ELECTIVE SUBJECTS AS MEANS OF FORMATION OF PROFESSIONAL COMPETENCE AMONG STUDENTS OF A PEDAGOGICAL UNIVERSITY: THE COMPETENCE APPROACH

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Abstract: The article highlights the value of elective subjects as a means of professional competence formation among the students of a pedagogical university. The essential characteristics of the professional competence of students, as well as the contents of elective subjects as a means of formation of professional competence among students were studied. The research implemented a competence-based approach to the study of elective subjects as a means of formation of professional competence. A special model of competence formation among the students during the study of elective subjects was developed. The experimental stage proved the value of elective subjects as a means of professional competence formation among the students. The model of professional competence formation among the students is recommended for use in universities while studying elective courses.

Keywords: Elective courses, tool, professional competence, students, formation, model, competence approach.

INTRODUCTION

The transition to new educational standards is one of the priority directions of present-day educational modernization. This approach calls for fundamental changes in directions and objectives of education, the introduction of new and effective educational programs, i.e. the implementation of competence-based approach to learning (Adieva, A. and S. Djamalova. (2013)).

A wide range of key professional competencies, ranging from informational to pragmatist, allows to create educational programs by means of subjects, including elective subjects. Top elective subjects should include, first of all, information pedagogy, which is of high social and practical significance, educational case studies, and a variety of educational - cognitive activities of students in the course of their study. Aspects of much importance also include competence approach, transparency and updatable content of the material, the formation of professional competence-oriented education activities which include society demands, the possibility of wider application of knowledge and skills in practice (see Albekova, A.

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et. al., (2014); A. Koceic et. al., (2010); Zhumabaeva, Z. et. al., (2016); Artyukhin, O. (2012); Murzatayeva, A. (2014); Sakenov, D.Zh. et. al., (2012);. Asenova, N. et. al., (2013)). Elective subjects are disciplines of choice, the contents of which can satisfy the professional interests in accordance with the personal inclinations of students.

Elective courses (information pedagogy, educational case studies) reinforce the practical orientation of education, creating educational and practical situations in which a student gains experience of independent cognitive activities, necessary for the development of professional competences.

Modern higher education environment is directed at the efficient formation of key professional competences among the students of teachers' training departments. This process requires much time. Even the study hours of core subjects are not enough for a profound study of compulsory minimum content of educational program determined by the state educational standard. One possible solution is to implement the principle of electivity. Currently the use of elective subjects is possible within a variable part of the syllabus implemented in the organization of elective subjects chosen by a student. This variability makes it possible to take into account students' individual cognitive needs and offers the opportunities for students to choose conditions for the formation of students' professional competences, necessary for various areas of educational activities.

The analysis of the works by modern scholars (Balabayeva, A., et. al., (2016); Zhumasheva, A. et. al., (2016); Berkimbaev, K. et. al., (2012); Day, Ch. (1994); Zhaparova, B. et. al., (2013); Brown-Rice, K., Furr, S. (2013), Hoffmann, T. (1999); White, R. (1959); Saliyeva, A. et. al., (2016); Chown, A. (1994); Sundburg, L. (2001); Omarov Y. et. al., (2016)) demonstrates that one of the priorities of modern education is the realization of competence-based approach aimed at the formation of professional competence of students. The relevance of the study is determined by the strategic objectives of educational modernization, the development philosophy of higher education, competence-oriented focus on the student. It should be noted that there is still the problem of a systematic research of elective subjects necessary for students' professional competences' development. The analysis of the research by modern educational experts (Zhumasheva, A. et. al., (2016); Albekova, A. et. al., (2014); Fernandez, N. et. al., (2012); Zhaparova, B. et. al., (2016); Rakhimbekova, G. et. al., (2015); Gifford, S. (1994); Onalbek, Zh. et. al., (2013); Asenova, N. et. al., (2013)) shows that higher education institutions with a good organizational level of the teaching process insufficiently promote a widespread application of elective subjects as a means of formation of professional competences among students. Thus, the purpose of our study is to study the value of elective subjects as a means of professional competences' formation among students.

METHODS

In order to study the value of elective subjects as a means of formation of professional competences of students of teachers' training departments we used a mixture of methods. Theoretical methods of the research are: the study and analysis of sociological, pedagogical and methodological literature on the study of professional competences. We also studied conceptual and terminological datasets. The approaches to the problem of elective courses and professional competence are closely connected with general science methods, such as synthesis, comparison, generalization, content analysis. We used empirical research methods: study and generalization of experience in the formation of professional competence of students in the system of higher education while doing elective courses; interviews with students and teachers; questioning, observation; the method of generalization of independent characteristics; the study of creative activity while doing students' products; the methods of mathematical and statistical data; modeling, pedagogical experiment to study the value of elective subjects as a means of formation of professional competence among students. The methodological basis of the research of elective subjects' value as a means of formation of professional competence among students is based on the following theories: the theory of personality development; the theory of educational content; current theories and concepts of higher education; the provisions of the essence of complete teaching process; pedagogical research of the nature of the competence of the teacher; the research of the formation of the professionalism of a teacher. We can't but mention the research of the formation of the professional competences of a teacher; the idea of systemic, cultural, personal approach to the activity, as well as humanistic, axiological and acmeological approaches; the idea of the subjective activity of the person in the course of his/her life; the development of technological approaches and elective technologies of higher education, elective courses' lists.

RESULTS

The expertise included the study of a set of interrelated personality qualities (knowledge, skills, ways of life) defined with the respect to a certain range of objects and processes, the qualities of productive activities in relation to them. We define competence as a possession, the possession of suitable qualifications, including one's personal attitude to it and the attitude to the subject of activity (Karimova, A. et. al., (2016); Ivankova, N. et. al., (2016); Henner, E. (2004); Makhashova, P. et. al., (2016). Competence approach in education means improving the entire educational system, aimed at the student's acquisition of culture accumulated by mankind in the form of knowledge, skills and ways of life, and the formation of his/her experience of self-assistance in various areas.

It is important for modern higher education system to form among students of teachers' training departments professional competences in different areas, but, due to the lack of experience gained by students in the learning process at the university, they should have a set of competencies that can be formed as the basis for future professional and social competences. However, social competence, due to the versatility of public life, includes a wide variety of competencies: social, work, leisure, information, health preservation, communicative and artistic ones (for example, Mirza N. (2013); McClelland, D. (1973); Berkimbaev, K. et. al., (2012)). The analyses of the classification of key competences proposed by various authors (Kramsch, C. (2006);. Makhashova, P. et. al., (2016); Henner, E. (2004)) and conducted diagnostics tests resulted in the formation of the following list of competences, which must be included in elective courses:

– Informational competence (knowledge of the various data sources and their characteristics, methods, and knowledge cycle; the ability to process information of various kinds, knowledge of methods of cognition, understanding the significance of new information, the pursuit of new knowledge, the experience of reports' preparation, essay writing, conducting observations, experiments and etc.);

– Activity competence (the knowledge of the structure of activities, principles of rational organization of professional activities, stages of professional activities, the ability to exercise sound professional activities; awareness of the need for rational activities, the pursuit of creative professional activities, the presence of experience of planning and implementing sound professional activities).

These key professional competences, along with many others, are a part of a social competence. They are versatile, have the ability to transfer into wide and necessary qualities among students which help them to achieve success in any area of public life and professional activities. In addition, these professional competences are interrelated, some of them include knowledge, skills and activities, which are part of more than one competence (intersection area).

To be successful in the field of education, students need to search for the right information, using various methods of cognition (i.e. possess informational competence), to know the structure of professional activities and ways of rational organization (i.e. activity competence). It is possible to identify the main structural components of professional competence, which include:

1. Knowledge.
2. Skills.
3. Value orientations.

4. The experience of the practical application of acquired knowledge and skills.

Each structural component is interconnected with all others and is an integral part of professional competence. Knowledge and skills constitute its foundation - the core professional competence; they must be universal, have the property of a wide application and give the student the skill to solve significant problems in various areas of educational activity. Creating the conditions for the formation of the key professional competence of students in modern high school is a difficult task. In this connection, while designing a group of elective subjects (namely, information pedagogy, educational case study) it is important to develop information and activity-related competences. Elective subjects create favorable conditions for differentiated instruction and the practical implementation of all the didactic principles of competence-based approach. During the experimental training we are guided by the following principles:

- fundamental knowledge,
- individual and social significance of the educational material,
- practical orientation of education,
- focus on the development of the professional independence of students.

Our model of formation activity of key professional competence of students, consists of the main components (Figure 1):

I   a comprehensive educational assessment,

II   identifying learning goals of elective subjects,

III   the selection of the content of educational material,

IV   the variety of forms of teaching and cognitive activities for students,

V   comprehensive assessment of the level of formation of key professional competence,

VI   correction and further designing of the educational process,

VII   the process of the formation of the students' key professional competence,

VIII   the three levels of formation of key professional competencies: high, medium and low.

Explanation of the Figure 1. The model of activity formation of the key professional competencies of students includes:

I   a comprehensive educational assessment,

II   identifying learning goals of elective subjects,

III   the selection of the content of educational material,

IV   the variety of forms of teaching and cognitive activities for students,
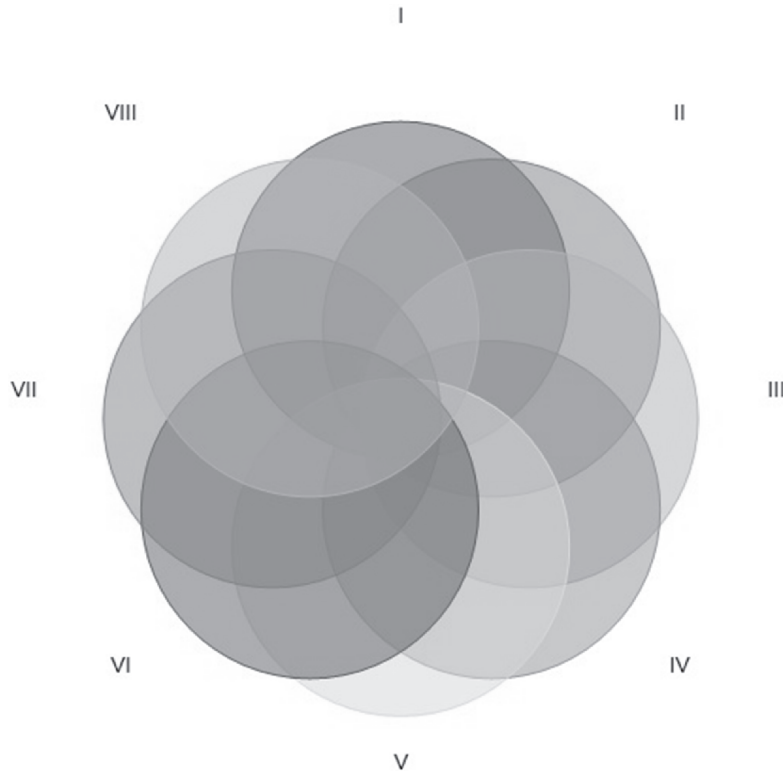
Figure 1: The Model of activity formation of the key professional competence among the students of pedagogical departments

  V comprehensive assessment of the level of formation of key professional competence,

 VI correction and further designing of the educational process,

VII the process of the formation of the students' key professional competence,

VIII the three levels of formation of key professional competencies: high, medium and low.

Both traditional and non-traditional methods, forms and means of instruction were used for the study. Based on different levels of perception and training of students, we selected the tasks of corresponding challenges, based on the principles of differentiation and individualization of learning. Students participate in conferences, seminars, carry out project activities, conduct comprehensive research, write essays, developing multimedia presentations, etc. We taught students to use such forms of control as self-control, mutual control, reflection. A good selection of forms and methods of activity helps students to successfully generate the key professional competence.

Our approach is based on the need to address the educational demands of students and their achievements in core subjects, as well as taking into account the objectives of training, aimed at the formation of the key professional competence, specific training material for elective subjects (information pedagogy, educational case study). The focal points of our approach are as follows:

- – practical application;
- – potential significance;
- – regional features of science development;
- – matching the educational needs of students;
- – the focus on the formation of knowledge, skills and values belonging to the key professional competence

The Novelty of the Results

During the implementation of elective subjects (information pedagogy, educational case study) it is possible to provide the students with scientific thinking and creative skills. The lecture material must be presented in presentations, reference charts and tables. In various competitions the students use special knowledge and skills, and we conduct the external evaluation of their educational achievements.

Throughout the period of 2014 to 2016, our positive dynamics of conducting external evaluation of educational achievements of students in teaching information pedagogy and educational case studies, confirmed the effectiveness of the proposed system of elective courses.

In the 2014-2015 academic year during external evaluation of educational achievements our students scored 69 points.

In the 2015-2016 academic year during external evaluation of educational achievements our students scored 71 points.

To study the effectiveness of elective subjects we conducted a special experiment which included the data about information pedagogy and educational case studies. In this experiment we determined the level of formation of the key professional competence. We identified the three levels of formation of key professional competencies: high, medium and low. Our students were divided into 2 groups: experimental and control. In the experimental group there were classes of elective subjects (information pedagogy, educational case studies), based on the models of formation of the key professional competence among students. According to the developed technique, while evaluating the educational achievements of the students, it was possible to obtain objective results, using qualitative and quantitative methods. Comprehensive assessment of the level of formation of key professional competencies was based on a combination of qualitative diagnostic methods and the elements of qualitative analysis. The students were tested on their

knowledge and ability to conduct tests, frontal survey, testing, original surveys, analyzes of their practical activities, students' self-assessment sheets. We analyzed the products of educational activity of students. The evaluation process actively involved students' self-assessment, reflection of their activities (oral discussion, written questionnaires, filling in sheets of self-diagnosis) and mutual assessment. The results of the analysis of experimental data were ranged, according to the levels of formation of key professional competencies: if K factor is less than 50% - a low level of formation of competence; if K is in the range of 50% to 70% - medium; if K is in the range from 70% to 100% - high. (4). The following data (Table 1) were obtained in the experiment.

TABLE 1: THE ASSESSMENT OF FORMATION OF PROFESSIONAL COMPETENCE OF THE STUDENTS AT THE END OF THE EXPERIMENT

Professional students' competence	*The levels of key professional competences among students (%)*					
	Control group (17 students)			*Experimental group (17 students)*		
	Low	*Medium*	*High*	*Low*	*Medium*	*High*
Informational	15	64	21	5	15	80
Activity	16	65	19	3	14	83

As can be seen from Table 1, in the experimental groups the number of students with a high level of development of a key professional competence after the experiment was 80% and 83% respectively, the number of students who reached the average level equaled 15% and 14%, the number of students with a low level constituted 5 % and 3%. The results in the control groups significantly differ, the number of students with a high level of development of a key professional competence after the experiment was 21% and 19% respectively, the number of students who reached the average level was 64% and 65%, the number of students with a low level equaled to 15% and 16%. These figures show the high efficiency of the proposed model for the formation of the key activities of the professional competencies of the students in the study of elective subjects (information pedagogy, educational case studies).

CONCLUSIONS AND RECOMMENDATION

As a result of the study, we have justified the value of elective subjects (namely, the following subjects: information pedagogy, educational case study) as a means of formation of professional competence among the students of teachers' training departments. Professional competence is formed on the basis of practical orientation, the potential value of which matches the characteristics of the development of science, it is transferred into the educational needs of students and focused on the formation of knowledge, skills and values belonging to key professional competencies. We have studied and proved the essential characteristics of the

professional competence of students. We also described the contents of elective subjects as a means of formation of professional competence of students. We implemented a competence-based approach in the study of elective subjects (namely, the following subjects: information pedagogy, educational case study) as a means of formation of professional competence of students. We developed and experimentally tested the activity model of formation of students' key professional competence within the framework of elective subjects. Contrary to the research of some scholars (Artyukhin, O. (2012); Berkimbaev, K. et. al., (2012); Henner, E. (2004); Omarov Y. et. al., (2016); Zhumabaeva, Z. et. al.. (2016)), in the course of our experiment we have implemented and proven the effectiveness of the activity model of formation of the key professional competence among students in the study of elective subjects. We experimentally disclosed the value of elective subjects (namely, the following subjects: information pedagogy, educational case study) as a means of formation of professional competence among students. The model of key activity formation of professional competence among students in the study of elective subjects is recommended for practical application in universities in the course of special educational programs.

Thus, our study proved that the consistent implementation of the selected elements of the proposed activity model of formation of the key professional competence among students in the study of elective subjects affected the formation of the key levels of professional competence of students in the experimental group. It is important to take into consideration the interconnectedness of the selected elements of the model, as well as its specific and systematic application in the study of elective subjects.

According to the results of the research, we will carry out correction work with the students in the control group, plan corrective actions and further analyze students' educational needs to improve the efficiency of formation of their key professional competencies. The application of the system of elective subjects is an effective way for the formation of necessary key professional competence among students. This method allows to further improve the quality of teaching at the university.

References

Adieva, A. and S. Djamalova, (2013). General scientific research methods as a theoretical basis for improving the quality of the educational process. International Journal of Applied and Fundamental Research, 2. Date Views 19.12.2016 science-sd.com/455-24071.

Albekova, A., G. Rezuanova, A. Muratbekova and G. Kukenova, (2014). Elective disciplines as means of formation of professional competence of future teachers. Life Science Journal, 11(8s): 53-56.

Koceic, A., A. Mestrovic, L. Vrdoljak, K. Vukojevic, V. Barac-Latas, I. Drenjancevic-Peric, D. Biocina-Lukenda, D. Sapunar and L. Puljak (2010). Analysis of the elective curriculum in undergraduate medical education in Croatia. Medical Education, 44(4): 387 - 395.

Artyukhin, O., (2012). The system of disciplines of elective courses by preparation of bachelors of the pedagogical education direction. Fundamental research, 9(4): 842-846.

Asenova, N., Z. Zhumabaeva, M. Kenenbaeva, D. Sakenov and D. Toktarbaev, (2013). About preparation of students of higher education institution for professional activity in the course of studying of elective disciplines. Life Science Journal, 11(8s): 53-56.

Balabayeva, A., A. Zhubandykova, N. Sailauova, N. Shyntayeva and J. Sakenov, (2016). Pedagogical conditions for the formation of innovative abilities in students of pedagogical specialties. WALIA journal, 32(S2): 23-32.

Berkimbaev, K., S. Nyshanova, B. Kerimbaeva and G. Meyrbekova, (2012). The Formation of Professional Competencies of Future Specialists. New Educational Review, 30: 271-281.

Brown-Rice, K.K. and S. Furr, (2013). Preservice Counselors' Knowledge of Classmates' Problems of Professional Competency. Journal of Counseling & Development, 91(2): 224-233.

Chown, A., (1994). Beyond competence? British journal of in-service education, 20(2): 161-180.

Day, Ch., (1994). Personal development planning: a different kind of competency. British journal of in-service education, 20(3): 287-302.

Fernandez, N., V. Dory, L.G. Ste-Marie, M. Chaput, B. Charlin and A. Boucher, (2012). Varying Conceptions of Competence: An Analysis of How Health Sciences Educators Define Competence. Medical Education, 46(4): 357-365.

Gifford, S.S., (1994). Evaluating the Surrey New Teacher Competency Profile. British journal of in-service education, 20(3): 313-326.

Henner, E., (2004). Information and communication competence of the teacher: the structure, requirements and measurement system. Computer science and education, 12: 5-9.

Hoffmann, T., (1999). The meanings of competency. Journal of European Industrial Training, 23(6): 275-285.

Ivankova, N., N. Zhumagulova, L. Povstjan, D. Bekenova, A. Mukhamedina, T. Alkhatova and J. Sakenov, (2016). Studying Teachers' and Parents' attitudes Towards Educationally Underperforming Adolescents – Students of General Education Schools. The New Educational Review, 44(2): 62-72.

Karimova, A., A. Amanova, A. Sadykova, N. Kuzembaev, A. Makisheva, G. Zh. Kurmangazina and J. Sakenov, (2016). Theoretical model of professional competence development in dual-specialty students (On the example of the "History, Religious Studies" specialty). International Journal of Environmental & Science Education, 11(17): 10683-10693.

Kramsch, C., (2006). From Communicative Competence to Symbolic Competence. The Modern Language Journal, 90(2): 249-252.

Makhashova, P., A. Meirmanov, Zh. Zhunusbekov, O. Makasheva, E. Mirzaliyeva, A. Ermuratova and J. Sakenov, (2016). On the Development of Professional Competence in Students of Creative Pedagogical Specialties. International Journal of Environmental & Science Education, 11(11): 4660-4668.

McClelland, D., (1973). Testing for Competence Rather that for "Intelligence". American Psychologist, 28(1): 1-14.

Mirza, N., (2014). Creative component of professional competence of a teacher. International Journal Of Applied And Fundamental Research, 2. Date Views 19.12.2016 science-sd.com/455-24286.

Murzatayeva, A., (2014). Formation of professional competence of students oligophrenic-teachers. Life Science Journal, 11(11s): 499-502.

Omarov, Y., D. Toktarbayev, I. Rybin, A. Saliyeva, F. Zhumabekova, F. Hamzina, N. Baitlessova and J. Sakenov, (2016). Methods of Forming Professional Competence of Students as Future Teachers. International Journal of Environmental & Science Education, 11(14): 6651-6662.

Omarov Y.B., Toktarbayev, D. G.-S., Rybin, I.V., Saliyeva, A.Zh., Zhumabekova, F.N., Hamzina, Sh., Baitlessova, N., Sakenov, J. (2016). Methods of Forming Professional Competence of Students as Future Teachers. International Journal of Environmental & Science Education, 11(14), pp. 6651-6662.

Rakhimbekova, G., Z. Baigozhina, A. Abdrakhmanova, A. Samatanova, R. Orazakova, Z. Nurtayeva and J. Sakenov, (2015). Development of professional competence in students of creative pedagogical specialties (professionally-oriented aspect). Life Science Journal, 12(1s): 24-28.

Sakenov, D., Y. Kushnir, Y. Shnaider and D. Abdulkhamidova, (2012). Preparation of Students of Higher Education Institution for Professional Activity in the Course of Studying of Pedagogical Disciplines. World Applied Sciences Journal, 19(10): 1431-1436.

Saliyeva, A., F. Zhumabekova, B. Bayzhuman, G. Kashkynbay, D. Tauasarova, D. Toktarbaev and J. Sakenov, (2016). On the Students' Ability to Use Digital Educational Resources. International Journal of Environmental & Science Education, 11(11): 4669-4679.

Sundburg, L., (2001). A holistic approach to competence development. Systems Res. and Behav. Sci., 18: 103-114.

White, R., (1959). Motivation Reconsidered: The Concept of Competence. Psychological Review, 66: 297-333.

Zhaparova, B., Z. Schavalieva, M. Kenenbaeva, A. Tleulesova, B. Soltanbaeva, J. Sakenov and N. Baitlessova, (2016). On Training Future Teachers for Use of Multimedia Training Tools. Global Media Journal, S2(24): 1-5.

Zhaparova, B., A. Tleulesova, B. Sarsenbayeva and D. Sakenov, (2013). The Development of the Catalog of Elective Subjects as a Means of Professional Training of Students. Life Science Journal, 10(11s): 282-285.

Zhumabaeva, Z., A. Zhumasheva, T. Kenzhebayeva, J. Sakenov, A. Tleulesova, M. Kenenbaeva and Sh. Hamzina, (2016). On the Role of Elective Disciplines in the Formation of Professional Competence of Students as Future Teachers. International Journal of Environmental & Science Education, 11(15): 6671-6686.

Zhumasheva, A., Z. Zhumabaeva, J. Sakenov, Y. Vedilina, N. Zhaxylykova and B.Sekenova, (2016). Theoretical model of development of information competence among students enrolled in elective courses. International Journal of Environmental & Science Education, 11(18): 11249-11259.