extranjera en una universidad no lingüística.

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### ABSTRACT

The article deals with the issues related to formation of the communicative competence of students in the process of teaching a foreign language in a non-language university. The role of communication as an environment for the development of each individual is very great. The individual's education develops and grows in the course of the interaction of the individual with the languages of the community. The main role in this process for a long time belonged to educational institutions of various types. However, today the situation has changed dramatically, as communication facilities, namely, for example, computer technology, have clearly expanded the educational opportunities of each person.

**Keywords:** communicative competence, activity, non-language university, specialist; linguistic competence

### RESUMEN

El artículo aborda los temas relacionados con la formación de la competencia comunicativa de los estudiantes en el proceso de enseñanza de una lengua extranjera en una universidad no lingüística. El papel de la comunicación como entorno para el desarrollo de cada individuo es muy grande. La educación del individuo se desarrolla y crece en el curso de la interacción del individuo con los idiomas de la comunidad. El papel principal en este proceso durante mucho tiempo perteneció a instituciones educativas de diversos tipos. Sin embargo, hoy la situación ha cambiado drásticamente, ya que las instalaciones de comunicación, a saber, por ejemplo, la tecnología informática, han ampliado claramente las oportunidades educativas de cada persona.

**Palabras clave:** competencia comunicativa, actividad, universidad no lingüística, especialista; competencia lingüística

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The modern educational system is faced with tasks related to the conditions of the intellectual, spiritual and moral development of future specialists and the conditions for the training of an intelligent person who thinks in universal terms and inherits the experience of previous generations.

Communicative competence - communication skills that allow a person to adequately comply with the norms and rules of life in society. The term "competency" (translated from Latin as "conformity", "proportionality") means a range of issues in which this competent person has knowledge, experience.

Communicative competence (Milrud R.P. 2004) is knowledge of the basic concepts of speech linguistics, skills of text analysis and speech communication in relation to various areas and situations of communication, taking into account the addressee, style.

Communicative competence - the ability to real communication is adequate to the goals, areas, situations of communication, readiness for verbal interaction and mutual understanding; these are skills, taking into account who we are talking to, where we are talking and for what purpose.

The following indicators are included in the concept of communicative competence:

- awareness in linguistic theory, its awareness as a system of rules and general requirements governing the use of language in speech;
- knowledge of speech theory, possession of the main types of speech activity;
- proficiency in basic language (identify, classify, etc.) and speech (select, update, etc.) skills;
- the ability to analyze the speech situation and, in accordance with it, choose the program (verbal and non-verbal) of speech behavior.

At present, the goal of teaching communicative competence is more multifaceted, it is aimed not only at transmitting information, but also, at expressing feelings, thoughts, will, and desires of a person; it requires the choice of not only other language units, but also extra linguistic conditions, under which communication takes place.

The formation of communicative competence is characterized by the presence of the following criteria:

- a desire to make contact with others;
- be able to assess the situation of communication;
- the ability to organize the course of a communicative act.

The ability of verbal communication is manifested in the communicative culture of students, the formation of which is evidenced by the following signs of mental activity:

- a) installation for analysis, involving self-esteem and interpretation of one's communicative behavior;
- b) flexible response to various communicative situations;
- c) the ability to initiate and independently organize communicative interaction.

The development of communicative competence in the study of foreign languages contributes to the versatile development of the student's linguistic personality, and also assumes, the need for a harmonious combination of the educational activity itself, in the framework of which basic knowledge and skills are formed, with creative activities related to the development of individual components of students, their cognitive activity, creative thinking, ability to independently solve non-standard communicative tasks (Bim I.L. 2002).

In the context of a communicative strategy for language teaching, the formation of communication skills and the development of the ability to carry out communication, and the path to mastering the language is seen in its practical use as the most important goal. The communicative strategy of language teaching actualizes its educational potential, contributing to the students' mastery of the culture of speech behavior and communication.

Communicative competence develops in accordance with the topics, problems and situations of communication selected for this level of training within the following areas of communication: social, educational, labor, social and cultural.

The study of foreign languages in a non-linguistic university should be aimed at developing communicative competence, including speech competence, i.e. the ability to effectively use the language being studied as a means of communication and cognitive activity;

A competent approach to teaching foreign languages allows us to turn a modern student from a passive element of the educational system into an active participant in the educational process, where he learns to shape his worldview, comprehending the experience accumulated by mankind using traditional sources of information and new technologies, and the teacher acts as an adviser, assistant, opponent and consultant. It is the competency-based approach that allows not only to obtain a certain amount of knowledge, but also teaches the student the most important thing - the ability to think independently and acquire knowledge independently.

Thus, the competency-based approach puts forward in the first place not the student's awareness, but the ability to solve professional problems.

For students of non-linguistic universities, the main learning objectives are the formation of a foreign language speech competency, which is one of the main components of a foreign language communicative competence, as well as the ability to work with information.

As part of the competency-based approach, there are technologies that we believe contribute to the formation of foreign language speech competence, and also allow us to develop the ability to work with information, think critically and solve problems while working in a team. Among these technologies, DCTTWR ("Development of critical thinking through reading and writing") technology stands out, because its purpose is to use the means of reading and writing that are necessary for the development of foreign language competence.

The purpose of this technology is the formation of critical thinking skills through the interactive inclusion of students in the educational process.

One of the effective ways to solve this problem is the introduction of critical thinking development technology into the educational process. In this regard, the problem of the methodology of teaching a foreign language in non-linguistic universities is updated taking into account the use of active teaching methods, and in particular, the pedagogical technology "Development of critical thinking through reading and writing" (DCTTWR) The aforementioned technology is based on a communicative and active teaching principle, providing for a dialogue, interactive mode of classes.

The competency-based approach fundamentally changes the traditional idea of training a specialist in a technical university as simply transferring to him a certain amount of knowledge in teaching a foreign language (A.G. Shtarin, 2008).

It is one of the ways to intensify the educational activities of students, increase their level of motivation to learn a foreign language, develops activity and creativity, teamwork.

It should be emphasized that the competency-based approach does not imply a rejection of the knowledge model; it considers knowledge only as a tool for mastering one or another basic ability. We can say that if before the student had to "know this and that," then now he should "know this and that." The competency-based approach in vocational education requires not only a change in the methods of teaching foreign languages, but also a rethinking of the values and methodological basis of the whole process and the results of teaching a foreign language.

In accordance with the competency-based approach, the knowledge acquired within the framework of the training course should serve as the basis for the ability to solve professional problems, possess not only linguistic and regional knowledge, but also actively act as a successful participant in intercultural and professional communication.

In the context of the transition to a competency-based approach in teaching, the teacher needs new methods and technologies to identify the student's knowledge, update it, add what is missing, structure the training material, teach not only to remember and reproduce, but to apply knowledge and skills in practice. The methods that organize learning through desire stimulate the learning of students, stimulate their natural curiosity, and motivate interest in the independent acquisition of knowledge.

The formation of communicative competencies of students is one of the most important tasks facing the educational system in connection with the modernization of domestic education. In this regard, the issue of competency-based approach in education becomes relevant.

The competency-based approach places certain demands on students and their level of knowledge of a foreign language. In this regard, distinguish between basic and advanced competencies of students.

At a basic level, language is supposed to be a means of communication (a certain vocabulary, mastery of basic grammatical structures, knowledge of the laws of the functioning of the language, familiarity with the cultural environment, etc.)

An advanced level suggests that students will use a foreign language to solve practical problems, for example, to search for the necessary information on the profile of their specialty (Yesina L.S. 2004). This level has an interdisciplinary character and is assessed by the result achieved, and not just by the correct use of certain grammatical constructions and active vocabulary.

How successfully the competency-based approach to teaching is being implemented can be judged by the extent to which students with their level of knowledge of a foreign language are able to withstand competition in the free labor market in the future and take their rightful place not only in their society, but also in the international community.

In the conditions of teaching a foreign language, students develop certain competencies by acquiring knowledge that they will be able to acquire in their future professional activities in the field of economics, commerce and business, mastering various ways of solving problem-cognitive tasks, experience in effective decision-making and achieving set goals through overcoming obstacles. The stock of knowledge, the possession of methods for solving problems and the experience of achieving the goal are necessary components of students' competence.

Thus, the considered technology of teaching a foreign language in a non-linguistic university within the framework of the competency-based approach allows us to turn a modern student into an active participant in the educational process, able to solve a certain class of professional tasks, and, as we assume, contributes to the formation of foreign language speech competence.

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## Determination of the nationality of the legal entity on the basis of the theory of control

Determinación de la nacionalidad de la entidad jurídica sobre la base de la teoría del control

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### ABSTRACT

The purpose of this article is to analyze the theory of control as a specific method of determining the nationality of a legal entity in international private law. The search for the definition and content of the control theory is usually accompanied by the statement that, unlike all other theories, the application of this theory takes into account not the legal entity itself as a whole, but the nationality of natural persons behind it (founders, participants). On the basis of the present study, it can be concluded that the theory of control is an exceptional and the only method guaranteeing the determination of the real nationality of the legal person with a view to conferring on it certain rights (benefits, privileges). This also coincides with the protection of state sovereignty and national security as confirmed by numerous examples from practice.

**Keywords:** Nationality, legal person, personal law, theory of control.

### RESUMEN

El propósito de este artículo es analizar la teoría del control como un método específico para determinar la nacionalidad de una entidad jurídica en el derecho privado internacional. La búsqueda de la definición y el contenido de la teoría de control suele ir acompañada de la afirmación de que, a diferencia de todas las demás teorías, la aplicación de esta teoría no tiene en cuenta la entidad jurídica en sí, sino la nacionalidad de las personas físicas que la respaldan (fundadores, participantes). Sobre la base del presente estudio, se puede concluir que la teoría del control es un método excepcional y único que garantiza la determinación de la nacionalidad real de la persona jurídica con el fin de conferirle ciertos derechos (beneficios, privilegios). Esto también coincide con la protección de la soberanía estatal y la seguridad nacional, como lo confirman numerosos ejemplos de la práctica.

**Palabras clave:** nacionalidad, persona jurídica, derecho personal, teoría del control.

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## INTRODUCTION

The changes taking place in the world, manifested in the unification and harmonization of private law of different states, do not affect the issue of regulation of the legal status of a legal entity globally: there is an enviable consistency, even despite the emergence of European legislation on the Statute of the European Company. It is understandable, because the unification of law is justified and useful when it provides common interest for all participating states, but in the event of a clash of opposing economic interests it can be harmful (Voznesenskaya, 2017); in other words, in matters of legal regulation of a legal entity, foreign investment, not to mention economic security, the interests of states with different levels of economic development are extremely different. The Statute of the European Company has unified some of the questions regarding the most common forms of legal entities in the business sphere, leaving the key ones to the discretion of the national legislator and thus preserving the approach to the legal entity as a generation of national law; therefore, the thesis that it is impossible to create one legal entity simultaneously on the basis of two national laws is still valid. The practice of the European Court of Justice “squeakily” tries to pave the way for the obligations of European States in terms of the free movement of goods, works and services resulting from the signing of the 1957 Treaty on the Functioning of the European Union.

In other States, the issue of unification of legislation, in particular on legal entities, is not even on the agenda or in its infancy. As for the Russian Federation, since 2013 there has been a tendency to detail the collision regulation of the legal status of legal entities: the number of criteria for determining the personal law of a legal entity has increased, their hierarchy has been established, and exceptions to the general rule have been added. Federal Law No. 290-FZ of 3 August 2018 “On International Companies” (Collection of Legislation of the Russian Federation. 2018. No. 32 (part I). Art. 5083) Russia has launched a “pilot project”, which allows for changes in the personal law of a legal entity (an international company) in strictly defined areas.

However, there may still be situations in which a State is obliged to provide diplomatic protection to private actors or to provide, under an international treaty, a certain regime for the conduct of economic activities on its territory; under such circumstances, it is clear that the question of the establishment of the nationality of a legal person for legal science and practice does not lose its importance.

In this regard, it is very appropriate to recall the words of N.N. Voznesenskaya, who pointed out that the problem of determining the nationality of a legal entity rarely arises as an independent one, usually it is tied to another problem, which helps to solve (Voznesenskaya, 2017). However, there is a long-standing dilemma regarding the unity and/or priority of the criteria for determining the nationality of a legal entity. The most controversial among them is the theory of control, which has determined the research interest in it.

### Tasks

Accordingly, the purpose of this article is to analyse the theory of control as a specific method of determining the nationality of a legal person in private international law, with specific objectives: 1) analysis of the concepts of “nationality”, “state affiliation” and “personal law (personal statute)” of a legal entity, their ratio; 2) consideration of the history of the theory of control, including the definition of the legal nature of the theory of control, the mechanism of action of the criterion of control; 3) analysis of the spheres of application of the theory of control in modern conditions and the prospects of its use in determining the nationality of a legal entity.

### Methods

In order to check and substantiate the author’s position on the subject of this article, there was a need to refer to the analysis of regulatory sources, respectively, an important place in the study is occupied by the regulatory-dogmatic method. Since one of the objectives of this article is to build a perspective for the use of control theory in international private law, its achievement is impossible without legal modeling. When writing this article at the stage of systematization of approaches to the theory of control, revealing its legal nature, a descriptive method was widely used, which allowed by disclosing their content to highlight the most relevant information. Later on, the selected data were processed by using logical methods (deduction, induction, analysis, synthesis). The key method used in this article is the comparative legal method, since the study of international legal problems is inconceivable without comparative jurisprudence. An important role in the study was played by the historical-legal method: within the framework of this article, the works of both Soviet and foreign international experts, dating back to the beginning of the 20th century, were analyzed. In addition, the historical method is invaluable from the point of view of the need to identify outdated norms and approaches in domestic international private law, which should be abandoned. Taking into account the various situations of implementing the theory of control, as well as the search for areas of its possible application predetermined the need to apply the heuristic method. Since the very appearance and further application of the theory of control is connected with the protection of national security, internal and external interests of the state, the rejection of the axiological method of research is also impossible. By means of the method of functional analysis, the advantages and disadvantages of the theory of control were systematized. Due to some grammatical and terminological drawbacks of the formulations accepted in the theory and practice of private international law, the linguistic method was used to a sufficient extent.



## DEVELOPMENT

In international private law, when determining the nationality vs. nationality of a personal law (personal statute) of a legal entity, it is customary to distinguish four basic theories (criteria): incorporation (law of the place of registration); sedentarization (law of the place of location of management bodies); center of exploitation (law of the place of economic activity); control (Ladyzhenskiy, 1957; Lunts, 2002; Boguslavsky, 2009; Doronina, 2018; Asoskov, 2015; Inshakova, 2015; Kadyшева, 2002; Young, 1908; Rogerson, 2013; Briggs, 2013; Drury, 2009).

As can be seen from the list presented, the legal status of a legal person remains that almost exclusive area of conflict of laws regulation where there is no or virtually no room for party autonomy, although the idea of giving the personal law of a legal person to the discretion of private entities is not new and has previously been proposed by the French scientists P. Armignion and J. Mazeau (Voznesenskaya, 2013). Here, for the sake of justice, it is necessary to make a small clarification, according to the opinion of the domestic international lawyer of the last century, M.I. Brun, that “the will is not so autonomous that the legal entity may have the nationality that the national legislator does not want to recognize” (Brun, 1915), is no longer absolutely true today in the light of the decision of the European Court of Justice in the case of S-378/10, VALE Építési Kft, which authorized the transformation of the legal entity by changing its personal law.

In some studies, the authors develop mixed theories (e.g., the theory of G.Grasman’s differentiation, O.Sandrock’s theory of superpositio, D.Zimmer’s theory of limited incorporation criterion) (Asoskov, 2015) or apply multiple criteria (tests) to determine the nationality of a legal entity (Fillers, 2014; Voznesenskaya, 2013; Novikova, 2013).

Among the plenty of discussion issues related to the establishment of nationality vs. state affiliation vs. personal law (personal statute) of a legal entity, one should start with the ratio of these three concepts. Characteristically, already here begins the disagreement and the formulation of the general concept does not differ in certainty among the scientific community: that as a result all criteria and the theory of control as one of them are defined.

Thus, for example, a number of domestic scientists speak about the state ownership of a legal entity and the criteria for its definition (Luntz, 2002; Boguslavsky, 2009), others - about nationality (Ladyzhenskiy, 1957; Doronina, 2018; Inshakova, 2015; Kanashevsky, 2009; Kadyшева, 2002; Monastyrskaya, 2011), and the third - on the personal law (personal statute) of the legal person (Dmitrieva, 2009; Asoskov, 2015). There are also such scholars who extend the criteria jointly to the concepts of “nationality” and “personal law” of a legal entity, which obviously suggests their equivalence (Voznesenskaya, 2017). At the same time, although there is a differentiation between “nationality” and “state affiliation” of a legal entity, some nuances are noted: homogeneity of concepts, their belonging to public law, as opposed to the concept of “personal law (personal statute)” of a legal entity, which is a concept of private international law; a more complete scope of the concept of nationality of a legal entity in determining its legal status, the personal law of a legal entity defines its concept only in the volume of private law (Asoskov, 2015). In the third edition of the textbook on private international law, edited by G.K. Dmitrieva, the criteria for determining the personal law were separated), and the criteria for determining the nationality of a legal entity (control theory).

The concept of “nationality” is widely used in foreign English-language legal studies (Young, 1908; Fillers, 2014; Muchlinski, 2009; Rodley, 1971; Astorga, 2007), and within the framework of conflict law - the concept of “personal law” (Rogerson, 2013; Calster, 2016; Briggs, 2013). However, the use of the concept of “nationality” poses a certain danger, because it contains not only a legal but also a political context (Young, 1908; Kadyшева, 2002). In the legal sense, the author understands the nationality of a legal person as the application of the legislation of a state to a legal person as a personal law (Young, 1908).

As noted by Y.I. Monastyrskaya, the attempts to define the criteria of nationality of a legal entity began to be undertaken by scientists from different countries for a long time. And the author classifies all the above mentioned theories (criteria) after A.M. Goroditsky into two groups: 1) collision; 2) material-legal; the latter include, in addition to the theory of sedentarization and the center of exploitation, also the theory of control (Monastyrskaya, 2011).

The search for the definition and content of the theory of control is usually accompanied by the statement that, unlike all other theories, when applying the abovementioned one, not the legal entity itself as a whole is taken into account, but the nationality of natural persons behind it (founders, participants). According to E.H. Young, this is a natural conclusion from another theory - the nature of the legal entity, which is supported in the U.S. (Young, 1908; Monastyrskaya, 2011). According to this theory, “a legal entity is no more than a light veil, thrown on the members of the group, in order to unite them; it condenses them into one person, which is no different from them, because it is they themselves. His nationality cannot be other than their nationality” (Ladyzhenskiy, 1957). The criterion of control requires the use of the formula “removal of the corporate veil”; and then the nationality of the participants (shareholders) comes first (Astorga, 2007). The corporate veil descends and hides the participants when it comes to corporate responsibility; and vice versa, the corporate veil rises as soon as it comes to the rights and interests of participants.

As O.V. Kadyшева rightly points out, the application of the criterion of control, when the very figure of a legal

entity is discarded, is exceptional in international practice and its application is always determined by special purposes (Kadysheva, 2002). Indeed, if we recall the history of the appearance (World War I) and application of this theory (World War II, the fight against terrorist organizations, international sanctions), we can understand these special goals: the preservation of state sovereignty, maintenance of its economic security (Lunts, 2002; Boguslavsky, 2009; Dmitrieva G.K. (2009).

The disadvantages of the theory of control, which are shared by many domestic and foreign scientists, are the following. First, there is no consensus among scholars on the definition of this criterion: control can be established by nationality of the majority of persons owning shares, or by nationality of persons owning shares for a larger sum (Ladyzhensky, 1957; Kadysheva, 2002) which generally illustrates the low effectiveness of the criterion for a legal entity with a multinational composition (Boguslavsky, 2009; Ladyzhensky, 1957). Secondly, this criterion is not characterized by stability and staticity: usually the legal category "nationality" of individuals and legal entities serves for permanent application and is rarely subject to change. At the same time, it is clear that the composition of participants of a legal entity and their shares in it may change over time, which will entail a change in the nationality of the legal entity. In some cases, the phrase "over time" is equivalent to "during the day" (Boguslavsky, 2009). Third, for some types of legal entities the criterion of control is difficult to apply, due to a specific subject or object, for example: it is difficult to establish the origin of capital in anonymous companies or the nationality of shareholders of bearer shares (Ladyzhensky, 1957). As a result, according to N.N. Voznesenskaya, the practical significance of this criterion is not great, because it is not clear how to apply it (Voznesenskaya, 2017; Young, 1908).

Returning to the question of the origin and development of the theory of control, it is necessary to point out that its appearance is normatively connected with the publication of legislation on trade with hostile aliens, originally in the United Kingdom (1914, 1939) and the United States (1917). In the English law of Trading with the Enemy Act of 1939, "enemy" is understood, among other things, according to part 2 (c), to mean any organization (corporate or unitary) operating in any place, if and because this organization is controlled by a person understood as "enemy" according to this part (URL: <http://www.legislation.gov.uk> (contact date: 08.08.2019). The serious consequences of classifying a legal entity (companies, corporations) as an enemy in the Anglo-Saxon group of countries are restrictions on substantive and procedural rights, such as: allowing the use of the institution of private property confiscation, deprivation of the right of access to the national court of the respective state as a plaintiff (Cheshire, 1982; Monastyrskaya, 2011).

The present legislation was developed for the case of wartime and for military conditions, but it has been in force for 100 years in the mentioned states, and has also become widespread in other countries, differing only in the specifics of restrictive measures - material, procedural or mixed. Moreover, in the U.S., it became the basis for the draft international sanctions applied by the President in both wartime and peacetime (Coates, 2018). What began as an attempt to "define, regulate and punish trade with the enemy has become a broad document for all time, everywhere and against undefined enemies" [Ibid.] And then the historian concludes: "Peacetime has become a permanent war, and centuries-old legislation on past wars continues to define the present.

Thus, today, in addition to vs. also for the purposes of international sanctions, the theory of control is widely applied in international investment law, which is illustrated both by international treaties and national legislation of different states. Among the first ones is the Convention on the Settlement of Investment Disputes of 18 March 1965.

Thus, "persons of a Contracting State" shall be understood to mean, inter alia, any legal person who is a legal person of a Contracting State other than a State acting as a party to the dispute on the date of agreement to submit disputes to the Centre for conciliation or arbitration, as well as any legal person who is a legal person of the Contracting State acting as a party to the dispute on the date of agreement, if by reason of control exercised by foreign nationals.

The practice of ICSID investment disputes, analyzed by scientists, shows that the court often proceeds from a literal interpretation of the provisions of international treaties, which often leads to the problem of migration of investors (Novikova, 2013; Fillers, 2014); that is why we hear proposals on the use of a set of criteria for determining the nationality of an investor, the use of not only the legal (formal) method, but also the economic (Voznesenskaya, 2017; Astorga, 2007; Fillers, 2014), which actually implies a reference to the theory of control, since "for any state that allows foreign capital to enter its territory, especially in important areas of the economy, it should be not indifferent to who actually owns this or that large enterprise, whose capitals and interests are represented in it".

A departure from the literal interpretation is provided, among other things, by reforming the national legislation of states. Thus, in Russia on September 30, 2016, to replace the Resolution of the Government of the Russian Federation No. 456 dated June 9, 2001, the Resolution of the Government of the Russian Federation No. 992 "On Conclusion of International Treaties of the Russian Federation on the Issues of Investment Promotion and Protection" was adopted (Collection of Legislation of the Russian Federation No. 41. Art. 5836), in paragraph 10 of Annex No. 2 to the Regulation on Conclusion of International Treaties of the Russian Federation on the Issues of Investment Promotion and Protection, which contains a protective clause according to which the agreement should not be applied to the Investor.

At the same time, the scope of application of the theory of control in international and foreign legislation is not limited to the issues of sovereignty of the state, protection of national security of the state. For example, the theory of control is uniquely refracted in the rules of the current international law governing the procedure of arbitration disputes, in particular, in the Arbitration Rules of the London Court of International Arbitration as amended in 2014. Thus, as a general rule, it is prohibited to select arbitrators of the same nationality as the parties if the latter have different, distinct nationalities. At the same time, it is envisaged that the concept of citizenship of a party includes the citizenship of the owners of the controlling interest or the majority of shares in the share capital (Art. 6.2. Arbitration Rules of the London Court of International Arbitration (URL: [https://lcia.org/Dispute\\_Resolution\\_Services/lcia-arbitration-rules-2014.aspx](https://lcia.org/Dispute_Resolution_Services/lcia-arbitration-rules-2014.aspx) (reference date: 08.08.2019))). Thus, in this case, the theory of control is applied to justify the prohibition on selecting an arbitrator (unless the parties have agreed otherwise) in order to achieve an impartial, independent arbitration, which ultimately serves to establish and maintain the rule of law.

For Russia, the urgency of the problem of determining the nationality of a legal entity became apparent only with the adoption of the Law of the RSFSR No. 1545-1 "On Foreign Investments" dated July 4, 1991. At the time of the existence of the USSR, there were no foreign legal entities in the country, no foreign capital was allowed, and the whole problem was limited only to the determination of the legal status of foreign counterparties of Soviet foreign trade associations in foreign trade transactions (Voznesenskaya, 2017).

As far as Russian private international law is concerned, a cursory glance at Article 1202 of the Civil Code of the Russian Federation leads to a hasty conclusion that there is no such criterion in Russian private international law. In this regard, it is customary to say that in domestic legislation the theory of control is used indirectly, in addition (Boguslavsky, 2009), in particular, when establishing restrictions on the involvement of foreign capital in certain areas of activity: para. 5 h. 2 Article 18 of the Federal Law No. 395-1 of December 2, 1990 "On Banks and Banking Activities" (Collection of Legislation of the Russian Federation, 1996, No. 6, Article 492); para. Article 6, paragraph 3, of Federal Law No. 4015-1 of 27 November 1992 "On the organization of insurance business in the Russian Federation". (News of SNA and RF Armed Forces. 1993. N2. Art. 56); part. Article 19.1, paragraph 2, of Act No. 2124-1 of 27 December 1991 on the mass media (News of SNA and RF Armed Forces. 1992. N7. Art. 300); part. Article 5, paragraph 3, of Federal Law No. 57-FZ of 29 April 2008 "On the Procedure for Making Foreign Investments in Economic Entities of Strategic Significance for Ensuring the Country's Defence and State Security" (Collection of Legislation of the Russian Federation, 2008, No. 18, Article 1940), etc.

At the same time, within the framework of international treaties with Russia's participation, on the one hand, and as a reaction to unfriendly actions at the international level (the principle of reciprocity), on the other hand, this theory is applied periodically in order to ensure the security of the state. The mechanism of action in the first case is provided by the norms of international law: the UN Security Council issues a resolution binding on all participating States, it is implemented in the Russian Federation in the form of a corresponding decree of the President of the Russian Federation, for example: On measures to implement the UN Security Council Resolution No. 1267 of October 15, 1999 (Collection of Legislation of the Russian Federation, 2000, No. 19, Art. 20159); On measures to implement the UN Security Council resolutions No. 1388 of January 15, 2002 and No. 1390 of January 16, 2002 (Collection of laws). In particular, according to paragraph 1 (b) of Decree No. 786 of the President of the Russian Federation, sanctions apply to property owned or controlled directly or indirectly by the Taliban (the Taliban is an organization whose activities are prohibited in the Russian Federation); according to paragraph 1 (a) of Decree No. 393 of the President of the Russian Federation - owned or controlled directly or indirectly by them or by persons acting on their behalf or at their direction.

With regard to the second case, characterized by a reaction to unfriendly actions of other states and consisting in the introduction of restrictive measures by virtue of the principle of reciprocity, the President of the Russian Federation issues a decree, which may be specified by resolutions of the Government of the Russian Federation, for example: On the application of certain special economic measures to ensure the security of the Russian Federation of 6 August 2014 (Collection of Legislation of the Russian Federation, 2014, N 32, Art. 4470).

For the purposes of the issue under study, the statement of the President of the Russian Federation V.V. is indicative. The statement of the President of the Russian Federation V.V. Putin during the "straight line" on April 14, 2016, stating that in the scandal with the "Panamanian dossier" everywhere "ears" of the customers are "sticking out". According to the President, the German newspaper *Süddeutsche Zeitung*, which published the documents, allegedly belongs to the American bank Goldman Sachs (see: Peskov was "left behind" by Putin for an error during the "hotline" // <http://www.rbc.ru/politics/17/04/2016/5713e3cd9a79477b24a15f3d> (reference date: 08.08.2019)).

## Results

To date, the theory of control remains the exclusive and the only method of determining the nationality of a legal person, which leads to a goal where other methods somehow do not show the real connection between the legal person and the state.

On the one hand, the concepts of “nationality” and “nationality”, as well as “personal law (personal statute)” of a legal entity, on the other hand, are related as a whole and part of it; the concept of “personal law (personal statute)” of a legal entity is used in private international law, while the concept of “nationality” of a legal entity has a public-law nature. Accordingly, only the theory of control is applied to determine the nationality of a legal person.

The application of the control criterion implies the “removal of the corporate veil” in which the nationality of the legal entity is identified with the nationality of the natural persons behind it (founders, participants, etc.); the limits of sensitivity are set by the state depending on the national interests.

The theory of control is applied there and when it is necessary to define the real nationality of the legal entity in order to give it certain rights (benefits, privileges), while the protection of the sovereignty and national security of the state are at the forefront, as evidenced by numerous examples from practice.

On the basis of the research carried out within the framework of the present article, it is necessary to point out that all three concepts of “nationality”, “nationality” and “personal law (personal statute)” of a legal entity lie in the same plane and therefore all three concepts can be interchangeable in certain cases. It is advisable to consider the concept of “nationality” as a general, collective concept encompassing both public and private law aspects of a legal entity; the concept of “nationality” of a legal entity characterized solely by its public law nature is absorbed by the concept of “nationality” of a legal entity and they are related as a part and as a whole.

The same can be said about the relationship between the concepts of “state affiliation” and “personal law (personal statute)” of a legal entity: based on the conceptual apparatus revealed both in the Russian doctrine and law and in foreign sources, we can agree with the statement that the personal law (personal statute) of a legal entity is used in the framework of private international law, conflict of laws and emphasizes the private law aspect of the legal entity. It seems that the concept of “nationality” has appeared in the doctrine of private international law and its use today is justified in relation to the theory of control, when the nationality of a legal entity is derived from the nationality of natural persons. If one wonders whether the concept of “personal law (personal statute)” of a legal person can be fully consistent with the concept of “nationality” of a legal person, one should rather answer in the negative, since the criterion of control is only applied when it is impossible to determine the true nationality of the legal person by means of “ordinary”, undisturbed integrity of the legal person (without removing the corporate veil), collision links. Only if a national law or international treaty clearly permits or even prescribes the definition of a legal person’s personal law initially and/or exclusively on the basis of a theory of control can one speak of synonymy, which is unlikely, however, since the theory of control as a means of determining the legal person’s personal law is traditionally the last in the hierarchy and requires special conditions to legitimise its application.

However, it should be recognized that differentiation of concepts (especially the triple one, adopted in Russian international private law) is more often an illustration of their nature, but not always necessary in a practical sense: in the absence of violations, including “circumvention of the law”, of any extraordinary circumstances, it is presumed that a legal entity has, for example, French nationality, its personal law is French law and it has French nationality.

Continuing the thesis about the legal nature and place of the control criterion, it is necessary to repeat that it is of a public-law nature, and is comparable to such an institution of private international law as a public order clause: both perform a protective function, and both are used when other means do not help to achieve the desired goal. It is therefore logical that, from the point of view of the hierarchy of application of the criteria, the theory of control is a subsidiary method. If we analyze the theories of origin of a legal entity, the theory of control, as mentioned above, is genetically closest to the legal entity, and therefore refers to the original ways of establishing the applicable law to the legal entity (Young, 1908).

It seems necessary to amend the classification of concepts for determining the nationality of a legal entity proposed by A.M. Gorodissky and supported by Y.I. Monastyrskaya with regard to the distribution of criteria: based on the results of this study, in addition to the criterion of incorporation, the criteria of residence and place of business should be referred to as a conflict of laws method, since all of them, in accordance with the national conflict of laws laws, may serve as a means of determining the identity of a person. These three criteria should be contrasted with the theory of control, the only material criterion, as it represents a change of perspective and a departure from the integrity of the legal entity.

The disadvantages of the theory of control as a long-term method of determining the nationality of a legal entity are its advantages as a rapid method of establishing a real link between the legal entity and the state at a particular time when it is necessary to decide to grant the legal entity certain rights, in other words, “to reveal the real nature of the company’s activities from the point of view of public law” (Luntz, 2002). Therefore, for the purposes of public law, the situation is not defective if the nationality of the legal person does not coincide with its personal law or changes depending on the requested rights. The state has the right to establish any requirements in respect of subjects of civil legal relations, including in terms of restrictions for foreign subjects. Speaking above about the difficulties of determining the nationality of participants (founders) in certain types of legal entities, it should be borne in mind that the difficulty does not mean impossibility, and when using appropriate legal techniques, the result will not be



long overdue (see, for example, Federal Law No. 57-FZ of April 29, 2008 “On the Procedure for Making Foreign Investments in Business Entities of Strategic Significance for Ensuring the Defense of the Country and Security of the State”, where to determine the controlling persons are applied quantitative ) In particular, to trigger an effective control criterion, the legislator may use language prescribing the establishment of a national composition of the board or audit commission. However, even despite all the disadvantages and complexities of applying control theory, it does not go off the agenda and will not go off the agenda, as exemplified by the development of English company law. For example, as of 6 April 2016, all English private companies, limited liability partnerships (LLPs), European companies (SEs) are required to maintain a register of people with significant control, which includes their nationality, place of residence, place of business, place of residence (Companies Act 2006, Section 12A; Part 21A // URL: <http://www.legislation.gov.uk> (contact date: 08.08.2019)).

The history of the emergence and development of the theory of control predetermined the scope of application of this criterion. In the most general sense, it can be said that the theory of control in order to determine the nationality of a legal entity is used when it comes to granting a legal entity certain rights (benefits, privileges) in the state. The theory of control is widely enough applied in international investment law, when it is necessary to control the implementation of economic activities in a particular sector of the economy. On the other hand, the theory of control is mandatory in emergency situations, wartime, for the purposes of diplomatic protection of legal entities. A separate purpose of the application of the theory of control may be to protect the foundations of the rule of law.

## CONCLUSIONS

Thus, the analysis of literature and sources on the issue of control theory in private international law leads to the assertion that this is the exclusive and unique method of determining the nationality of a legal person, aimed at determining the real connection between the legal person and the State at a specific time when other methods fail to meet the objective.

If we think about the prospects of using the theory of control, namely, whether there may come a time when private international law, international investment law will cope without the theory of control, then this question should be answered negatively. This is explained by the fact that the theory of control is applied, firstly, as a means of implementing the principle of reciprocity; secondly, as a means of protecting national security. These functions mimic the theory of control and guarantee its preservation in private international law. In other words, even if a legal entity functions in peacetime, in the absence of a state of emergency, the theory of control, as a method of determining the nationality of the legal entity, is invisibly present in a “sleeping” regime and manifests itself if international relations so require.

To date, in the context of the ongoing mutual sanctions against individual States, as well as the ongoing fight against international terrorism, there has been a differentiation and concretization of the national legislation of States governing the legal status of legal persons, manifested through the introduction of new rules based on the theory of control. In fact, this means developing this criterion, which again demonstrates its vitality and relevance in international (private) law. Concretization of national legislation on legal entities is a kind of counterbalance to the existing unification and harmonization of law, which demonstrates the eternal processes of convergence and divergence of law.



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## Effective teaching methods in teaching English

Métodos de enseñanza efectivos en la enseñanza del inglés

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### ABSTRACT

The article analyzes the issues related to effective teaching methods in teaching English. The changing realities of the modern world require the same changes in educational systems. Therefore, the topic of innovation is becoming important for the entire system of education and teaching a foreign language, in particular. In the conditions of the rapidly accelerating pace of changes in society, one of the urgent problems facing the scientific community, the pedagogical community, is the conceptual need for the formation of a new generation of specialists. In this regard, a mobile, dynamic and accurate reorientation of the normative-parametric establishment of a specialist, both the technical industry and the humanitarian profile, is required. In the logic of the study of this problem, the question rightly arises: how to determine a well-trained specialist who meets the needs of modern society. Indeed, the intellectual, spiritual and cultural condition of society depends on the quality of education. The author analyzed the research and commentary of researchers on the issue of choosing appropriate teaching methods and presented them in this article.

**Key words:** training course, methods, speech practice, students, communication, specialist

### RESUMEN

El artículo analiza los problemas relacionados con métodos de enseñanza efectivos en la enseñanza del inglés. Las realidades cambiantes del mundo moderno requieren los mismos cambios en los sistemas educativos. Por lo tanto, el tema de la innovación se está volviendo importante para todo el sistema de educación y enseñanza de una lengua extranjera, en particular. En las condiciones del ritmo acelerado de los cambios en la sociedad, uno de los problemas urgentes que enfrenta la comunidad científica, la comunidad pedagógica, es la necesidad conceptual de la formación de una nueva generación de especialistas. En este sentido, se requiere una reorientación móvil, dinámica y precisa del establecimiento normativo-paramétrico de un especialista, tanto en la industria técnica como en el perfil humanitario. En la lógica del estudio de este problema, surge la pregunta correcta: cómo determinar un especialista bien capacitado que satisfaga las necesidades de la sociedad moderna. De hecho, la condición intelectual, espiritual y cultural de la sociedad depende de la calidad de la educación. El autor analizó la investigación y los comentarios de los investigadores sobre el tema de elegir los métodos de enseñanza apropiados y los presentó en este artículo.

**Palabras clave:** curso de capacitación, métodos, práctica del habla, estudiantes, comunicación, especialista.

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The modern methodology of teaching foreign languages offers us a wide selection of teaching concepts, methods and technologies – as both traditional and innovative. Curriculum developers and teachers give preference to certain methods depending on the goals of the training, the contingent of students, the duration and intensity of the training course, and other conditions. Moreover, each of the teaching methods has its advantages and disadvantages, and the success of their application depends on the specific goals and conditions of training.

In recent years, the role of a foreign language as a means of communication has significantly increased, which should be taken into account when teaching a language. The specificity of a foreign language is that we teach not the basics of science, but skills and abilities, and this requires sufficient speech practice. The purpose of language teaching is not only to acquaint students with the system of a foreign language, but, first of all, to teach how to use the language as a means of communication. Consequently, the entire structure of classes and the methods used should correspond to the real situation of communication, and training should take place in the context of student interaction.

Educational technologies are the means to achieve objective and meta-subject results, as well as personal results of students. The system of the teacher's work to ensure the results of teaching a foreign language must necessarily include the implementation of the following technologies: communicative learning technology, technology for understanding the communicative meaning of the text, game technologies, collaborative learning technologies, design technologies, etc.

The concept of "technology" is borrowed from the sphere of production. "Under technology, it is necessary to understand the totality and sequence of methods and processes for the conversion of raw materials, allowing to obtain products with specified parameters" (New pedagogical..., 2009). Under the pedagogical technologies of teaching a foreign language, we should understand the way of planning and implementing language training of a specialist for effective work. The term "innovation" refers to the Latin "*novus*" –which means the achievements of science, technology and economics should be used in innovative technologies. An analysis of the existing literature allows us to define the concept of "innovation" in relation to the process of teaching a foreign language as: the use of foreign experience and its extrapolation to our educational environment; the use of traditional scientifically based techniques of the past in modern conditions; the creation of completely new pedagogical educational technologies. The following innovative technologies are used in foreign language teaching: binary lesson, project, distance learning, co-operation training, multi-level training.

Socio-economic changes in Uzbekistan and the information explosion affecting the whole world require a revision of traditionally developed systems, content, methods and technologies of instruction. Education, as a part of culture, unconditionally, largely experiences the global process of informatization, and today it is advisable to talk not just about the educational function of a foreign language, but about the media education of students. In the new educational paradigm, the student is an active subject of cognitive activity, which, with the help of new forms of organization of the educational process, is involved in a dialogue with the teacher. Today, a student is an active, creative person, who must not only possess a certain amount of knowledge, but also be able to learn: to search and find the necessary information, use various sources for this, including media sources, and continuously develop (Vorobiev G.A. 2004).

The most important trends in the development of modern society associated with the processes of globalization and informatization are directly reflected in the educational process in general and in the field of foreign language education in particular. At present, there remains a need for further development of the issue of introducing modern Internet technologies into the educational process, especially in the field of higher professional education. There is a need to develop specially organized work with information. Today there are a large number of Internet resources. They contain material that is potentially suitable for educational use. One of the modern technologies that make it possible to organize cognitive activities of students in a special way under the conditions of an ever-growing amount of information and the appearance of accessible educational Internet resources is the technology of web quests.

Web-quest technology has great educational and developmental potential for the following reasons:

- is a model built in accordance with the "pedagogy of the post-method." This model integrates a variety of approaches, technologies, teaching methods and techniques: problem-project training, contextual learning, communicative approach, active teaching methods, ICT;
- involves the use of a group form of work, thereby contributing to the development of communicative and collaboration skills;
- can be used in an interdisciplinary context, i.e. serve for the implementation of intersubject communications in the educational process;
- contributes to the development of critical thinking;
- increases the motivation of students.

M. Luzon, who studies the use of web quests as a means of teaching English to students of engineering specialties, argues that the use of web quest technology expands the possibilities of applying linguistic knowledge and skills (Luzon M.J., 02-40-3).

Multimedia technologies opened opportunities for teachers to abandon the routine types of teaching activities characteristic of traditional teaching, giving them the opportunity to use intellectual forms of work and free from the presentation of a significant part of the teaching material and routine operations related to the development of skills. The methodically

correct use of ICT allows us to change the learning process itself, replacing memorization of the text with cognition in the process of project implementation.

Today, education, especially vocational education, should be focused not only on the diverse development of the student and his personal needs, but also take into account the needs of society. And the use of a competency-based approach in education contributes significantly to the achievement of these goals.

Features of the development of the information society determine the modernization of the education system in higher education. Modern society is interested in specialists who are ready to bear independent responsibility for the decisions made, are able to set goals and choose a way to achieve them, based on their own value priorities, thereby proving their own individuality. Young professionals in any field of activity should have the ability to really assess their capabilities, their professional activities and their results.

Today, in the practice of teaching students of various disciplines, the project method is widely used, which involves relying on the creativity of students, introducing them to research activities, and organizing training in cooperation. Group work on projects allows you to learn the skills of joint work in a team, to justify your choice, that is, to show your "I", evaluate yourself as a person and analyze your actions through the eyes of others. Therefore, one of the main tasks of project activity is the development of students' reflexive skills. In the general understanding, reflection is self-observation, self-knowledge (Tamrazova I.G.2014). Project activity is defined as a search and research activity, which provides not only for the achievement of a particular result, designed as a concrete practical output, but also for the organization of the process of achieving this result.

The project method can become one of the effective ways of forming and developing the personality of students, who can orient themselves in a huge flow of information, can make non-standard decisions, reveal their intellectual, spiritual and creative potential, increase motivation for educational and cognitive activities (Tamrazova I.G., 2016).

Another highly effective teaching method is to use the educational "Portfolio" in the process of studying at a university, as it is a means of increasing the students' independence in educational activities and their professional and personal self-development (Niyazova A.E. 2006). During its compilation, a phased documented recording of student achievements takes place. The student is given the opportunity to show not only language skills, but also communication skills, self-reflection. During learning, the student is fixed both on the process and on the product of labor; high creative and informative activity of the student is required: he learns to present the result of his work; the student performs a new role for him in relation to himself and his learning partners - the role of an evaluating teacher; the motivation of learning is increased, because the student feels that he is a real participant in the educational process, whose interests are not indifferent to both the teacher and classmates.

The current state of teaching foreign languages can be described as a state of struggle between traditional learning and innovation. Of course, the predominance of one type of training leads to extremes. We need technologies that are effective and contribute to the progressive development of pedagogical science and prepare students for future professional activities.

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# Visual study of carpets in the Safavid era: A case study in Sheikh Safi al-Din Ardabili's tomb

Un estudio visual de las alfombras en la era Safávida: un estudio de caso de la tumba Sheikh Safi al-Din Ardabili

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## ABSTRACT

This article studies and visually analyze motifs of carpets in the Safavid era, especially the carpet in Sheikh Safi al-Din Ardabili's tomb. Ardabili carpets have very special designs and motifs. The method of study is based on visual analysis, which ultimately aims to achieve important and dynamic points in the composition of the designs and the proper geometry in this carpet. The result of this study shows that in the past designers have drawn the motifs on a geometric background, considering geometry as the main basis of carpet design. In the design of Safavid carpets, like other arts, special proportions have been used in the size of frames, elements as well as interior parts of the frame.

**Keywords:** Carpet, Safavid Era, Sheikh Safi al-Din Ardabili's Tomb

## RESUMEN

Este artículo estudia y analiza visualmente los motivos de las alfombras en la era safávida, especialmente la alfombra en la tumba de Sheikh Safi al-Din Ardabili. Las alfombras Ardabili tienen diseños y motivos muy especiales. El método de estudio se basa en el análisis visual, que en última instancia tiene como objetivo lograr puntos importantes y dinámicos en la composición de los diseños y la geometría adecuada en esta alfombra. El resultado de este estudio muestra que en el pasado los diseñadores han dibujado los motivos sobre fondo geométrico, considerando la geometría como la base principal del diseño de alfombras. En el diseño de las alfombras Safavid, como en otras artes, se han utilizado proporciones especiales en el tamaño de los marcos, elementos y partes interiores del marco.

**Palabras clave:** Alfombra, Era Safavid, Tumba de Sheikh Safi al-Din Ardabili

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## Introduction

During the Safavid era, the court, especially the king himself, was very attentive to art and always welcomed a variety of artists, both domestic and foreign. During this period, art reached its peak in every field, changed from an individual work to an advanced industry. In the meantime, the art and industry of carpet weaving had a special place. Of course, people like Henry Focillon, head of the Museum of Fine Arts in Lyon, have described Iranian art in the Safavid era more as a vast and traditional world. These carpets were expensive and large, in enormous sizes beyond the capacity of ordinary and small rural and nomadic looms, beyond the need of ordinary people and only fit for royal palaces and halls, they were woven sometimes of silk and sometimes of golden and silver yarns in the kings' court workshops. Large court workshops for this purpose were set up in major cities of the country, and carpets nowadays held in the museums of the world in the name of exquisite Iranian carpets and showing Iranian masters in motif and texture are generally the product of efforts of weavers, designers and dyers of this era (Stead, 1974)

The history of world's carpet weaving mentions Iranian carpets as an artistic work and important commercial product. Phrases like "Iranian Carpet" and "Oriental Carpet" in some cases have a synonymous meaning, and of course the artistic and historical significance of the Iranian tradition has proven to everyone. The rich and unique design and motifs of Iranian carpets in the form of beautiful combinations and pleasing colors have always amazed audiences. This can be due to the Islamic law (prohibition of illustration) in the Safavid era. At this point, the designers gave up the true drawing of the elements and, while separating from the real world, sought the equivalent of it in the realm of spirituality and achieved it to the fullest (Rizvi, 2017).

Sheikh Safi al-Din Ardabili Shrine Ensemble, Government Mansion of the Safavid Kings in city center of Ardabil in Ali Qapavi Square, which includes various sections such as Teahouse, Pantry, Allah Allah Dome, Jannat Sara and Tombs of the Safavid dynasty, is considered one of the ten important historical monuments in Iran. Ardabil carpet is one of the most famous carpets of the Safavid era (Hoseini, 2019)

In this study, the carpets of the Safavid era are studied. The number of carpets and designs in the Safavid era is very high and varied. For this reason, we visually examine the carpets in Sheikh Safi al-Din Ardabili's Tomb. Some of the carpets of this monument have been placed in major museums around the world, including the Museum. Based on the images of the carpets in this ensemble, a visual analysis of the main carpet, Ardabil Carpet, will be presented. The main difference between this work and other carpets of the Safavid era will also be mentioned.

## Carpet motifs in the Safavid era

Serious studies and research on Safavid carpets have been started by non-Iranian scholars since about 120 years ago and so far many books and articles on this carpet have been published. The Safavid era is regarded as the peak of the excellence of Iranian art, also they are unanimous that the carpets of this period are masterpieces of Iranian carpet weaving. This unanimity is to the extent that all or most of the Safavid carpets that have remained until now are recognized as not only the glory of Safavid carpet weaving, but also the history of Iran. But no one has mentioned the reason for this greatness and glory, as if whatever they consider as carpet and the product of the Safavid era is the peak of Iranian and Safavid carpet weaving. Considering the visual study done on about forty images of these carpets and gathering their texture characteristics and the possibility of examining the three samples in the carpet museum and considering the recommendations and the guides that were made, the reasons for this greatness and glory can be the Safavid kings' attention and support for carpet weaving, attention to the maintenance of weaving techniques and practices and the symbolism of the Iranian carpet among countries. Safavid carpets can be divided into categories of medallion corner, overall flower, *vagirei*<sup>1</sup>, prayer niche, vase, garden, hunting, composite and a type known as Polish (Issawi, 1971).

The carpets left remained from the Safavid period are divided into two distinct groups according to their predominant coloration; a group of these carpets, which are similar to woven carpets colored according to Iranian foundations, with the dominant colors of: cream, red, and navy blue and often red color, named Gheyre Shahi (non-royal) carpets and another group that have departed from the traditional coloration foundations of Iranian carpets and are very different carpets called royal (Shahi) carpets with the dominant colors of yellow or green, orange and blue. In the coloration of shahi carpets, it is noticeable that in some of them the colors such as blackish dark navy blue and dark brown are widely used as margins and the text color, while this color in general has not been used in any period in the Iranian carpet and like other dominant colors in this group, the use of black is limited to some of these carpets. Also no sample is found in contemporary carpets (Zadeh, M. M. and S. Noori, 2017). Of the factors affecting the Safavid carpet, the factor with the most effect on the Shahi carpets has been the court's taste, meaning that the king's courtiers, according to their aristocratic and luxurious nature, had tendency to bright colors such as yellow with its high glitter (Canby, 2002)

<sup>1</sup> Vagire means to repeat a small pattern in the length and width of a carpet.

## Research background

Ardabil carpet is one of the oldest, most important and exceptional carpets in the world. Of course, the importance of Ardabil carpet is not only because of its age and beauty, but also because of the narrative of one of the most important historical periods of Iran. Ardabil carpet, currently on display at the Victoria Albert Museum in England, is actually a pair of carpets that used to adorn Sheikh Safi al-Din Ardabili's tomb. Sheikh Safi al-Din Ardabili was a Sufi elite who had many disciples. He was one of ancestors of Shah Ismail the first king of Safavid dynasty. He passed away and was buried in Ardabil many years before the Safavid dynasty was formed. In the Safavid era, the tomb of Sheikh Safi as a shrine was so welcomed by people that Shah Tahmasb made an order for weaving a pair of exquisite carpets. The two carpets were laid next together in Sheikh Safi's tomb. In this carpet, wool is used more than silk because wool gets the color better (Flood, 2012).

There have been many studies on this carpet. Due to being the symbol of Iranian carpet glory, this carpet has been the subject of much attention by all scholars and has been always studied in the Persian carpet study books as one of top 10 Iranian carpets (Fahime, 2019). Rexford conducted a study under supervision of the California Museum that pointed to a careful examination of the carpet and its effect on the exchanges. Garthwaite et al. also studied prominent Persian works of art and considered this carpet to be one of the most prominent motifs of Iranian weaving art (Garthwaite, 2008).

## Research Methodology

In this research, it has been attempted to collect motifs of the carpet of Sheikh Safi al-Din Ardabili's tomb by relying on documentary and library studies, using visual comparison and case study, thereby analyzing aesthetic principles of the motifs, color and composition of Tabriz's contemporary carpets.

## Visual analysis

Visual research is a term that is based on data collection and analysis using images (drawing, painting, photography, film or video images). Visual productions are the product of the time and place that they are recorded in and, on the other hand, represent the position of the particular time and place. Thus, they can be used methodologically as materials for studying and understanding human life in specific periods, and to help researchers gain a more accurate and deeper understanding of a particular phenomenon or period of history, society, culture. Paul Mason stated that the use of image in social research has a long history, and the disciplines, or more precisely the sub-disciplines that have developed image-based research, are visual anthropology and visual ethnography. But for Banks, methodological perspectives in these disciplines are scattered or defined for specific areas, such as ethnographic film. Image in anthropological research has traditionally been used to illustrate textual narratives. But today, the focus is on the interpretation of image in disciplines such as visual anthropology, which focuses primarily on understanding visual representation of culture. In visual ethnology and anthropology, image and visual material are recognized as phenomena that are worthy of analysis and not merely illustrators of narrative. In visual research, research methods and strategies are tailored to the type of visual data. Marcus Banks discusses the classification of visual research methods and divides visual data into two categories:

1. Visual documents produced by the researcher
2. Visual documents produced by those on whom the research is being conducted

In recent years, with the collapse of the duality between observer and observee, a third type of visual data has emerged, called participatory representation. However, it is worth saying that these visual images or data have been discussed in most of the existing methodological sources from the perspective of their function in social research, but it is clear that they can also be used from a methodological perspective in artistic research [13, 14].

## Ardabil carpet

Ardabil Carpet (Figs. 1 and 2) is a pair of famous Iranian carpets placed in the tomb of Sheikh Safi al-Din Ardabili. In terms of design and texture, this carpet is considered to be one of the most exquisite and most famous carpets throughout the world, which has been included in the list of 50 selected artistic masterpieces of the world. Art experts consider this carpet to be a unique abstract artwork with its beautiful designs and motifs that is equivalent to the abstract paintings of the present century in terms of artistic level (Stead, 1974).

According to the writings, some sources reinforce the possibility that Shah Tahmasb I ordered weaving the carpet in 930 AH (1524 AD) and that the carpet was woven by Maghsoud Kashani, master of carpet weaving, alone in sixteen years. The pattern of the carpet is designed based on the image of the candelabrum house (Ghandil Khane) ceiling, and those who entered the room would see the floor and ceiling of the hall in one design that evokes the mentality of the Safavid mystics regarding the unity of being, there is one design from the earth to the empyrean.

In the design of the main carpet pattern, there is a sea of delicate shank and leaf motions using Shah Abbasi colors. In the carpet pattern, some mental and spiritual states are felt, including in the navy blue color of its text, that would make the shrine have a sacred state. The presence of two petals on the carpet demonstrates its sacredness and validity, and the carpet medallion containing 5 oval pendants is considered as a sign of the sun. On the margin of the carpet there is a series of frames that also still exist in the tile-work of the monument's ceiling. The use of Turkish knots and wool of Azerbaijan in weaving the carpet and also the necessity of its supervision by the then king who ruled in Tabriz make the possibility of weaving the carpet in this city get close to certainty. The couplet "Save Thy threshold, my shelter in the world is none. Save this door, my fortress-place is none." and the phrase "Work of your servant Maghsud Kashani 946 AH (1540 AD)", which is woven on the carpet, indicate that the weaver is Maghsud Kashani. This carpet is a special milestone in the history of Iranian carpet weaving industry, as it has been woven for the complex and a kind of innovation has been used in its design. The carpet's pattern is absolutely innovative due to the lack of use of geometric shapes that were common in most carpet of Iran at the time. As the years go by, every carpet woven into this motif is still called Sheikh Safi pattern (Jackson, 2016).



Figure 1- Ardabil Carpet in Jamel Gallery



Figure 2 - Ardabil Carpet, Iran c1540 CE, AH 946, Los Angeles County Museum of Art [16]

Ardabil carpet is as a masterpiece of Iranian carpet weaving which has three main characteristics. The first characteristic is that it was woven in the Safavid era, which was the period of development of and attention to the arts, especially the Iranian carpet. On the other hand, in the pattern of this carpet an evolved medallion has been used and finally it has the date of weaving and the name of the master weaver on it. The symmetry and balance in the elements of Ardabil carpet resemble miniature and illustrated manuscripts, and the top and bottom of its medallion is a cryptic motif of the candelabras (Ghandil) that once lighted the sheikh's shrine. Due to the presence of the common motif of the northwest medallion carpets in this carpet (Fig. 3), it is considered to be of this category (Maghsoudi, 2013).



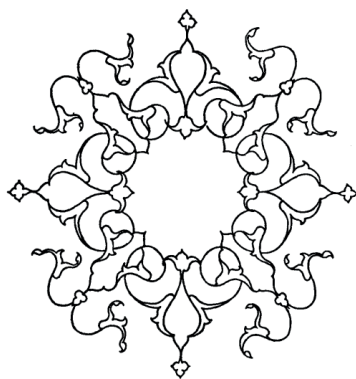


Figure 3. Schematic of the Northwestern Medallion Carpet of Iran (Stead, 1974)

The wool yarns used with Sehna or Persian knots on the carpet and near the candelabra on the silk threads give this carpet an extraordinary design. Aside from the outer boundaries and part of the olive ground in the Los Angeles Ardabil carpet, the overall size of which has been shrunk, the carpets are almost identical. Weaving important carpets in pairs (two cases) in the 16th century in Iran was common. While some features and placement of, for example, central sunflower medallions are exactly identical in both works. There are changes in weaving technique and wool quality, along with minor changes in design. The warps and wefts are the same: both are of silk without fat, with twisting Z-spun, S-ply and weft in three boughs- each coupled bough that ends. Significant and confusing differences are found in the number of knots, the texture and the length of the candelabrum, curious enough. In London works, there are seventeen to eighteen manual knots per inch, while the Los Angeles carpet has nineteen to twenty knots on average. As a result, there are 297 to 324 knots per square inch in the London Ardabil carpet and 380 to 420 knots per square inch in the Los Angeles carpet. In general, the quality of candelabrum in London carpet is harder, shorter, stronger and denser in packing. However, Marjani Ardabilis have a multilevel design that presents an almost three-dimensional image to the viewer. As a result, there are 297 to 324 knots per square inch in the London Ardabil carpet and 380 to 420 knots per square inch in the Los Angeles carpet. In general, the quality of candelabrum in London carpet is harder, shorter, stronger and denser in packing. However, Marjani Ardabilis have a multilevel design that presents an almost three-dimensional image to the viewer. This is due to the Fugue-like complexity of the original design in which the original medallion is with sixteen Oygol. The flower ground all is different against the vibrant blue background and the beat and tonality. The bold and unique use of the Safavid dye affects the whole carpet. Ten colors have been used in design of Ardebil. Except for areas with white backgrounds, it has been taken from the color of natural materials perhaps all vegetables. Age, weather conditions and exposure to light inevitably lead to color fading (Zadeh, 2017).

In some areas, such as the green part, knots of the carpets are more visible. It can be surely assumed that some of the origins of the traditional dyes known in Persian carpets are related to Ardebil. Therefore, the three shades of blue are probably derived from indigo, as in fact repeated immersion probably produces black Ardabil as well. Although the green color of Ardabil may be the result of meeting between blue and yellow, this color can be obtained from ripe turmeric. Pomegranate extract was probably used for making yellow, although saffron is also a source of yellow. White or cream areas are not of natural wool. The three reds used may have a wild base (Rudner, 2011)

The main design element in the Ardabil carpet is the large central medallion, a yellow light with decorative beams of red, green and dark cream (Figure 4). The medallion is covered with blue rose motifs, which in turn provide a uniform yet symmetrical shape. These are like ashes scattered in the wind. There are also Chinese cloud knot motifs brought to Iran by the Mongols. At the center of the medallion, it is not immediately recognizable because it is almost as a large internal medallion (Fig. 4). These ornaments, which look magically below the water's surface, have been enhanced on the surface of bright blue and floating lotus blossoms. This picture with flowering plants is on an edged background (Armstrong, 2018).

In many northwest medallion carpets of the 16th century, the bar and pendant knot above and below a longitudinal axis in the central medallion appear very much like the cover of books in this period. The main and most creative design feature of this carpet is that it changes this frame with a completely different approach that has never appeared in any other Iranian carpet of this period. Instead of pendant knots and pendants, candelabras of various styles have been used in the form of pendants at the highest and lowest levels of sharp panels, which in turn are aimed at the outside of the lotus blossoms (Junod, 2012).



Figure 4- Central Medallion of Ardabil Carpet

The main parameter considered by researchers to study the carpet in order to justify the carpet's pattern is the place for which the carpet has been woven. Ardabil carpet has been woven for the tomb of Sheikh Safi al-Din Ardabili. These candelabras are, in fact, the embodiment of verse 35 of the Holy Surah Nur: Allah is the Light of the heavens and the earth. The example of His light is like a niche within which is a lamp, The lamp is within glass, the glass as if it were a pearly [white] star, Lit from [the oil of] a blessed olive tree, there are small medallions designed around the main medallion and on each side of that there is a candelabrum that symbolizes the sacredness of the carpet and a quarter of the main motif of the carpet is woven on the four corners of the carpet.

Ardabil carpet background is dark blue and its flowers and arabesque designs are woven in red, green and yellow and consist of buds and foliage, arabesque knots (band), Shah Abbasi flowers that are woven masterly and despite the simplicity, the motifs are scattered throughout the carpet in such a way that the viewer perceives an endless wealth and a comfortable life full of blessings from it (Schapiro, 1938).

This basic design element has been used on a blue and azure deep field with a dark color. A dominant tonality with a large number of blossoms, consisting of curveless crowns and intertwining leaves. The blossoms are a typical Persian motif of the sixteenth century: a traditional Sassanid lotus, crossed with Chinese peony. In some cases, these Safavid creativities seem to be completely disorganized and in some others sprout barely comes out of the figure. These are balanced with astounding accuracy - no difficult arrangement - they seem to be scattered in the field. Crenate leaves have not been observed botanically from the plant point of view as shown. In this carpet, these leaves are similar to rose leaves (Soleymani, 2014).

## Conclusion

Ardabil carpet has a history of about 500 years. The carpet was woven in the first half of the 16th century by a team of weavers working under the supervision of a weaving master at the court of Shah Tahmasb Safavi. The Ardabil Carpet existing in London is as an artwork obtained from two original carpets rebuilt for a nineteenth-century art market that makes the complete masterpiece valuable. This carpet has been used in cultural policies between East and West. Its replica has been used as a model for the consumer in the global carpet production system. The glory of this carpet has been endorsed by professionals every decade. Each of these transfers has risen issues that have contributed to the progress of "Oriental" discourse. Nevertheless, this carpet has had its own independent life and has followed its path.

Finally, in a sentence, we can say that the unique design of these carpets observing special visual principles and qualities along with the artistic coloring, while paying attention to the aesthetic factors, is the main factor of their durability and beauty. Visual analysis also showed that this carpet, even in the eyes of ordinary people, is different from all other carpets. The significant difference between this carpet and its uniform reflects the genius used at the time of its design, which is still used as an eye-catching motif in modern design.



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