



COMPETENCE APPROACH IN FUTURE SPECIALIST SKILLS DEVELOPMENT

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ABSTRACT

The realities of the modern labour market dictate the conditions for the transformation and modernization of traditional approaches to training specialists, in this regard, the article considers the features of the competency-based approach to the learning process.

The characteristics and features of the methodology under consideration suggests a synergy between the use of academic methods of academic type and approaches focused on the development of specific competencies. The purposes indicated in the article use a modular system of specialist training, with mandatory intermediate testing of results, which means that they can be used both in a complex and individually.

Orientation to the flexibility of building the educational process, clearly defining assessment criteria, and the formation of a systematic approach to the learning process

on a competency-based approach, allowed us to conduct a successful pedagogical experiment, the results of which are presented in this article.

Keywords: Competence Approach, Skills Development, Specialist

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1. INTRODUCTION

A competency-based approach to the training of future specialists is becoming increasingly important in terms of bridging the gap between learning outcomes and modern labour market requirements [1-4].

The essence of this approach is the ability to prepare a competitive specialist who possesses not only knowledge, skills, but also has the ability to effective professional self-improvement

Modern realities of the labour market require future specialists not so many skills and expertise in the relevant field, but also such qualities as competitiveness in the labour market, fluency in their profession and a sufficient level of knowledge in related areas, self-development skills, and the ability to provide their professional growth, the availability of capabilities for social and professional mobility, the ability to adapt to changing external conditions [5-6].

All of the above can no longer be provided to a future specialist through the traditional approach to training through a system of "knowledge-abilities-skills", which is why the competency-based approach to the preparation and development of skills of future specialists comes to the fore.

2. METHODOLOGY

In the modern environment, the professional sphere clearly denotes the requirements for future specialists and more and more often those who possess the formed circle of relevant competencies and competences, which are the keys to the world of the profession and success, have great advantages and competitiveness [7-8].

2.1. The essence of the competency-based approach and the definition of critical concepts.

A competency-based approach is bringing education in line with market needs, based on the concepts of "competence" and "competency".

Competence is the personal capabilities of an official and his qualifications (knowledge, experience) that allow him to take part in the development of a specific range of decisions or solve problems himself, due to the presence of certain knowledge and skills.

The concept of "competency" reflects the final result, indicating the employee's work efficiency, his ability to achieve goals in his work. Assessment of employee competency is based on professional standards, on his ability to cope with job duties.

Competence is a group of knowledge in a specific field, skills and relationships that:

- affect a significant part of professional activity,
- associated with the implementation of activities,
- can be measured contrary to accepted standards,
- can be developed through training.

When considering the competency-based approach to the training of specialists, the error of contrasting competence with knowledge or skills should be avoided. The concept of competence is much broader than the idea of knowledge or skill, of course, it includes them, but we are not talking about competence as a simple sum of knowledge and skills (Fig. 1).

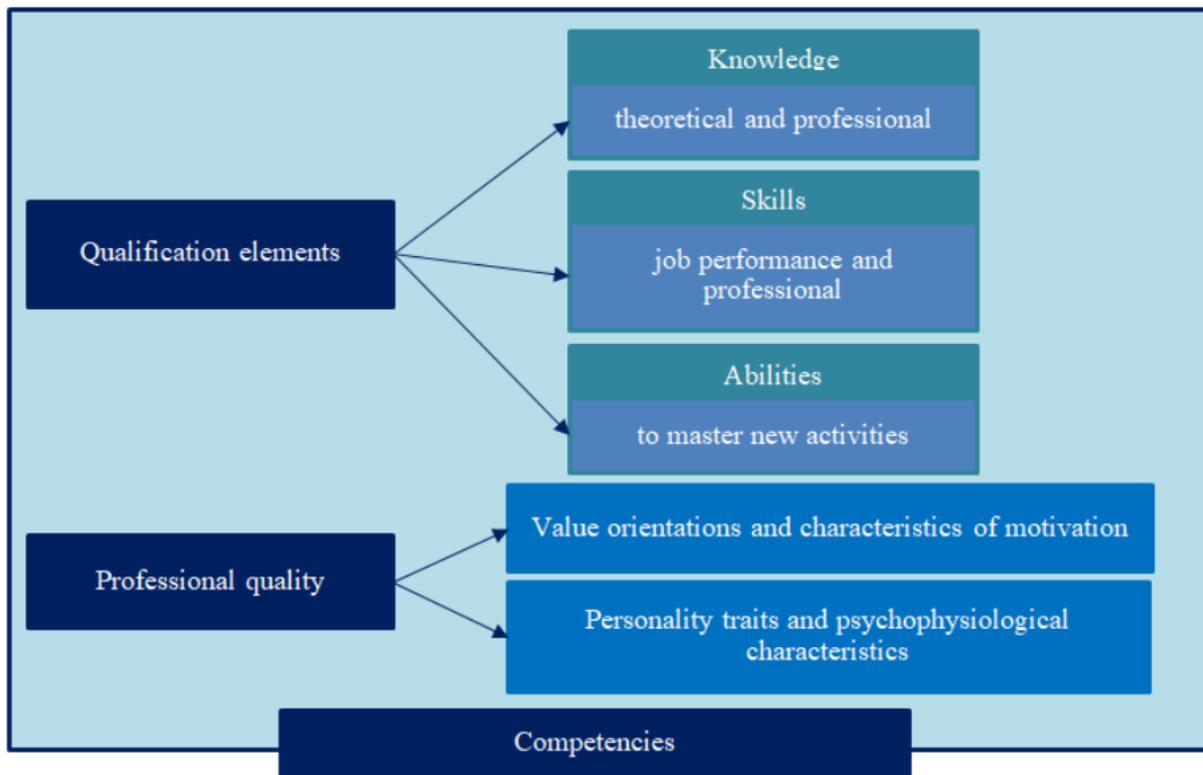


Figure 1 Competency framework

The concept of competence is broader than knowledge or skills. In essence, competency includes knowledge, skills, educational and life experience, values, interests that are independently implemented by a specialist and used by him in a specific situation.

Interpreting the requirements of market conditions for future specialists, taking into account the competency-based approach in the field of business, economics, management and training, as applied to the system of development of skills of a future specialist, then his competency model will include the following elements:

1. Algorithm (technology) of the specialist's productive activity – the sequence of «steps» and their nature, optimal for achieving the planned result under the given conditions, or rather, a set of such courses, generally similar to each other, but different for different situations and for different levels quality.
2. Theoretical knowledge – systematized information about the activity performed, as well as about the conditions of this activity, its objects and subjects, necessary for the conscious formation of skills, as well as for the formation and variable application of the algorithm of effective activity.
3. Psychological attitudes – an understanding of the meaning of the activity, a positive attitude towards it, self-confidence. The integrative characteristics of competence in terms of views are motivation and purpose.
4. Skills – a set of individual actions that allow you to effectively implement the algorithm of effective activity.

5. Personal and professional qualities - provide a level, and often the very possibility of implementing all the actions performed. They differ from skills by their relative non-specificity.
6. Professional experience - provides stability and cost-effectiveness of the implementation of the selected activity algorithm, especially in
7. Self-development - the realization of one's potential, the ability to independently acquire new knowledge and skills.
8. Professional development - the ability to continuous professional growth.

Based on the preceding, it can be concluded that competencies are defined as a dynamic combination of knowledge, understanding, skills and abilities. Giving a characterization of competence, it should be noted that the entire list of competencies of future specialists can globally be divided into two groups of general skills and specific areas of professional activity (their diagram is presented on Fig.2).

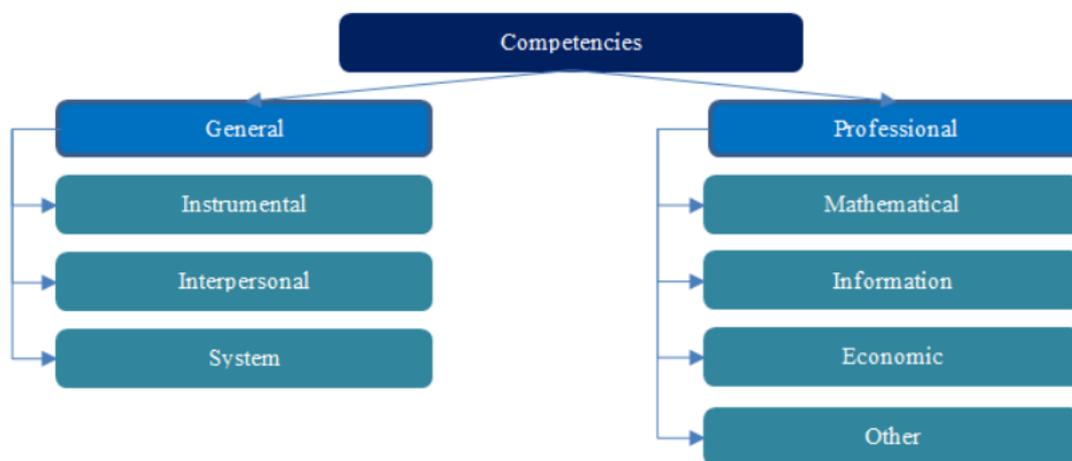


Figure 2 Classification of specialist competencies

General competencies are those competencies that are considered essential for specific social groups. The importance of basic skills cannot be overestimated since they are considered crucial and provide more extensive employment opportunities. The ability to analyze and synthesize, general knowledge, knowledge of European and international realities, the ability to self-study, cooperation and communication, perseverance, leadership and organizational skills, planning skills - these are qualities that are useful in many situations, and not just in a specific subject area. General competencies are divided into three categories: instrumental, interpersonal, and systemic. These qualities are essential in the performance of any activity, and not only professional. They are multifunctional - they allow solving many problems and tasks in everyday life, in various situations; interdisciplinary and interdisciplinary; multidimensional – include various intellectual skills (analytical, critical, communicative, etc.); require significant intellectual development: abstract and critical thinking, self-reflection, determination of one's position, self-esteem, etc.

Instrumental competencies include cognitive ability, the ability to understand and use ideas and considerations; methodological abilities - the ability to understand and manage the environment, organize time, build learning strategies, make decisions and solve problems; technological skills - skills related to the use of technology, computer skills and information management abilities; linguistic skills - communication skills.

Interpersonal, that is, individual abilities, are associated with the ability to express feelings and attitudes, critical reflection and the ability to self-criticism, as well as social skills that are

associated with the processes of social interaction and cooperation, the ability to work in groups, and to accept social and ethical obligations.

System competencies are a combination of understanding, attitude and knowledge, which allows us to perceive how the parts of the whole relate to each other and evaluate the place of each component in the system, the ability to plan changes to improve the system and construct new arrangements. Specific or professional competencies are closely related to specific knowledge acquired in the learning process and reflect the specifics of the professional part of education.

2.2 The model of the competency-based approach to the formation and development of the competencies of a future specialist.

A competency-based approach assumes that the goals facing the educational system are not determined within the system itself, but are dictated by the labour market. This actualizes not only the rethinking of the goals and results of education but also the search and development of new mechanisms in the processes of formation of a modern specialist by modernizing the content of professional training and optimizing the ways and technologies of organizing the educational process.

The principles on which the proposed methodology of the competency-based approach to training specialists will be based is schematically presented in Fig.3

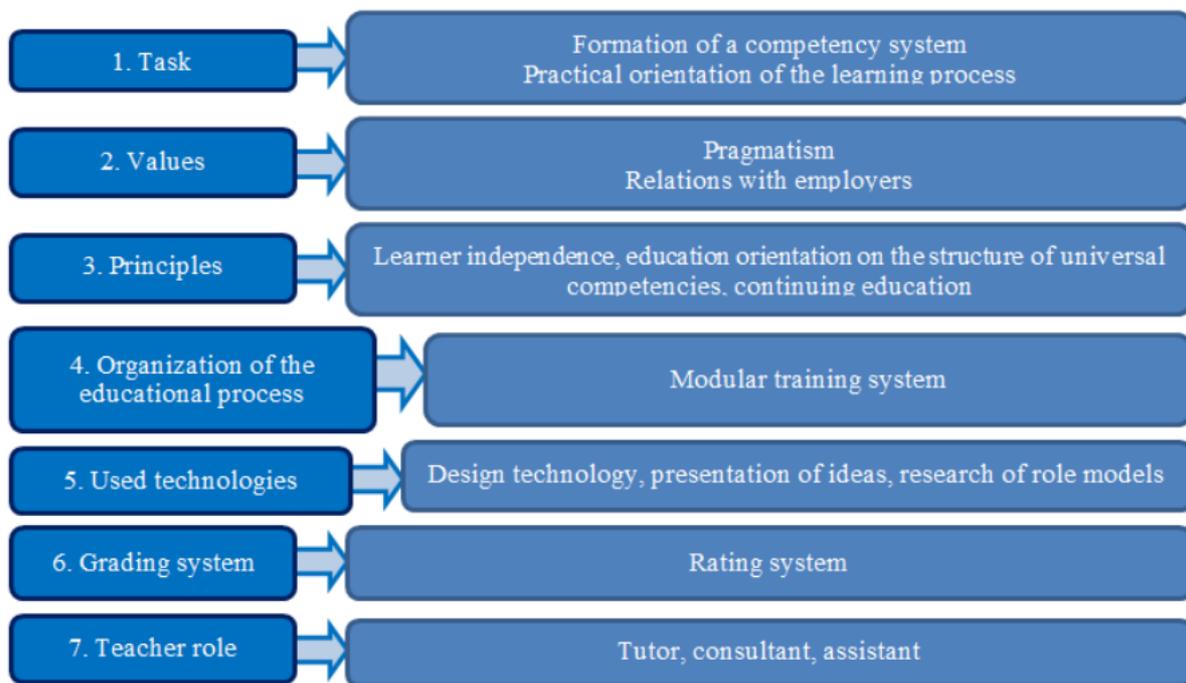


Figure 3 Principles of the competency-based approach to specialist training

Speaking about the competency-based approach and comparing it with the traditional systemic training of future specialists, the question arises whether focusing on competencies would mean a shift in emphasis from future specialists to gaining professional knowledge.

As already mentioned above, competencies are a broader concept than professional knowledge and skills, therefore, answering the question of what is the ratio of knowledge and competencies, we can assume that knowledge is the basis of competence, and the improvement of the educational process, taking into account the competency-based approach, consists in to teach students how to apply their knowledge and skills in specific situations.

The proposed training model, based on a competency-based approach to training specialists, is schematically presented in Fig.4

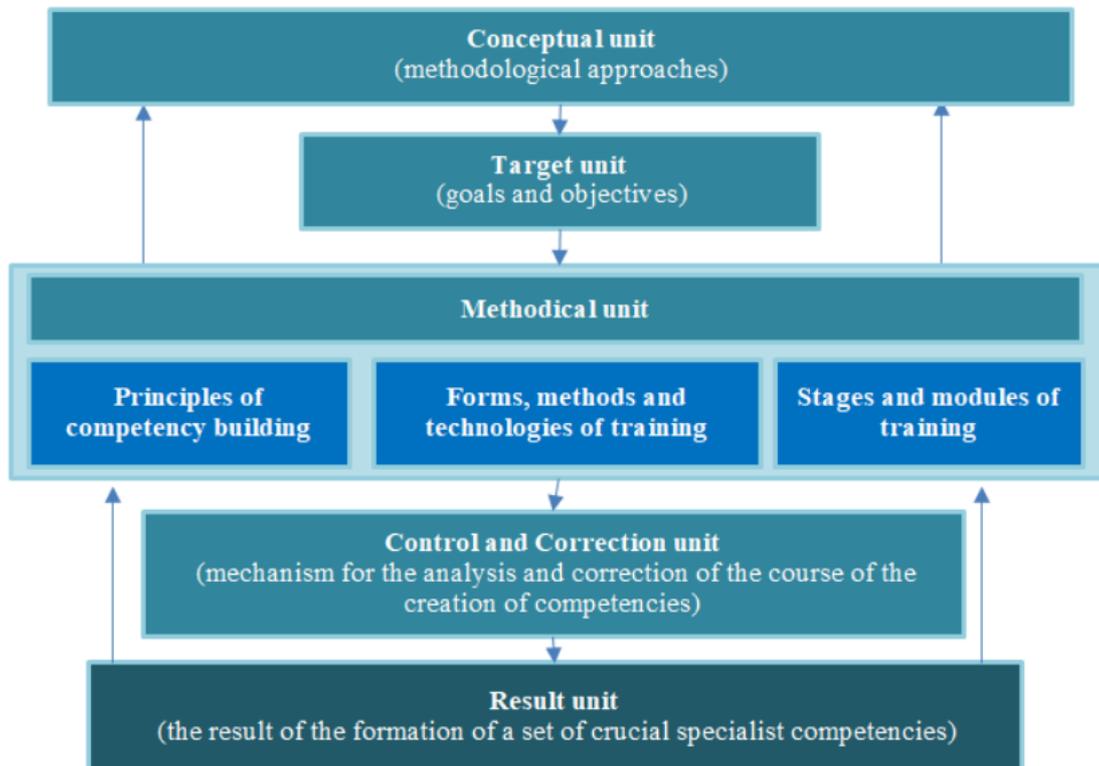


Figure 4 Model competency-based approach to the training of future specialists

The target block of the model aims to form the basis of the competence of future specialists, to achieve which it is necessary to solve the following problems: the formation of future specialists in the process of training value orientations and motives to acquire the necessary knowledge and skills; the formation of skills and personal qualities that contribute to the motivated and responsible use of them to solve various problems.

The content-methodical block of the model determines the content and methodology of forming the necessary competencies of future specialists. Based on the combinations of personality-oriented, systemic, and competency-based approaches, the following three types of student activity are established: academic-type educational activities (educational activities per se); quasi-professional activity (business and other game forms); educational and professional activities (research work of students, practical training) and intermediate forms.

The next block of the model is *the performance-correction block*, which includes a mechanism for analysis and correction of intermediate results of formation among specialists of relevant competencies. It provides analysis and comparison of the results of the creation of competencies, through the use of integrated testing systems at various stages of training.

The productive block of the proposed model includes a result that should be correlated with the goal and objectives of training future specialists. This result of the implementation of this process will be the formation of a set of critical competencies.

Each of these activities contributes to the formation of specific competencies of future specialists.

Academic-type educational activities contribute to the acquisition by students of knowledge about existing technologies, their application in future professional activities, and therefore contribute to the formation of necessary and professional competencies.

In the quasi-professional activity, the knowledge acquired by students is updated and applied in the process of future professional activity through such training forms and methods as business (role-based simulation) games, analysis of specific situations, etc.

By participating in educational and professional activities, students gain real experience in future professional activities. The main unit of learning content for this type of activity is the problematic educational and social situation, or a fragment of professional activity, which is analyzed and transformed in the forms of students' joint activity. It is vital that such activity is primarily creative, and also styles and develops both interpersonal and systemic competency groups.

The effective formation and development of competencies are based on an appropriate combination of both traditional methods and active, collective learning strategies that are of a problem-research nature and model the problems of the professional activity of a future specialist. The technologies of joint activity, game technologies, the project method, the method of analysis of specific situations, and practical work are such technologies and techniques.

It is impossible to speak about the presence or absence of competencies in absolute terms. In essence, people own competencies to varying degrees, so competencies can be placed along an appropriate scale and developed using theoretical and practical training.

3. EXPERIMENT AND ANALYSIS OF THE RESULTS

To test and confirm the effectiveness of the developed model of the competency-based approach to the training of future specialists, the following research was conducted. The study was based on student economists at different stages of the learning process, but for the purity of the experiment, students of the first years of research were excluded. Two groups of comparable numbers were involved in the experiment – the control group (38 students) and the experimental group (39 students). In the control group, training was conducted based on a standard curriculum, in the experimental group – using competency-based approaches to the learning process. The result of the process of training all students, and their formation as trained specialists, should be the correspondence of their knowledge to the list of requirements presented in Table 1.

Table 1 Requirements for the professional preparedness of a future specialist, necessary for him to perform professional functions.

The specialist should be able to:	
1	carry out normalized control of technical documentation
2	develop new and revise existing standards, specifications and other documents for standardization and certification
3	carry out a systematic check of the criteria used in the enterprise and other materials on standardization and certification
4	to control the implementation of standardization work by business units
5	design tools and technologies for measurement and control
The specialist should know:	
6	legislative and regulatory legal acts; teaching materials on standardization, certification and quality management
7	essential technical and structural characteristics of products, organization of design and technological preparation of production; production capacities, technical characteristics, design features and equipment operating modes

8	system of state supervision, interdepartmental and departmental control over product quality, standards and measurement uniformity
9	methods and means of product quality control; organization and technology of product certification; test and acceptance rules
10	methods of product quality analysis, organization of statistical quality control and process control
11	fundamentals of economics, labour organization, production and management, fundamentals of legislation and labour protection standards
12	the procedure for the development, approval and implementation of standards, specifications and other regulatory documentation
13	quality systems, the process for their development, implementation, certification and audit
The specialist should be able to apply:	
14	computer technologies for planning and conducting work on standardization, accreditation and metrology
15	test and measurement equipment for product quality control
16	methods of unification, simplification and calculation of parametric series in the development of the standard
17	methods for controlling the quality of products and processes when performing work on certification of products and quality systems
18	methods of analyzing data on product quality and methods for determining the causes of marriage
19	technology for the development and certification of measurement, testing and control procedures
20	methods for calculating the economic efficiency of standardization and certification

At the initial stage of the experiment, diagnostics were carried out, and indicators of the formation of professional competence of future specialists were determined, separately for the control group (Fig .5) and the experimental group (Fig. 6).

It should be noted that despite the fact that the competency approach in training specialists was used when working with the experimental group, the set of competencies of the future specialist is typical for both groups, their level of professional knowledge and skills should be comparable in the result of training.

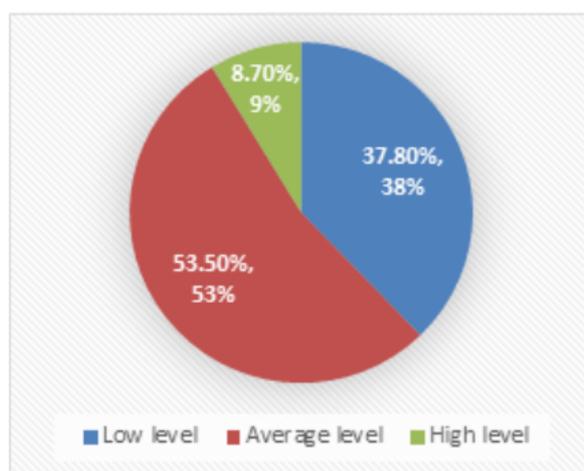


Figure 5 Indicators of the level of professional competencies of the control group at the initial stage of the experiment

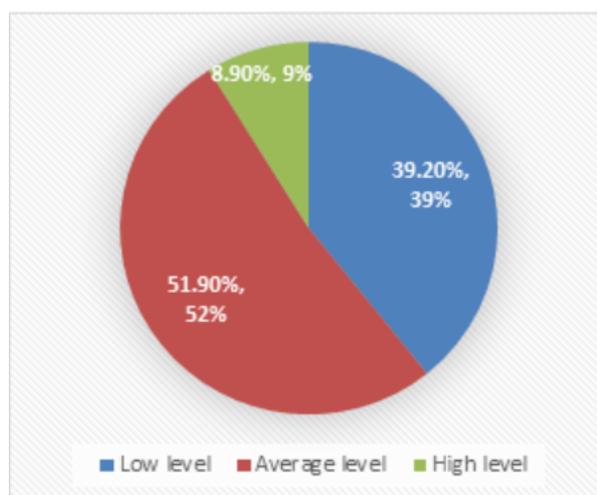


Figure 6 Indicators of the level of professional skills of the experimental group at the initial phase of the experiment

Testing of professional knowledge both in control and in the experimental groups shows that the level of their assimilation is at approximately equal indicators. At the same time, to assess the formation and development of competencies, the control and evaluation system should be updated to adequately evaluate the results of the two approaches to the learning process, namely, to take into account and observe the fundamental principles of the assessment approach:

- minimize subjectivity in the final control and switch to the expanded use of standardized tests;
- reduce the share of authoritarianism and coercion in the current control, create conditions for self-control and self-esteem of students;
- abandon the predominant orientation of the current and final control to assess the results of memorization, activity according to the model, algorithmic knowledge and go to innovative meters that provide an assessment of competencies, abilities for creative and practical activities;
- replace the usual orientation to the “average student” with individualized methods of correction of educational activity in the process of current control, systematically use input control;
- to reduce the share of traditional written checks by introducing authentic forms of assessment, involving the use of relevant, meaningful for students, assessment tools in control: practical skills tests, situational tasks and work on projects.

All this will allow not only to assess knowledge effectively but also to track the process of formation and development of competencies of future specialists. It should be noted that the analysis of student training data on the competency-based approach revealed the following features.

At a high level of formation of students' competencies, the following indicators are distinguished:

1. the ability to create professional activity, including in situations of a high degree of complexity and uncertainty,
2. the prevalence of internal motives for educational and professional activities, readiness for self-development and self-improvement;
3. steady formation of expert knowledge;

4. the ability to solve situations and tasks of a high degree of complexity based on independently developed technologies;

At an average level of competency formation:

1. the ability to produce professional activities;
2. the formation of generalized professional knowledge, but taking into account some gaps in highly specialized and related fields of knowledge;
3. possession of skills to resolve predominantly typical situations and tasks

At a low level of competency formation:

1. the ability to reproductive professional activity according to a given algorithm (instructions),
2. the prevalence of external motives of educational and professional activities;
3. the creation of superficial knowledge;
4. the ability to solve typical situations and tasks, as a rule, based on low-efficiency technologies;

The final test result of specialists of both groups, at the end of the preparation process, showed the following results presented on, Fig. 7 for the control group, and Fig. 8 for the experimental group.

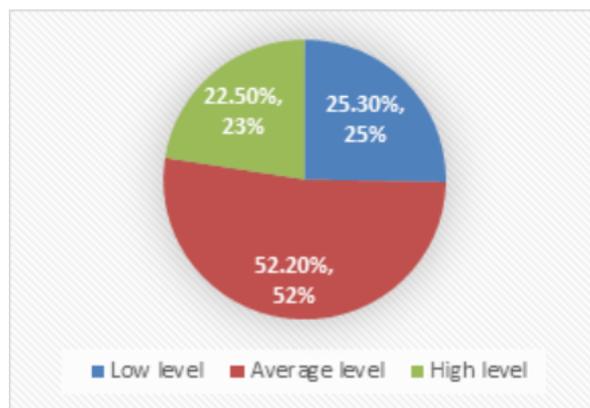


Figure 7 Indicators of the level of professional competencies of the control group at the final stage of the experiment

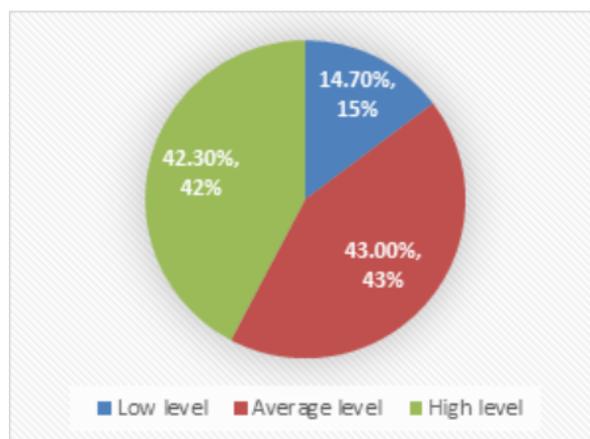


Figure 8 Indicators of the level of professional competencies of the experimental group at the initial stage of the experiment

Analyzing the data, we can conclude that the use of both training methods contributes to the formation of professional competence of future specialists. Still, the most visible results are observed in the experimental group, where the percentage of the high level of competency formation increased from 8.9% to 42.3% in comparison with 8.7% and 22.5% in the control group.

It should be noted that these graphs show data on testing non-professional knowledge, namely the correspondence of competencies, which of course include both professional knowledge and the skills of future specialists.

Separately, it is possible to present data on testing specialists of both groups for compliance with all 20 mandatory requirements of the training program outlined in Table 1 (Fig. 9)

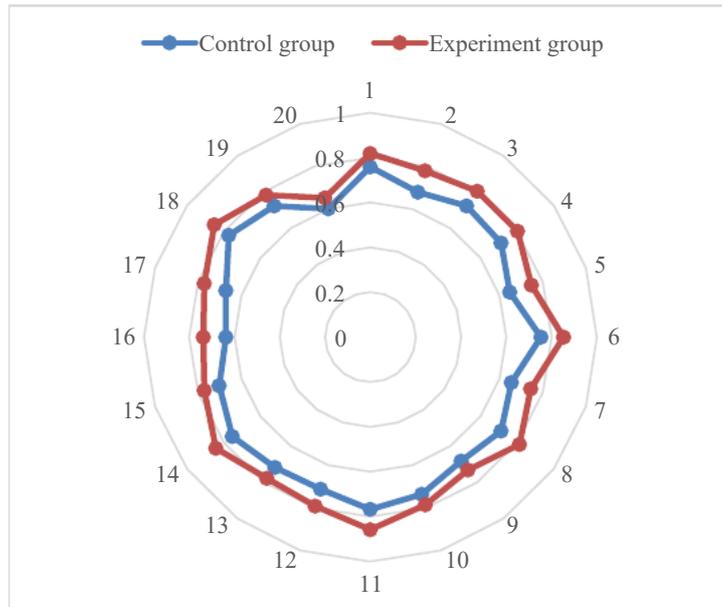


Figure 9 The final results of testing the professional skills of specialists from the control and experimental groups.

Here one can see the predominance of the effectiveness of the acquired knowledge in the experimental group, primarily due to their more confident use, as well as the presence of practically worked out skills worked out during the educational process of the quasi-professional activity.

6. CONCLUSION

The competency-based approach to the training of future specialists reflects an attempt to reach a new level of integrated assessment of education.

In the process of implementing a competency-based approach, for most educational institutions the task of forming and developing professional competencies will not be a problem, since the process of their formation is closely intertwined with the traditional educational process, and will not require too significant changes.

At the same time, the process of developing common competencies, which are a complex of complex integral human skills. Previously, universal competencies were formed gradually – in the process of communication between the teacher and the student, now they are designated as mandatory. Therefore the approaches to their formation and control should be unified for the entire teaching staff.

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