Issues of forming professional self-efficiency in conditions of personalized education

Lyutsiya Vansettovna Vakhidova1,*, Andrei Viktorovich Dorofeev2, and Yulia Viktorovna Avgustova1

1 Bashkir State Pedagogical University named after M. Akmulla, 3a, Oktyabrskoi Revolutsii Str., Ufa, 450000, Russian Federation
2 St. Petersburg Mining University, 21, Str. Line, St Petersburg, 1991062, Russian Federation

Abstract. The paper outlines the modern contexts of the system for training specialists, the tasks and guidelines for its development. The authors describe the characteristics of professional self-efficacy and reveal the essence of individualization and personification. The work also considers problems that require changes in the system of vocational education in terms of approaches, technologies, forms and methods of personalization or individualization, personification and personalization of learning. The purpose of the study is to study the potential of the model for training a specialist, which allows one to successfully compete in the labor market from the standpoint of one’s professional self-efficacy. As a methodological technique, a conceptual analysis of a critical nature is used, in the discourse of which the valorization of a person's professional self-efficacy in the conditions of professional education is realized, triadically revealed in personalization or individualization, personification, personalization. The personalization of education is implemented with the help of personalized technologies that contribute to the disclosure of the actual completeness of the content of the triadic model of professional self-efficacy of the individual. Personalized technologies for self-study of students in the system of higher education based on a specialized methodological content favor independent learning, which forms a modern pedagogical matrix of thinking in the context of the valorization of the educational activity of the student, increasing the maximum value and usefulness of educational programs, knowledge, etc.

Keywords: professional self-efficacy, personalized learning, individualization, personification, personalization, educational triadic model

1 Introduction

In the modern world, which is quite complex, ambiguous and changeable, it is extremely difficult and not rational to have a clear plan, to live and develop according to patterns. In this connection, the main requirement of the customers in education is requests related to the formation and development, along with professional so-called “flexible” skills. Recently, in the system of training specialists, more often they have paid attention to the formation of critical thinking, creativity in professional activities, where the ability to solve non-standard problems becomes relevant. Otherwise, they consider production problems and offer solutions that are not “taught at a university”, work in a team, understanding and accepting the opinions of their colleagues. All of the above requires changes in the system of training specialists. Therefore, many psychological, pedagogical and social studies offer models of training and education aimed at developing competencies that are in demand on the labor market; high-performance technologies using elements of artificial intelligence, machine learning, etc.; organizational and psychological-pedagogical conditions to implement a particular model in various educational systems.

2 Materials and Methods

We consider the main task of vocational education to be the implementation of a specialist-training model that allows you to successfully compete in the labor market, effectively implement your professional skills with high personal potential and professional self-efficacy. In addition to the professional competencies necessary to perform a particular type of work, there is a need to form additional professional competencies, which imply abilities of an individual to realize one’s professional development in a production situation that one needs to solve the variable tasks of professional work. Additional professional competencies predetermine the importance of the personal properties of the future specialist; therefore, it is necessary to study the processes of self-education, self-efficacy. This allowed us to determine the direction of research, i.e. the process of formation of professional self-efficacy. These circumstances cause serious changes in the forms, methods, means and content of professional training of specialists, the search
for adequate approaches to the organization of the educational process at various levels and new educational technologies that are practice-oriented in a competence-based context [1].

The methodological trajectory that we would like to propose includes teaching-learning-assessment strategies, methods and techniques, detailed according to the specific competencies of the students, aimed at acquiring the ability for professional self-efficacy, student learning potential and using a methodological style that encourages personal responsibility. In this regard, a conceptual analysis of a critical nature seems to be a significant methodological tool. In the discourse of the analysis, valorization is realized as an elevation to the value of the identified significant conceptual features, in our case, the professional self-efficacy of the individual in the conditions of vocational education, revealed in personalization or individualization, personification, personalization.

3 Results and Discussion

An analysis of theoretical developments and accumulated empirical research currently available in various areas of a teacher’s professional activity allows us to talk about significant progress along the path of understanding the essence of professional support and developing the teacher’s skill. The study of this problem is relevant not only for pedagogical science, but also for pedagogical practice, as it will help in solving the problems of effective management of the professional growth of a teacher. The main direction of the research is to determine the organizational and pedagogical conditions for the professional support of a teacher in an educational organization. It should be noted here that the assessment and development of the professional competence of a teacher at different stages of his professional career is one of the most important areas of state policy in the field of education. Professional growth is necessary for any person. It gives a feeling of stability, confidence in the future, does not allow you to “burn out” at work.

The needs of educational organizations in the development of teaching staff are formed today under the influence of the following main factors:

• professional knowledge quickly becomes obsolete, which leads to a decrease in the qualifications of specialists;
• there are rapid technological changes that require the acquisition of new knowledge, skills and abilities;
• educational institutions feel constant competition, which requires improving the quality-of-service provision, more efficient use of the organization’s resources.

Existing trends in the development of education are largely associated with the readiness of teachers to develop and implement pedagogical innovations in the educational process, their desire for professional improvement, growth and development. In connection with the above, it becomes necessary to define the essence of the concept of "professional growth". In most studies, the problem of professional growth is associated with the concept of "development". In the philosophical aspect, development is considered as a concept that characterizes the qualitative changes in objects, the emergence of new forms of being, the existence of various systems, associated with the transformation of both internal and external relations.

Thus, the categories of professional growth and development are in a dialectical relationship, where professional growth can be considered as a change in the structure (internal change) and / or quantitative professional growth (external change), which is a form of manifestation of the development process. In this regard, it is important to note that this concept characterizes internal (realization of potential) and external (increase in quantity or properties) changes occurring under the influence of external and internal factors.

The concept of "professional growth" in the most general terms is a scientific category that is part of the problematic field of professionalism. We adhere to the positions of the concept of professional development of the individual, according to which professionalism is a set of psychological, mental and personal changes that occur in a person in the process of mastering and long-term performance of activities, providing a qualitatively new, more effective level of solving complex professional problems in new conditions. In the context of modern concepts of professionalism, professional growth is aimed at changing the personal style, professional outlook and professional culture of the teacher. Recently, there has been an actual decrease in the quality of training of graduates of pedagogical specialties. In this regard, it is worth talking not so much about the relevance of professional support for a teacher, but about the development of a teacher's professionalism in an educational organization and the growing role of pedagogical communities that have great educational potential.

Initially, the process of forming professional self-efficacy was focused on the triad: personalization or individualization, personification and personalization, reflecting the result of the identification of the subject at the initial stage and its further change into selfhood [2]. We have identified three levels of disclosure (development) of the personality: personalization or individualization, personification, personalization, which occur in a single bundle. They do not exist on their own and line up in the logic of the development of the subject of the educational process (Fig. 1). In this process, there are also qualitative characteristics. Personalization or individualization entails perception; personification evokes the cumulative process of perception, understanding along with the manifestation of the subjective position. Personalization is presented in the process of changing the external environment with the formation of its own framework in it. This is an evolutionary change in quality [3].
Personalization and personalized learning in pedagogy and psychology has been considered for many years. It is defined, on the one hand, as a special form of organization of the educational process, which considers the student as a certain standard of learning activity, embedded in the requirements of the educational standard, and sets the leading subject in the education system. On the other hand, taking into account the individual characteristics of students gives reason to think about the ongoing process of personalization, i.e. reflecting the formed features and actions of students, as well as further extrapolation to other participants in the process [4]. In pedagogy, this is defined as a factor in the development of an individual's cognitive activity. The technology is based on the concept of the formation of universal actions, which is necessary for a competent specialist, including the provisions for the formation of additional competencies [5].

Currently, the personalization of learning and education in general is a popular topic, researchers offer various definitions of this phenomenon from different aspects and points of view. However, the most common and brief approach is based on the focus on the characteristics, capabilities and interests of the student oneself. At the same time, it is necessary to take into account the fact that the personality of the student is active, has targets for learning. In this regard, considering the process of self-learning as a personalized intervention that enhances the cognitive, practical, volitional and motivational mechanisms of the student and opens up new ways to sustainable change in self-behavior, self-esteem and awareness of one's own learning style, resolving problems that arise in the professional environment. Very often, a synonym for personalization is proposed, i.e. individualization, a well-established term in science. However, experts and researchers separate individualization and personalization. According to Savina, "personalized learning provides a wide range of conditions and learning routes that the student chooses in the future”, and in individualized learning, the conditions are determined by the teacher oneself, taking into account their needs [6]. Personalization of education is often implemented through individual educational trajectories (IET), which are also relevant for teachers in the process of their professional development, presented in competency development maps, self-education plans, and individual development trajectories.

To implement the personalization of education, the following conditions must be met:

- goals are set by the students themselves;
- the student shows initiative and independence in educational activities, and is also ready for self-education;
- the content of education is integrated and interdisciplinary;
- when forming general professional competencies, teamwork skills, communication skills, skills for solving complex problems and the ability to make decisions on them, responsibility, etc. are formed.

Thus, we again have approached the fact that new conditions require new pedagogical methods, modern tools, and completely different learning technologies. In our study, the emphasis is on the didactic-instrumental approach with the use of didactic regulations in the formation of professional self-efficacy in a personalized informational and educational environment. The latter is currently relevant in connection with the situation of the "pandemic" time that has captured the whole world in the previous two years. This has become the starting point for all educators and the transition to hybrid learning. At the same time, the share of students' independence in educational activities has grown significantly, which was a challenge for teachers to change the actual content, interaction technologies and use other pedagogical technologies. The priorities in education are also changing with an emphasis on designing educational trajectories, meaningful and structural-functional models of education. At the same time, it is necessary to dwell on the disadvantages of personalized education: a decrease in the motivation of teachers when changing the education system; personalized learning with multiple trajectories is energy- and resource-intensive; digital solutions for learners are not entirely personalized, which can "take the learner away from the generalized idea. As an example of the personalization of a recommender system in a digital environment based on different levels of complexity and user skills, one can cite the so-called serious games in rehabilitation and, in particular, exergames. They were defined as any type of a video game that requires movement of the entire body of the player, which allows interaction in real time. That can motivate, engage and increase patient commitment to treatment. In this example, the automatic personalization of the patient is formed in the process of playing exercises. The construction of an intellectual rehabilitation system is implemented on the basis of Exergaming, which consists of a platform with an exergame player and a constructor. The intelligent

![Figure 1](https://doi.org/10.1051/shsconf/202316400135)
platform includes a recommender system that analyzes user interaction as well as user’s history to select new gaming exercises for the user [7]. If we transfer this solution to the field of vocational education, then, in our opinion, it can be successful to define a recommender system based on different levels of complexity and user skills, providing the user with a personalized game mode based on one’s own history and preferences, which can positively affect processes of personalization of education.

In view of the foregoing, we believe that the educational route in a personalized information environment acts not only from the standpoint of the form, but also the process of implementing professional education, being, among other things, a means of self-education, self-development and professional competence, contributing to the professional development of the future specialist. We have proposed a set of principles for building a personalized informational and educational environment, including:

• socio-cultural foundations of technology: an invariant/variable basis for constructing both the content and stages of the educational process (scientific-cognitive, emotional-figurative experiencing and reflective-evaluative);

• anthropological foundations of technology: an invariant/variable basis for constructing the content and stages of the process of educational activity (subject-introductory, analytical-speech and modeling-fixing);

• macro- and micro-navigation of the organization of educational activities;

• logical and semantic modeling of knowledge and skills through their multidimensional figurative and conceptual representation;

• didactic-instrumental self-dialogue of a student with educational material;

• subagent organization of the system, integrated with the structure of the didactic multidimensional technology that determines it.

It is possible to create a successfully functioning and time-appropriate model of professional training of a future specialist only on the basis of the continuous introduction of pedagogical innovations into the practice of the educational process. Innovation in educational activities lies in the widespread use, first of all, of new teaching technologies and the organization of the educational process at the university to obtain results in the form of educational services that are distinguished by social and market demand. In this context, the traditional learning technology is a certain way of learning, in which the main task of implementing a particular function is performed by a person under the control of a person. In traditional teaching technology, the leading role is given to teaching aids: the teacher does not teach students, but performs the functions of stimulating and coordinating their activities, regulating learning activities [8].

The new requirements of society for the level of education and personal development have already led to a change in the technology of education. Today, innovative technologies make it possible to organize the educational process taking into account the professional orientation of education, as well as the orientation of the student’s personality to one’s interests, inclinations and abilities. Among them, the leading place belongs to such types as student-centered learning, problem-based learning, test forms of knowledge control, block-modular learning, project learning, case method, cooperative learning, multi-level learning, distance learning. As a result of their implementation, the functions of the subjects of the educational process change dramatically. The teacher becomes a consultant-coordinator, as one performs an information-monitoring function, and students are given greater independence in choosing ways to master the educational material. The main forms and methods of teaching that contribute to improving the quality of personalization of education using innovative technologies are: role-playing games, business games, seminars, recapitulation, conferences, debates, dialogues, problem-based learning, independent work, abstract defense, individual work, creative essays, reports; research work, metacognitive strategies, etc. It is promising to use practice-oriented learning in the training of future specialists in the vocational education system, which is implemented within the framework of a vector model [9]. A special place among personalized technologies is occupied by the strategy of active contextual reading, using which you can improve your reading skills through performances: speed, decoding, understanding through increasing the degree of one’s activity and autonomy through the procedural mechanisms of valorization. If the teachers themselves value independent teaching methods in their courses and seminars/laboratory works, then they will be transferred in the learning behavior of the students, contributing to the formation of independent learning ability, to the professional development of the future specialist.

4 Conclusions

Thus, the work of a teacher turns into managing the student's activities and the process of interaction with one, solving the problems of transition from literacy to professional culture, from misunderstanding to understanding, from inability to skillfulness, from helplessness to independence and the desire to share knowledge, skills and experience; taking into account the personality of the student. The student, as the subject and object of interaction with the teacher, creates new knowledge, skills, practical skills and personal qualities in the process, not only in purely professional activities, but also in pedagogy. The teacher should warn students about the need for a balanced approach to obtaining information from external sources. Only a person with sufficient experience and knowledge can correctly assess the quality of information [10]. On the other hand, today's students are increasingly acquiring the qualities of competent and constructive active partners, becoming one of the main forces launching changes in higher education. It follows that in order to implement the model of training a specialist that allows one to successfully compete in the labor market with high personal potential and professional self-efficacy, it is necessary to move on to the valorization...
of teaching methods, dynamization, assimilation or formation of reflexive and metacognitive competencies in action, self-learning competencies, integration into a single whole. The task leading students to the discovery and creation of knowledge by themselves, forming skills that will manifest themselves at a higher level in their official professional activities, obliges us, teachers, to pay attention to ourselves. It forces us to understand how we manage to involve, in addition to the main guideline, in the minimum standards professionalization (basic skills), into teaching meta-competences (with a cross-cutting meaning), such as: genesis, use and transfer of information, formulation of hypotheses and development of professional projects, the ability to determine one’s own priorities. These include the ability to take responsibility and believe in oneself, to integrate into a professional group and work in teams, show solidarity and respect for others [11]. We see a further study of the problematics in the analysis of the results of teaching teachers according to the methodology of self-study of students in the system of higher education based on specialized content. This is a group of methods that favor independent learning, contributing to the formation of a modern pedagogical matrix of thinking, first within the educational process, and then in the context of valorization in the course, seminar and laboratory activities of the student.

References


5. A variant of a single framework for describing a personalized approach in education, taking into account various pedagogical systems, is given and justified in: Rubin S. C., Sanford C. Pathways to Personalization (Cambridge, Harvard Ed. Press, 2018)


