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Pedagogical Technology as a Means to Develop Educational Self-Sufficiency in Students of Higher Education Organizations of FSIN Russia

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Abstract. *Introduction:* the paper addresses the issue ofenhancing the role of individual extramural studies for students of higher education institutions of the Federal Penitentiary Service of Russia and searches for ways to form students' attitude towardindividual extramural studiesas a significant component of the educational process. *Aim:* description and scientific substantiation of a pedagogical technology aimed to develop educational self-sufficiency in future staff of the penal system. *Methods:* theoretical methods (studying and analyzing psychological and pedagogical literature on the subject, pedagogical simulation) and empirical methods (survey, performance results analysis). Results:in the course of our research we formed a set of definitions and terms, the key one among which is "educational self-sufficiency". Pedagogical simulation helped us describe distance educational technology based on interactive pedagogical communication using Modular Object-Oriented Dynamic Learning Environment (Moodle). This technology focuses on the development of cognitive motivation in students, and the motivation source is found in a professionally oriented educational dilemma. An educational dilemma serves as an informational and conceptual unit that covers the content of a certain topic and the corresponding competence laid down in the structure of an academic discipline. The empirical research we conducted has shown that the use of this educational technology actually mobilizes students' cognitive activity and fuels their interest in learning and future profession beyond the topics intended for classroom-based studies. *Conclusions:* we have found out that the performance efficiency of individual extramural studies depends on how the teacher organizes external supervision. It should correlate with the inner needs of students and bring to the fore a wide range of cognitive motives: motivating directly, motivating intellectually, motivating prospectively. Being in line with these conditions, the educational technology we describe can be used on a large-scale basis.

Keywords: educational self-sufficiency; educational process; pedagogical technology; cognitive motives; educational dilemma; electronic educational environment.

13.00.01 – General pedagogy, history of pedagogy and education.

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Introduction

According to Federal Law 273-FZ dated December 29, 2012 "On education in the Russian Federation" all higher education organizations provide for the training of skilled workforce in all major fields of socially useful activity in accordance with the needs of society and the state (Art. 69). This provision focuses the attention of higher education organizations on the implementation of strategic educational tasks.

Content-related aspectsare determined by federal state educational standards, and separate requirements can be elaborated by employers of graduates of higher education organizations. The Federal Penitentiary Service of Russia (FSIN Russia) is an employer for graduates of educational organizations that train specialists for the penal sphere. FSIN Russia requires that the quality of training of graduates should provide them with the ability to organize their self-education on their own, taking into account the need to be in line with innovation processes, respond efficiently to potential challenges and risks in conditions of Russian penal system reform [5]. We should emphasize that graduates of educational organizations funded by government agencies can most effectively implement their potential as specialistsin the very bodies and agencies of the penal system; moreover, the quality of graduates' education can be assessed objectively, first of all, by the employer. Having reviewed the information on assessing the ability of FSIN Russia higher education organizations graduates to perform their professional duties efficiently, we can state that along with obvious achievements, there are certain drawbacks in this sphere. Gaps in professional education have different nature; one of the reasons, according to researchers, is an insufficient level of self-sufficiency, which impedes successful orientation in the professional environment under changing conditions, when a FSIN Russia officer has to show initiative in the setting of a goal and searching for ways to achieve it [3; 4;7].

Developing self-sufficiency in penal system officers is in many ways related to improvements in organizing educational process in higher education institutions. We consider a more comprehensive use of individual extramural studies as a resource to optimize educational process. It is known that the latest federal state educational standards attach greaterimportance to individual studies of the majority of disciplines included in educational programs. The proportion of academic hours devoted to individual extramural studies in the curricula of higher education organizations is not less than of the hours provided for the main educational program. Thus, students' individual work acts as a full-fledged component of educational process and receives special consideration on the part of teachers.

Research methods

The research was conducted with the use of theoretical (study and analysis of psychological and pedagogical works on the topic of our research) and empirical (survey, analysis of performance results) methods. Pedagogical simulation included designing a model for developing educational self-sufficiency in students in the form of main ideas and technological solutions, which were confirmed during further experimental studies in conditions of actual pedagogical process.

Theoretical materials for the research included modern works on the formation of educational self-sufficiency in students in educational process in general and in organizing individual studies in particular; cadets survey data were also used for the purposes of our research. The practical stage of the research was conducted at the psychological faculty of VIPE FSIN Russia. The experiment lasted three years; 158 third- and fourth-year cadets who studied the disciplines "Anti-corruption education of penal system officers" and "Testing and developing ideas related to legal aspects in minor convicts" participated in the experiment from 2017 to 2020. Upon completion of the courses, cadets were asked to fill in a questionnaire to assess the efficiency of the technology for developing educational self-sufficiency used in educational process.

Terms and definitions of the research

Having studied and analyzed relevant psychological and pedagogical literature, we formed a set of terms and definitions for our research. The set includes the following terminological constructs: "educational self-sufficiency", "individual extramural studies", "pedagogical technology as a means to manage individual extramural studies". The terminological construct "educational self-sufficiency" was used as a key term for the problem under consideration. Educational self-sufficiency is understood as a student's personality trait that allows them to design their own individual educational track based on their own choice corresponding to their educational goals, abilities, motivation and interests [2, p. 13]. Students' educational self-sufficiency is based on their self-organizing abilities, the main components of which are as follows: determining an educational task taking into account one's abilities and needs, choosing educational means to address the tasks at hand, assessing one's own actions from the viewpoint of achieving the goal, choosing optimal ways to develop one's professional competencies, assessing

the actual state and results of development of professional competencies [2, p. 32].

It follows from the analysis of scientific literature that students are to act as subjects in managing their own individual extramural studies. Students as subjects of internal management have different personality features that is why they show different self-organizing abilities, and not all of them are willing to go beyond the mandatory tasks assigned by the teacher. Being part of the curriculum, individual extramural work acts as the segment in which a student or cadet of a higher education organization can use their educational self-sufficiency. Before an individual educational route for the student is designed, there should be some preliminary work related to studying the syllabus and the working program of a discipline so as to find answers to the following questions: Which topics should be fully included in individual studies? To what extent should one expand their knowledge on their own in the framework of those topics that are to be studied within the classroom? What should be the level of acquisition of this knowledge? What forms of control will be used? And so on.

Regarding individual extramural studies, many students do not go through planning documentation painstakingly and do not design their own educational route on its basis; they rather focus on studying the topics in the framework of preparation for exams. Thus, there emerges a need for external supervision on the part of the teacher, whose role is to encourage and promote educational self-sufficiency in students.

Among many ways to organize external management of individual extramural studies, we consider it necessary to talk about the technologization of this process. Pedagogical technology serves as an intermediate link between the theory and practice of its application. In order to make practical use of theoretical provisions one should technologize them and describe them as activity-related procedures. Researchers have different opinions regarding the definition of a pedagogical technology. The definition closest to our understanding is to consider pedagogical technology as an algorithm of purposeful joint actions of educational process participants, which provides for the achievement of the intended educational result [8, p. 12].

The relevance of using pedagogical technology as a means to manage individual extramural studies of students at higher education organizations has been substantiated quite thoroughly in scientific literature. Having reviewed scientific works on this topic we found out that the majority of relevant technologies consider such aspects as coordinated goal-setting, criteria-based assessment, design, dialog-based learning, etc. as the means to mobilize educational self-sufficiency in students [1; 2; 9; 11]. Insufficient attention to the use of students' cognitive motivation in pedagogical technologies has served as a reference point for eliminating this gap when simulating the technological process of developing educational self-sufficiency in students at higher education organizations of FSIN Russia.

Model description of the pedagogical technology

In order to provide pedagogical support to the learning and cognitive activity of cadets at higher education organizations of FSIN Russia we propose a distant technology for motivating individual extramural studies. Development of motivation is considered as a major driver in making cadets accustomed to individual extramural studies. In the course of development of the pedagogical technology we proceeded from the fact that major importance is attached to the sense-making motives that bring socially significant values to the level of personality – "what is important to me". Among the cognitive motives of the kind, we can distinguish those that motivate directly, intellectually, and prospectively [10, p. 97].

Under direct motivation the mobilizing effect is produced by novelty, vividness, entertaining component and imagery of the information and also by the possibility of getting a high score or appraisal. Intellectual motivation ensures cognitive interest provided that students obtain satisfaction from participating in educational and cognitive activities and successfully cope with the tasks that require the use of intellectual skills. Prospective motivation is related to the postponed result effect, under which students realize the potential usefulness of the knowledge in the long run, when they become graduates and can implement the knowledge in practice.

The purpose of using this technology is to provide pedagogical support for cognitive individual extramural activities of cadets by motivating them to study thoroughly the material included in the section "Individual extramural work". The time period of its implementation coincides with the process of cadets' individual work on studying a certain topic within an

academic discipline. The number of cycles in the use of the technology corresponds to the number of topics defined by the thematic plan for independent extramural study. The main forms to implement the technology in remote mode include interactive communication using electronic educational environment of the university on the basis ofModular Object-Oriented Dynamic Learning Environment (Moodle) and social media.

This technology provides a convenient and effective way to control remotely the individual extramural work of cadets in the course of rapid exchange of information, in an online format as well. It comprises three stages: orientation- and activity-based, project- and activity-based, and reflection- and activity-based. The names and content of the stages correspond to the logic of the progressive development of cognitive motivation. For each stage, groups of dominant cognitive motives are defined. They are: directly motivating (first stage), intellectually motivating (second stage), and prospectively motivating (third stage).

The specifics of this educational technology consist in the fact that a professionally-oriented educational dilemma is used as an information and semantic unit that covers the content of a certain topic and corresponds to the logic of the formation of competencies laid down in the structure of an academic discipline. Finding solutions to educational dilemmas involves students' joint discussion of professionally significant situations. For each dilemma, several solutions are developed. The choice of a particular solution should be substantiated from the scientific and practical viewpoints. Project-based activity is organized, according to which the student speculatively builds a model for the probable development of events that corresponds to all the proposed solutions. Working with a dilemma involves the use of questions that problematize it and represent the situation through the prism of diverse circumstances.

A professionally-oriented dilemma involves a situation of professionally significant choice, in which there is no unambiguously correct solution, but there are different solutions that reflect different interests. As in any situation, the training dilemma provides for the continuation of the activity (in an unchanged or modified form). If the subject of cognitive activity has sufficient means and methods to solve a certain problem contained in the dilemma, then the activity continues. Otherwise, the situation is classified as a problematic one, which entails the need to use special methods to continue the activity. Thus, an educationaldilemma has no limitations if a task is performed in the form of a simple choice: depending on the level of motivation and training, students determine the boundaries of tasks and solutions on their own.

Special requirements to the content of an educational dilemma are established, they serve as pedagogical conditions for the successful implementation of the technology under consideration. According to these requirements, the formulation of a task is focused on covering the main volume of program material on the relevant topic; in the course of finding a solution to the dilemma, the competencies inherent in the structure of the academic discipline are being formed; the relevance and eventfulness of the content of dilemmas is ensured. Dilemmas that meet these requirements are presented in the textbook on the discipline "Anti-corruption education of officers of the penal system" (for the specialty 37.05.02 Psychology of service activity) [6, p. 73-80].

The technological chain for the implementation of distance educational technology for motivating students forindividualextramural studies includes a sequence of certain actions. At the first stage (orientation- and activity-based), the teacher sends each student an incentive material that includesthe following: the name of the topic intended for independent extracurricular study, goals to be achieved, a list of key terms to be described on the basis of reference information sources, the content of a professionally-baseddilemma, instructions on the method (algorithm) for completing the task, information about the form of the subsequent presentation and discussion of the results of the work performed. If necessary, the teacher initiates the formation of mini-teams for interactive communication aimed at solving educational dilemmas.

At the second stage (project- and activity-based), the teacher acts as a mentor, providing advice in case students have any difficulties. The teacher also urges students to formulate their questions clearly and describe problems in detail in situations of difficulty.

At the third stage (reflection- and activity-based), the teacher organizes presentation and discussion of the completed tasks and their assessment from the scientific and applied viewpoints. The teacher also defines the format of the presentation and interactive discussion: forum, chat, video conference, discussion platform, poster presentation, etc.

The productivity of this technology is determined, among other things, by a set of organizational conditions, which include creating a supportive emotional atmosphere, coordinating actions in e-learning environment, using methods that enable a more comprehensive reasoning and interaction, summarizing the results of the work on agiven topic, which includes the correlation of the results obtained with the content of the competencies relevant to the discipline in the structure of an educational program.

Results and discussion

The cadets who study certain disciplines using the technology under consideration note that the educational dilemmas they are to solve fuel their interest in studying and mobilize their cognitive activity. This statement that we make is based on the results of many years of pedagogical observation and on many surveys conducted among students. Thus, in May 2020, at the final stage of studying the discipline "Assessment and development of law-related concepts in juvenile convicts", cadets from group 261 of the psychological faculty of Vologda Institute of Law and Economics of FSIN Russia (VIPE FSIN Russia) were asked the following questions:

1. Did solving the proposed dilemmas help maintain interest in the academic discipline? Substantiate your answer.

2. What was the most interesting dilemma and why?

3. Will you useyour experience of solving the dilemma in the course of psychological work with convicts? In what situations?

The cadets' answers and opinions posted on the electronic information and educational platform of VIPE FSIN Russia turned out to be quite informative and multidimensional. Here are the excerpts from some of the answers:

"The course is quite interesting and important for us, and it will be definitely useful in our work. The format of this course is new for me, but I liked it for its originality and novelty. While solving dilemmas I gained experience in finding the right point of view, improved my skills of reasoning and substantiating my point of view on the basis of theoretical material. Each proposed dilemma in this course is interesting and original. To answer a question presented in the dilemma, you need to study the proposed material thoroughly and understand it well, which naturally increases the effectiveness and usefulness of this type of work".

"Having completed the course "Assessment and development of law-related concepts in juvenile convicts", I would like to say that the teaching method used in the course is unconventional, which aroused the greatest interest in its studying. Reading, analyzing and solving dilemmas was very exciting".

"I liked solving dilemmas; it is a very good approach to studying this discipline. In my opinion, finding solutionsto dilemmas contributed to the development of good knowledge in this discipline and aroused my interest greatly, it also contributed to the development of my own opinion on each specific situation and helped me formulate my own thoughts more competently. The dilemma about the Kirovograd correctional facility made a great impression on me and aroused greatest interest in me. This dilemma made me feel a great deal of emotions, especially after reading the consequences, I even felt a tinge of anger in relation to the inmates. However, it was necessary to choose the right solution regardless of my own feelings and emotions. It took me more than an hour to solve this dilemma, because it was difficult to put together all the thoughts that came to my mind".

During the survey, the cadets (158 people) answered the question "What advantages of using this technology can you name?" and noted "the opportunity to learn how to recognize possible professional mistakes and find ways to overcome them in the course of solving educational dilemmas"; "a variety of interesting dilemmas"; "the opportunity to fulfill educational tasks in a self-paced course"; "it is interesting to work without stress in a favorable psychological atmosphere", "at the forum and in the chat, it is interesting to get acquainted with all the solutions of my fellow students, to participate in discussions and assess my own answers on this basis"; "the possibility of using modern computer technologies to obtain skills that can be useful in professional activities and everyday life"; "acquiring professional experience in the application of educational dilemmas, the developing potential of which will be useful in the future work with convicts and other categories of clients of psychologists". The most frequently repeated words in the answers are "interest" and "opportunity", which are used in the aspect of future professional activity. When asked about possible disadvantages of this technology, all respondents said there were none.

We can say that the use of this educational technology mobilizes the initiative activity of

students: at least 92% of cadets are involved in systematic individual extramural studies. It is noteworthy that in the current academic year in which there was a transition to “remote training” due to the coronavirus pandemic, full participation of all cadets without exception was achieved.

Other manifestations of positive feedback included cadets’ projects that described the ways in which the object under consideration can be developed, cadets’ evaluative judgments about controversial aspects of the proposed solutions, and the actualization of professionally significant values. The feedback serves as a basis for introducing adjustments to the teaching and editing of the content of the course. The product of this technology is educational self-sufficiency, the indicators of the formation of which are as follows: readiness and ability to overcome difficulties in educational and cognitive activities; the presence of a system of cognitive motives; the ability to independently set goals in educational and cognitive activities and plan their achievement; the ability to build an individual educational route; the willingness to use existing knowledge, skills and experience in solving professional problems; the ability to assess and adjust one’s own actions.

Conclusion

The materials of the research allow us to draw the following conclusions:

1. There is a relationship between the level of educational self-sufficiency of students and the ways to organize external management of individual extramural studies.

2. Such communication becomes effective when the teacher uses a technology focused on the development of cognitive motivation in students.

3. The use of didactic basis in the form of professionally-oriented dilemmasthat are information and semantic units covering the content of a certain topic and correspond to the logic of the formation of competencies laid down in the structure of the discipline allows us to bring to the fore a wide range of cognitive motives: motivating directly, motivating intellectually, and motivating prospectively.

The proposed technology is characterized as one of the ways for providing pedagogical support to the process of forming educational self-sufficiency as a professionally significant personal quality in cadets. At the same time, the current problems that can form the basis for further research remain outside the scope of this article, including the following problems: the structure and level of development of students’ cognitive interests due to the use of the technology under consideration; motivating teachers to provide pedagogical support to cadets in the course of individual extramural studies; monitoring the development of educational self-sufficiency in the cadets who are at different stages of studying at the university, etc.

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