Application Of The SCAFFOLD Tool In The Formation Of Competencies Of Future Specialists In The System Of Vocational Education

Xaydarov Batir Mashrapovich

Institute for the Development of Vocational Education under the Ministry of Higher Education, Science and Innovations of the Republic of Uzbekistan, associate professor at the Department of Innovative Educational Technologies, Uzbekistan

Abstract: This article examines the competencies embedded in the Qualification Requirements for future specialists, using the profession of "Welder" as an example. It discusses the understanding of terminology such as general, professional, transversal, and key competencies for applying the competencies framework of the SCAFFOLD tool. The article also presents the development of a lesson plan using modern teaching methods within the SCAFFOLD tool and draws conclusions on how using the SCAFFOLD tool can enhance the effectiveness and quality of teaching in vocational education.

Introduction: At present, vocational education institutions in the Republic of Uzbekistan face such tasks as forming a competitive individual and meeting the demands of the labor market. This is particularly relevant because today society and employers in the labor market are interested in a specialist who is prepared to solve professional tasks in various conditions, can organize their own activities, make optimal decisions, and search for ways and methods to perform non-standard tasks—i.e., a specialist who possesses, at a high level, the competencies required for professional activity.

To address these tasks, the Republic adopted the Resolution of the Cabinet of Ministers of April 6, 2017, No. 187, "On Approval of the State Educational Standards of General Secondary and Secondary Specialized Education," which sets the following objectives:

• improving the state educational standards of general secondary and secondary specialized (vocational) education on the basis of a competency-based approach;

• improving the content and quality of educational materials based on the requirements of the competency-based approach, taking into account the development of modern science and technology, and effectively introducing advanced foreign experience in this area;

• ensuring full mastery by students of knowledge, skills, abilities, and competencies based on the requirements of state educational standards;

• developing students' competence in a scientific worldview and global thinking [1].

In accordance with this resolution, the general requirements for graduates of secondary specialized vocational education institutions include professional activity and competencies needed in the modern labor market.

These competencies are embedded in the State Educational Standards as well as in the Qualification Requirements for the graduate's profession. In this material, we focus on one of the most in-demand professions in the labor market—"Welder (electric and gas welding works)" [3].

The Qualification Requirements for the welder profession specify 12 general competencies and 8 professional competencies that a graduate must possess upon completion of training and mastery of the curriculum.

The Qualification Requirements list the following general competencies: the ability to choose methods for finding solutions to various problems arising in professional activity; the ability to work in a team to achieve a goal set by a supervisor; continuous improvement of one's professional skills and personal development; working in a team or group focused on accomplishing a specific task, maintaining sincere, friendly, and productive contacts with colleagues, supervisors, and clients; the ability to express one's opinion freely in oral and written form in the language of instruction; possessing universal human values, loving one's people and homeland, taking pride in it, and respecting national customs and values; searching for information necessary for effective performance of professional duties; applying information and communication technologies in professional activity; working with documents related to the profession; knowing and observing occupational safety and labor protection rules in professional activity; taking measures to prevent environmental damage and to dispose of waste generated in industrial and non-industrial organizations; carrying out activities in compliance with environmental culture in the sector.

The Qualification Requirements list the following professional competencies: organizing the work of welding stations for various types of welding in accordance with labor protection and safety requirements; using design and production-technological documentation for welding work and using measuring instruments; performing metalworking (fitting) operations; assembling parts for various types of welding; performing gas-flame welding, manual electric arc welding with consumable and non-consumable electrodes, as well as manual and mechanized welding in shielding gases.

The modern labor market imposes an entire layer of new requirements on specialists—requirements that are insufficiently reflected or not reflected at all in specialist training programs. As it turns out, these new requirements are not rigidly tied to a particular discipline; they are cross-disciplinary in nature and universal. Their development requires not so much new (subject-specific) content as different pedagogical technologies. Some authors call such requirements basic skills (V. I. Baidenko), others refer to them as supra-professional, foundational qualifications (A. M. Novikov), and still others describe them as key competencies (I. A. Zimnyaya, A. Yu. Petrov).

Given the variety of terms, in order to apply the SCAFFOLD tool to develop students' competencies in the vocational education system and to interpret competencies within a unified framework, it is necessary to bring the competencies from the Qualification Requirements for graduates of vocational education institutions and the SCAFFOLD competencies to a common understanding.

According to the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan of August 7, 2020, "On Approval of Regulatory Legal Acts Regulating the System of Continuous Primary, Secondary, and Secondary Specialized Vocational Education in the Republic of Uzbekistan,"

• general competencies are the ability to function successfully in solving tasks common to most types of activities close to the profession, based on knowledge, skills, and practical experience;

• professional competencies are the ability to act when performing tasks related to professional activity, based on knowledge, skills, and practical experience [2].

The SCAFFOLD tools propose 7 transversal competencies and 57 key competencies (21 for DigComp, 15 for EntreComp, 9 for LifeComp, and 12 for GreenComp). Let us clarify what is meant by transversal competencies.

Transversal competencies are qualities that go beyond a specific field or discipline; that is, they do not depend exclusively on acquired knowledge, but are based on the personality and the ways a person develops [4].

Transversal competencies are a set of skills and knowledge needed to work successfully in any field of activity. They include qualities such as communication skills, teamwork ability, analytical thinking, and others [5].

Key competencies encompass knowledge, skills, attitudes, and values. Key competencies interact with

and influence one another. They are demonstrated in practice—they require action. Key competencies are complex and changeable—they will look different in different contexts [6].

Key competencies are the abilities that people have and need to develop in order to live and learn today and in the future [7].

From the above, we can conclude that SCAFFOLD competencies are more closely related to—or aligned with—the general competencies specified in the Qualification Requirements. They are aimed at personal development and at improving the specialist as a more valuable professional and are universal for many professions. SCAFFOLD key competencies are supra-professional and enable specialists to develop competitive advantages. However, it should be taken into account that, under certain circumstances, SCAFFOLD key competencies can become professional competencies depending on employer requirements and life situations. For example, let us consider the following situation: suppose a graduate decides to organize their professional activity independently as a private entrepreneur; in that case, they will need entrepreneurial competencies. If they establish a small enterprise, they will also need digital, green, and personal competencies.

The value of using SCAFFOLD competencies together with the competencies of the Qualification Requirements lies in preparing a graduate not merely as a worker in a specific field, but as a specialist capable of solving real-life and professional tasks and achieving success.

How can this be achieved using the SCAFFOLD tool? In our view, first and foremost, it is necessary to determine which specific learner needs the work will address. Failure to identify students' needs may lead to low outcomes or even negative results from a lesson. There are many methods for identifying or shaping learners' needs, and teachers must be able to use them. When the lesson objectives and learners' needs are aligned, the expected outcomes will be higher and the quality of instruction will be more effective. Teachers should remember that motivation to learn directly depends on learners' needs.

Second, correct lesson planning and preparation are essential. The entire learning process depends on proper lesson planning. SCAFFOLD tools make it possible to clearly and precisely distribute the elements, sequence, and timing of a lesson. When planning lessons and integrating key competencies, it is recommended to use the inspiring principles of SCAFFOLD.

The SCAFFOLD tools present modern teaching methods aimed at helping teachers develop key competencies through experiential learning. All of them promote learning through experience by offering learners something to act on—for example, solving a problem, creating something new, or finding a way out of difficult situations.

Particular attention should be paid to methods such as Service Learning and the Pedagogy of Value Creation, which help teachers focus learners on creating something valuable for the community and enable them to feel their significance within it.

These methods are based on questions and inquiry, foster critical and analytical thinking, creativity, collaboration, and a growth mindset.

CONCLUSION

In conclusion, the use of the SCAFFOLD tool in the vocational education system in the Republic of Uzbekistan will contribute to improving the quality of education and training for future specialists through lesson planning that incorporates modern teaching and assessment methods, and through developing the competencies demanded by today's labor market and society.

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