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PROCEDURAL COMPONENT OF THE DIDACTIC SYSTEM IN THE COMPETENCE-BASED PARADIGM OF EDUCATION

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Abstract

The article considers the pedagogical requirements concerning the problem of designing the procedural component in the didactic system of competence-oriented education. The research shows, while following the objective requirements for designing the procedural component, it should be assumed that the teaching methods should include a combination of traditional and interactive classes providing the balance and interrelation of the various forms of teaching. The authors discuss the concept of "active forms of training sessions" and "interactive forms of training sessions". Besides the syllabus, the forms and methods of active teaching have an independent potential for personality development including the development of competencies. In order to form the professional competencies of students, the implementation of the process-design approach involves the development of a model of the gradual use of forms and methods of active and interactive project training that provides the students' carrying out multi-level projects, including mini-projects that are based on the students' situational activity and aimed at positive motivation for educational and professional activities, accumulation of the primary experience; midi-projects corresponding to the over-the-situational individual activities and aimed at solving tactical learning tasks: maxi-projects that involve solving strategic educational tasks, that is, tasks of the creative level.

Keywords: Design, professional competencies, modelling, system, condition, level.

1. Introduction

The relevance of the research is conditioned by the objective need for developing professional competencies within the competence-based paradigm in education. Therewith the procedural component of the didactic system plays an important role. This is due to the fact that this component is focused on ensuring the inclusion of students into various activities (educational, communicative, organizational, etc.) and thereby acquiring the experience of relevant activities.

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2. Problem Statement

The didactic system of the formation of professional competencies is an interrelation of the components (objective, content, procedure, control and evaluation) the implementation of which is aimed at forming in students some general cultural and professional competencies that meet the requirements of Federal State Education Standards of higher education (2009).

The formation of the competencies can be carried out in two ways. The first way is including the relevant curriculum subjects into the syllabus (in the curriculum, syllabus) (or the new modules into the structure of the already existing subjects) which imply the basic knowledge of any competence as well as the means and conditions of its development among students. For example, in order to develop in students the competence in the field of pedagogical activity, the curriculum includes the discipline "Pedagogy", and to develop research competencies the discipline "Methodology and methods of scientific research" is added. However, as practice shows, this does not automatically lead to the successful development of relevant competencies among learners.

The second way is to use the educational potential of the methods and means of instruction that constitute the procedural component of the didactic system. This way implies such organization of the learning process when the students are involved in various activities and communication aiming not only to study the subject and acquire some skills but also to gain experience while performing educational activities, communication experience, independent decision making, etc.

Concerning the first way of developing professional competencies, it should be noted that the syllabus, of course, plays a leading role in solving the educational problems. That is why much attention is paid to the issues of its systematic renewal (which is held annually at the level of a program of a particular discipline). At the level of FSES of higher education, this renewal takes place every three to five years as evidenced by the fact that today the fourth generation of federal educational standards is being introduced in higher education. In general, this is a response to external challenges characterized by a high tempo of change, uncertainty, etc.

At the same time, it is known that any syllabus is implemented within the established time frames, which are also regulated by the Federal State Education Standards of higher education (2009). The inclusion of the additional modules into the curriculum leads to overwork. Moreover, the content of the provided

education (knowledge in the form of facts, concepts, laws, principles, rules, etc.) gives primarily an indicative basis for his educational and future professional activity. But the competence is not limited to knowledge only. It also includes motivational and behavioural components. The competence implies that the learner not only knows but also has a sufficiently high motivation and ability to use this knowledge to solve certain problems (educational, professional, social). And the skills are formed, as shown in numerous psychologists' studies, only if the learner acquires the experience of the particular activity while learning.

The necessity to build up the experience of relevant activities as an objectively necessary didactic mechanism for developing professional competencies allows speaking about the increasing role and place of the second way of building competencies by using various forms and methods of teaching. We consider it is essential to make a wider use of psychological and pedagogical potential of active forms and methods of teaching focused on solving tasks to build professional competencies of students. This conclusion is also supported by the universally observed fact that within one and the same framework and educational content in one educational institution, the outcomes are completely different. One teacher achieves great results, the students successfully grasp the material, actively participate in the projects, research, communication, but another teacher (with the same curricula and textbooks) receives completely different results. The explanation is that the educational process is greatly influenced by the motivational and procedural aspects of training that depend ultimately on the intention and readiness of the teacher to implement them at the level envisaged by relevant requirements.

In addition, we draw attention to the fact, described by Baydenko and Oskarsson (2002). They emphasize "basic skills... cannot be taught as traditional subjects, but should, on the contrary, be systematically integrated into the entire process of education, starting possibly from earlier stages" (p. 134). How can such "systematic integration" be implemented into the process of developing basic skills? The authors believe it is necessary to organize the audience and the training situation around these skills so as to allow students to learn and "feel" the concept, but not just to study it (in the traditional sense) (Baydenko & Oskarsson, 2002). This, in turn, leads to emphasizing pedagogical methods that stimulate learning through action, studying and exchanging experience, experimentation, cooperation, "positive" error correction, creative problem solving, feedback through social interaction, presenting ideas and problems, investigating the role models particularly through interaction with the outside world (Baydenko & Oskarsson, 2002).

While forming professional competences, an important role is played by the procedural component of the didactic system, which aims at involving students in various types of activities (educational, communicative, organizational, etc.) and thereby at the acquirement of relevant experience. Meanwhile, today the specialists in the field of theory of education are confronted with a contradiction between a wide variety of technologies, forms and methods (from lectures and seminars to case studies, from training to brainstorming) on the one hand, and the lack of information on what is the best way to use these and other intensive technologies and how to introduce them into the educational process and how to use them to teach practical skills – on the other hand (Panfilova, 2009).

3. Research Questions

To reveal the role and place of the procedural component of the didactic system of forming professional competences; to disclose the content of the terms of 'active forms of training', 'interactive forms of training'; develop and justify a model of phased use of forms and methods of active and interactive learning, focused on the consistent implementation of multi-level projects by students.

4. Purpose of the Study

To determine the methodological principles of modelling the gradual use of forms and methods of active and interactive project training, the educational potential of which comprises the procedural component of the didactic system and the didactic conditions for implementing the process -design approach.

5. Research Methods

The purpose of the study is analysis of scientific and pedagogical literature on the problem of research, modeling, comparison, generalization, study of the legal framework of education.

6. Findings

In pedagogical manuals, it is indicated that the procedural component of the pedagogical system explains what forms, methods and means of training should be used to achieve the goals (interrelation with the objective component) and effective implementation of the syllabus (interrelation with the content component). Sometimes the procedural component of the pedagogical system is called a technological component. Is it possible to say that this is the same phenomenon expressed in different words? We believe that there is a very close correlation between these two concepts, but they are not identical.

First of all, it is necessary to discuss the following. In higher education practice as well as at other levels of education the teacher has a right to choose the technologies, forms and methods of teaching by himself. However, with the introduction of the FSES for higher education the teacher's freedom to choose the forms and methods of teaching turned out to be somewhat limited. The point is that the requirements for the implementation of the core curriculum of the bachelor program state that "the implementation of the competence approach should provide for a wide use of active and interactive forms of teaching (computer simulations, business games and role-plays, case studies, psychological and other training) in the educational process combined with the classwork aimed at developing the students professional skills... ". And further: "The training courses should include the meetings with the representatives of Russian and foreign companies, state and public organizations, workshops from experts and specialists" (Federal State Educational Standard of Higher Professional, 2009).

Therefore, there are several requirements. The first requirement is the implementation of the competence approach that requires a wide use of active and interactive forms of teaching. If, with a knowledge-based paradigm, the use of active and interactive forms was the teacher's preference and depended on his desire and capabilities, so within the competence approach this becomes mandatory. These forms of training are investigated by Russian (Verbitskiy, 1991; Ibragimova, 2013; Panfilova, 2009) and foreign authors (Alvarez, 2012; Ballagas et al., 2004). What does the term "active forms of training

sessions" mean? The study of literature shows that these forms of training stand for such forms that are oriented toward creating conditions to stimulate students' cognitive activity by developing their creative thinking, skills of intellectual and practical work, etc. The most important thing in active forms of teaching is structuring a lesson by way of its structure and dynamics induces students to have independent cognitive and practical activities. The key concept of the interactive teaching forms is teaching, based on the phenomenon of interaction. This term means education, based on the active interaction of the participants in the educational process. And it is not just about interaction in the "teacher-student" subsystem (such interaction is the essential characteristic of any training), but also in other subsystems: student-student, students-students, teacher-teacher, etc. Interactive education is education with a well-organized feedback from the subjects and objects of education, with the bilateral and multilateral exchange of information between them (Selevko, 2006).

The second requirement is that the following forms of teaching classes are mandatory for a wide use and refer to the group of active and interactive teaching: computer simulations, business games and role plays, case studies, psychological and other training. And they are used in combination with classroom work. There are four similar types indicated in the Federal State Education Standards of higher education. These forms are not accidental and are chosen so that each of them performs one dominant function in the process of developing this or that competence among the students. This conclusion was made by observing the interactive sessions for many years, as well as conversations with experts and the experts in the field of organizational forms of education. In addition, we state the fact that in this group of forms of training organization the latest three forms are already known and are widely used in practice of vocational education. And the first form (computer simulations) was brought to life relatively recently and it is attributive to the wide use of information and computer technologies in the educational process of training specialists and bachelors.

So, the first form - computer simulations - focuses on building professional skills related to using a computer to model various phenomena and processes of life and professional activity. The second form - business and role-playing games - basically solves the problem of developing professionally significant skills of interaction with people, performing different roles, etc. For example, such general cultural competence as "ready to interact with colleagues, to work in a team" requires using game forms of training sessions with the inclusion of all students in the process. The third form – the analysis of particular situations – is aimed at developing such professional skills as the ability to analyze the real situation arising in professional and other activities, to find solutions in the situations of uncertainty, etc. The fourth form – psychological and other training – is aimed at developing the skill to analyze socially and personally important problems, to set goals and choose ways to achieve them, etc.

The workshops from experts and specialists, meetings with the representatives of the companies (domestic and foreign), state and public organizations are also active forms of teaching classes within the framework of the educational courses, and are responsible for building professional and social competencies among students, accumulation of the experience in relevant activities, etc.

The third requirement for conditions is the proportion of classes conducted in the interactive forms that should make, in general, at least 20% of classwork. The choice of interactive forms of classes is determined by the main goal of the core curriculum, the readiness of the students and the teacher to conduct them, the content of the discipline being studied, and a number of other factors.

The fourth requirement for the conditions is that the proportion of lectures for relevant groups of students cannot exceed 40% of classroom activities.

Taking into account these requirements of the Federal State Education Standards of higher education, we designed a procedural component of the didactic system of forming the students professional competencies. The projected forms and methods of teaching included a combination of traditional and interactive classes based on the demand for a balance and the interconnection of different forms of teaching. In general, with any modernization, the system of vocational education we cannot lose traditional, well-proven methods and forms of training in order to satisfy all kinds of innovations. The idea of designing a pedagogical process is to find an optimal balance between traditional and innovative pedagogical technologies. The following forms of teaching classes that are included in the group of active and interactive ones are mandatory for use: computer simulations, business and role plays, case studies, psychological and other training. And they are used in combination with the classroom work.

The proportion of classes taught in interactive forms should include at least 20% of classroom activities. The choice of interactive forms is determined by the main objective of the educational program, the readiness of the students and the teacher for performing them and a number of other factors. The lectures for the relevant groups of students cannot take more than 40% of classroom activities. Keeping this in mind, we designed a procedural component of the didactic system of developing the professional competencies in students. The developed forms and methods of teaching included a combination of traditional and interactive classes, due to the requirement for balance and interconnection of different forms of teaching.

Considering the interrelation of theoretical and practical training, we developed differentiated didactic conditions for implementing the project - process approach. In the process of theoretical training, it is a consistent increase in the proportion and interdisciplinarity of the student's own project activity; an intensification of the level of problem-based tasks; the immersion of the students into a situation as close to the real conditions of professional activity as possible. In the process of practical training: preparation and implementation of medium and high-level projects (research and presentation of the final qualification work); studying just before the introduction of relevant training modules (Ibragimov, 2011).

7. Conclusion

It has been found that, under the objective requirements for designing the procedural component, it is necessary to proceed from the fact that the forms and methods of instruction should include a combination of traditional and interactive exercises ensuring a balance and interconnection of various forms of teaching. The essential of the didactic system design is to determine and maintain an optimal balance between traditional and innovative pedagogical technologies.

The authors reveal the concepts "active forms of training sessions" and "interactive forms of training sessions". It is shown that the method or form of teaching cannot be active or passive by itself, but the training can. Therefore, it is more appropriate to talk about active (or passive) training, and not about active (or passive) methods and forms of teaching. The forms of traditional education do not necessarily require the active interaction of the trainee and the educational environment. But interactive learning by definition, by its nature, is impossible without this interaction. The direct interaction of every trainee with the educational environment is an attributive characteristic of interactive forms of teaching and therefore there

is the educational and developing potential initially laid. The forms and methods of active teaching have, along with syllabus, an independent potential for personality development, together with the development of their competences. This potential lies in the possibilities of teaching forms and methods to activate learners' thinking, improve the emotionally saturated communication paying attention to individual characteristics in the process of acquiring legal culture.

The effectiveness of the interactive forms of education in developing professional competencies of students is determined by the fact that they provide a transition from building the entire teaching process by the teacher to self-organization of this process by students. Self-organization of the students 'activities is based on changing the trainees' attitudes toward the process of obtaining knowledge, in the process of independent discovery, search for a certain personal meaning in the interpretation of educational information and the activity in the process of which this information is acquired. The educational activity of students in the process of implementing interactive forms is of a creative nature because it contains all three types of operations that characterise creative activity: logical, intuitive and heuristic.

The results show that in order to develop the professional competencies of students, the implementation of the process- design approach involves the development of a model for the gradual use of forms and methods of active and interactive project training that provides for the consistent performance of the multi-level projects, including 1) mini-projects (solving traditional learning tasks of practical and professional content) based on the students' situational activity and aimed at the building positive motives of educational and professional activities, the primary accumulation of experience; 2) midi-projects corresponding to the over-the-situation activity of the individual and aiming at solving tactical learning tasks (for example, writing practice-oriented abstracts, reports, game modeling of professional activities, etc.). At this level, the learning process is enhanced by transformative, communicative, aesthetic activities. 3) maxi-projects that involve solving strategic educational tasks, that is, tasks of the creative level of the third level. These projects correspond to the creative activity of an individual and can be realized in practical training and educational design. They assume the organization of their cadets' own experience in the implementing professional activities (for example, a course paper and a diploma).

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