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About improvement professional training quality of students (on materials of biological, mathematical, pedagogical disciplines)

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Abstract: In research the essence of improvement of student's professional training quality on materials of biological, mathematical, pedagogical disciplines is opened. Set of professionally significant qualities of future teachers which can be formed on materials of biological, mathematical, pedagogical disciplines is proved. The model of improvement of students professional training quality on materials of biological, mathematical, pedagogical disciplines is designed and theoretically proved. Efficiency of the developed model of improvement of students professional training quality on materials of biological, mathematical, pedagogical disciplines and the technology of realization created on its basis is experimentally checked.

Key words: *Professional training; Biological; Mathematical; Pedagogical disciplines; Students; Professional training of students; Improvement of students professional training quality on materials of biological; Mathematical; Pedagogical disciplines*

1. Introduction

Modern society needs the teacher who is ready to pedagogical improvisation, owns organizing abilities, to the creative solution of professional tasks, is capable to assume responsibility, to show leadership and an initiative, is able to work in team, seeks for self-development and a reflection. The analysis of works of Kabieva S.Z., Mukataeva Z.M., Toktarbaeva A.S., Syzdykova G.K., Korogod N.P. [1], Sakenov, D. Zh. [2], Alpysov A., Naimanova A. [3], Schantz, E.A. [4], Marissa Harle, Marcy H. Towns [5], Zhumasheva A.S., Zhumabaeva Z. E., Sakenov J.Zh., Ismagulova B.H., Sametova F.T., Bazarbaeva A. S. [6], Shavalieva ZSh, Ahmuldinova AN, Isinbayeva KG, Ayapbergenova GS, Alibayeva ZhE, Sakenov DZh. [7], Zhumabaeva ZE, Kenenbaeva MA, Asenova NS, Sakenov DZh. [8], Harold B. White, Marilee A. Benore, Takita F. Sumter, Benjamin D. Caldwell and Ellis Bell [9], Tracey Arnold Murray, Pamela Higgins, Vicky Minderhout and Jennifer Loertscher [10], Otepova G.Y., Ilyassova A.S. [11], Ross H. Nehm, Sun Young Kim and Keith Sheppard [12], Ishanov, P., Bekmambetova, Z. [13], Ash, D., Levitt, K. [14], Aviv Shachak, Sara Fine [15] shows that in the conditions of increase of requirements imposed to teachers, there is a need of use of such forms and tutorials by their preparation which most effectively would initiate development of professionally significant qualities of students. In researches Kabieva S.Z., Mukataeva Z.M., Toktarbaeva A.S., Syzdykova G.K., Korogod N.P. [1], Sakenov, D. Zh. [2], Alpysov A., Naimanova A. [3], Schantz, E.A. [4], Marissa Harle, Marcy H. Towns [5], Zhumasheva A.S., Zhumabaeva Z. E., Sakenov J.Zh., Ismagulova B.H., Sametova F.T., Bazarbaeva A. S. [6], Shavalieva ZSh, Ahmuldinova AN, Isinbayeva KG, Ayapbergenova GS, Alibayeva ZhE, Sakenov DZh. [7], Zhumabaeva ZE, Kenenbaeva MA, Asenova NS, Sakenov DZh. [8], Harold B. White, Marilee A. Benore, Takita F. Sumter, Benjamin D. Caldwell and Ellis Bell [9], Tracey Arnold Murray, Pamela Higgins, Vicky Minderhout and Jennifer Loertscher [10], Otepova G.Y., Ilyassova A.S. [11], Ross H. Nehm, Sun Young Kim and Keith Sheppard [12], Ishanov, P., Bekmambetova, Z. [13], Ash, D., Levitt, K. [14], Aviv Shachak, Sara Fine [15] is specified that this task can be solved through strengthening of out-of-class work and use of tasks of design type. In our opinion improvement of students professional training quality, it is also possible to realize on materials of biological, mathematical, pedagogical disciplines, through strengthening of out-of-class work and use of tasks of design type. The special importance the focused materials of biological, mathematical, pedagogical disciplines as they are integrators not only abilities to solve professional problems, but also knowledge, experience of creative activity accept professional, abilities to present themselves, to build the relations with colleagues, and also create conditions for manifestation of personal qualities, significant for the teacher. Actual there are the researches connected with improvement of training of future teachers on materials of biological, mathematical, pedagogical disciplines. We understand achievement of such condition of pedagogical process as improvement of students professional training quality during the using in it professional the focused materials of biological, mathematical, pedagogical disciplines at which its result –

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efficiency of achievement of the purposes dictated both by normative documents, and wishes of all subjects of pedagogical process, is higher in comparison with result of traditionally organized pedagogical process. Speaking in the real research about training of students of pedagogical higher education institutions, we consider professional and pedagogical training of future teachers.

Relevance of research is caused by need of permission of the following contradiction between: high potential of materials of biological, mathematical, pedagogical disciplines for professional development of future teachers and insufficient development of questions of use professional the focused materials of biological, mathematical, pedagogical disciplines in the theory and practice of educational process of higher education institution.

The analysis of the revealed contradiction allowed to formulate a research problem which consists in permission of a contradiction between need of updating and realization of potential opportunities professional the focused materials of biological, mathematical, pedagogical disciplines in the course of improvement of future teachers professional training quality both an insufficient theoretical and practical readiness of this process in higher education institution.

In a context of the specified problem a research definite purpose which consists in theoretical and practical justification of model of improvement of students professional training quality on materials of biological, mathematical, pedagogical disciplines within educational process of pedagogical higher education institution.

2. Methods

Theoretical analysis and synthesis, abstraction and specification, pedagogical modeling; empirical methods: studying and analysis of standard and biological, mathematical, pedagogical, psychology and pedagogical, educational and methodical literature, studying and synthesis of pedagogical experience, questioning, poll, testing, supervision, studying of results of activity of students, method of expert evaluations, pedagogical experiment; mathematical methods.

3. Main parts

Under materials of biological, mathematical, pedagogical disciplines, for improvement of students professional training quality, we consider professional the focused biological, mathematical, pedagogical materials demanding from students of high extent of return of intellectual forces, demonstration of knowledge, abilities, skills in subject domains, the personal professional qualities corresponding to their specialty, and also promoting the operational decision students of professional and pedagogical tasks on a creative basis.

The organization of the educational process constructed on the basis of use of materials of biological, mathematical, pedagogical disciplines allows to provide formation at students of such professional and significant qualities of the teacher, as: ability to a reflection, motivation of the doctrine, ability to work in collective in network projects, ability to organize the Olympic Games, pedagogical improvisation, ability to apply information and communication technologies in professional activity, professional consciousness; therefore efficiency and quality of process of professional training of future teachers increases.

Due to the above, we developed Model of improvement of students professional training quality on materials of biological, mathematical, pedagogical disciplines which is represented in Fig. 1.

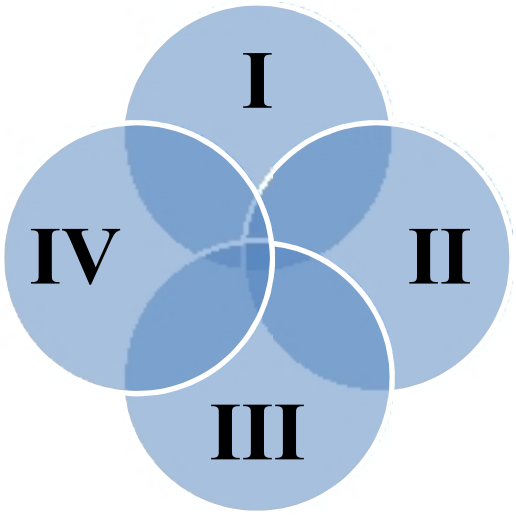

Fig. 1: Model of improvement of students professional training quality on materials of biological, mathematical, pedagogical disciplines

The explanation to figure 1. Model of improvement of students professional training quality on materials of biological, mathematical, pedagogical disciplines:

I – Quality of professional training of students on materials of biological, mathematical, pedagogical disciplines.

II – Professionally orientation module of improvement of students professional training quality on materials of biological, mathematical, pedagogical disciplines (formation of professional and pedagogical qualities of students; promotion at students of a public role of the teacher; design of individual and team professional activity of students).

III – The Teoretical-metodological module of improvement of students professional training quality on materials of biological, mathematical, pedagogical disciplines (generalization and systematization of knowledge, skills on subject domains; familiarizing of students with scientific search).

IV – The activity and practical module of improvement of students professional training quality on materials of biological, mathematical, pedagogical disciplines (development of skills of work in the competitive environment; increase of readiness of students to innovations in education; systemacity and integrative realization in preparation for professional activity).

Skilled and experimental work on check of Model of improvement of students professional training quality on materials of biological, mathematical, pedagogical disciplines was carried out on the basis of methods of poll, questioning, supervision, interview, interviewing, testing.

During experimental check of Model of improvement of students professional training quality on materials of biological, mathematical, pedagogical disciplines, it is possible to draw the following conclusion: at the initial stage of experiment the number of students with the expressed informative interest made 16%, and at the end of the 7th semester it increased to 61%. Therefore, positive dynamics for 44% allows to determine productivity of skilled and experimental work by this criterion. The analysis of results of a forming stage of experiment allows to define dynamics of improvement of students professional training quality on materials of biological, mathematical, pedagogical disciplines. At the initial stage of experiment the number of students with high-quality professional training made 14%, and at the end of a semester it increased to 72%. Therefore, positive dynamics by this criterion for 57% indicates productivity of skilled and experimental work on Model of improvement of students professional training quality on materials of biological, mathematical, pedagogical disciplines. The comparative analysis of results of stating and forming stages of experiment showed that in a course is skilled - experimental work positive dynamics on all modules of Model of improvement of students professional training quality on materials of biological, mathematical, pedagogical disciplines is observed. Pedagogical diagnostics of results of improvement of students professional training quality on materials of the biological, mathematical, pedagogical disciplines, carried out with use of the rating monitoring system, allowed to reveal a tendency of improvement of students professional training quality on materials of biological, mathematical, pedagogical disciplines to what results of progress in experimental and control groups before experiment (fig. 2) testify.

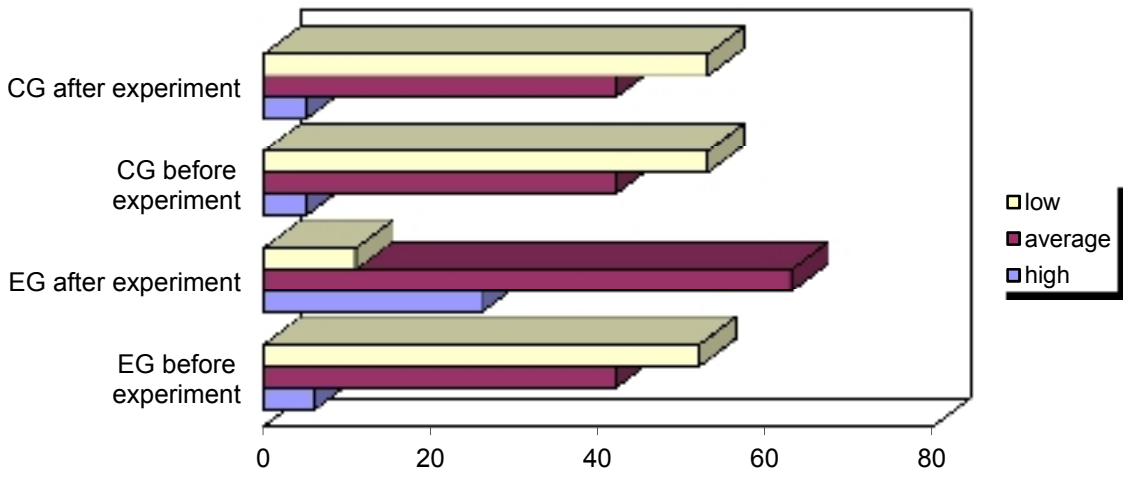

Fig. 2: Diagnostics of improvement of students professional training quality on materials of biological, mathematical, pedagogical disciplines

Thus, in experimental groups the number of students with a high level of quality of professional training on materials of biological, mathematical, pedagogical disciplines after experiment increased

by 19%, number of the students who have reached the average level – for 20%, the number of the students having low level – decreased by 40%.

Results in control groups testify to preservation of number of students with a high level of professional training quality on materials of biological, mathematical, pedagogical disciplines at the level of 6%, average level – for 0%, reduction of low level by 0%.

The received indicators testify to high efficiency of offered Model of improvement of students professional training quality on materials of biological, mathematical, pedagogical disciplines.

4. Conclusion

As a result of carried out research the essence of improvement of students professional training quality on materials of biological, mathematical, pedagogical disciplines is opened.

Set of professionally significant qualities of future teachers which can be formed on materials of biological, mathematical, pedagogical disciplines is experimentally proved.

In the course of experiment the Model of improvement of students professional training quality on materials of biological, mathematical, pedagogical disciplines is designed, theoretically proved and almost approved. An experimental inspection of efficiency of the developed Model of improvement of students professional training quality on materials of biological, mathematical, pedagogical disciplines and the technology of realization created on its basis is organized and carried out.

The model of improvement of students professional training quality on materials of biological, mathematical, pedagogical disciplines is recommended for use in higher educational institutions.

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