PRE-SERVICE TEACHERS' MOTIVATION AND ATTITUDE TOWARDS BILINGUAL EDUCATION AT KAZAN FEDERAL UNIVERSITY, RUSSIA

L. Salekhova, A. Danilov, R. Zaripova, K. Grigorieva, O. Malancheva

Kazan Fedaral University (RUSSIAN FEDERATION)

Abstract

The article is devoted to the study of motivation and attitude of the university students to bilingual education in Russian and Tatar languages, implemented at Kazan Federal University (KFU), Republic of Tatarstan. The Republic of Tatarstan is a region of the Russian Federation where ethnic and cultural diversity have always been of particular importance due to its specific historical development. Tatars is the second largest ethnic group in Russia, so the development of bilingual education is the issue of primary importance. In 2018, the Ministry of education of the Republic of Tatarstan launched a "Bilingual Teacher" project that is aimed at training teachers for bilingual Tatar-Russian schools. A subject teacher must have bilingual competence, i.e. the ability and willingness to teach curricular subjects using two (Tatar and Russian) languages. Currently, there are 365 students studying at KFU on a bilingual basis. When implementing the project, it is important to monitor the effectiveness, adjust and improve the developed model of bilingual education. One of the factors is to monitor the attitude and motivation of bilingual students to studying on a bilingual basis using Tatar and Russian languages. For this purpose the survey was held among 153 first- and second-year bilingual pre-service teachers of KFU. The questionary and its results were developed and analyzed using the Likert scale and Spearman's rank correlation coefficient. Data analysis and the results of the survey assessed students' motivation in terms of bilingual training programs, students' attitudes towards using Tatar as a language of instruction and the importance of studying major-related subjects like mathematics, computer science and physics in Tatar. The results of the study showed that students are motivated to study major-related subjects in Tatar, they have positive attitude towards bilingual training programs, and they also appreciate the opportunity to study major-related subjects by means of their native (Tatar) language. Moreover, bilingual programs improve students' attitudes towards Tatar language as a language of instruction and as a language of communication in non-academic contexts. However, the study revealed a number of problems. Thus, 47% of respondents do not like using information technologies (IT) to study subject content by means of Tatar language. Apparently, this is due to the fact that the Tatar language is not widespread enough in the field of IT. Attention should be paid to development of digital educational resources in Tatar. It should be noted that 36% of respondents did not agree with the opinion that they feel comfortable when a teacher uses two languages in the classroom. This can be explained by the fact that they had no experience of bilingual education at school. In order to maintain a positive attitude and motivation among students, the support of a mentor is important and more attention should be paid to the strategy of scaffolding (language and cognitive support). Despite the fact that students are rather positive and motivated to study subjects in a bilingual program, the results of the survey show that studying a larger number of subjects in Tatar can negatively affect their attitude to the bilingual program. Further research is needed to improve motivation and attitudes, as well as understanding the academic and linguistic achievements of students in bilingual programs.

Keywords: Bilingual education, Tatar language, Russian language, language of instruction, motivation, attitude towards bilingual learning.

1 INTRODUCTION

Russian Federation (RF) is a vast country with a huge territory. As a result policies and attitudes to bilingualism and bilingual education (through Russian and national languages) have specific peculiarities and features depending on the region. The article describes students' motivation and attitudes towards bilingual education by means of Russian and Tatar languages in the Republic of Tatarstan (RT). RT is an administrative region of the RF where such ideas as ethnocultural diversity, interethnic and interreligious relationship have always been of primary importance due to the specific historical development of the region.

Tatar is the language of the ethnic majority. Russian is a must for academic communication, Russian mainly is used as a medium of instruction especially in high school. Russian provides opportunities for achieving more ambitious goals and professional growth that means Russian is the language of socio-economic development [1]. Nevertheless, Tatar is still very important. As Tatars use both languages, the majority of Tatars are bilingual. It can be said that the Republic's language policy in the educational sphere turned out to be more successful than in the neighboring regions, for example Chuvashia, Mordovia, Mari El or Udmurtia [2, 3].

Bilingual and multilingual education has been successfully implemented in the RT. Thus, in 2018 the ministry of education of RT launched two educational projects aimed at developing bilingual and multilingual education in the region. The aim of the first project "Adimnar – a pathway to knowledge and harmony" is to create a model of a modern multilingual school providing students with competitive education by means of Russian, Tatar and English languages and personal development in terms of preserving interethnic concord. The concept of a multilingual school was developed in accordance with the federal and ethnocultural needs of all the multiple nations of Tatarstan and RF [4]. The second project "Bilingual teacher" that has been implemented at the Kazan Federal University is aimed at training teachers for the new multilingual schools. The main goal of the project is training bi- and multilingual subject teachers, i.e. those who are able and ready to work successfully at school using 2 (Tatar and Russian) or 3 (Tatar, Russian and English) languages. One of the tasks in terms of scientific and methodological support of the project is the monitoring of the bilingual education effectiveness, its adjustment and enhancement. For instance, students' motivation and attitudes towards bilingual education by means of Russian and Tatar is being researched.

Motivation and attitude are two main factors defining students' academic success. Motives, namely specific intentions or reasons that make a person function, constitute the basis of motivation. Motives define student's attitudes towards the object of their activity. Motives are complicated dynamic systems where alternatives are analyzed and assessed and decisions are made. There are multiple approaches to defining the notion of motivation, its nature and structure in psychological and pedagogical literature (L.I. Bozhovich, A.N. Leontjev, A.K. Markova, A. Maslow, S.L. Rubinshtein, E. Fromm, etc.). Academic motives are of primary importance. It is possible to understand students' academic motives by assessing students' attitudes and personal interests to learning. This particular research deals with pre-service bilingual teachers' attitudes and motives. In terms of bilingual education the role and the place of the target language changes. It becomes not only a curricular subject, but also a medium of instruction. According to Siguan and Mackey [5], a bilingual person is a person who knows and uses two languages (L1, L2) equally well and is able to use both in different situations. In our research a bilingual student is a person who uses two languages while learning.

The issue of motivation in terms of second and foreign language acquisition has been widely discussed by Russian and foreign scientists [6-7]. Gardner defines two types of second language acquisition: instrumental motivation that is connected with some practical reasons and integrative motivation that is connected with cultural component and desire to communicate with native speakers [8]. Dörnyei [9] assumes that motivation influences students' success rate. If there is no motivation, even the best students with outstanding abilities are unable to achieve long-term goals. At the same time, motivation plays an important role in second and foreign language acquisition; it is an integral part of a person's identity and a form of social organization integrated into cultural community.

Gardner and Lambert [10] came to the conclusion that students' ability to achieve advanced level of second language acquisition doesn't only depend on their cognitive or linguistic abilities, but on comprehension and attitudes towards the target language. Victori and Lockhart [11] state that students' negative believes are closely connected with anxiety, insufficient cognitive progress and negative attitudes. Supporting this view point, Reid [12] indicates that attitude is connected with student's achievement; second language acquisition doesn't only presume student's cognitive abilities but attitudes towards the target language as well.

According to Latchanna and Dagnew [13], attitude is a suitable notion for understanding human behavior and is defined as a psychological state including feelings and beliefs. Following Lennartsson [14], motivation and desire to acquire the second language are more important than social factors. Positive attitude has positive impact on students' motivation. Yang Yuqian [15] studied the attitudes of students and teachers from two universities in Western areas of China towards bilingual education. In contrast, the research showed that students had pessimistic attitude towards bilingual learning and didn't realize the importance and opportunities of bilingual education in terms of their personal development in the long run.

Jurado and García [16] studied students' attitude and motivation towards Spanish-English bilingual programs. The results showed students' high motivation and positive attitudes towards mathematics and physics within bilingual programs. However, special attention should be paid to different teaching methods and individual pace of learning.

Despite previous research, we focused on the first- and second-year university students' motivation and attitudes towards bilingual education. These are pre-service teachers of mathematics, physics and computer science being trained through bilingual programs. English, being modern lingua franca, was used as a target language in the previous research. We tried to implement a model of bilingual education by means of Russian (the language of interethnic communication in Russia) and Tatar (national) languages within tertiary education.

2 METHODOLOGY

The concept of bilingual's full linguistic repertoire [17] and the holistic approach constitute the basis for implementing bilingual model of pre-service teachers' training at KFU. The above-mentioned approach presumes that both languages (Russian and Tatar) should be used while teaching.

Today 365 first, second and third-year students of KFU are involved in bi- and multilingual programs. They are majoring in mathematics, physics, music, foreign languages, etc. English is a curricular subject for junior students. However, with senior students it is used as a language of instruction in order to develop pre-service teachers' multilingual competence.

The aim of the research is to answer the following research questions:

1   Does the bilingual program motivate the students?

2   Does the bilingual program improve the attitude of students towards Tatar language?

3   Do the students appreciate the possibility of studying mathematics, physics and computer science through Tatar?

The received answers will help to characterize motivation and attitudes of pre-service teachers of mathematics, physics and computer science towards bilingual education by means of Tatar and Russian at Kazan federal university. In our research, we used survey as a method of studying motivation. The questionary was entitled «Motivation and attitude of students towards bilingual education through Tatar and Russian languages».

In order to process and analyze the received data, the Likert scale and Spearman's rank correlation coefficient were used. The score method provided us with quantitative estimation of respondents' attitudes suitable for analyzing the intensity of concern in the studied aspect. The Spearman's rank correlation coefficient was used in order to highlight the meaningful statements in the initial version of the questionary. The Likert scale is used to define respondents' attitudes towards the problem under study by showing their agreement or disagreement with the statements about the stimulus objects. The classical version of the Likert scale used in the research is the 5-point scale [18]. Student's positive attitude towards the statement is coded by a larger number (5) and negative is coded by a smaller number (1). Theoretical validity of the questionary was proved by three experts (in bilingual education, computer science and applied linguistics) who corrected the statements.

In order to define the internal consistency of the questionary statements, the Cronbach's alpha formula was applied:

$$\alpha = \frac{k}{k-1}\left(1 - \frac{\sum_{i=1}^{k} \sigma_{Yi}^2}{\sigma_X^2}\right),$$

where σ_X^2 denotes the variance of sum of all the answers and σ_{Yi}^2 denotes the variance of the sum of points for the i-th respondent. The coefficient value is greater than 0,9. This proves the internal consistency of the questionary as well as possibility to use it with the following sample of respondents.

53 1st and 2nd year pre-service bilingual teachers majoring in bilingual teaching of mathematics, physics and computer science took part in the survey. As we were interested in students' motivation and attitudes towards bilingual education by means of Tatar and Russian, it was vital to define the level of students' language proficiency in both languages. The highest score in Russian is 98 and the lowest is 59; the mode is 89, the median is 79 and the average score for the sample is 78,9 (SD=8.8).

The average score is rather high proving that students have a good command of basic interpersonal communicative skills in Russian.

The respondents took part in the survey that was aimed at self-assessing the level of their Tatar language proficiency. The results showed that 19% of the respondents have the basic level of language proficiency and 81% showed the average level. When entering the university the students had to take a test to define the level of Tatar language proficiency according to Common European Framework of Reference (CEFR). Comparison of the results of self-assessment and independent testing show that they are almost identical as 86% of bilingual students have B1-B2 (average and above average) and 14% of respondents possess A2 (basic level) level of Tatar language proficiency.

We conducted a survey in order to assess the Likert scale statements and created a summative table for the survey results. Spearman's rank correlation coefficient was calculated in order to check the quality of every statement in the questionary. The calculations were made according to the following formula:

$$R = 1 - \frac{6 \sum d^2}{n(n^2-1)},$$

where d denotes the difference of rank pairs for i-statement, n denotes the number of respondents.

To interpret the received data it was necessary to define the limits of calculated indicators that allowed determining the strength of correlation between the characteristics.

As a result we analyzed the answers to the following 10 statements presented in Table 1.

Table 1. Statements with high rate of Spearman's rank correlation coefficient

№	Statement
1	Students like to communicate in Tatar.
2	Students like to use information technologies to study subject content in Tatar.
4	Students approve of studying mathematics, physics and computer science through Tatar and Russian.
6	Students feel comfortable when a teacher uses two languages in the classroom.
7	Studying subject content through Tatar is useful for students.
11	Students like to speak Tatar with teachers.
12	Students look forward to having mathematics, physics and computer science classes in case a teacher uses both languages.
13	Students like it when a teacher uses Tatar during lectures and seminars in physics, mathematics and computer science.
14	Students would like to study more subjects through Tatar.
15	Parents appreciate the fact that teaching mathematics, physics and computer science is based on bilingual approach.

3 RESULTS

In order to answer the three research questions, the analyzed data and results were grouped in accordance with three dimensions.

The first dimension deals with students' motivation in terms of bilingual education, and the received results answer the first research question. The results of respondents' assessment of statement №1 are presented in Fig. 1.

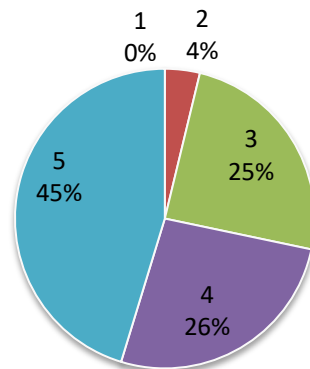## Students like to communicate in Tatar

Figure 1. Results of respondents' assessment of statement №1

Majority of students (71%) showed positive attitude towards the usage of Tatar as a means of communication; 25% partially agreed with the statement and 4% demonstrated slight disagreement.

According to Fig.2, students (53%) like using ICT to study content in Tatar. At the same time 47% of respondents slightly agree or disagree with the statement.

Students like to use information technologies to study subject content in Tatar
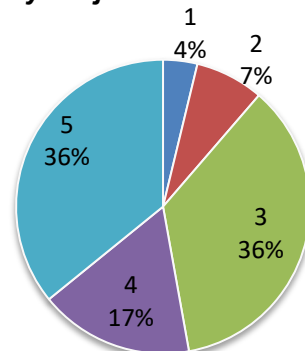
Figure 2. Results of respondents' assessment of statement №2

Having analyzed the results (Fig.3), we came to the conclusion that 70% of the respondents welcome the idea of studying mathematics, physics and computer science through both Russian and Tatar. Simultaneously, 30% of students disagree with the following statement.

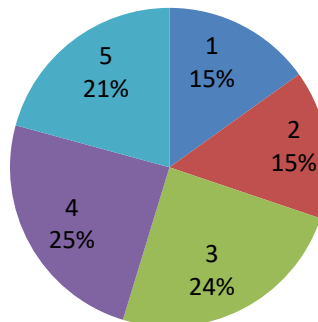## Students approve of studying mathematics, physics and computer science through Tatar and Russian

Figure 3. Results of respondents' assessment of statement №4

The results presented in Fig.4 show that 64% of students feel comfortable when a teacher uses both languages in class. 36% do not agree with the statement.

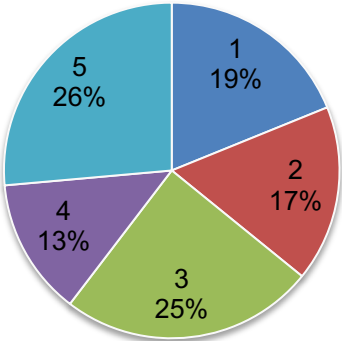**Students feel comfortable when a teacher uses two languages in the classroom**

Figure 4. Results of respondents' assessment of statement №6

The second dimension deals with students' attitude to bilingual Tatar-Russian program; it provides the answers for the second research question. The majority of students (57%) agree and 28% slightly agree with the statement that using Tatar for studying subject content is useful (Fig.5).

Studying subject content through Tatar is useful for students
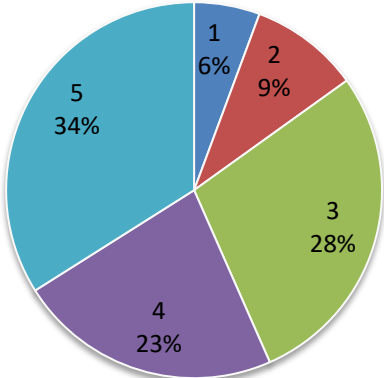
Figure 5. Results of respondents' assessment of statement №7

Only 17% of respondents do not like to communicate with teachers in Tatar. The majority of students approve of the idea (Fig.6).
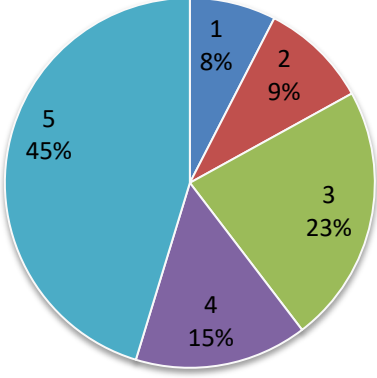
Students like to speak Tatar with teachers

Figure 6. Statement №11 responses

The last dimension was connected with the third research question when the students assessed the possibility to study major-related subjects like mathematics, physics and computer science through Tatar. The survey showed that 47% of students looked forward to having classes that were conducted in Tatar; 27% of the respondents disagreed with the statement and 27% slightly agreed with statement 12 (Fig.7).

Students look forward to having mathematics, physics and computer science classes in case a teacher uses both languages
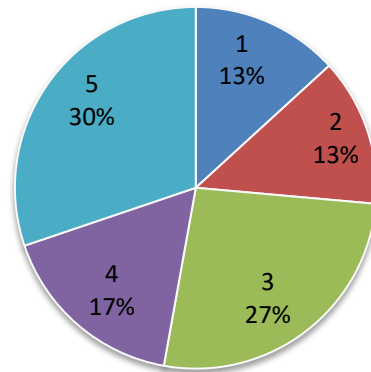
Figure 7. Results of respondents' assessment of statement №12

The students appreciate it when lectures and classes are conducted in Tatar (81%) (Fig.8).

Students like it when a teacher uses Tatar during lectures and seminars in physics, mathematics and computer science
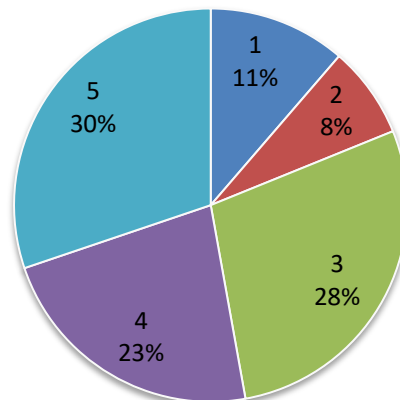
Figure 8. Results of respondents' assessment of statement №13

Fig.9 shows that 55% of the respondents would not like study more major-related subjects through Tatar at the university. Although 25% of the respondents express the opposite opinion.

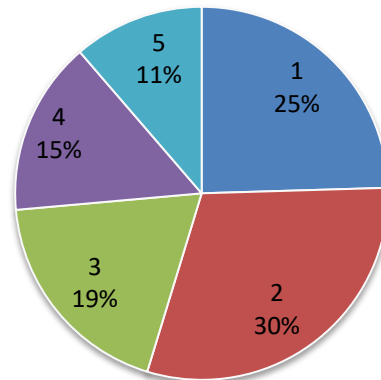**Students would like to study more subjects through Tatar**

Figure 9. Results of respondents' assessment of statement №14

The majority of bilingual students (74%) think that their parents are satisfied with the fact that major-related subjects like mathematics, physics and computer science are taught in Tatar. However, there are respondents (26%) who are not satisfied with the statement (Fig.10).

Parents appreciate the fact that teaching mathematics, physics and computer science is based on bilingual approach
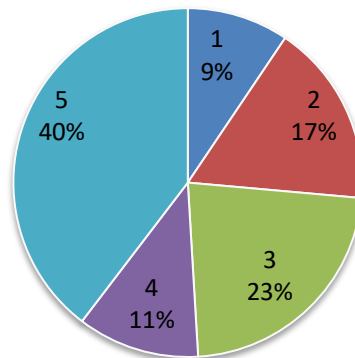

Figure 10. Results of respondents' assessment of statement №15

4   CONCLUSIONS

The results of the research show that the students are rather motivated and feel positive about participating in the bilingual educational program. They appreciate the opportunity to study mathematics, physics and computer science by means of Tatar language. The bilingual educational program improves pre-service teachers' attitudes towards using Tatar not only as the language of communication in non-academic contexts but also as the language of instruction. However, 47% of respondents do not approve of using IT to study content in Tatar. Apparently, this is due to the fact that Tatar language is not widespread in the field of IT; there is also lack of information resources in mathematics, physics and computer science in Tatar. It is vital to pay more attention to the development of digital bilingual Tatar-Russian resources. It should be noted that 36% of respondents do not agree with the opinion that they feel comfortable when a teacher uses two languages in the classroom. This can be explained by the fact that they find it difficult to switch between languages. The level of students' language proficiency in both languages differ greatly. For instance, 57% of students had B2 and lower in Tatar when entering the university; when at school, they had no experience of bilingual education based on holistic approach that implies using students' full linguistic repertoire. In order to maintain positive attitude and motivation, the support of a mentor is important and more attention should be paid to using scaffolding techniques aimed at both linguistic and cognitive support.

Despite the fact that students are rather positive and motivated to study curricular subjects in a bilingual program, too many curricular subjects taught through Tatar can negatively affect their attitude towards the bilingual program.

However, the research should have paid more attention to the linguistic inhomogenuity of respondents as their levels of language proficiency in both Russian and Tatar differ significantly. Linguistic diversity is an essential factor that requires thorough research. Special attention should be paid to different teaching methods and individual pace of learning. Further research is needed to improve motivation and attitudes, as well as understanding of students' academic and linguistic achievement in bilingual programs.

ACKNOWLEDGEMENTS

REFERENCES

[1] Wigglesworth-Baker T. Language Policy and Post-Soviet Identities in Tatarstan. Nationalities Papers. 2016; 44 (1): 20–37. DOI:10.1080/00905992.2015.1046425

[2] Alos i Font H. Chuvash Language in Chuvashia's Instruction System: An Example of Educational Language Policies in Post-Soviet Russia. Journal on Ethnopolitics and Minority Issues in Europe. 2014; 13 (4): 52-84.

[3] Marquardt K.L. Language and Sovereignty: A Comparative Analysis of Language Policy in Tatarstan and Kazakhstan. Identity and politics in Central Asia and the Caucasus. 2013; 44-68. URL: https://www.international.ucla.edu/media/files/Marquardt_PoCA_4-fj-lrh.pdf (accessed 10.08.2020)

[4] The construction of a multilingual complex in Kazan continues. Portal Ministerstva obrazovaniya i nauki Respubliki = Tatarstan The site of the Ministry of education and science of the Republic of Tatarstan. URL: https://mon.tatarstan.ru/index.htm/news/1682685.htm (accessed 10.08.2020)

[5] Siguan M., Mackey W.F. Education and Bilingualism. Paris; 1987. 147 p.

[6] Zimnyaya I.A., Rogova G.V. Psychology of teaching foreign languages at school. Moscow: Prosveshchenie; 1991. 222 p.

[7] Rogova G.V. Rabinovich F.M., Saharova T.E. Methods of teaching foreign languages in secondary schools: theoretical and practical methodological guide. Moscow: Prosveshchenie; 1991. 287 p.

[8] Gardner R. C., Lalonde R. N., Moorcroft R., Evers F. T. Second language attrition: The role of motivation and use. Journal of Language and Social Psychology. 1987; 6 (1): 29-47.

[9] Dörnyei Z. Motivation in second and foreign language learning. Language Teaching. 1998; 31 (3): 117-135. DOI:10.1017/s026144480001315x

[10] Gardner R.C., Lambert W.E. Attitudes and Motivation in Second Language Learning. Rowley, Mass.: Newbury House Publishers; 1972. 313 p.

[11] Victori M., Lockhart W. Enhancing metacognition in selfdirected language learning. System. 1995; 23 (1): 223-234. DOI:10.1016/0346-251X(95)00010-H

[12] Reid N. Getting started in pedagogical research in the physical sciences. Hull: LTSN Physical Sciences Centre, University of Hull; 2006. 78 p.

[13] Latchanna G., Dagnew A. Attitude of teachers towards the use of active learning methods. E-journal of All India Association for Educational Research. 2009; 21 (1). 4 p.

[14] Lennartsson F. Students' motivation and attitudes towards learninga second language: British and Swedish students' points of view. Växjö: Linnaeus University Press; 2008. 35 p. URL: http://urn.kb.se/resolve?urn=urn:nbn:se:vxu:diva-2571 (accessed 10.08.2020)

[15] Yuqian Y. An Investigation on the Students'Opinions of Bilingual Teaching in Universities of Western China. Journal of Education and Training Studies. 2018; 6 (12). 12 p. DOI:10.11114/jets.v6i12.3594

[16] Jurado C.B., García M.C. Students' attitude and motivation in bilingual education. International Journal of Educational Psychology. 2018; 7 (3): 317-342. DOI: 10.17583/ijep.2018.3558

[17] García O. Bilingual Education in the 21st Century: A Global Perspective. West Sussex, UK: Wiley-Blackwell; 2009. 496 p.

[18] Derrick B., White P. Comparing Two Samples from an Individual Likert Question. International Journal of Mathematics and Statistics. 2017; 18 (3): 1-13.