

Building a practice-oriented model of pre-service teacher education

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Abstract. The article analyses modern trends in the university graduates' training based on a practice-oriented approach, which is interpreted as training focused on the specifics of solving pedagogical problems that arise in real practice. The world experience of practice-oriented educational practice aimed at the formation of a creative, thinking teacher is analysed. The author's three-segment practice-oriented model of teacher training has been developed. The structural components of the model and the links between them are described: principles of model building (practice-oriented orientation, principles of flexibility, validity, compliance and integrativity); system-forming subjects (professional community, university and school); blocks (target, factorial, theoretical-methodological, content-technological, effective). The peculiarity of the visual image of the constructed model (fractal) is that each separate segment of the system retains the properties of the entire system, which means that at each level, target guidelines are preserved and the basic requirements for the preparation process are consistent with each other.

1 Introduction

Currently, a new view of the content, process, and result of education in a higher pedagogical institution is being formed. This, in turn, initiates the modernization of technologies and organizational procedures for teachers' training. The introduction of the Professional Standard for a teacher (educator) in Russia stimulated interest in foreign experience of the practice-oriented process of future teachers' training [1, 2], and also led to the emergence of Russian research aimed at the development and implementation of practice-oriented training models [3, 4].

Target guidelines for teacher training and their achievement are predetermined by a combination of external and internal factors. The first correlates with the requirements of different levels standards to the mandatory components of the main educational programs for the future teachers' training (a set of planned results embodied in the formulations of competencies; the ratio of the mandatory and variable parts of the curriculum, the amount of classroom work and practices, etc.). The second one is the combination of the innovative

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potential of the educational institution, embodied in the educational process implemented by the teaching staff, and the management decisions made in relation to the content of the curriculum.

Among the problem areas for the introduction of practice-oriented models, the need to develop innovative means of measuring and evaluating educational results is indicated; search for effective mechanisms of interaction in the High education – Secondary vocational education–Primary general education chain; the continuity of the mastered content of academic disciplines (or modules) and the tasks being implemented for the development of relevant professional skills and actions within the practice framework.

The article presents the research results, the purpose of which was to find the principles of building a practice-oriented model of teachers' training based on triple-actor didactics as a tool for resolving contradictions between the individuality (student's selfhood) and the objective conditions of the external educational environment [5].

The theoretical research basis was formed by the concepts of the competence-activity approach in teaching [6], triple-persons didactics (R.K. Serezhnikova and others), etc. The research novelty consists in the development of a practice-oriented training model, placed in the space of pedagogical events affecting future teachers' creative self-actualization.

2 Methods

The future teachers' training is considered as a unique educational system based on the acmeological, synergetic and noospheric principles of its construction [6]. During the research, a theoretical analysis of foreign and national practice-oriented practices of teacher's training; systematization and a theoretical modelling of the studied processes and phenomena were carried out. The obtained material was correlated with the personal experience of researchers in the field of forming an event-driven professionally-oriented space for future teachers' training [7, 8].

The world experience of individually-oriented (or subject-centrist) educational practice aimed at the formation of a creative, thinking teacher is analysed; the basic principles of building a practice-oriented model of future teachers' training, integrated into the system of continuous professional development of a teacher and flexibly taking into account the social order and the situation corresponding to the current moment, have been developed.

3 Conceptual apparatus and world practices

The teachers' training carried out in educational institutions of secondary and higher professional education before they start working as a teacher is denoted in English-language practice by the term "pre-service teacher education". This type of training includes periods of study within the walls of the university (classroom studies and out-of-class forms of work), alternating with periods of internship in educational organizations of different levels.

A teacher who has received a diploma and started to fulfil his professional duties, faced with the new tasks, also feels the need for constantly improving his classification. In relation to the practicing teachers' training, the term "in-service teacher education" is used, thereby realizing lifelong education of teachers.

The above practices of teacher training are traditional and are currently complemented by e-learning tools [9], including elements of distance and virtual learning [10, 11]. The importance of active, interactive and event-driven forms of interaction between participants in the educational process [12], the practice-oriented orientation of teaching (subordination

of all academic disciplines and practices to a single goal – the formation of a competent professional teacher) is growing.

The analysis of the sources revealed some models of practice-oriented teacher's training in foreign countries, built on the ideas of J. Dewey "Professional Development School" (PDS); model of training based on projects (Project-Based Learning (PBL)), as well as a number of more modern models of learning in the workplace (Work Based Learning (WBL)) [13]; a model of learning based on real problems (Problem Based Learning (PBL)) [14] and others.

The majority of practice-oriented models are based on the idea of creating situations of students' practical actions, as close as possible to real professional activity, which they will implement after graduating from the university [15, 16]. However, the issues of coordination of training theoretical and practical aspects are not discussed here.

One of the brightest trends in the education of the new era is the role of understanding of the individual in the self-formation and the search for tools to stimulate professional self-development. The latter includes: the capabilities of the electronic educational environment [9], the system of professionally oriented tasks and projects [17, 18], inclusion in the professional environment and the process of solving professional problems in real time within the framework of industrial practice.

As a result, a closer partnership is established between educational organizations and professional communities (Russia, Finland, etc.). For example, in Finland, music teachers, participating in a professional concert project, not only gained experience in professional communication, but also raised the level of their professional skills. "The central aim of all the preparations was the development of a teacher's personal competence through the successful realization of the authentic work placement period" [19].

The described approach is based on the significance of sociocultural practices, their influence on the development of competence through the construction of new knowledge and skills as a result of involvement in joint processes characteristic of professional communities. The teachers involved in this experience (a learning-at-work student) noted that they were able to see what kind of situational field a student might find himself in, what learning problems / difficulties he might have. In this example, we are talking about training practicing teachers (an in-service teacher), but this idea can also be implemented in the practice of teaching students–future teachers (pre-service teacher).

James O. Barbre, Brenda J. Buckner (2013) emphasize the importance of critical reflection in shaping the future teacher's professionalism [20]. As a tool that triggers the process of critical reflection, "action research" is chosen, which the student implements as a part of the practice through the video recording of his own teaching experience with subsequent self-analysis; interviewing students to get feedback at the lesson; observation of the students' behaviour in the framework of events and group forms of work in terms of the chosen teaching tools correctness.

Thus, the environment formed by the educational organization, built on partnerships of all interested parties (society, university, school) is a significant factor in the future teachers' training in the space of professionalization. This environment is implemented on the basis of the practice-oriented education principles, which should be interpreted as the learning focused on the specifics of solving pedagogical problems that arise in real practice, in contrast to practice-oriented education (life-oriented education), which is implemented in teaching schoolchildren. When organizing the preparation process, one should search for such mechanisms that will maximize the involvement of the future professional teacher in building the personality of the student himself, that is, will contribute to his self-development. These factors should be reflected in the construction of a modern practice-oriented model of future teacher's training.

4 The author's approach to building a practice-oriented model of teacher training

The developed author's model reflects the system of future teachers' professional training and includes the following blocks: target-oriented, factor-oriented, theoretical and methodological, substantive technological, resulting. These blocks are immersed in an eventful professional-oriented space.

Target-oriented and resulting blocks. In general, the goal of modelling in pedagogy is to build models of complex, multidimensional and multifactorial pedagogical phenomena that need to be studied and in relation to which it is necessary to establish the patterns of their effective functioning. The model displays directly the research object. In our situation, this is the process of a competent professional teacher preparing.

By building and studying the constructed model, one can more deeply realize the positive and negative aspects that can take place in the real preparation process.

Factor-oriented block. This block determines a set of key requirements for the model (principles of model building). First of all, our training model is *practice-oriented*, and, therefore, the aspect should be reflected in all components of the educational process. The model should be flexible and take into account possible changes in the requirements for tasks and the content of the training process. *The model validity* is traditionally ensured by the implementation of a systematic approach to modelling, but the completeness problem of the constructed model remains. During the model constructing, it should be borne in mind that the process of future teacher training to some extent correlates with the learning process at school (the *correspondence* principle), and the individual components of the training process interpenetrate each other (the *integrativity* principle). The latter principle presupposes the unity of theory and practice, implemented through interdisciplinary cooperation of academic disciplines (modules) and research at the university level, on the one hand, and interdisciplinary communications and research work at the school level, on the other.

Theoretical and methodological block. The model development was based on the main provisions of triple-actor didactics, which combines the value orientations of education with instrumental (theoretical and practical) aspects of learning to build a "subject-developing educational space" [4]. The key subjects in the author's interpretation are: subject (educator) – subject (student) – subject (environment).

To visualize this approach, we took a triangle image as a basis, expanding the depth of its use by building on this basis a fractal (a self-similar object, that is, an object, each part of which repeats the features of the entire object). Thus, in this model, it was possible to visualize different levels of implementation of the process of future teacher's training: from conceptual system-forming subjects of the training process (university–school–professional community) to the embodiment of the training process in the content of specific training sessions and forms of extracurricular work.

As a result of delegating the solution of the assigned tasks to a new level, the image of a fractal model is born. The stages of building the model are presented on the Figure 1.

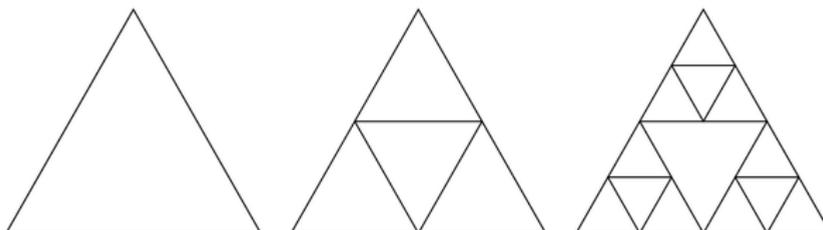


Fig.1. Stages of the fractal model building.

Substantive technological block. In the training process, two equal participants are traditionally distinguished – the university and the school. Being in the field of triple-actor didactics, we supplement this structure with a professional community, which formulates a social order in the field of future teacher’s training and monitors the quality of its performance.

The substantive filling of the model comes from a global vision of learning outcomes at a specific level (the top of any triangle), to the achievement of which equal and interrelated counterparties are directed: theoretical and practical tools (theoretical block – lower left corner of any triangle and practical block – lower right corner of any triangle).

The zero-level triangle has no division (Fig. 1). This is a process of the future teacher’s training, which is still not divided into separate elements, and we place the student himself at the center (Fig. 2).

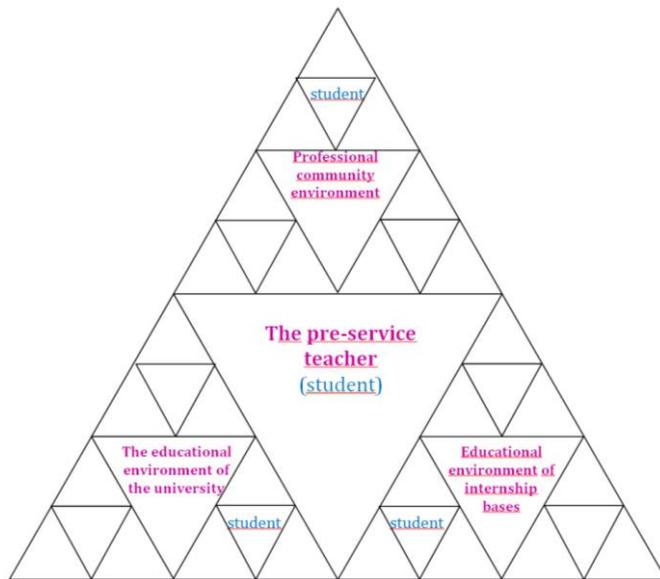


Fig. 2. Content filling of the model (first level).

The top of the first level triangle (the triangle is divided into 4 parts by the middle lines, the student is in the center) is the vision of the educational result at the level of the professional community. Equal partners implementing training at this level are the University (theoretical training) and the School (practical training). We’ll comment on the display of the student’s place on the model (blue). It is always in the center, but the student’s role does not remain unchanged. Upper triangle – the vision of the goals of the student’s preparation is built in. Left triangle – the student acts as a student, to whom the practical impact is directed. Right triangle – the student acts as a teacher, realizing the accumulated theoretical baggage in practical activities.

Dividing each of the constructed triangles into parts according to the same principle takes us to a new deeper level. It turns out that the university, just like the school, must have its own vision of the students’ training result and its own tools for coordinating the theoretical and practical training aspects.

Further immersion allows you to see how the preparation process should be implemented through the content of specific educational events (training sessions and extracurricular forms of work) and even individual training tasks.

5 Conclusion

The existing teacher training system has developed in the context of the knowledge paradigm and, therefore, does not fully ensure the formation of graduates' professional competencies. Higher vocational education requires qualitative changes due to the requirements of modern program-targeted documents. The beginning of such changes can be laid by the development of author's concepts, models and technologies for their implementation in the educational space.

The problem of teachers' practice-oriented training occupies a certain niche in Russian and foreign scientific research. The developed practices are aimed at creating situations of students' practical actions, as close as possible to real professional activities. These practices require consolidation and coordination between themselves and the students' theoretical training.

In the constructed three-segment practice-oriented model, we tried to take into account all the problem areas of the existing models. Its key advantage is the ability to construct a visual image (in the form of a fractal), which makes it possible to emphasize its fundamental feature: each separate segment of the system retains the properties of the entire system, which means that at each level target guidelines are preserved and the basic requirements for the preparation process are consistent with each other.

The implementation of this model is based on the principles of partnership between the subjects of the educational process (professional community, university, school), which will create effective conditions for the implementation of practice-oriented teacher's training. The effectiveness of the developed model will be verified as part of our further research.

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