LOOK	IEJME — MATHEMATICS EDUCATION
OPEN ACCESS	2016, VOL. 11, NO. 6, 1607-1620
OI EN ACCESS	

# On the Problem of Formation of the Future Teacher's Willingness to the Museum Materials Usage in Teaching and Educational Process of University

Daulet K. Omarov<sup>a</sup>, Sharban M. Maigeldiyeva<sup>a</sup>, Zhetkergen M. Utegenov<sup>a</sup>, Zhannat M. Maigeldiyeva<sup>a</sup>, and Sandigul K. Daribaeva<sup>a</sup>

<sup>a</sup>Korkyt Ata Kyzylorda State University, Kyzylorda, KAZAKHSTAN.

#### ABSTRACT

The article presents the materials on the formation of the future teachers' willingness to foundations usage of the museum pedagogy in the educational process of high school. Are highlighted scientifically substantiated pedagogical conditions, which are necessary for the implementation of this process, namely the insertion of the pedagogical museum component in the content of the theoretical training of future teachers; inclusion of museum-pedagogical problems in the students' research activities; the educational museum tasks system performing during the teaching activities; perform of the educational-museum tasks system during the teaching practice; the future teachers' immersion into the educational-museum environment in the process of extracurricular work. In the article they are confirmed by experimental results. The feature of museum pedagogy is to visualize an object of study, what significantly increases the students' interest to learn. The students also develop the cultural and aesthetic tastes and a growing interest in history. On completion of the experiment, which took place in Korkyt ata Kyzylorda State University, the participants of which amounted 374 people, a survey was carried out, which showed that the students' interest in museum education has grown considerably. The designed course includes the theoretical and practical classes and is intended for 15 hours.

KEYWORDS Museum pedagogic, museum funds, museum materials, future teacher's willingness, the spiritual-moral culture ARTICLE HISTORY Received 11 January 2016 Revised 5 May 2016 Accepted 9 June 2016

## Introduction

Today creating of an educational system that complies the world standards, is an extremely important task for Kazakhstan, since it is the leading apparatus for building a democratic, legal state, provides the economic and cultural development of the country. In this regard, the educational system reform should be carried out based on the scientific theory, scientific concepts and

**CORRESPONDENCE** Sharban M. Maigeldiyeva Sharban56@mail.ru © 2016 Omarov et al. Open Access terms of the Creative Commons Attribution 4.0 International License (http://creativecommons.org/licenses/by/4.0/) apply. The license permits unrestricted use, distribution, and reproduction in any medium, on the condition that users give exact credit to the original author(s) and the source, provide a link to the Creative Commons license, and indicate if they made any changes.

## 1608 🕥 D. K. OMAROV ET AL.

models of comprehensive modernization of education with the involvement of the necessary human and economic resources that allow the republic to worthy enter the world educational system (The State Program for Development of Education of the Republic of Kazakhstan for 2011-2020, 2010).

Providing high professional competence, competitiveness, high professional specialist is one of the most important socio-economic fields of education, since the citizens' social protection in the conditions of the market largely depends on the level of education, professional qualifications, competencies and skills of each one of them.

Previously, the main purpose of professional education was to obtain some knowledge, the formation of practical skills, but now the main goal is formation of a competitive professional personality possessing skills of knowledge transfer into new working conditions, the skills of self-acquire the necessary knowledge. At the same time, preparation of highly skilled specialists has always been fundamental to the mission of any higher education institution, regardless of the profile orientation and the specific purpose of the university. If we consider the quality of training as an accordance of purpose and the internal market demand, the overall high school satisfied them, ensuring with manpower all the field of socio-cultural and economic activities.

The entry of the Republic of Kazakhstan into the world community as a sovereign state makes a new way to assess the quality of specialists training in universities. Now the quality of education should be considered not only as a category of internal satisfaction of the society needs, but also as a phenomenon of the interstate format.

Internationalization of education, the increase of the academic mobility of teachers and students are today's realities and it is important not only to recognize this fact, but also to carry out actions, aimed at further progressive development and improvement of high school, as well as the process of preparing future professionals in the universities of Kazakhstan.

By signing and ratifying the Lisbon Recognition Convention on the qualifications recognition concerning with the high school education in the European region, Kazakhstan committed itself, as well as a number of states, on bringing the educational system to the requirements, which apply to the current and perspective needs of the person, society and state. One of the most important tasks at this stage is the insertion of the quality valuation system in Kazakhstan, which allows objectively describing the activities of the educational institutions, the process of the young professionals training. It is logical that a qualitative education is provided in schools, which correspond to the requirements of modern society.

The development of modern education, the continuous professional increase, retraining and further prosperity of the Kazakhstan peoples culture is one of the most important and long-term state policy. The confirmation of that is the adopted in 2007 Law "On education in the Republic of Kazakhstan" (2007), in 2010 the State Programme for the Education Development of the Republic of Kazakhstan for 2011-2020 (2010), the annual Messages of the President of Kazakhstan Nursultan Nazarbayev (Kazakhstan's way – 2050, 2014, January 17). Government documents emphasizes that the qualitative education, highly qualified personnel training, the formation of professional skills of future specialists are the main task for the present time in the overall system of Kazakhstan higher education.

In modern conditions of Kazakhstan social and economic life modernization is increasing the demand for competence, competitive, highly qualified professionals, which are ready to work effectively at the level of world standards (Mukhtarova & Smith, 2014). On this basis, one of the priority tasks of higher education system is to prepare a proactive, creative educator, which combines a high level of culture, education, intelligence, professional competence that contribute to the success of the professional activity and are components of professional pedagogical culture (Abykanova, et al., 2016) emerging not only in the process of training, but also in the interaction with social institutions, one of which is a museum.

Museum is a historical socio-cultural institution, preserving in the original material objects the cultural universal values, evidence of social and historical development and different ways of being. In the museum environ, through the exposition materials implements the transition and broadcast of spiritual and cultural experience accumulated by mankind (Watermeyer, 2015; Hooper-Greenhill, 2004).

Currently, the role of the museum in the socio-cultural environment is related to the expansion and deepening of its educational function. The demand degree for public information capacity of the museum coincides with its inherent functions – to be the guardian and translator of the original culture testimony. The main purpose of the museum educational process is the inclusion of a person in a single historical and cultural space.

Strengthening of the museum role in the young people education in general and the formation of their spiritual and moral culture in particular, contributes to the development of museum pedagogy as a branch of pedagogical science, which considers training and development of students at the museum material (Duh, 2015). The process of interaction between the museum and the university is expressed in intensifying of activities aimed at creating interactive events, development of museum-educational programs, guided tours (Foreman-Peck, and Travers, 2013). Solving the educational and training tasks, museum pedagogic contributes to the emergence of new forms of exposure, the introduction of the original technology and methods of museum work, methods of work with the audience. The emergence of the phenomenon of the virtual museum causes the need of identifying and solving new tasks in the work of the museum staff and teachers.

Thus, fulfilling the most important functions, such as education and upbringing, the museum seek for develop the cognitive interest of young people with specific funds usage, the need to address to the cultural and historical heritage, the desire to enrich the spiritual realm (Beery et al., 2013). The key to the success of this process is not only the active work of the museum staff, but also the mastering by educator the rich arsenal of museum-pedagogical funds.

However, now teachers do not have enough knowledge and skills to use and inclusion of museum and pedagogical material in the educational process of high school, so it is necessary to include in professional and pedagogical training of future teachers in general and in the development of their spiritual moral culture, museum-pedagogical component in particular (Din, 2015).

## 1610 💽 D. K. OMAROV ET AL.

Based on the foregoing, an urgent task facing the expert higher educational system is the formation of the future teacher's willingness to museum pedagogy funds usage, which emphasizes the need for theoretical and practical understanding of formation of the future teacher's willingness to the museum materials usage in the educational process of high school.

At the turn of the XIX and XX centuries the prerequisite for the birth of the museum-pedagogical thought was the realization of the museum as a sociocultural institution, which plays an important role in the formation, which is most clearly apparent in German, considered as the birthplace of museum pedagogy, and which have been developed and put into practice the most important museum-pedagogical ideas (Hooper-Greenhill, 2006).

The characteristic features of the museum pedagogy at the turn of XIX-XX centuries were: the need for an act of empathy in the process of perception of works of art, the need for the formation of aesthetic contemplation skills within the school educational process, the emergence of national excursion school, the occurrence of children's museums that have become the centers of alternative education. In 70-ies of XX century, it became necessary to develop the museum pedagogy, which provides a scientific approach to the interpretation of museum collections based on the usage of pedagogical and psychological principles (Uyen Tran & King, 2007).

Museum pedagogy, as a branch of pedagogical science, was formed at the junction of the museology, pedagogy and psychology, and is considering the museum as an educational system that performs the function of knowledge, education, creativity and socialization (Tran, 2007).

The museum educational activity, as a specific form of museum activity, is characterized by the pedagogical orientation to development, education and training of the person by means of museum pedagogy. Museum and school interaction is carried out within two blocks: "School in the educational space of the museum" and "museum pedagogy in the space of school", where the main objectives are: the organization of museum excursions; conducting the work with the students before and after visiting the museum; creating a culture of behavior in a museum and pupil's independent research activity; development of design skills; development of the ability to work with the museum exhibition and museum objects; including funds of museum pedagogy in the educational process of the school and others.

Thus, some aspects of the interaction of the museum and educational institution – the school, as well as museum pedagogy usage, are reflected in pedagogical science, but at the same time the problem of the future teacher's willingness to museum materials usage in the highest echelon of educational system has been studied deficiently.

The analysis of the psychological and educational research and teaching practice indicate a contradiction between the need of the education system in pedagogy with the theoretical and practical training in museum materials usage as a means for the development of spiritual and moral culture and unformed future expert's willingness in the implementation of such activities.

#### Method

The comparative analysis of pedagogical and museological researches identified the following means of museum pedagogy: the forms (tour, museum lessons,

lectures, conferences, seminars, etc.), the methods (narrative, question-answer, problem, game, comparisons, contrasts, theatricality, dialogic communication, stimulating of independent activity, the creative competition), and the specific means of museum pedagogy (the museum object, the scientific auxiliary materials fund, museum exhibition, museum environment), which are an essential component of the museum organization and the pedagogical process in the conditions of the establishment and functioning of the museum environment.

In this work, are also used the scientific methods of analysis, systematization of theoretical data, statistical methods: simulation, questionnaires, interviews, observation, synthesis, comparative analysis and synthesis of the results. The experimental work was carried out based on the humanitarian- pedagogical faculty of the Korkyt Ata Kyzylorda State University, attended by 374 people in toward the training of the groups of pedagogical specialties 5B01000 – Education.

#### Data, Analysis, and Results

The museum resources usage in the educational process of high school allows to prepare students for the perception of museum information, contributing to their enrichment of scientific knowledge, revealing the natural and social phenomena, educates the respect for the cultural traditions of its people, provides an opportunity to acquire the practical skills of search and research activities, to develop the educational interest, instill the skills of observation and contributes to the development of associative thinking and the formation of public aspirations, moral and aesthetic feelings.

The aforesaid demonstrates the need of the insertion of the process of vocational training of the future teachers of special training, aimed at the museum materials usage.

One of the components of the willingness of professional work is the future expert's willingness of the museum materials usage. The future teacher's willingness of the museum resources usage is an integrative characteristic of the person, which is determined by professionally significant personal qualities, aimed at the museum-pedagogical work, special knowledge, skills and abilities that contribute to the implementation of the transfer of the educational material by students with the usage of the museum pedagogical funds as didactic.

The future teacher's willingness of the museum pedagogical funds usage is the aim and the result of professional training process, representing a synthesis of interrelated components: motivational, cognitive, active and reflective, where each component is aimed at solving a particular problem, and only their interaction makes this process effective.

The research of the current condition of the practicing teacher's and future teacher's willingness was conducted during the ascertaining experiment. 374 respondents took part in the experiment. The analysis of the data showed the levels of respondent's willingness of the museum resources usage (Table 1).

Table 1. Allocation of the respondents in accordance with the levels of willingness of the museum materials usage (in %)

	Levels	High	Medium	Low
№ o/n				
Teachers		-	48,3	51,7

# 1612 💽 D. K. OMAROV ET AL.

Students		-	11,1	88,9
To component	analysis at	the stage	of the ascertaining	experiment were
1.1 . 1 .	1 1 1	1 17 1 0.	1 1 (2010)	1 1.0. 11

used the techniques, developed by V. L. Sinebryuhova (2016) and modified by us. The results of this analysis are shown in the table (Table 2).

Table 2. The correlation of the willingness' levels and components (in %)

Levels of	Components of willingness				
willingness	Motivational	Cognitive	Active	Reflective	
Low	25,9	51,9	55,5	48,1	
Medium	66,6	48,1	44,5	51,9	
High	7,5	-	-	-	

The theoretical analysis, analysis of pedagogical activity of teachers, instructing in the pedagogical specialties, and analysis of the ascertaining experiment allowed building a model of formation of the future teacher's willingness of the museum materials usage in the pedagogical process of university.

The proposed model consists of three parts: objective, a meaningful and productive. The first block defines the purpose – formation of the future teacher's willingness of the museum materials usage in the course of high school preparation, concretized in the following objectives: improving the students' theoretical knowledge and practical skills in the field of museum pedagogy; activation of insertion the means of museum pedagogy into the educational process of secondary school during the period of teaching practice; development of the sustainable needs to master the teaching skills in the field of the museum pedagogy usage.

The second block of the model reveals the direction of students' activity in the process of formation of the willingness of the museum materials usage and the content of the willingness components through the criteria and indicators. The motivational willingness component is characterized by the interest of the museum pedagogy funds usage; positive emotional content to this type of activity; understanding the role of the museum pedagogy usage in the formation of the moral, spiritual, aesthetic spheres of the student. The cognitive component is formed by the sense of purpose, meaning and importance of the museum pedagogy usage in their relationship in the educational process; the need for special theoretical and methodological knowledge in the museum pedagogy usage, their depth and fullness. The active component includes possession of means and methods of the museum resources usage; skills of independent creative activity in the museum resources usage; active museum resources usage. The reflective component reflects awareness of reflexive action; adequate self-esteem use of museum resources; the ability to adjust its activity on the basis of reflection.

In accordance with the model the leading directions of students' activity during the training are: theoretical training, research and creative activities, practical-pedagogical work and extracurricular activities.

The third block of the model reflects the level of the future teacher's willingness of the museum materials usage: high, medium, low.

*The high level* is characterized by an active interest of the museum pedagogy funds usage; positive emotional content to this type of activity;

understanding the role of the museum resources usage in the formation of the moral, spiritual, aesthetic spheres of the individual student; awareness of purpose, meaning and significance of museum resources usage and their relationship in the educational process; the need of a special theoretical and methodological knowledge in the museum resources usage; mastering of the methods and techniques of the museum pedagogy usage; skills of independent creative activity and activity in the museum resources usage; adequate selfesteem, the ability to adjust its activity on the basis of reflection.

The medium level is distinguished by the not high interest in the museum pedagogy funds usage; insufficiently high positive emotional content to this type of activity; lack of understanding of the role of the museum resources usage in the formation of the moral, spiritual, aesthetic spheres of the student; not a full sense of purpose, meaning and significance of the museum resources usage and their relationship in the educational process; rather weak awareness of the need of a special theoretical and methodological knowledge in the museum resources usage. The skills of independent creative activity in the museum materials usage and their activeness of usage are slightly expressed. So is the lack of ability to adjust its activity on the basis of reflection.

On *the low level* there is: the lack of interest in the museum pedagogy funds usage; no understanding of the possibilities of the museum resources usage in the formation of various spheres of the student. The awareness of purpose, meaning and importance of the museum pedagogy usage in their relationship in the educational process and the need of a specialized theoretical and methodological knowledge in the museum pedagogy usage are absent. The activeness of the museum materials usage is weak; the reflexive actions are practically implemented.

Thus, each block of the model, being in the close relationship and cooperation, are aimed at the formation of the future teacher's willingness of the museum materials usage.

The aim of the experiment was the realization of the complex of nominated pedagogical conditions, which are conducive to the effective formation of the future teacher's willingness of the museum materials usage.

Subsequently, according to the study plan the training pedagogical experiment was organized and conducted.

The I period of the forming (training) experiment. At this stage of the study was developed and offered the technique of the museum materials application in the formation of their spiritual and moral culture. This technique is to develop a system of pedagogical tasks, situations in conducting informative lectures.

The II period of the formative experiment was accompanied by the organization and conduct studies of the elective course on the subject "The fundamentals of the museum pedagogy". The program collected themed plans for lectures and practical training. In this regard, it has been introduced in the educational process of the Korkyt Ata Kyzylorda State University elective courses for students of the pedagogical specialties, which was entitled as "The fundamentals of the museum pedagogy." The course affects such actual topics as the main stages in the development of the museum pedagogy, its conceptual problems in the educational activities, especially the perception of the museum

1614 🛈 D. K. OMAROV ET AL.

values at different stages of age development, functional model of the interaction of the museum and the school, and the issues of the museum pedagogy integration in teaching and educational environment of the school.

The creation of this course is designed to enable the formation of the museum in the process of preparing the future teachers.

The course program for students – future teachers – which is aimed at the acquisition of the knowledge systems and skills of the museum materials usage, preparation for the professional activity, has been designed for students enrolled at the University pedagogical specialties (Table 3).

No Subject Number of hours Ways of implementation Lectures Practice 1 The aims, objectives and the 1 Introduction of the basics of the content of the elective course museum pedagogy to students To elaborate the topics for the 2 On the nature of the concepts 1 of "museum education", assimilation of the issues on the "Museum pedagogy". course "Pedagogy", relating to the problems of the pedagogy system as a science. 3 Conceptual problems of 1. To show the role and importance 1 1 museum pedagogic in the of the museum pedagogy on the educational space of school. course "Pedagogy" in the system of pedagogical science. 2. Conducting seminars on the theme "Pedagogical views of scientists on the problems of formation and development of museum education in Kazakhstan and abroad". 4 Priority fields of museum-2 1 1. In the study of the course of pedagogical activity. Education, the Ethnopedagogics draw students' attention to the priorities of the museum-educational activities of the school. 2. Organization of the round table on the problem museum materials usage in training and educating students. 5 Functional model of Conducting discussions on the 1 1 cooperation of the museum and problems of interaction between the the school. museum and educational institutions. 6 Integration of the museum 2 1 Preparation of educative plan for pedagogy in teaching and group work, taking into account the educational environment of the integration of activities of the school. museum and educational institution. 7 Features of perception of the 2 Using the features of perception of museum values at different the museum values in the stages of age development. explanation of the physiological and psychological characteristics of the child in the classes of the "Psychology of human development", "Self-knowledge" courses. Total 10 5

Table 3. The program of the elective course "The fundamentals of the museum pedagogy"

The course, which volume is 1 credit, is intended at 15 hours, including 10 hours of lectures and 5 hours of practical sessions. All the classes are conducted in accordance to the requirements of the university and the educational process with the usage of the interactive teaching methods.

The theoretical knowledge of the origin, formation and development of museums, their classification by type, species and profiles of the theoretical aspect of the modern museum pedagogy, museum glossary, of the basic forms of cultural and educational museum activities, the analysis of the museumpedagogical programs and teaching kits for secondary school from a position of the museum pedagogy usage, the students receive in the course of lectures and practical sessions on the elective discipline "The fundamentals of the museum pedagogy." The course studding solves the problem of forming a holistic view about the museum and its role in the system of socio-cultural institutions, about museum pedagogy as a branch of pedagogical science, the acquisition of knowledge of modern methods, forms and means of museum pedagogy and the skills of their usage in the professional activities, the acquisition of skills and scientific and methodological research work in the field of the museum pedagogy. The practical classes of the course were held based on the Korkyt Ata Kyzylorda State University museums and museums of Kyzylorda city, which allows the students to directly get acquainted with the museum-pedagogical programs of museums in the district, to observe the work of the museum staff and to participate in the school museum. Within the course students perform the creative objectives: drafting the exposure project of children's mini-museum class, routeing sheet-journey on the one of the museum's exhibitions, preparation of the presentation of one of the school's museums, museums of the Kyzylorda city and Kyzylorda region, compiling a virtual tour on the given topic. Thus, to realize a pedagogical condition: the insertion of the museum-pedagogical component in the content of the theoretical training of the future teachers. Research activities in the process of formation of the future teacher's willingness of the museum materials usage was organized and carried out in the preparation and writing of diploma and master's works, scientific articles, the works of a student's psycho-pedagogical coterie on the basis of the Pedagogy and Psychology Department, the Humanitarian Pedagogical Faculty of the Korkyt Ata Kyzylorda State University and preparing students for various levels of scientific conferences. This contributed to the implementation of the pedagogical conditions for the inclusion of museum-pedagogical problems in the student's research activities.

One of the pedagogical conditions of formation of the future teacher's willingness of the museum resources usage is to perform at the museum pedagogical practice the system of the museum-pedagogical tasks. The realization of this condition is contributed to the system of such objectives as the development of the abstract one of form of museum and educational activities, preparation and protection abstract lesson with museum pedagogy elements and based on the analysis of teaching kits for secondary schools, training certificates of the school museum and based on it the characteristics of one of the school museums, conducting tours in the school museum, the analysis of cultural and educational programs of museums in the city, the region and the programs for elementary, middle and primary school levels in terms of the possibility of including in the content of museum pedagogy usage. The proposed system of objectives solved the following problems: acquaintance with the experience of

museum-pedagogical activity of teachers and masters; organization of extracurricular activities of the museum and educational activities; acquaintance of students with the basic types of museum and educational activities; development of the general pedagogical and specialized skills, working out at a specific museum-pedagogical material skills of the aim formulation, planning of educational activities, the organization of the collective, group and individual work of students and others.

The extracurricular museum-pedagogical work was carried out throughout the study period and found its expression in the interaction with the students of the university museums, city and region, conducting thematic curatorial hours, guided tours, exhibitions and museum lessons, participation in the excursion, exhibition-stock and educational activity of the university history museum. Thus, was carried out a pedagogical condition: the future teacher's dive into the museum and educational environment in the process of the extracurricular work.

During the elective course were refined the needs and motives of the museum materials usage in the formation of spiritual and moral culture of the students. Within this aim a questionnaire was carried out to determine the willingness of the museum materials usage in their future careers. In experimental work after the studying of the course " The fundamentals of the museum pedagogy" we conducted a survey. The survey was attended by 374 students.

## Questionnaire:

1. How do you think, how important is the knowledge of the basics of museum pedagogy? Is it necessary to take them into account in the educational work?

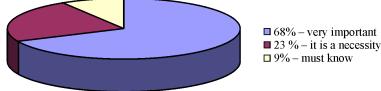
2. How do you understand the spiritual and moral culture?

3. What have you taken new as a result of studying the course "The fundamentals of the museum pedagogy"?

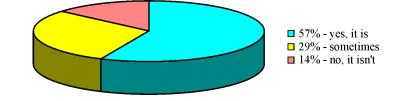
4. Is it possible to apply in professional practice the knowledge gained on the course?

5. How do you think, during the course studying, what forms and methods of teaching were mostly the best?

How do you think, how important is the knowledge of the basics of museum pedagogy?

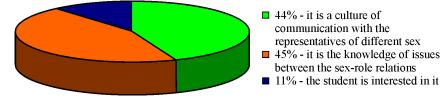


IEJME - MATHEMATICS EDUCATION



*Is it necessary to take them into account in the educational work?* 

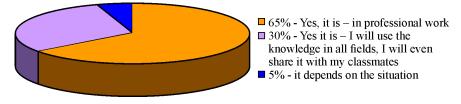
How do you understand the spiritual and moral culture?



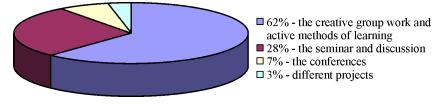
What have you taken new as a result of studying the course "The fundamentals of the museum pedagogy"?

On this question all the students have responded positively.

Is it possible to apply in professional practice the knowledge gained on the course?



How do you think, during the course studying, what forms and methods of teaching were mostly the best?



The results of the formative experiment, obtained on the basis of questionnaires, tests, observations, interviews, self-assessment and peer review, show an increasing dynamic of the future teacher's willingness of the museum pedagogy funds usage on the high and medium levels and are presented in an article in the form of tables, charts and graphs.

Analyzing the dynamics of the formation of willingness' motivational component of the museum resources usage, it should be noted that in the experimental group of students on a high level the gain was 6.2%, on a medium -10.1%, and on the low, respectively, decreased by 16.3%. In the control group of students on the high level -4%, on the low, respectively, decreased.

The levels of formation of the cognitive component were distributed as follows: in the experimental group of students on the high level the increase was 18.3%, on the medium -12.2%, respectively, and on the low, respectively, decreased by 30.5%; in the control group of students on the high and middle levels the increase was respectively 2% and 6%, the low level decreased by 8%.

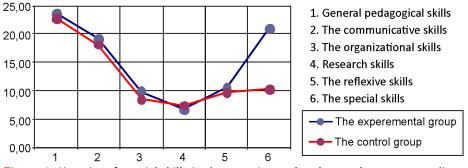
The dynamics of formation of the active component shows that in the experimental group of students happened the increase of the high and medium levels by 36.6%, and the similar reduction occurred on the low level. In the control group of students, the gain of the high and medium levels was 4% and 12%, respectively.

The analysis of the results of forming experiment is presented in the table (Table 4).

Groups	5	The experimental group		The control group		up	
	Levels	High	Medium	Low	High	Medium	Low
Components							
Motivational		14,3	73,5	12,2	12	64	24
Cognitive		18,3	59,3	22,4	2	50	48
Active		18,3	63,4	18,3	4	48	48
Reflective		18,3	59,3	22,4	4	56	40

Table 4. Distribution of levels of the future teacher's willingness of the museum pedagogyfunds usage according to the results of a formative experiment (in %)

Using the method of N. V. Kuzmina (2016), modified by us, we have studied a group of dedicated special abilities of future teachers, aimed at the museum pedagogy usage. The results are shown in the graph (Figure 1).



**Figure 1.** Maturity of special skills in the experimental and control groups according to the results a formative experiment (in points)

The graph shows that the level of the special skills of the students in the control group was 10.2 points, and of the students in the experimental group -21 points. In our opinion, this result was achieved in the process of a specially-organized work.

# Discussion

The developed method of training has proven its effectiveness as a result of the conducted experiment. The course is aimed at all-round training and includes

the practical and theoretical tasks. The practical tasks were concluded in collaboration of students with the museums of university, city and the region, where the students receive practical knowledge through the guided tours for visitors. In the results of the survey can be seen the increased interest in museum education. The experiment was attended by 374 people from the Korkyt Ata Kyzylorda State University. As a result, it was compiled with three levels of student's willingness of museum materials usage – high, medium and low levels. A high level indicates a strong interest in the museum materials usage, at the medium level is seen a positive attitude towards museum pedagogy, but also low interest in its usage, the low level trace the complete lack of interest and understanding of the meaning of museum pedagogy.

Museum teaching work is the teacher's ability to use the funds of museum pedagogy in the educational process. Museum Education is an effective strategy to improve student's learning, as it implies the visualization of subject of teaching (Watermeyer, 2015). This statement is confirmed of the survey, in which 68% of respondents indicated high importance of museum pedagogy.

The insertion of the proposed course not only creates in future teachers a nonstandard training program, but also provides them with an increased interest in the study of history, culture and aesthetics. The importance of museum education particularly increases against the backdrop of globalization and going by the wayside of the aesthetic development of the youth (Duh, 2015). Therefore, the museum education should be integrated into the larger educational environment.

## Conclusion

Thus, the purposeful work on formation of future teacher's willingness of the museum materials usage confirms the hypothesis and proves that this process will be effective at observance of all the following pedagogical conditions:

- the insertion of the museum-pedagogical component into the content of the theoretical training for future teachers;

- the inclusion of the museum-pedagogical problems into the research activities of students;

- performance system of the museum-educational tasks during the pedagogical practice;

- immersion of the future teachers of primary classes into the museumpedagogical environment in the process of extracurricular work.

The results of the research show that the process of formation of the future teacher's willingness of the museum materials usage does not end in high school. The museum pedagogy usage in the practical work of the teacher should be constantly improved on the basis of self-education, self-training and self-development.

The completed work does not exhaust all the problems of formation of the future teacher's willingness of the museum pedagogy funds usage. Further areas of research may be, for example: the improvement and implementation of the inherited connections between the general professional disciplines and subject learning technologies in the formation of the future teacher's willingness of the museum resources usage; the preparation of the future teacher to the organization of interaction between the museum and school on the basis of the principle of social partnership.

1620 🛈 D. K. OMAROV ET AL.

## **Disclosure statement**

No potential conflict of interest was reported by the authors.

## Notes on contributors

**Daulet K. Omarov** is a Doctoral Candidate at the Pedagogy and Psychology Department, Korkyt Ata Kyzylorda State University, Kyzylorda, Kazakhstan.

Sharban M. Maigeldiyeva is a Doctor of Pedagogy, Professor of the Pedagogy and Psychology Department, Korkyt Ata Kyzylorda State University, Kyzylorda, Kazakhstan.

Zhetkergen M. Utegenov is a PhD, Senior Lecturer of the Pedagogy and Psychology Department, Korkyt Ata Kyzylorda State University, Kyzylorda, Kazakhstan.

Zhannat M. Maigeldiyeva is a PhD, Associate Professor of the Pedagogy and Psychology Department, Korkyt Ata Kyzylorda State University, Kyzylorda, Kazakhstan.

**Sandigul K. Daribaeva** is a Magistrate at the Pedagogy and Psychology Department, Korkyt Ata Kyzylorda State University, Kyzylorda, Kazakhstan.

#### References

- Abykanova, B., Bilyalova, Z., Makhatova, V., Idrissov, S., Nugumanova, S. (2016) Psychological and pedagogic conditions of activating creative activity in students for successful learning. *International Journal of Environmental and Science Education*, 11(10), 3333-3343.
- Beery, T. et al. (2013) Occupy Museums as Public Pedagogy and Justice Work. JCT (Online), 29(2), 230-236.
- Din, H. (2015) Pedagogy and Practice in Museum Online Learning. Journal of Museum Education, 40(2), 102-109.
- Duh, M. (2015) The Function of Museum Pedagogy in the Development of Artistic Appreciation. Journal of Elementary Education (Revija za Elementarno Izobraževanje), 8(4), 35-38.
- Foreman-Peck, L., Travers, K. (2013) What is distinctive about museum pedagogy and how can museums best support learning in schools? An action research inquiry into the practice of three regional museums. *Educational Action Research*, 21(1), 28-41.
- Hooper-Greenhill, E. (2004) Museums and the Interpretation of Visual Culture. Routledge, 195 p.
- Hooper-Greenhill, E. (2006) The power of museum pedagogy. In Genoways, H. (ed) Museum Philosophy for the Twenty-first Century, University of Nebraska Press, 235-245.
- Kazakhstan's way 2050: Common goal, common interests, common future: Address by the President of the Republic of Kazakhstan Nursultan Nazarbayev to people of Kazakhstan. (2014, January 17) Official site of the President of the Republic of Kazakhstan. Direct access: http://www.akorda.kz/ru/ page/page\_215750\_poslanie-prezidenta-respubliki-kazakhstan-nazarbaeva-narodu-kazakhstana-17-yanvarya-2014-g. Treatment Date: 04.19.2015.
- Kuzmina, N. V. (2016) Acmeological approach to assessing the efficiency of fundamental education (theoretical and methodological problems). Akmeology, 17, 54-57.
- Law "On education in the Republic of Kazakhstan". (2007). Astana, 32 p.
- Mukhtarova, A., Smith, A. (2014) Aspiring International Standards: challenges and outcomes of project management in the context of Kazakhstan Higher Education. *Life Science Journal*, 11(6), 218-222.
- Sinebrychova, V. L. (2016) E-Portfolio as means of formation of a subject position of younger schoolboys. *Concept*, 2, 35-42.
- The State Programme for the Education Development of the Republic of Kazakhstan for 2011-2020. Astana, 64 p.
- Tran, L. U. (2007) Teaching science in museums: The pedagogy and goals of museum educators. Science Education, 91(2), 278-297.
- Uyen Tran, L., King, H. (2007) The professionalization of museum educators: The case in science museums. *Museum Management and Curatorship*, 22(2), 131-149.
- Watermeyer, R. (2015) Science engagement at the museum school: teacher perspectives on the contribution of museum pedagogy to science teaching. British Educational Research Journal, 41(5), 886-905.