Conceptual Framework for Competency-Based Model of Multilingual Specialist

Rakhima Zhumaliyeva[1], Kanat Kozhakhmet[2], Lyazzat Atymtayeva[3], Akbota Muratkyzy[4]
[1]Centre for Multidisciplinary Research, Suleyman Demirel University
P.O.Box 040900, Almaty/Kaskelen, Almaty Region, Kazakhstan
rzhresearch2019@gmail.com

[2,3,4,5] Centre for Multidisciplinary Research, Suleyman Demirel University
P.O.Box 040900, Almaty/Kaskelen, Almaty Region, Kazakhstan

Abstract

Currently Kazakhstan education system has a priority task that includes the transition to an effective competency-based model for the multilingual specialist by using the competency- based approach. The implementation of a competency-based approach into the system of undergraduate and graduate training is aimed at modernizing educational process, improving interaction with the labor market, as well as increasing the competitiveness of future specialists. This study is a part of the Kazakhstan grant project "Developing and implementing innovative competency-based model of multilingual IT-specialist in the course of national education system modernization". The purpose of this research is related to developing the competency-based model of a multilingual specialist and identifying the general methodology for formation of multilingual specialist competencies. The main approaches and ideas in this research deal with the identifying methodology for the developing competency-based models in education.

Keywords: Competency-based model, Competence, Competency, CEFR (Common European Framework of Reference for Languages)

1. Introduction

The importance of this research paper is based on the necessity to improve quality of the higher education system in the Republic of Kazakhstan. In this context, it is necessary to highlight that the competency-based approach in our country effectively provides the transition from the knowledge-oriented educational paradigm to an activity-oriented paradigm which has relevant and demanded learning outcomes [3, 15]. Ministry of Education and Science of the Republic of Kazakhstan also considers the problem of developing the competency-based model of multilingual IT specialist as an actual and significant since it has given the special grants and funding for the project "Developing and implementing innovative competency-based model of multilingual IT-specialist in the course of national education system modernization".

The purpose of this research is devoted to the development of innovative competency-based model (CBM) for a multilingual specialist in undergraduate and graduate level training, and to identifying the general methodology for the formation of multilingual specialist competencies.

2. Literature review

There are many interpretations of the concepts for competency-based educational approaches that have different content. For example, competency as a set of certain knowledge area; competence (in a general sense) as a compliance with the requirements, established criteria, standards in the relevant fields of activity, and skills to solve certain issues; competence as a possession of the

necessary knowledge as well as the ability to achieve successful results in the definite professional situations. The competency-based approach in education is the formation of key competencies that can be interpreted as a set of skills, knowledge, social attitude necessary for effective personal and socially significant issues' decisions in certain fields of professional activity [15, 22]. In Kazakhstan education system modern competency-based models are often defined as a complex of competencies, where the concept of "competency" has the meaning of "know what" in contrast to the necessary key point "know how." In this context it is necessary to highlight that strategic and tactical tasks are not clear identified for Kazakhstan competency-based and multilingual education system [20]. The above mentioned factors determine the demand to select main approaches in developing the national innovative competency-based model of a multilingual specialist. This model can guarantee world-class quality achievement in the case of maintaining uniqueness of the national education system.

It should be noted that in some studies, competencies are defined as knowledge and skills in a certain field of education, and competence is the quality use of competencies [11, 20]. Other works emphasize that such concepts as "knowledge", "abilities", and "skills" inaccurately characterize the concept of "competence", whereas term "competence", according to some scholars, involves the possession of knowledge, skills, and life experience [4]. It is known that the term "professional competence" is widely used to consider the issues of education modernization and to define requirements for university graduates [3]. Some attempts to highlight and include professional competencies of future specialists in obligatory requirements are undertaken both at the level of enterprise management and at the state level. Numerous national and foreign studies consider issues of the education system quality [1, 3, 5, 11, 12, 13, 14, 15, 17]. In this regard, it should be taken into account that in some works the problems of multilingualism in the undergraduate and graduate education system are being investigated [7].

According to modern researchers and educators, the CBM is a basic key concept of the competency-based approach in education. For this reason it is noted that nowadays there is a tendency to minimize the quantitative composition of the specialist competencies both in foreign and national education. Modern companies and enterprises where one of the main activities is to work with the staff follow the same trend. If in the early 2000s the set of competencies was represented by a sufficiently large quantitative composition of competencies, then now close attention is paid to the qualitative features of this issue and also to the study of the essential competence characteristics. Therefore in many foreign studies, competencies are generally divided into general and specific ones that are represented by a certain complex of skills [8]. In Kazakhstan and Russian studies competencies are determined as key and professional skills, within which a certain composition of the future specialist abilities and skills are highlighted [3, 15].

By analyzing the experience of foreign studies we can mention that several researches consider the questions and issues of implementing the competency-based approach in education [6, 9]. In these works special attention is paid also to the level organization of competencies, to the main types of competencies, principles and criteria for assessing competencies. Therefore foreign scientists conduct special surveys to determine the necessary components of competencies and criteria for their assessment what is evidenced by a sufficiently large number of published works related to this subject area. As a result, in some works competencies are defined for the graduates and employers, in others – for students and teaching staff [2, 18, 19].

Thereby different approaches and methods used in national and foreign studies on the competency-based approach confirm the diversity of modern CBMs. In this regard it is important to highlight that the CEFR system is used as a completely new approach in developing the CBM in this research analysis.

3. Methodology

It is known that national and foreign higher education system is characterised by functioning of the specialist qualification-based models, which are included in educational standards of the beginning of the XXI century. In this regard, the study material of this research was the numerous theoretical and practical works on the competency-based approach to the education system. However, conducted researches on the proposed topic do not fully analyze all issues of the CBM development. Accordingly, this study includes three following stages:

- posing a key question, hypothesis, and choosing research methods,
- determination of the competency essential characteristics and the algorithm for its development based on the level approach,
- developing the CBM for a multilingual specialist at undergraduate and graduate training.

The study uses a modelling method as well as the CEFR system to determine the essential characteristics of competency, to develop the CBM for formation multilingual specialist competencies. Thus, the research question of this study is as follows: does the CEFR system contribute to the development of the more effective specialist CBM at undergraduate and graduate training? The research hypothesis is defined from the research question and related to the developing general methodology for the formation of multilingual specialist competencies that can be effective only if there is correctly selected correlation of the interconnected multilingual specialist CBM components at undergraduate and graduate training. According to modern researchers, the competency-based approach to training, competencies and their components should be considered from the modelling method since this method is based on systematic and integrated approaches [16]. It is known that modelling as a universal form of cognition is the most common method to study objects. In general, we can distinguish the following steps of modelling:

- determination of objectives for model construction,
- designing various models, including graphical forms
- analysis of these models and their application,
- practical implementation and adjustment of the obtained results to introduce additional data and characteristics.

The stages of modelling mentioned above are used in the proposed study to construct the multilingual specialist CBM and define the general methodology for the competencies formation of a multilingual specialist.

As stated above, the concept of CEFR is used to determine the essential characteristics of competencies. CEFR is avowed as an international standard in teaching foreign languages. Its relevance is undeniable as it provides opportunities for further innovation in the educational process. Evidently the research work in this direction will continue, in particular what is proved by the Kazakhstan experience of implementing the European standards of foreign language teaching in the educational process.

CEFR was developed in collaboration with numerous European institutions and represents an open international system for alteration and further development [10]. The main characteristics of CEFR are universality and systematization. The universality is a subject of the study standardization, the fundamental categories standards, the used terms, the levels themselves, and their criteria of grades achieved by language competencies. CEFR is acceptable for a description of any language, regardless of its structure, countries of functioning, educational context (school, university, language courses) and teaching methods. Systematization of CEFR covers both the scale of language proficiency itself and descriptors of these levels that together creates a single conceptual complex with the help of a unified language capable to describe any certification system, any training program, its goals and objectives, and finally achieved language competencies. CEFR

determines specific skills which are necessary to use language for communication purposes as well as abilities need to be mastered for successful communication. The CEFR scale consists of 6 levels, including 3 large levels (basic/A, medium/B and advanced/C). Each of them is divided into 2 sublevels. We can talk about CEFR specifics, which distinguishes it from other systems. Firstly, CEFR defines the necessary competencies for the language-user and includes four well-known speech skills (listening, speaking, reading, writing) in the framework of the activities undertaken by the learner. Secondly, CEFR provides science-based and field-proven descriptors for each competency and each type of speech activity. Descriptor scales are based on a carefully developed category system that determines the meaning of concepts “language proficiency/use” and ”fluent in language/user” [10].

Thus this proposed methodology for the multilingual specialist competencies development can make additions and changes to the strategic educational planning of the undergraduate and graduate training. Research results can contribute to broaden and deepen notions of the multilingual specialist CBM at undergraduate and graduate training, and to improve national education for the effective training of future specialists.

4. Results and discussion

The key concepts constructing the CBM such as ”competency”, ”competence”, “competency component”, “competency levels”, “competency descriptors” are very important in defining the competency-based approach in education. These key concepts of the competency-based approach related to the characteristics and algorithm of competencies formation and necessary to implement the main objectives of the research project are determined as follows:

- competency is a personal feature of an individual characterized by abilities to perform various tasks of professional activity,
- competence is a compliance with the requirements, standards and criterias,
- competence component is a structural element of a competency,
- competency levels is the range of competency formation,
- competency descriptors are results of learning,
- competency indicators are indicators of success in achieving learning outcomes, i.e. criteria to evaluate the learning results [21].

The competency is a category characterizing the professional activity of a person. It can fully be realized after university graduation. Wherein, the competence is the skills and abilities that meet certain standards, requirements and criteria. The development of any competency may occur throughout the professional activities of a specialist. Integrated implementation of a competency is carried out by cyclical integration of its structural elements. In other words, structural elements of a competency are cognitive, motivational and reflective components. Furthermore, each of these components is a specific activity in any competence. In the cognitive component this activity is aimed at realization of understanding, accumulation and synthesizing the received information. The motivational competency component can be considered as a certain type of activity, related to using rational attitudes and methods for forming a positive motivation (motivation for success). Whereas the reflective competency component aims at development, implementing, consolidation and automation of acquired knowledge and skills. If the competency component is, first of all, a way of its implementation, then the level of a competency is its formation.

In the Republic of Kazakhstan the system of undergraduate and graduate training of a specialist is divided into the following educational structures: bachelor, master, doctoral and post-doctoral studies. In the context of a level hierarchy, each of the competencies are represented by certain levels. So, for instance, the formation and competency development in undergraduate training can

be divided into six levels: beginner, elementary, intermediate, upper-intermediate, advanced and professional. In this case, the beginner and elementary levels correspond to the 1st and 2nd courses of study, intermediate and upper-intermediate – to the 3d course, advanced and professional – to the 4th course. It should be noted that the division by six levels in undergraduate training corresponds to a system of CEFR, as it showed in the Table 1 – Levels of CEFR system.

It should be emphasized that six CEFR levels are grouped into three categories A, B and C. So the same categories can be applied in the manifestation of competencies at the undergraduate level: elementary use for beginner and elementary levels; independent use for intermediate and upper-intermediate levels; fluency use for advanced and professional levels of competencies formation.

Further development of competencies corresponds to master's studies, that can be divided into 4 levels:

- level of professional competence,
- level of advanced professional competence,
- level of academic competence,
- level of advanced academic competence.

The first two levels correspond to the 1st course of study, and the third and fourth levels – to the 2nd course at 2-year graduate studies. Furthermore, one-year or specialized graduate study is represented by 2 levels:

- level of professional competence,
- level of advanced professional competence.

Doctoral studies also highlight the level of research competence corresponding to the 1st and 2nd years of study, and the level of advanced research competence corresponding to the 3rd year of doctoral studies. The level of competencies formation in postdoctoral studies is represented by two levels:

- the level of an expert,
- the level of an advanced expert competence.

The level approach to competencies formation requires a specific demand to evaluate performance of a particular competency. Thus the authors offer a 100-point measuring system of competencies formation. For undergraduate study, each of beginner and elementary levels corresponds to 10%, all other levels – to 20% (Diagram 1 – Performance of competencies in undergraduate study).

The system for measuring the manifestation of competencies in other educational structures has a similar 100-point scale. So, for example, the competencies formation in the graduate study is represented by a 100-point system. In 2-year graduate study two ranges of 25% of the competencies formation accounted for level of professional competence and level of advanced professional competence, the other two ranges of 25% - for the level of academic competence and level of advanced academic competence

In one-year graduate study, two ranges of 50% formation competency is accounted for level of professional competence, level of advanced professional competence (Diagram 3 – Performance of competencies in one-year graduate study).

The 100-point system for measuring the manifestation of competencies is also used in the doctoral studies: level of research competence corresponds to 50% of the range, another 50% is accounted for level of advanced professional competence. This method of competency measurement is also used in post-doctoral studies: 50% of range is accounted for the level of an expert, another 50% for the level of an advanced expert competence.

The next key concept of the competency-based approach in education is the "competency descriptor" related to the learning outcomes. For each specific level of competencies formation (training stage), the following basic categories are distinguished: "to know", "to be able" and "to

use.” In this case, “to know” means to reproduce theoretical material with the necessary degree of accuracy and completeness; ”to be able” is related to the fulfillment of professional tasks based on standard algorithms of solutions; ”to own” represents to solve complicated professional tasks based on acquired knowledge and skills.

In order to determine the degree of results achievement, 3 criteria for learning outcomes (indicators) can be applied for each of these categories, according to the degree of their formation. In other words, the indicator is the degree of training at each level, measured by a 3-point system. Thus indicator 1 is an insufficient use of knowledge, abilities and skills; indicator 2 is related to the adequate use of knowledge, abilities and skills; indicator 3 is dealt with a high degree of knowledge, abilities and skills.

Considering the experience of national and foreign research works, the multilingual specialist CBM describes a set of competencies that undergraduate and graduate specialist should meet, professional functions that alumnus should be prepared to fulfill, and the degree of alumnus’ preparation. The composition of such competencies certainly includes key and professional competencies.

Thus the CBM of undergraduate (bachelor’s) is a classification of social, communicative, general professional and special professional competencies, which form a multistructural and multifunctional professional competence of the future specialist (Diagram 4 – CBM of a multilingual undergraduate specialist).

The CBM of graduate training specialist is performed by applied competency in master studies, scientific competency in doctoral studies and the competence of an expert assessment
of professional activity in post-doctoral studies with the further development of key (social, communicative) and professional competencies.

Thus the multilingual specialist CBM of the graduate study can be presented in the form of the following diagram (Diagram 5 – CBM of a multilingual graduate specialist). It should be noted that social and communicative competencies are universal, whereas general professional and special professional competencies can vary.

The starting point in the development of the multilingual specialist CBM at the undergraduate and graduate training on different specializations is to specify the system of professional competencies regarding the requirements of modern educational programs.

However, in accordance with the requirements of modern realities not only specialized knowledge and skills compose the profession of a specialist, but also a number of the so-called ”soft” skills, or humanitarian qualities and competencies should be presented in a pack. In this regard, development of language skills related to Kazakh, Russian and English can be emphasized because they are the main languages in Kazakhstan.

Within the framework of the multilingual specialist CBM, the authors propose the following methodology for the competencies formation of a multilingual specialist at undergraduate and graduate training, including social, communicative, professional, applied, scientific competencies, as well as the competence of an expert assessment of professional activity. While defining the general characteristics of these competencies, it can be noted, that social competencies based on the subject’s awareness of belonging to a certain social group are accompanied by the adoption of basic value orientations that designate a person as an individual and personality. Communicative competencies are dealt with the skills of effective communication, teamwork and understanding professional ethics. It should be noted that professional (general professional and special professional) competencies correspond to types of professional activities. They are structured in accordance with the basic educational structures of the undergraduate and graduate system. Applied and scientific competencies of specialists corresponding to such educational structures as graduate studies are related to the further development of professional competencies. This process includes

the formation and development of skills in logical, substantive, academic and research activities. The competence of an expert assessment of professional activity, firstly, concerns specialist's possession of all professional, applied and scientific competencies at an advanced level, and secondly, ability to apply them according to standard requirements of professional activity.

5. Conclusion

Thus the conceptual features of the CEFR system contribute to the creation of the more effective CBM of undergraduate and graduate specialist. The correlation of its interconnected constructs determines the effective methodology of forming the competencies of a multilingual specialist. The basic principles of the multilingual specialist CBM are associated, first of all, with the definition of a set of competencies, the formation of which is carried out through the educational process. The proposed general methodology for formation of the multilingual specialist competencies determines the factors, principles and conditions for the development of future specialist competence during the educational process.

With regard to previous research experience, as well as the results of this study, the multilingual specialist CBM is considered by the authors as a process and result of undergraduate and graduate training of a specialist, ensuring the abilities to succeed in the professional and social spheres, which is substantively represented by the structure of key, professional, applied, scientific competencies and competencies of an expert assessment of specialist professional activity. In this context, it should be noted that the development of the multilingual specialist CBM is a promising area for further research by the authors.

In conclusion, it is necessary to emphasize that the main results and conclusions of this work can be used by researchers studying the quality, content and organization of the undergraduate and graduate education system. In the context of the education internationalization, the conducting of such researches by Kazakhstan scientists is particularly important for modernization of national education system.

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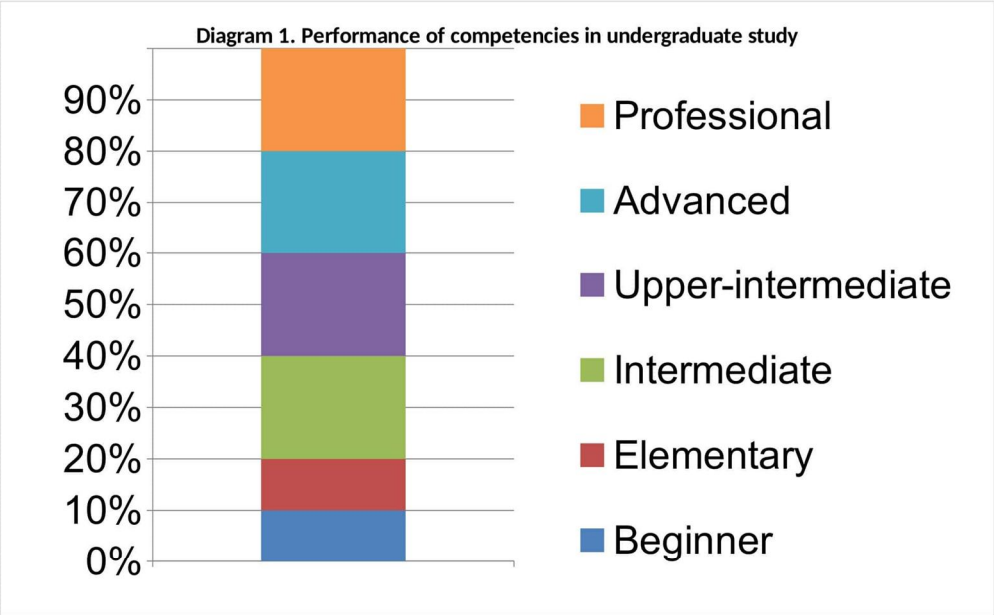
Appendix

A/Basic user	A1/Breakthrough
	A2/Waystage
B/Independent user	B1/Threshold
	B2/Vantage
C/Proficient user	C1/Effective operational proficiency
	C2/Mastery

Table 1. Levels of CEFR system



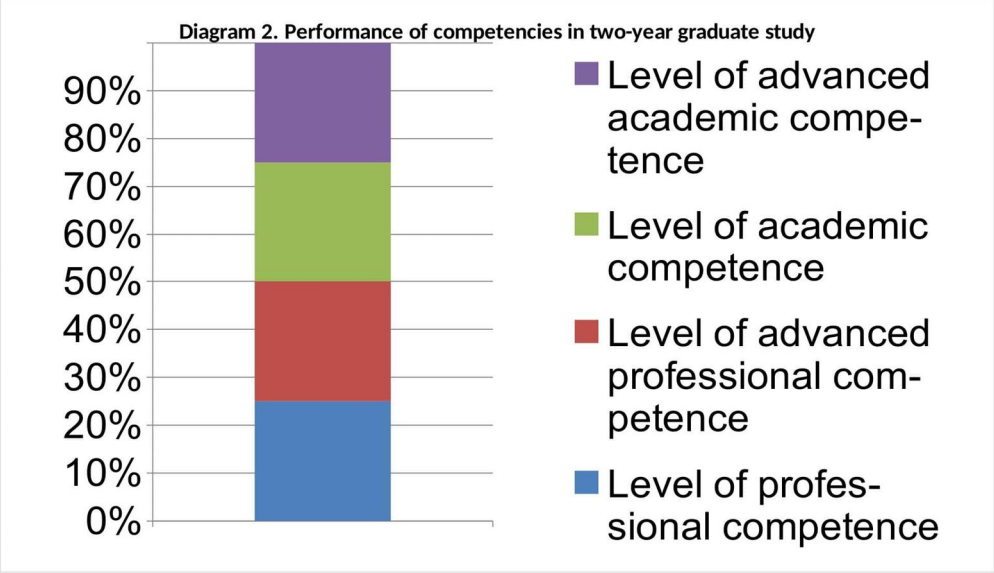


Diagram 3. Performance of competencies in one-year graduate study

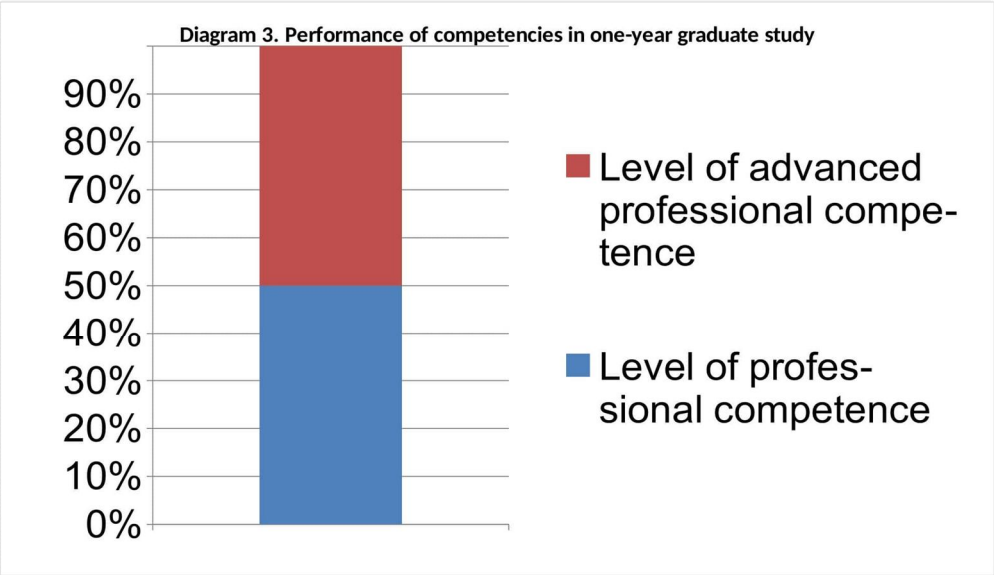


Diagram 4. CBM of a multilingual undergraduate specialist

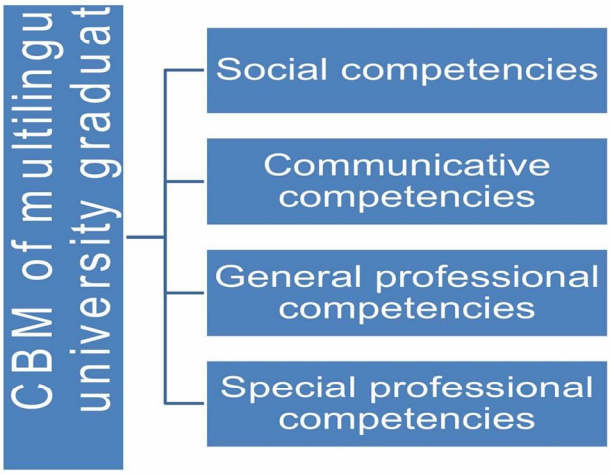


Diagram 5. CBM of a multilingual graduate specialist