



COMPETENCY APPROACH IN THE TRAINING OF MATHEMATICS TEACHERS

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Abstract. In this article, the need to develop the stochastic competence of mathematics teachers is based on the analysis of the works of scientists who have conducted research on this topic.

Keywords: stochastics, probability theory, pedagogue, competence, competence.

Introduction

Rapid changes in the socio-political and economic situation in the Republic of Uzbekistan place new demands on a person with higher education. Modern society needs highly qualified personnel who can independently supplement and systematize knowledge, manage the flow of scientific and technical information, think critically and defend their point of view.

In the Decree "On the development strategy of New Uzbekistan for 2022-2026" in the direction of "Equity social policy, development of human capital", for the purposes of "Improving the state policy on youth", "Spiritual development" providing and bringing the industry to a new level" points set a number of priority tasks related to higher education. Higher education is called to organize the education of the next generation and thereby ensure the increase of professional personnel to work in the field of science and in various fields of the country's activity.

The professional qualification of a teacher is understood as "an indispensable feature that determines the ability to solve professional problems and typical professional tasks that arise in real professional activity based on the specialist's knowledge, professional and personal experience, values and abilities." Regarding professional competence, mathematics teachers distinguish its three components: science, general psychological-pedagogical and methodological competence. Science competence provides the effective implementation of science (mathematical) activity, which is the meaningful basis of the professional activity of a mathematics teacher as a science teacher.

General secondary education and higher education state educational standards define the tasks of forming students' ability to use acquired knowledge, skills and methods of activity in practical life.

The elements of stochastics, which includes branches of mathematics such as combinatorics, probability theory, and mathematical statistics, are suitable for solving the above problems

according to the specific characteristics of their content. It is the understanding, reflection and application of stochastic tasks and problems that develop the combinatorial thinking needed everywhere in the modern world. The social and practical importance of stochastics can be applied if the need for stochastic knowledge is manifested in situations close to the life experience of students. Today, it is impossible to organize effective human activity in any sphere of life without sufficiently developed ideas about random events and their probabilities, without having a good idea that the events and processes we are considering obey the complex laws of probability theory.

The theoretical and experimental studies conducted in order to evaluate the level of formation of stochastic competence of mathematics teachers and graduates of secondary schools showed that the stochastic competence of mathematics teachers is at a low level, it cannot be considered sufficient for the formation of stochastic competence of students. . Such a situation in the context of the need to implement probabilistic-statistics (stochastic line) in high school puts one of the first places in the process of professional training of a mathematics teacher, the problem of forming his stochastic competence and creating a special ability. In this regard, we studied one of the components of science (mathematical) competence - the stochastic competence of the future mathematics teacher.

All of the above allows us to conclude that the problem of our research is to find and scientifically substantiate the methodology of stochastic competence development of future mathematics teachers.

The purpose of the study is to develop a methodology for the development of stochastic competence of future mathematics teachers in the process of studying "Theory of Probability and Mathematical Statistics".

Tasks of the research:

substantiation of stochastic competence as a mandatory component of science (mathematical) competence of the future mathematics teacher of secondary schools;

preparation of competence-oriented assignments as a mandatory means of developing the stochastic competence of a modern mathematics teacher;

Creating case assignments from the subject "Theory of Probability and Mathematical Statistics".

The development of stochastic competence is an integral direction of the development of the professional competence of a modern mathematics teacher and requires special attention. Competence-oriented tasks should be considered as the main means of developing the stochastic competence of the future mathematics teacher in the study of "Theory of Probability and Mathematical Statistics". The main rules of the methodology of developing the stochastic competence of the future mathematics teacher: the main expected result of teaching is the development of stochastic competence of students to the basic level, with the reliable application of stochastic knowledge in practical, life situations and conditions characterized by a high degree of uncertainty. is determined; stochastic competence development tools are competence-oriented tasks and situations; the organization of the educational process should meet the following requirements: systematically involve students in solving competence-oriented tasks and situations of different levels of mathematical and situational complexity in accordance with the stages allocated in the organization of the educational process in practical training: stage 1 - working with basic concepts, 2nd stage - working with assignments, 3rd

stage - diagnosis of educational results; stimulating motivation through interactive and active teaching methods, including remote support of students' independent work; in the educational process, it is necessary to use competence-oriented tasks and case-technologies as the preferred methods of developing students' stochastic competence

In the dissertation, attention was paid to the analysis of the research problem from scientific, theoretical, and practical points of view.

The need to distinguish competencies in education is explained by A.N.Leontiyev's thesis that the real basis of a person's personality is his social relations with the world, the sum of relations realized by his activities. The works of scientists V.V.Krayevskiy, O.E.Lednev, I.D.Frumin, J.Raven, A.N.Dahin and others show that one of the tasks of the competency-based approach is not the student's consciousness, but the connection between theoretical and practical knowledge, which is close to the student's life world. they emphasize that it is the development of the ability to solve various tasks.

The main ideas about the theoretical and practical training of the teacher are expressed in the works of famous teachers and psychologists O.A. O.A.Abdullina, S.I.Arangel'skiy, V.I.Zagvyazinskiy, N.V.Kuzmina, P.I.Pidkasi'stogo, V.D.Selyutina, V.A.Slastenina, A.I.Shcherbakov.

The main theoretical principles of the competency-based approach and directions for its implementation developed by O.V.Akulova, I.A.Zimnyaya, V.V.Kraevskiy, A.K. Kuzmina, N.V.Markova, J.Raven, N.F.Radionova, X.J.T.Stefanova, V.D.Selyutin, A.P.Tryapitsyna, I.D.Frumin, A.B.Xutorskoy the theory of activity and personality development by V.V.Davydov, D.A.Leontiev, G.I.Shchukina, D.B.Elkonin and others, A.P.Reingold, L.V.Smolyaninova, A.A.Abdugodirov and others studied the technological approach and theoretical foundations of using case technologies in the educational process.

In order to strengthen the practical direction in the training of graduates and improve their professional qualifications, it is necessary to use active and interactive teaching methods aimed at forming systematic thinking skills and abilities and solving real problem situations.

One of the leading tasks of the pedagogical process of training a mathematics teacher is to train a student who is not only knowledgeable, but also successful and able to solve various professional problems. "Improving the professional training of a mathematics teacher requires revision of the structure and content of mathematics training of students, its transfer to the technological level of teaching and learning. This is largely related to the continuity of the content of mathematics education in secondary and higher schools and the author's approach to the development of theories, concepts and methods of teaching mathematics. The researches of N.Ya.Vilenkina, V.A.Gusev, G.D.Gleyzer, O.B.Epishcheva, G.L.Lukankin, V.F.Lubicheva, V.M.Monaxova, V.D. Selyutin, N.L.Stefanova and others are devoted to the features of the work of a mathematics teacher in modern school conditions.

In a number of scientific works of J.Quadratov, D.V.Manevich, A.Ploski, N.S.Sedova, V.D.Selyutina, S.V.Shcherbath the term "stochastics" combines areas of mathematics such as combinatorics, probability theory and mathematical statistics.

A number of scientists from our country, such as Sh.Q.Farmonov, A.A.Abdushukurov, E.Mamurov, T.Adirov, A.Rasulov, X.Q.Jumaqulov, have conducted scientific research in the field of probability theory and mathematical statistics.

The analysis of the level of study of the topic shows that higher educational institutions have

the task of providing high-quality training of a qualified specialist who can think differently, work creatively, and take responsibility. In such conditions, professional competence is of particular importance as one of the main resources for ensuring and developing the quality of education.

Competency approach is one of the priorities of updating the national education system. Higher education institutions have the task of providing high-quality training of a qualified specialist who can think creatively, work creatively, and take responsibility. In a number of Western European vocational education and training systems, the phrase "competency-based education" has been adopted. In the educational system of Uzbekistan, the term "Competency approach" is used. This term is also used in a number of official documents related to education, in particular, "On approval of state educational standards of general secondary and secondary special education" of the Cabinet of Ministers of the Republic of Uzbekistan No. 187 This term is also used in the decision dated 04.06.2017.

A competent specialist should be able to work successfully even if there are no ready-made algorithms in his knowledge base. Competencies are interpreted as a single (harmonized) language for describing academic and professional profiles and higher education levels. Currently, the term "competency" is used more in relation to the quality of educational outcomes. In contrast to the qualification model, the competence model of a specialist focused on the field of professional activity is less connected with a specific object and subject of work. This ensures the mobility of graduates in the changing conditions of the labor market. The main difference between the concept of competence and traditional concepts: knowledge, skills, competence; correlation with value-semantic characteristics of the person; is oriented towards practice. In all approaches to determining competence, it can be determined that competence is formed and manifested in practical activities.

The concept of competence was first used in 1965 in the USA by N.Chomsky in his definition of language theory. The period of 1960-1970 can be considered as the first stage of formation of competences/competencies-based education. Currently, various language competencies are being studied and efforts are being made to develop communicative competence.

The second phase is the 1970s-1990s, which focuses on the study and introduction of the concept of professional competence/competence. Many foreign and domestic researchers have devoted their work to the study of this important topic. Psychologist J. Raven's research deserves special attention. In the work "Competence in modern society: identification, development and implementation", he developed a model of competence regardless of the type of human activity, studied the importance of the value-motivational aspect of its uniqueness.

At this stage, we can say that competence is recognized by most scientists as a personal characteristic considered in categories such as "ability" ("motivational abilities" - J. Raven) and "readiness". Thus, at this stage, the following aspects of competence are defined. First of all, it is a characteristic of personality, which means that it is a multifaceted phenomenon, the components of which cannot be listed. Secondly, it is impossible to determine whether a person is competent in this or that activity without knowing his values, aspirations and attitudes. Thirdly, the presence of competence ensures the ability to adequately respond to the current situation and make the right decision based on it.

A detailed study of competence in the early 90s. NVKuzmina, LAPetrovskaya, LMMitina, LPAlekseeva and other researchers interpreted it as a synonym of professionalism or as one of

its components. An important event in the field of education in 1996 (UNESCO, Council of Europe program) established that students must have basic competencies for successful work and for obtaining further higher education. This event can be considered as the beginning of the third period along with AKMarkova's works. At the same time, until this time, the concept of competence was not defined in essence.

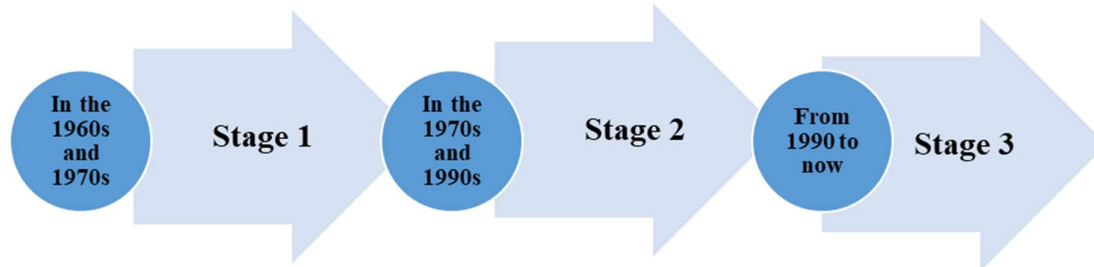


Figure 1.1. Formation of competence/competency-based education stages

European TUNING provides the following definition: "... the concept of competences and skills includes knowledge and understanding (theoretical knowledge, knowledge and understanding of each field), knowledge of how to act (practical and operational application) includes, values are considered as an integral part of the way of perception and communication with others in the social context. Competence is a combination of features (knowledge, skills and abilities) that describe the ability of a person to apply these competencies or the level of application of these competencies.

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