

THE IMPORTANCE OF STEAM EDUCATION IN FORMING PROFESSIONAL COMPETENCES OF PRIMARY STUDENTS

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Annotation. Competence is the ability to use theoretical knowledge, skills and qualifications acquired in a particular subject in solving practical and theoretical problems that arise in everyday life and apply them in practice. The article discusses the importance of the STEAM approach in improving the professional competencies of primary school students.

Keywords: STEAM, competence, communicative, information, digital, knowledge, creative, creativity

In our country, attention and care are being paid to the ambitious and ambitious youth, who are our main support in achieving the great goal of building a New Uzbekistan, and the necessary conditions and opportunities have been created for them to fully demonstrate their abilities and potential in all areas, and this issue has always been one of the priorities of state policy.

In particular, comprehensive measures are being implemented to provide active, ambitious, talented, modernly educated young people studying in higher educational institutions, young men and women who are starting an independent life with a decent source of work and income, to teach them modern professions, IT technologies, and to meaningfully organize their free time. Therefore, in higher educational institutions, critical analysis of methods for developing students' professional competence, generalization and selection of optimal options for teaching methods, the use of information and communication technologies in teaching, in particular, the teaching of digital technologies, are important pedagogical tasks. Today, state educational standards require the definition of qualifications based on a competent approach to the development of skills. The reason is that the essence of the educational processes organized in higher

educational institutions is not to develop the needs of listeners, but to convey knowledge based on information technologies.

Such mastered information does not allow the student to adequately develop practical skills. As a result, there are cases where students accumulate a lot of information in vain, resulting in low educational effectiveness. More precisely, it seems that the listener is far from real reality, and the task of mastering only previously accumulated information is set as a goal.

To eliminate such problems, it is considered an important task to organize the educational process on the basis of various new views and approaches. It is not without reason that the words of our President Sh.M. Mirziyoyev, “We will mobilize all the forces and capabilities of our state and society so that our youth can become independent thinkers, have high intellectual and spiritual potential, and become people who are not inferior to their peers in any field on a global scale, and become happy,” are also aimed at stabilizing the thinking abilities of the youth of our new Uzbekistan. Therefore, one of the high tasks for us teachers today is to organize lessons based on modern approaches and meet the demands of the times.

“Competence” (from English “competence” – “ability”) – means the effective use of theoretical knowledge in activities, the ability to demonstrate a high level of professional competence, skills and talent.

The concept of “competence” entered the field of education as a result of psychological scientific research. From a psychological point of view, competence means “how a specialist behaves in unconventional and unexpected situations, enters into communication, takes a new approach in interactions with listeners, performs ambiguous tasks, uses contradictory information, has a plan of action in consistently developing and complex processes”.

Professional competence means the acquisition by a specialist of the knowledge, skills and qualifications necessary for the implementation of professional activities and their high-level application in practice.

Professional competence does not imply the acquisition of separate knowledge and skills by a specialist, but rather the mastery of integrative knowledge and actions in each independent area.

Competence also requires the constant enrichment of professional knowledge, the study of new information, the ability to understand important social requirements, the ability to search for new information, process it and apply it in one's activities.

If competence means the totality of knowledge and its presence in people, then competence means the level of use of this knowledge in the work process.

Formation of professional competence in primary school students

Professional competence is a student's imagination, practical skills, interest in the work process and personal motivation in relation to certain professions. In primary school, this competence can be formed as follows:

1. Role-playing games (embodying professions on a theatrical stage)
2. STEAM projects (for example, building a simple bridge, robotics lessons)
3. Excursions to the world of professions
4. "My profession is my pride" events in collaboration with parents

Through such activities, the child gets acquainted with various professions, understands their content and significance, which serves to form his own interest and professional choice.

STEAM education was first developed in America at the Massachusetts Institute of Technology (MIT). The motto of this famous institute is "Mind and hand". The Massachusetts Institute of Technology has developed STEM courses and even created STEAM education centers in some educational institutions. It is widely used in the education systems of Australia, Great Britain, Israel, Canada, China,

Singapore, and the USA. The goal of education is to develop students' creative thinking and teach them to effectively use natural sciences, technology, engineering, mathematics, and the arts by teaching them through design.

- ✓ STEM education has the following characteristics:
- ✓ ☐ STEM education relies on interactive activities, projects, and educational research.
- ✓ ☐ In a STEM education environment, knowledge retention is important, but how students apply that knowledge is even more important. STEM is not just about teaching students about a topic, but also about showing them how to apply that topic to real-life situations and how to use it in the future. For example, a traditional math course might teach a student an equation, but the student may not know how to apply that equation to real-life situations. STEM education teaches students a mathematical equation and gives them direction on how to use it in different fields, such as science or engineering;
- ✓ ☐ STEM education focuses on engaging, delving deeper into all parts of a chosen topic, and covering a specific part of the subject rather than a general one;
- ✓ ☐ STEM education involves learners in activities that can be directly applied to the subject, which increases learner interest and narrows the gap;
- ✓ ☐ There is no one-size-fits-all approach to STEM education, the lesson should be child-centered¹.

The main goal of school education is to teach knowledge and apply it in the process of thinking and creativity. STEAM education involves combining acquired

¹ Ta'limga STEM yondashuv tatbiqi (Fan o'qituvchilari, metodistlari va soha mutaxassisarlari uchun uslubiy qo'llanma). Samarqand viloyati xalq ta'limi xodimlarini qayta tayyorlash va ularning malakasini oshirish hududiy markazi. Toshkent, 2021-yil, 106-bet

knowledge with real skills. As a result, students' ideas are not only remembered, but also facilitated in their implementation in life.

Ways to improve professional competence through STEAM

1. Advanced training courses: Teachers can acquire modern methodologies through STEAM-based trainings and seminars.
2. Project-based learning: The teacher develops his creativity by creating STEAM projects and gains new experience in collaboration with students.
3. Use of digital platforms: Technological skills are strengthened through online lessons, interactive programs and the creation of 3D models
4. Establishing interdisciplinary integration: By combining knowledge from several subjects in lessons, the teacher's analytical thinking is strengthened.
5. Introducing robotics and STEM tools in education: Through this, the teacher gains practical skills and can effectively use modern educational tools.

As an example, let's take a lesson on the topic "Little Architect" with 3rd grade students. Students were asked to create their own house projects using cardboard, wood, glue, and colored paper. During the lesson:

- ☐ From the math lesson - measuring, separating shapes;
- ☐ From the technology lesson - cutting, gluing;
- ☐ From the visual arts - decorating;
- ☐ From life skills - knowledge about types of housing was repeated.

As a result, the children mastered the skills of creativity, responsibility, and cooperation. Many of them linked their projects to specific professions ("I want to be an engineer," "I want to be an artist").

Conclusion. The STEAM approach deeply develops not only the teacher's style of working with students, but also his professional competence. Today, educators who have mastered this approach achieve high results in education. Therefore, it is important for each teacher to improve their professional level by working on themselves, learning new technologies, and implementing innovative approaches in their work.

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