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## QUALIMETRIC MODEL OF AN ENGINEER-TEACHER COMPETENCY: DIAGNOSTIC, MONITORING AND COMPENSATORY ASPECTS

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The purpose of the project is to develop, adapt and implement a qualimetric model of future engineers-teachers' professional competency.

The actuality of the work is due to the need to carry out a practical assessment of the quality of vocational and pedagogical training, which requires a detailed model of the competency of a future engineer-teacher. Existing higher education standards serve as such a model today. However, they do not allow to take into account all the nuances of the professional and pedagogical training of a future engineer-teacher and to carry out quality assessment of certain competencies that he or she should acquire during the study at the higher education institution.

Tasks of the research: 1) to analyze the standards of professional training of bachelors and masters in specialty 015 «Vocational Education» (by specializations); 2) to develop a qualimetric model of professional competency of a future engineer-teacher; 3) to create a system for monitoring of the professional competency of future engineers-teachers using the developed qualimetric model and, based on its results, to determine a set of training sessions to compensate the gaps in the professional training of future engineers-teachers.

The main result of the work is the developed qualimetric model of professional competency of a future engineer-teacher, which is based on the current standards of professional training of bachelors and masters in specialty 015 «Vocational Education» (by specializations), which makes it a legitimate basis for assessing the competency of both future and current engineers-teachers.

Based on the carried out work, it is concluded that the created qualimetric model of the professional competency of a future engineer-teacher can be used for: familiarizing students with the requirements of professional training; assessing the level of professional competency of current engineers-teachers by colleagues, inspectors and experts; self-assessment of their own level of professional competency; monitoring the state of training of specialists based on the results of expert evaluation; assessing the level of training of future engineers-teachers by stakeholders.

**Key words:** qualimetric model, professional competency, future engineer-teacher, higher education standard, compensatory trainings.

**Бакатанова В.Б., Тупченко В.В.** "Кваліметрична модель компетентності інженера-педагога: діагностико-моніторинговий та компенсаторний аспекти"

Метою дослідження є розробка, апробація та впровадження кваліметричної моделі професійної компетентності майбутніх інженерів-педагогів.

Актуальність роботи зумовлена необхідністю здійснювати практичне оцінювання якості професійно-педагогічної підготовки, для чого потрібна деталізована модель компетентності майбутнього інженера-педагога. Такою моделлю сьогодні виступають існуючі стандарти вищої освіти. Однак, вони не дозволяють враховувати усі нюанси професійно-педагогічної підготовки майбутнього інженера-педагога та здійснювати кваліметрію певних компетентностей, котрі повинен він здобути під час навчання у виші.

Завдання дослідження: 1) проаналізувати стандарти професійної підготовки бакалаврів та магістрів за спеціальністю 015 «Професійна освіта» (за спеціалізаціями); 2) розробити кваліметричну модель професійної компетентності майбутнього інженера-педагога; 3) використовуючи розроблену

кваліметричну модель, створити систему моніторингу професійної компетентності майбутніх інженерів-педагогів та, на підставі його результатів, визначити комплекс тренінгових занять для компенсації прогалин фахової підготовки майбутніх інженерів-педагогів.

Головним результатом проведеної роботи є розроблена кваліметрична модель професійної компетентності майбутнього інженера-педагога, котра спирається на діючі стандарти професійної підготовки бакалаврів та магістрів за спеціальністю 015 «Професійна освіта» (за спеціалізаціями), що робить її легитимною підставою для оцінювання компетентності як майбутніх, так і діючих інженерів-педагогів.

На підставі проведеної роботи зроблено висновки, що створена кваліметрична модель професійної компетентності майбутнього інженера-педагога може використовуватись для: ознайомлення здобувачів освіти з вимогами професійної підготовки; оцінки рівня сформованості професійної компетентності діючих інженерів-педагогів колегами, перевіряючими та експертами; самооцінки власного рівня професійної компетентності; моніторингу стану підготовки фахівців за результатами експертного оцінювання; оцінки рівня підготовки майбутніх інженерів-педагогів стейкхолдерами.

**Ключові слова:** кваліметрична модель, професійна компетентність, майбутній інженер-педагог, стандарт вищої освіти, компенсаторні тренінги.

**Relevance of a research and statement of a problem.** Strategy for Development of Higher Education in Ukraine for 2021-2031 considers «research, analysis and monitoring of the problems of global, national and regional higher education systems, their interaction with each other and with secondary and professional pre-university education systems» as one of the tasks of scientific and methodological support for the implementation of the Strategy [1, p. 58]. At the same time, Ukraine's entry into European and global educational space requires continuous improvement of the national higher and vocational education systems, as well as the search for effective ways to improve their quality. Increasing attention in the country is being paid to raising the qualification level of specialists trained in vocational (vocational-technical) educational institutions. It is impossible to solve this problem without high-quality professional and pedagogical staff. One of the options for solving it is the use of modern monitoring technologies in education: monitoring the quality of education; monitoring learning activities; monitoring students' learning achievements; monitoring ways of improving the quality of students training and retraining of qualified personnel. All this should be done on the basis of mastering and implementing innovative pedagogical and information technologies. However, in order to solve a number of these tasks, it is necessary to define such key concepts as «monitoring», «quality of education», «quality of professional and pedagogical activity», etc. At the same time, it is necessary to carry out a practical assessment of the quality of professional and pedagogical training and activities on the basis of monitoring, the main tool of which should be an expert assessment.

Accordingly, under such conditions, it is most important to have a clear model of competencies that a pupil, student, or trainee should master in the process of obtaining professional education. This fully applies to the training of future engineers-teachers in higher education institutions, where the main model is the standards of professional training. However, these standards do not allow to take into account all the nuances of professional and pedagogical training and activities of an engineer-teacher, as well as to carry out qualimetry of certain competencies that an engineering and pedagogical employee of a vocational (vocational-technical) education institution should have. Thus, it can be stated that formally the model of a graduate of an engineering and pedagogical educational institution exists, but it has not yet become perfect and qualimetric. This determines the actuality of our research.

**Analysis of researches and publications.** The theoretical foundations for the development and use of factor-criterion models are presented in the works of L. Bachiiyeva, V. Hryhorash, H. Yelnikova, O. Zahika, R. Zelenskyi, O. Kovalenko, K. Kolos, M. Rostoka, Z. Riabova and others. They studied the theoretical foundations of the use of factor-criterion models in the educational area, the basis for which was the qualimetric approach.

The methodological foundations of monitoring studies are considered in the works of Zaslavska T.I., Levada Yu.A., Maiorov O.M., Pishulya N.P., Saveliev A.I., Selezneva N.A., Subetto A.I., Shyshov R.Ye., etc. Scientists Galagan A.I., Saveliev A.Y., Semushyna L.G. evaluate the monitoring in terms of improving the efficiency of planning the development of secondary, higher and vocational education. Mikhailova N.N. and Selezneva N.A. study

monitoring as a means of assessing the quality of education. The monitoring of the educational process in the educational institution, the success of the teacher's activity and the learning of pupils or students, trainees are considered in the works of Gorbatkov S.A., Makarov T.D., Nikitin N.Sh., Skok G.B. and others.

**Statement of a task.** The purpose of the research is to develop, adapt and implement a qualimetric model of future engineers-teachers' professional competency. Tasks of the research: 1) to analyze the standards of professional training of bachelors and masters in specialty 015 «Vocational Education» (by specializations); 2) to develop a qualimetric model of professional competency of a future engineer-teacher; 3) to create a system for monitoring of the professional competency of future engineers-teachers using the developed qualimetric model and, based on its results, to determine a set of training sessions to compensate the gaps in the professional training of future engineers-teachers.

**Statement of the main material.** The analysis of modern scientific and pedagogical sources shows that the issue of objective assessment of the competencies of current and future engineers-teachers has not been sufficiently studied yet. This necessitates a more detailed consideration of the concept of «qualimetric factor-criterion model».

In order to implement the use of the factor-criterion model as a measurement apparatus, it is necessary to use qualimetry (from the Latin *qualitas* - quality or Greek *metreo* - measure). The quality of assessing the state of artificially created systems to some extent depends on the quality of certain indicators (standards) of this state.

Qualimetry technology makes it possible to measure certain parameters of an object state at any time. The technology developed by scientists is based on a comprehensive assessment of an object state, which takes place in two stages: the first is the assessment of simple properties of the object and the second is the assessment of complex properties.

At each stage information is received not about the objects themselves, but about their distinctive features or properties. Thus, the use of qualimetry makes it possible to formalize the qualitative characteristics of complex phenomena and processes by dividing them into simpler ones, to determine their normative or standard course through a system of criteria and indicators of the functioning of the research object, which provides measurement of results that record its state only for a certain time [2, p.49].

The creation of an appropriate model of the desired state of the object (quality) is realized

through factor-criterion modeling. We build a normative model (standard) that monitors the state of development of the object and directs it to the desired result. To do this, we create a standard of materials of promising pedagogical experience quality by defining its criterion basis - parameters and indicators.

The National Doctrine of Education in Ukraine has defined the main goal of modernizing the education system as its quality and universal accessibility. Although the quality of education has always been the subject of attention of heads of educational institutions and teachers, its connection and dependence on information support have been considered mainly at the level of general ideas, without theoretical understanding of their interaction, without the involvement of high-tech technologies in the practice of managing the quality of education. The emergence of many innovative pedagogical technologies has led to the creation of new concepts and terms typical of other (non-pedagogical) fields of knowledge. In the information space such a concept as monitoring is increasingly common.

There are several definitions of the term «monitoring» in pedagogy. Firstly, monitoring is understood as continuous, long-term observation and management of the environment by timely informing people about the possible occurrence of unfavorable, critical or unacceptable situations [3]. Monitoring also refers to a set of research procedures that allows to identify the nature of changes in a particular object over a certain period of time. Thus, monitoring is a systematic, standardized observation of a process [4]. It can also be argued that monitoring is a regular observation of any process in order to identify its compliance with the desired result or initial position. In education system the subject of monitoring research is most often the quality of education. Due to the fact that the effectiveness of an educational institution can be considered as one of the manifestations of the quality of education (V.A. Kalney, V.P. Panasiuk, S.Ye. Shyshov and others), monitoring can be understood as the identification and evaluation of the effectiveness of educational institutions, the presentation of performance indicators of this activity on the basis of developed key performance indicators, in order to solve problems of improving the quality of management of education system.

The problem of education quality and its assessment are among the key issues in the education system. A lot of practically significant issues and tasks in the education system are related to the problem of quality and its solution. The

quality of education is also largely determined by the type of society and state. Experts of the Committee on Education of the Council of Europe believe, for example, that education policy «is a major part of the expression of the will and sovereignty of each country» [5, p.21]. In other words, a lag in the quality of education can have global negative consequences for any country, including even the loss of sovereignty.

In education, the problem of quality has been discussed by experts for decades. Studies aimed at solving this problem began in the 70s of the last century, but even today neither researchers nor practitioners in the field of education have clear, specific ideas about what should be understood by the quality of education, what requirements are set for the quality of education, on the basis of which indicators one can judge the quality of education, etc.

On the other hand, there is no shortage of concepts and scientific ideas about the quality of education in pedagogy. There are many of them, but the main problem here is that there is no such idea that could be the basis for solving practical tasks and problems and meet modern requirements. For example, teaching practice is dominated by the notion of studying quality as a certain level of mastery of subject knowledge, which is reflected in marks. However, a lot of scholars and practitioners believe that this idea is outdated and does not meet modern requirements for the quality of education.

Educational standards can be considered as a special type of representation of the quality of education. However, even in this case, there is no clear idea of the levels of quality of education. For example, there are different points of view on what to consider standards in education and training. Some people believe that standards should define the level of education that the state can guarantee to each student. Others insist that a standard is a certain minimum of subject content that every student should master (a standard as a low limit that separates the taught from the untaught). Still others propose to consider standards as a social order that takes into account the requirements of society, and these requirements should take into account not so much the present as the future state of society and its problems.

There are many other concepts and ideas about the quality of education, which can be found in publications on this issue [5]. However, the idea of the quality of education (theory, model, scheme) itself is a kind of intermediate stage or condition for solving a number of practical problems.

Thus, we have the problem of determining the quality of education in general, and the problem

of determining the quality of engineering and pedagogical activities in particular. The solution to this problem is seen through monitoring, which should be introduced in engineering education institutions. Monitoring, in turn, is carried out in accordance with previously clearly defined goals, the achievement of which will lead to the planned result. To define the goals preliminarily, it is necessary to carry out a certain analysis as the first step towards defining the goals. After the analysis, it should become clear what needs to be changed, improved or perfected.

The problem of the competency-based approach is characterized by Ukrainian scholar I.Ye. Klak as follows: «Today in Ukraine the competency-based approach is also recognized as one of the areas of education modernization. This issue is a key one in the regulatory documents on the development of national education: The National Doctrine of Education Development of Ukraine in the XXI Century, the National Strategy for Education Development in Ukraine for 2012-2021, the National Qualifications Framework, the Concept of Continuing Teacher Education Development, etc. These documents define that the main goal of the Ukrainian education system is to create conditions for the development and self-realization of each individual, to ensure high quality education for secondary and higher education graduates. The overwhelming majority of teacher-scientists and practitioners are convinced that training of specialists in any field should be carried out on a new conceptual basis within the framework of a competency-based approach» [6].

In modern national pedagogy, there are a large number of different approaches that are the basis for training specialists. Among them are both well-known and well-established (traditional knowledge-centered, systemic, activity-based, integrated, individual-oriented, personality-activity) and new ones that have entered scientific circulation relatively recently (situational, contextual, polyparadigmatic, informational, ergonomic, etc.). The second group includes the competency-based approach. The methodologies included in the first group are more or less fully developed, although to varying degrees. Thus, the systemic, activity-based and integrated approaches have a convincing grounding.

Defining the essence of the competency-based approach requires clarifying what is meant by «approach» in general.

Thus, a certain approach is used as a set of ideas, principles, and methods used to solve a problem. However, the approach is often reduced to a method (for example, they talk about a

systematic approach or a systematic method, etc.) This is not correct, because an approach is a broader concept than a method. An approach is an ideology and methodology for solving a problem that reveals the main idea, socio-economic, philosophical, psychological and pedagogical prerequisites, main goals, principles, stages and mechanisms for achieving goals. A method, on the other hand, is a narrower concept that includes knowledge of how to act in a given situation to solve a particular task.

Based on the above understanding of the approach, we will now reveal the goals and content of the competency-based approach.

The implementation of the competency-based approach in education has its own history and peculiarities related to the specifics of the development of education systems. Since the 70s in the United States, and since the 80s in Western Europe, competency-based studying models have been used in the context of activity-based education, which aimed to train specialists who are able to compete successfully in the labor market, i.e., those who have professional competencies. Competency-based and activity-based approaches allow for an effective transition from a knowledge-based education paradigm to an activity-based one focused on relevant and demanded studying outcomes.

To reveal the essence of the competency-based approach in education, let us turn to the key concepts of «competence» and «competency».

In our opinion, the most appropriate definitions of these concepts were given by the Ukrainian scientist I. Vasyliiev: «Competence is the range of powers of an official, within which he or she must have the necessary knowledge and has the right to make responsible decisions. Competency is the ability of an employee to perform certain types of work within a particular profession, achieving high quantitative and qualitative results of work based on his/her professional knowledge, skills and abilities. Competence and competency are correlated as a cause and effect. Competence belongs to the position, and competency - to a particular employee, his/her personality» [7, p.15-16]. Defining these concepts as the main categories of professional pedagogy, the author in [8] explains that the misuse of these concepts occurred because they tried to involve international documents written in English in national science and practice. And, further, he explains that both the concepts of «competence» and «competency» are translated into English by the same word «competence», which violates the main rule of an organized terminology system «one term - one concept». In

our further discussions, we will take into account these thoughts of the author.

The competency-based approach has pedagogical prerequisites in both practice and theory. Speaking about the practice of vocational education, educators have noticed long ago a clear discrepancy between the quality of graduate training provided by an educational institution (school, vocational school, higher education institution) and the requirements set for a specialist by industry and employers. This indicates the existence of gaps in training of specialists, which means that when forming a system of subject knowledge and skills, educational institutions pay clearly insufficient attention to the development of many personal and social competencies that determine (at the same level of education) the competitiveness of a graduate.

The goal of implementing the competency-based approach in vocational education is to form a competent specialist who has not only knowledge, skills and abilities of a certain level, but also the ability and willingness to implement them in professional activities.

The competency-based approach to education is built around the development of certain competencies in students. This becomes the main goal and result of education. This approach is also manifested in the special organization of educational process, in the choice of content, forms, methods and means of teaching.

In Ukraine, this approach appeared not so long ago. The fact is that in the traditional educational paradigm of our country, the goals and planned learning outcomes were formulated in the form of knowledge, skills and abilities (KSA). They are mentioned in the works of national classics of pedagogy and psychology. This is a balanced system in which knowledge becomes the basis for the development of skills, and they turn into sustainable skills in the course of practice. Accordingly, for decades, teachers and methodologists have focused on the transfer of knowledge rather than its application in practice. It was assumed that the necessary skills would somehow be formed by themselves in the process of acquiring knowledge.

However, reality has shown that it does not work that way. For example, students who have successfully graduated from university often had to (and still have to) relearn and retrain at the workplace in order to fulfill their professional tasks.

This problem has become even more acute in the 21st century. Information technologies are rapidly developing, market requirements are changing, and in such conditions, the accumulation

of knowledge alone, without holistic competencies, loses its meaning. Instead, the ability to solve various problems and tasks, many of which do not have ready-made solutions, is becoming increasingly important. It is believed that the competency-based approach can solve this problem.

Education based on the competency-based approach is applied. That is, people who have mastered a certain level of education have the necessary competencies and are ready to solve certain practical problems with their help.

It is believed that the concept of competency was first introduced into scientific circulation by the American psychologist Robert White in his article «Motivation reconsidered: The concept of competency» published in 1959. But this term was not immediately adopted in the field of education.

As a rule, there are three main stages in the process of developing a competency-based approach to education.

The first stage was in the 1960s and 1970s. During this period, researchers began to use the term "competence" and created the prerequisites for distinguishing between the concepts of «competence» and «competency». For example, linguist Noam Chomsky in his work of 1965 «Aspects of the Syntax Theory» called competence a person's knowledge of his native language, emphasizing that this knowledge, itself hidden, is manifested only in use (i.e., competency).

The second stage was in the 1970s and 1990s. The concepts of competence and competency began to be widely used in the theory and practice of teaching the native language, as well as in the field of human resources management. Researchers began to compile lists of competencies. For example, John Raven in his book «Competency in Modern Society», published in 1984, identified 37 competencies, including the ability to learn independently, seeking and using feedback, the ability to solve complex problems, critical thinking and self-control. In addition, scientists have addressed the question of how to structure learning in such a way as to develop the desired competencies.

The third stage was 1990-2001. At the Bern Symposium in 1996, Walo Hutmacher presented the concept of key competencies and identified five types of them: political and social; related to life in a multicultural society; communicative; related to the growth of information society; ability to learn throughout life.

Considering the issue of the competency-based approach in general, one cannot but consider the competency-based approach in vocational education.

By the Resolution of the Cabinet of Ministers of Ukraine of August 7, 1998, No. 1247 «On the Development of State Standards of Higher Education» this approach was introduced in vocational education.

The system of competencies appeared in the state standards of vocational education after 2007, and it is even more explicitly present there than in general education. For example, all requirements for learning outcomes in colleges and universities are given in lists of competencies - universal, general and professional (the latter, however, are replaced by references to professional standards, where possible).

In practice, the development of various competencies in students is again not so simple - not only with universal, but also with professional ones.

The formation of universal competencies in higher education faces the same obstacles as in school - there are still no universally recognized approaches to the development of, for example, critical thinking, communication skills and leadership qualities. As a result, Ukrainian students lack these skills, although in recent years' projects have emerged to improve the situation.

Professional competencies pose a different kind of problem. For example, the idea of close cooperation between higher education institutions and businesses was popular for some time. In theory, this is a win-win variant: companies formulate specific requests for specialists with the necessary competencies, and higher education institutions improve their programs to meet these requests, invite production employees as teachers, and send students for internships in partner companies. As a result, everyone seems to benefit: higher education institutions receive investments, students become sought-after specialists, and employers no longer have a shortage of new qualified personnel. However, there are opinions that this practice is not the most successful, as training in higher education institutions becomes too narrow and focused only on working in a particular company, which, in turn, reduces the professional mobility of a graduate of a higher education institution.

Free from the existing shortcomings of the practical implementation of the competency-based approach, in our opinion, can be the systemic competency-based approach proposed by I. Vasylyev, as «a way of constructing the content of professional training of vocational school teachers, which, based on the scientific understanding of the elemental composition of the pedagogical system and the structure of professional competency of a specialist formed on this basis, allows to form the content of his/her training in such a way that it has

systemic integrity, optimal volume and ensures the formation of the maximum possible number of components of professional and pedagogical competency in the graduates» [8, p. 181].

In our opinion, the standard of professional training of bachelors and masters in specialty 015 «Vocational Education» meets the above requirements (systemic integrity, optimal volume, focus on the formation of the maximum possible number of components of professional and pedagogical competency). Therefore, we will take it as a basis for the formation of a qualimetric model of professional competency of future engineers-teachers.

To solve the first task of our research we got acquainted with the competency-based approach and determined from many teacher-researchers who studied the competencies of engineers-teachers that the list of these competencies is quite scattered. The analysis of the standards of professional training of bachelors and masters in specialty 015 «Vocational Education» led to the conclusion that the fundamental and most essential components of the professional competency of an engineer-teacher are embodied in them to a certain extent. Accordingly, we grouped the competencies specified in the standard into 5 main groups.

All these actions made it possible to solve the second task of our research - to develop a qualimetric model of the professional competency of a future engineer-teacher, which is shown in Fig. 1. Let us consider this process in more detail.

The development of a qualimetric model of professional competency began with the grouping of competencies into 5 groups, which can be considered, to some extent, as factors influencing the overall professional competency of an engineer-teacher. Thus, in general, the psychological and pedagogical competency includes communicative, psychological, pedagogical and methodological competencies. General cultural competency was also defined as an integral competency, which also included legal competence. In general, the distribution of factors into 5 main groups includes the distribution of their corresponding competencies specified in the standard. We have also analyzed the program results that should complement the identified competencies.

Next, we determined which competencies should be formed and what program results they are specified by. For each competency, understood as a certain ability, a correspondence coefficient (C) was developed with a theoretical definition of its value (V) for each competency or group of competencies.

Thus, the proposed qualimetric model of professional competency of a future engineer-teacher should be used in the educational process for:

- familiarizing students with the requirements of professional training;
- assessment of the level of professional competency of current engineers-teachers by colleagues, inspectors and experts;
- self-assessment of one's own level of professional competency;
- monitoring the state of training specialists based on the results of expert evaluation;
- assessment of future engineers-teachers level of training by stakeholders.

In addition to the qualimetric model of professional competency of an engineer-teacher, an additional system of diagnostic materials was created, which is proposed for a more substantive definition of the problems of engineering and pedagogical training.

Also, trainings were offered that were recommended for students who have difficulty communicating, establishing interaction with students, relieving stress in public speaking, etc. That is, applying the developed qualimetric model, we not only created a system for monitoring the professional competency of future engineers-teachers, but also, based on its results, identified a set of training sessions to compensate for the gaps in the professional training of future engineers-teachers. Such trainings are called compensatory trainings. They constitute a certain complex, but the work on its replenishment and improvement will continue: it should be permanent and take into account all changes in the educational space: technical and technological, software and methodological and developments in the field of artificial intelligence.

Thus, the third task of our research was solved.

**Conclusions.** 1. The developed qualimetric model of professional competency of a future engineer-teacher is based on the current standards of professional training of bachelors and masters in specialty 015 «Vocational Education» (by specializations), which makes it a legitimate basis for assessing the competency of both future and current specialists. 2. The created qualimetric model of professional competency of a future engineer-teacher can be used for: acquaintance of students with the requirements of professional training; assessment of the level of professional competency of current engineers-teachers by colleagues, inspectors and experts; self-assessment of one's own level of professional competency; monitoring the state of specialists training based on the results of expert evaluation; assessment of the level of training of future engineers-teachers by stakeholders.

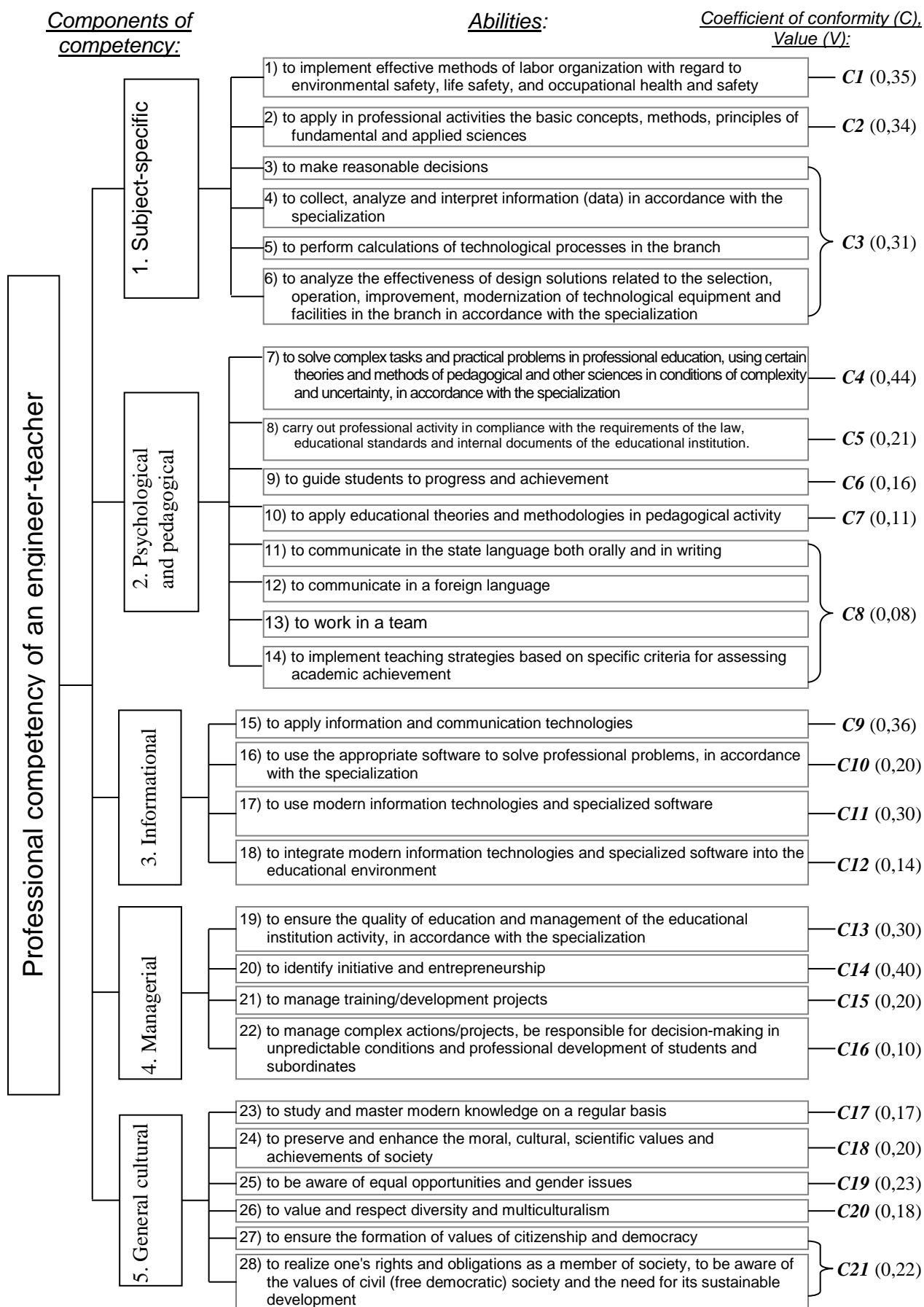


Fig. 1. Qualimetric model of professional competency of an engineer-teacher



3. We consider it necessary to apply the qualimetric model in the 4th year of study in training students for pedagogical practice for informational and diagnostic purposes. After the pedagogical practice, it is also advisable to re-evaluate the self-assessment and expert evaluation of the level of professional competency of future engineers-teachers. This will help to identify gaps in training and the possibility of eliminating them through a system of compensatory training exercises. Students need to understand which competencies are the weakest and, accordingly, together with their teachers, plan a system of exercises and trainings that will help to level the identified drawbacks.

4. Based on the results of the analysis of state standards (both bachelor's and master's) in specialty 015 «Vocational Education», we have determined that none of them defines even individual elements of acmeological competency, that is, graduates are not familiar with the basic

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principles that must be followed in professional activities to achieve a high level of professionalism. We believe that it is not advisable to teach this at the initial stage of professional training, but after the pedagogical practice, each future specialist should create a trajectory of professional growth and form their own guidelines in professional activity.

**Prospects of further researches.** We consider the following to be promising for further research: a broad expert evaluation of the developed qualimetric model of professional and pedagogical competency of the future engineer-teacher by current specialists in vocational (vocational-technical) education; development and testing of additional diagnostic tools for each component of the professional competency of the engineer-teacher; improvement of the system of compensatory training and methodological guidelines for their application.

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