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**METHODICAL BASES OF FUTURE ELEMENTARY SCHOOL  
TEACHER'S MATHEMATICAL COMPETENCE FORMATION BY  
MEANS OF INNOVATIVE TECHNOLOGIES**

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**Abstract.** *Experimental model of a future elementary school teacher's mathematical competence formation by means of innovative technologies was characterized. Possibilities of educational process improvement by inclusion of electronic methodical complex "Training method of educational branch "Mathematics" in it made in platform Moodle were illustrated. Creation of necessary organizational and pedagogical innovative forms, methods and means of a future elementary school teacher's mathematical competence formation using conditions is indicated.*

**Keywords:** *mathematical competence, innovative potential of educational establishment, electronic platform Moodle, innovative environment, innovative pedagogical activity of a student and a teacher.*

*Problem statement, its connection with important scientific and practical tasks.* Implementation of a competence-based approach in organization of studying is getting important meaning in the context of the higher education reforming. There is a need in training of a teacher who is capable to form pupils' key competences according to new State Standard of the Primary general education (2011) and new curricula (2013). Due to the changes in educational branch "Mathematics" it is relevant to improve process of a future elementary school teacher's mathematical competence formation. An important step on the way to realization of a competence-based approach in the context of mathematical competence formation is, directly, involvement of means of innovative technologies into educational process.

Question of necessity of innovative changes in the competent expert's training process found its reflection in normative documents of our country. In particular, in the Law of Ukraine "On Higher Education" it is noted that "innovative activity in higher educational establishments is inherent component of educational activity and is carried out with the purpose of integration of scientific, educational and productive activity in system of higher education" [6, p.54]. Transformation of education into innovative environment where pupils and students would receive skills of independent acquirement of knowledge during life and could put this knowledge into practice is provided by the draft Concept of Educational development of Ukraine for 2015-2025 [3].

*Analysis of the latest researches and publications on the given topic, emphasizing of unsolved parts.* Topicality of realization question of a competence-based approach in future elementary school teachers' professional training process determined multifaceted studying of this issue. Scientists show their interest to the studying of: a future elementary school teacher's professional development (V. Bondar, E. Lodatko, L. Petukhova, A. Savchenko and others); workings and implementations of innovative technologies into the process of future elementary school teachers' professional development (L. Danilenko, S. Martynenko, L. Pukhovska and others); educational process improvement by implementation of electronic methodical complex developed in the Moodle environment (A. Andreiev, S. Andreieva, I. Dotsenko, V. Soldatkin, A. Shcherbina and others); studying process optimization in the course of "Training method of educational branch" Mathematics" (M. Bohdanovych, M. Kozak, Y. Korol, L. Koval, A. Korchevska, S. Skvortsova, S. Strelets and others).

Despite the present researches in the sphere of optimization of a future elementary school teacher's professional development process there is a requirement for further, profound studying of this issue. Creation of a model of a future elementary school teacher's mathematical competence formation by means of innovative technologies and methodological support of educational subjects improvement, in particular in the course of "Training method of educational branch" Mathematics", will predictively allow to improve educational process.

*The article is aimed* at representing a model of a future elementary school teacher's mathematical competence formation by means of innovative technologies.

*Statement of the main material.* For clarifying basic concepts and judgments concerning competence, and also with the purpose of distinguishing of necessary components entered into model, we will address to the following documents.

According to the Law of Ukraine "On Higher Education" "competence" is dynamic combination of knowledge, abilities and practical skills, ways of thinking, professional, world outlook and civil qualities, moral and ethical values which define ability of the person to bring into action professional and

further educational activity successfully and is a result of training at the level of higher education" [6, p. 5].

Designers of the project Tuning of the European Commission consider competence as "dynamic combination of knowledge, understanding, abilities, values, other pupil's personal qualities that describe results of their studying according to the curriculum; acquired realizable abilities of the personality aimed at effective activity" [2, p. 5].

The realization idea of competence-based approach to studying is the basis for new edition of State Standard of Primary general education. Interpretation of the concepts "subject competence" and "mathematical competence" was given by the authors of the document. Therefore subject competence is interpreted as "acquired experience of specific for a certain object activity, connected with acquisition of new knowledge, its transformation and application mastered by the pupils in the process of studying" [4]. In system of subject competences mathematical competence is considered as "personal formation that characterizes pupil's ability to create mathematical models of processes of the outside world, to use experience of mathematical activity during the solution of the educational and informative and practically focused tasks" [1].

Analysis of theory and practice of a future elementary school teacher's mathematical competence formation, professional activity features studying, curricula and syllabi results analysis allowed to develop model of a future elementary school teacher's mathematical competence formation by means of innovative technologies (diag. 1). The purpose of this model creation is need of improvement process of a future elementary school teacher's mathematical competence formation by means of innovative technologies.



Diagram 1. Model of a future elementary school teacher's mathematical competence formation by means of innovative technologies.

Suggested model presupposes realization of certain organizational and pedagogical conditions in educational process.

Firstly, educational establishment innovative potential is an ability of educational establishment to create, perceive, carry out innovations and to get rid of out-of-dated, pedagogically inappropriate things in its time. Registration of a higher education establishment on electronic distant platforms, is further oriented at opportunities extension of improvement process of competent expert's training. Electronic courses development in distant environments is aimed at systematization of educational material, process optimization of

students' self-education. Therefore, one of the important organizational and pedagogical conditions of a future elementary school teacher's mathematical competence formation by means of innovative technologies is implementation of electronic methodical complexes in the environment of Moodle.

Secondly, innovative environment is pedagogically appropriate organized activity space that stimulates person's innovative resource development; integrated means of accumulation and realization of educational institution innovative potential.

Thirdly, teacher's innovative potential is a complex of social and cultural and creative characteristics of teacher's personality that expresses willingness to improve pedagogical activity, and also presence of the internal means and methods providing this willingness [5, p. 449].

Problem solution of educational process participants' inclusion in the innovative environment is possible by means of integrated approach to competent expert's formation who would combine direct future elementary school teacher's work in the Moodle environment (in particular in the course of "Training method of educational branch" Mathematics") and a future teacher's preparation for creation their own electronic methodical complexes.

Model structure of a future elementary school teacher's mathematical competence formation is considered as a unity of three components: valuable and purposeful, informative and active and control and reflexive.

Valuable and purposeful component consists in taking into account society order, aim, tasks, firm professional orientation at professional and pedagogical activity that defines orientation at professional personality's formation. Social order for level increasing formation of future elementary school teachers' mathematical competence contains requirements of the state and society as for its formation of the students. It defines aims and tasks of educational process that are carried out according to the State Educational Standard. Aim consists in a future elementary school teachers' mathematical competence formation by means of innovative technologies. Specification of aim process of future elementary school teachers' mathematical competence formation let to define its tasks – to create valuable attitude of future elementary school teachers to use means of innovative technologies; to create future elementary school teachers' mathematical competence by means of innovative technologies. Realization of goals and tasks is considered on the basis of normative documents (National and State Professional Standards: Educational Standards in the field of 0101 "Pedagogical Education" and conceptual bases (main approaches and principles of a future elementary school teacher's professional development).

Informative and active component is a system about knowledge of professional, psychology and pedagogical activity, fundamental and subject disciplines that interpret content of future professional activity, system of pedagogically professional forms, methods and means of innovative technologies studying that provide successful mathematical competence formation in the light of modern activity conditions. Mentioned component is a

basis of the offered model and covers the contents, stages, forms, methods and means of a future elementary school teacher's mathematical competence formation by means of innovative technologies.

Further detailed consideration of separate elements of informative and active component is considered as appropriate.

Innovative means of mathematical competence formation complex was improved, in particular, complex of educational presentations in the course of "Training method of educational branch" Mathematics" was worked out", study guide on the mentioned above discipline was published and electronic methodical complex developed in the environment of Moodle was created.

Developed multimedia presentations allowed to systematize lecture material and to facilitate process of its perception by students. Questioning among students of II, III and IV courses on a problem of presentations use relevance showed that use of multimedia equipment increases students' interest to educational information, improves understanding and memorizing of training material. Students noted that presence of multimedia equipment at the lectures resulted in increasing of acquired material volume, an opportunity to remember information at the subconscious, intuitive level appeared.

Except improvement of lecture material statement there is a need of complex ensuring of elementary education faculty students' practical work because operating manuals and textbooks for students are generally focused on a theoretical statement of training material. Necessity of training material selection, will help students with preparation for practical classes, caused creation of study guide "Training method of educational branch" Mathematics" [4]. This study guide covers all aspects of students' training within mentioned discipline. Combination of theoretical material and a full complex of practical work is characteristic feature of the study guide.

Electronic methodical complex in the Moodle environment which is being taken root into educational process of faculty of Primary education was made to systematize educational information, to create possibilities of studying and to provide interactive cooperation. This complex is created according to the standard requirements and taking into account features of educational subject. It is aimed at providing all forms of students' work and has the following structure: description of educational subject (curriculum and syllabus); lecture material of the course (text lectures accompanied by presentations); practice plan (theoretical questions, practical tasks, tasks for self-checking, abstracts patterns of mathematics lessons); tasks for independent work; scheduling on mathematics for 1-4 classes; the list of the curricula, textbooks and manuals recommended by Ministry of Education and Science of Ukraine; module control (system of tests); determined reports topics (topics of reports to annual student's scientific and practical conference, questions for examination; the glossary, the list of recommended literature; appendices (electronic versions of the existing textbooks on mathematics, video lessons of mathematics).

For work in the Moodle system students register, get the personified access to it and can get acquainted with the offered materials. Test system is protected by additional passwords that provide their making at strictly definite time by students. Results of educational achievements are reflected in the electronic journal that allows to correct skill level of training material on time.

Held questioning revealed considerable interest of students to work in the Moodle system. However graduate students noted lack of knowledge in work bases of distant Moodle environment, in particular in development of electronic courses. To fix the problem arosed it is appropriate to introduce graduate students a special course of study "Work bases in the Moodle environment" into educational process. This special course of study is aimed at giving skills of electronic courses development and setting and recommendations as for their use in educational process. The special course will include main theoretical aspects of work in the environment of Moodle which are combined with direct creation of electronic complexes within practical classes.

Control and reflexive component of elementary school teachers' model assumes assessment of the results reached in the course of studying by teachers and a self-assessment by students, their formation according to set tasks, revealing of the deviation reasons and making certain corrections into teaching activities if necessary.

*Conclusions and further aspects.* Presented model is considered as effective tools of a future elementary school teacher's mathematical competence formation process by means of innovative technologies. It has open character, constantly develops and can be added by new components.

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**THE FORMATION OF A LINGUISTIC PERSONALITY OF A  
STUDENT IN TERMS OF MULTICULTURAL COMMUNICATION  
(BASED ON CHINESE AREA STUDIES)**

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**Abstract.** *In the article the influence of multicultural communication on the formation of a linguistic personality of a student while learning Chinese Area Studies is shown. At the classes the project method has been proposed to the students. After the course it has been revealed that most of the students find this method productive in learning cultural, social, economic and political nature. As linguistic personalities they demonstrated a sufficient level of empathy and tolerance in effective multicultural communication based on their multicultural competence.*

**Keywords:** *linguistic personality, multicultural communication, multicultural competence, Chinese Area Studies, project method.*

*Introduction.* Starting from the last century to the present day the term "linguistic personality" is one of the most popular frequency and in native science.

A linguistic personality is considered from the standpoint of psycholinguistics, pragmatics, linguistics, cognitive science, cognitive science, pragmalinguistics, ethnolinguistics, text linguistics, sociolinguistics and other anthropocentric ways. Learning a language of the individual at the intersection of different fields determines the complexity and ambiguity of approaches to the definition, structure, criteria and the ways to describe this concept.

As many researchers note, the notion of a linguistic personality is still not precisely defined, due to the complexity and multileveled problem itself. In a linguistic personality philosophical, sociological, psychological and linguistic views refracted on a socially important set of physical and spiritual properties of a person. That is a definite interest in the issue.

In the article we consider a linguistic personality of a student in the context of multicultural communication. Multicultural communication is a form of communication that aims to share information across different cultures and social groups. It is used to describe the wide range of communication processes and problems that naturally appear within an organization or a social context made up of individuals from different religious, social, ethnic, and educational backgrounds. Multicultural communication is sometimes used synonymously with cross-cultural communication or intercultural communication. In this sense