

TECHNOLOGICAL SUPPORT OF PROFESSIONAL AND LEGAL TRAINING OF PROSPECTIVE ENGINEERS-INSTRUCTORS

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Abstract

The paper considers the problem of technological processes as a dominant feature of human activity. Based on the comparative characteristics of technologies in production and social processes, the features of the educational technology have been identified. A characteristic is given of specific essential features of pedagogical technology as a social system whose development and implementation are focused on ensuring qualitative changes in a person (one's accomplishment, upbringing, development, etc.). The desire to optimise continuously the educational process has been the reason of emergence of new educational technologies and improvement of those used.

The interpretation of the notion of "innovation" in the pedagogical process has been analysed. The topicality of using innovations to ensure the legal education of the personality of a prospective specialist to overcome the deficiencies of existing practices has been clarified. The study has analysed the proposals of professionals to improve the legal training of specialists by introducing different technologies focused on ensuring the content of legal education, viz. introducing practicals to discuss legal documents, and resolve and discuss legal situations in professional activities, and so forth.

With account of subjective and objective factors affecting the effectiveness of efforts in developing the legal competence of the prospective specialist, the advantages of different technologies for professional and legal training of the prospective engineer-instructor have been determined. Emphasis is placed on the practicality of using explanatory-informational technologies in professional and legal training at the initial stages of students' education at a higher education institution. The advantages of the problem training technology have been identified. The basic methods of the technology are problem-based exposition of tutorial material, the heuristic method (the partial searching one), the search method, the research method of advancing hypotheses, verification, and so forth. The technologies of teaching in cooperation, or interactive technologies, are considered to be effective ones in ensuring the professional and legal training of a prospective engineer-instructor. The perspectiveness of using the project technology to develop the professional and legal competence of a prospective specialist has been ascertained. As a variety of the project technology, the possibility of using the case method has been considered to be promising for creative independent assimilation of legal knowledge.

A conclusion has been drawn on the necessity of accounting for the stage-wise system of professional and legal training of prospective engineers-instructors in the technological support of its content in the environment of a higher education institution.

Introduction. Improving the content of professional and legal education of prospective engineers-instructors demands developing technological support. Since higher education schools face four kinds of tasks (informational, educational, practical and scientific), their accommodation by choosing and introducing new forms, means and methods of teaching within the framework of innovation pedagogical technologies into the educational process implies their close interdependence.

Analysis of researches and publications on the issue. Modern educational professionals, psychologists and experts in educational methods (V. Bespal'ko, V. Yevdokymov, M. Klarin, I. Prokopenko, and H. Selevko) consider the education technology as a comprehensive system of forms, methods and means of instruction to ensure manageability of the education process and optimal achievement of educational goals. In

particular, person-oriented educational technologies have become the subject of research (O. Piekhota, S. Sysoyeva, I. Yakymanska and others). Ukrainian researchers (T. Hannichenko, A. Starieva and others) are looking into interactive technologies.

The aim of the article is determining and theoretically substantiating technologies that ensure introduction of a system of ongoing professional and legal training of prospective engineers-instructors at a higher education institution.

Statement of basic materials. As research workers state [5], the emergence of the term "technology" in pedagogics was facilitated by the explosive development of scientific and engineering progress in different branches of human spiritual and practical activities, as well as the desire of teachers to achieve guaranteed results in their professional efforts. With the

current development of pedagogical science, the concept of "technology" has been instilled in the public mind and become a peculiar focus of scientific and practical thought. Technological effectiveness has become a dominant feature of human activity. It determines its transition to a qualitatively new stage of an effective, optimal, and science-intense educational process. Technology reflects the focus of applied research (in particular, the pedagogical one) to radical improvement of human activity, increasing its effectiveness (in the sense of a guarantee of achieving the goal), intensity, instrumentality, and technical equipment.

As an activity, technology reflects to the utmost the objective laws of the subject field and therefore ensures maximum conformity of results to set goals under existing conditions [5]. This principal provision, as regards evaluation of the technological effectiveness of a process, is hard to qualify completely as a characteristic of social processes. Due to this, even today one can witness the process of identifying the outlooks of researchers on the comparative characteristic of technologies in industrial and social processes. A social technology is one whose output and end result is for a human, and the key parameter to be changed is one or several human attributes (qualities) [7]. Certainly, the education technology is one of the manifestations of the social technology because educational activities are focused to ensuring qualitative changes in a person, viz. in one's educational level, upbringing, development, and so forth. "The aspiration for continuously optimising the instruction and education process has conditioned the emergence of new and improvement of existing educational technologies of different levels and with a various focus" [4, p. 56].

As distinctive features of social technologies, in contrast to industrial or manufacture ones, scientists distinguish the following ones: their flexibility and absence of strict determination; no guarantee of correspondence of the outcome to the set goal even under the condition of keeping to a certain sequence of most effective processes or measures. This is because the human being is a multifactor system affected by a huge variety of external factors whose force and focus is different, and sometimes even opposite. Due to this, it is often simply impossible to foresee the effect of one or other influence. Owing to this,

social technologies certainly are more complex in their organisation than production ones.

However, social technologies are capable of adapting to any conditions. They are capable of adjusting the deficiencies of separate processes and operations constituting the technological process. Another distinctive feature of social technologies is that their feedback plays a more significant role. This allows organising even the recurrence of individual elements of the technological process at the adjustment stages.

Hence, if industrial technologies consist of links of closely fitting natural processes, then "social technologies are a specially organised complex of various measures used in a different sequence and to certain levels to achieve a unique goal" [4, p. 181]. Analysis of industrial and social activities proves that social technologies are distinct from industrial ones because the area of pedagogical activities cannot be characterised by the following factors: a distinctive subject field, a unique set of functions, and isolation of professional actions from spontaneous communication and emotions, i.e. they cannot be completely regulated and fitted in advance into clearly defined limits and kinds of activities. The operational side of an educational activity cannot be isolated from its personality-subjective parameters, and the rational regulation from its emotional one. Subjectivity, remoteness and uncertainty of results deny pedagogical activity the same level of predictability and guarantee as that in industrial branches.

In the opinion of I. Dychkivska [4], the educational technology, having all the features of a social system, has specific essential features "distinguishing it is a self-sufficient and unique phenomenon" [4, p. 75]. They are as follows: conceptuality, diagnostic identification of goals and effectiveness, efficiency, algorithmic properties, projectability, integrity and governability, and adjustability and visualisation. Besides, the author offers additional features of educational technologies found by researchers to be a rational basis [4, p. 76]: decomposition of the pedagogical process into inter-related stages; coordinated and stagewise actions focused to achieving a pre-set result; and uniqueness of executing planned procedures and operations.

The interpretation of the notion "innovation", as proposed by V. Zahviazynsky,

is not all that new at the current stage of development of pedagogical science and it indicates that innovations "are not only concepts, approaches and technologies, which in the given form and in such combinations have not yet been advanced. They are also a complex of elements or separate elements of a pedagogical process carrying a progressive principle. Under changing conditions and situations, this principle allows for effective (at least more effectively than earlier) addressing of upbringing and education issues" [6, p. 13].

Modern researchers [2, 3 and others], by using the analysis of deficiencies in the current system, are drawing attention to employing innovations while providing legal education for the prospective specialist.

As A. Abutalipov offers generalisations [1] based on analysing the papers of researchers who investigated the technologies for providing legal training of a specialist in a higher education institution within the legal education system whose content is being expanded, as a rule, by introducing proposed practical exercises as technologies for ensuring legal competence. It boils down to the following points:

1) Instruction in rational methods of searching for legal information and working with statutory acts and reference books that govern professional activities;

2) Analysis of legal situations, their modelling and solving study tasks compiled based on typical legal situations, which representatives of a definite profession face most often; and

3) Drawing up business documents, which accompany legally significant actions during professional activities when executing professional functions.

Note that such lines of legal training of a prospective professional reflect the specific features of developing legal professional knowledge, and abilities and skills. All this is to ensure the practical mastering and use of formalised norms of professional training, such as working with statutory acts, their usage when addressing practical production situations, developing rule-making skills, and so forth. However, one can agree with the researcher that such activities are not exceptionally effective and require improvement. Thus, at the first stage of studying at a higher education institution, explanatory-informational efforts, in general, and working with legal information, in

particular, are of vital importance. Students need an explanation of theoretical material because they can be unprepared to master it independently due to the complexity of legal materials, the presence of psychological barriers in communicating and interacting with other students and instructors during educational activities, new conditions of studies, etc. Students need special coaching in effective methods of searching for legal information and its elaboration, and in working out critical thinking to use it. Such activities are important and sometimes they are decisive with account of such a key characteristic of legal information as its dynamics.

V. Shkatula [14], during practical studies in legal training of students at a higher education institution, offers drawing special attention to holding disputes and discussions, which, as the researcher asserts, are an active means of developing legal awareness, and as a whole, a student's personality by enhancing his/her intellectual level. The author has worked out different tasks for testing knowledge in the features of legal governance of social relations in different areas.

A. Abutalipov adheres to a task approach to implement the content and structure of legal training of prospective professionals in an educational environment by believing that "one of the main ways of improving professional training is modelling professionally-focused legal problems that include the following stages: first, identifying typical professional tasks a professional must address while performing one's job duties; second, based on these duties, working out educational and production tasks that embrace the entire professional activity; third, determining the place of these tasks within the educational content; and fourth, choosing educational forms and methods that best fit each task" [1, p. 62-63]. Such an activity sequence demonstrates the use of a technological approach to organising the legal education of students built around the principle of a professional focus of the legal material, and the dynamic character of assimilating legal information on the part of the students. Certainly, this will increase the effectiveness of legal training of prospective professionals.

The leading hand in these activities belongs to the instructor who is responsible for logically training the students in solving educational and production tasks. They include

the following: analysing the statements of the proposed tasks; correlating the proposed problem statements with the basic theoretical provisions; explaining separate facts and phenomena (conditions) from the standpoint of general regularities and principles; collective searching for and choosing task solution methods or ways of achieving a goal; and analysis of the decision made.

The above review of the scientific and methodical developments of the authors being analysed allows asserting that, undoubtedly, the methods of using problem training during desk studies and seminars and practicals in legal disciplines, which the researchers have suggested, are effective and promising in terms of ensuring professional and legal education of prospective engineers-instructors. This is because they account for the professional angle of the legal material given to students. The students assimilate the material arduously and acquire skills in its practical use by being aware of its need and significance. They rely on their own ability and are motivated to master it.

Note that researchers have identified the role and have proved the advantages of the technology of problem training. It not only ensures acquiring new knowledge, but also offers activity methods at the level of creative cognitive efforts and individual usage of the knowledge acquired [8]. It favours the development of independent thinking, and the formation of skills in creatively solving new problems [10]. It acts as a means of arousing the cognitive activity of those being educated [9; 11]. It is conducive to development of intellectual capacities, and independent and creative thinking, and it also ensures tenability and efficacy of knowledge, and evokes a sense of satisfaction from cognition [13].

The basic methods of problem-based learning are problem exposition of educational material, the heuristic method (a partial search one), and the searching method, the investigative method of advancing hypotheses, verification, and so forth. With account of the legal material to be learned by students of an engineer-instructor higher educational institution, such methods are effective during the following: desk studies when assimilating legal knowledge, seminars on resolving legal situations during professional functions, students' participation in heuristic talks with discussions on problematic professional and legal issues, performing individual assignments,

and conducting research activities.

With account of the undeniable advantages of the technology of problem-based learning during professional and legal training of students, one can draw a conclusion on the necessity of its use in the suggested system of professional and legal training of prospective engineers-instructors.

As effective technologies of ensuring the professional and legal training of a prospective engineer-instructor, let us consider the technology of learning in cooperation, or interactive technologies providing for a form of organising cognitive efforts whose goal is creating comfortable study conditions in which each participant feels one's successfulness and intellectual competence [12]. In this case, teaching and learning activities take place provided students' involvement is an ongoing and active one. Such learning is characterised as co-learning (collective and group learning in collaboration) where the instructor and the student are equal and equivalent education subjects.

According to the technology of teaching in cooperation, the instructor-student relations acquire collaboration features because the instructor intervenes directly in group activity only when students have questions, and when they themselves ask the instructor for assistance. Group learning does not isolate students from one another. On the contrary, it allows realising the natural drive to communication, mutual assistance and collaboration. In some cases, students are psychologically sensitive in addressing an instructor for explanations, whereas it is much easier for them to address their peers. Psychological and pedagogical studies affirm that group learning invigorates students, improves learning results, helps develop humane relations among them, develops independence, teaches how to argue one's viewpoint and persist in it, and develops students' skills in the culture of maintaining a dialogue.

Using the project method (the project technology) is promising for building professional and legal competence when studying legal disciplines. When training the students of engineering higher educational institutions, project activities are diverse, viz. during their education students submit several term papers and complete their theoretical training by defending a diploma project. While

doing this, a student uses knowledge from several associated academic disciplines, and the diploma project assumes the assimilation of all disciplines that develop the professional knowledge and skills of the prospective professional.

At the same time, along with technical (engineering) project planning, social planning can be used. Rather than providing for development of technical devices or production technologies, it develops new forms of public life.

As regards the professional and legal training of prospective engineers-instructors, the project method has huge potentialities in ensuring development of professional and legal competencies because it involves students in independent determination of the path of one's own legal education in the informational field (educational path), independent creation (development) of the educational content, and developing tuition materials in legal disciplines and educating the students of vocational and technical institutions. Education in an informational society ceases being a means of assimilating pre-packaged knowledge, but rather becomes a means of informational exchange of a person with the environment.

As a variety of the project technology, and being promising for creative independent assimilation of knowledge, researchers are suggesting to use the case method. It is a widespread method of training in the legal, business, medical and education areas. The case method uses descriptions of real situations, which students must analyse, get the gist of the problem, suggest possible solutions, and choose the best one. Cases are based on real-life material, or are close to a real-life situation. The case method in education boosts cognitive interest of students in the disciplines being studied, improves understanding of the laws, and helps develop research, communicative and creative skills in decision-making. A distinctive feature of the method is creating a problem situation based on real-life facts.

A case is a concrete learning situation specially designed and based on actual materials for further analysis in classes. In the course of analysing a situation, the students learn how to act as a team, and analyse and make decisions. This method, as a leading one

in the project technology, is seen as a tool for applying theoretical knowledge in solving practical tasks. The method promotes development of independent thinking in the students, the skill to listen to and account for an alternative viewpoint, and how to argue one's own opinion on legal issues in professional activities. Using this method, students can develop and improve their analytical and evaluation skills, learn teamwork basics, and find the best practical solution to the professional and legal problem posed.

The case method is a promising method of teaching legal disciplines to the students of an engineer-pedagogical educational institution and its advantages are as follows: using problem training principles for acquiring skills in solving real-life legal problems in engineer-instructor activities, and allowing a group to work in a problem field. In this case, the learning process, in essence, imitates the real-life decision-making process because it is more adequate to a real-life situation instead of learning academic terms followed by retelling because this requires not only the knowledge and an understanding of terms, but also the skill to use them in building logical schemes for solving a problem and arguing one's opinion; acquiring teamwork skills; developing skills in the simplest generalisations of the legal material learned; acquiring skills in presenting comprehended legal information; and acquiring press conference skills, and how to phrase questions, argue one's answers, etc.

Resume. The scientific and methodical support of professional and legal training of prospective engineers-instructors during professional training at a higher educational institution is based methodically on all the provisions of an integrated pedagogical process and the need to develop human-oriented interaction of instructors and students. This shall potentially be a source of intensive self-development of students. The technologies that ensure implementation of the content of professional and legal training of a prospective engineer-instructor are as follows: explanatory-introductory technologies, problem training technologies, interactive technologies (training in collaboration and in small groups), and project activity technologies (developing projects using the case method).

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Реферат

Технологічне забезпечення професійно-правової підготовки майбутніх інженерів-педагогів

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КЛЮЧОВІ СЛОВА:

технологічне забезпечення, професійно-правова підготовка фахівця, майбутній інженер-педагог, технології професійно-правової підготовки, вищий інженерно-педагогічний навчальний заклад

У статті розглядається проблема технологічності процесів як домінуюча ознака діяльності людини. На підставі порівняльної характеристики технологій у виробничому і соціальному процесах визначено особливості освітньої технології. Схарактеризовано специфічні істотні ознаки педагогічної технології як соціальної системи, створення і реалізації якої спрямована на забезпечення якісних змін в особистості (її навченості, вихованості, розвитку тощо). Прагнення постійно оптимізувати навчально-виховний процес зумовило появу нових і вдосконалення використовуваних педагогічних технологій.

Проаналізовано трактування поняття «інновація» у педагогічному процесі. З'ясовано актуальність використання інновацій у забезпеченні правової підготовки особистості майбутнього фахівця, зумовлену необхідністю подолання недоліків існуючої практики. Проаналізовано пропозиції науковців щодо удосконалення правової підготовки фахівців шляхом запровадження різних технологій, спрямованих на забезпечення змісту правового навчання: впровадження практикумів з обговорення правових документів, вирішення і обговорення правових ситуацій у професійній діяльності тощо.

Ураховуючи суб'єктивні й об'єктивні чинники, що впливають на ефективність роботи з формування правової компетентності майбутнього фахівця, визначено переваги різних технологій професійно-правової підготовки майбутнього інженера-педагога. Наголошено на доцільності використання пояснювально-ознайомлювальних технологій професійно-правової підготовки на перших етапах навчання студентів у вищому навчальному закладі. Визначено переваги технології проблемного навчання, основними методами якого є проблемний виклад

навчального матеріалу, евристичний метод (частково-пошуковий), пошуковий метод, дослідницький метод висунення гіпотез, верифікація тощо. Як ефективні технології забезпечення професійно-правової підготовки майбутнього інженера-педагога, розглянуто технології навчання у співробітництві, або інтерактивні технології. З'ясовано перспективність використання проектної технології у формуванні професійно-правової компетентності майбутнього інженера-педагога. Як різновид проектної технології, перспективний для творчого самостійного засвоєння правових знань, розглянуто можливість використання кейс-методу.

Зроблено висновок про необхідність урахування етапності системи професійно-правової підготовки майбутніх інженерів-педагогів у технологічному забезпеченні її змісту в умовах вищого навчального закладу

Реферат

Технологическое обеспечение профессионально-правовой подготовки будущих инженеров-педагогов

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КЛЮЧЕВЫЕ

СЛОВА:

технологическое обеспечение, профессионально-правовая подготовка специалиста, будущий инженер-педагог, технологии профессионально-правовой подготовки, высшее инженерно-педагогическое учебное заведение

В статье рассматривается проблема технологичности процессов как доминирующего признака деятельности человека. На основании сравнительной характеристики технологий в производственном и социальном процессах определены особенности образовательной технологии. Охарактеризованы специфические сущностные признаки педагогической технологии как социальной системы, создание и реализации которой направлены на обеспечение качественных изменений личности (ее обученности, воспитанности, развития и т.п.). Стремление постоянно оптимизировать учебно-воспитательный процесс обусловило появление новых и совершенствование используемых педагогических технологий.

Проанализированы трактовки понятия «инновация» в педагогическом процессе. Выяснена актуальность использования инноваций в обеспечении правовой подготовки личности будущего специалиста, обусловленная необходимостью преодоления недостатков существующей практики. Проанализированы предложения ученых по совершенствованию правовой подготовки специалистов путем внедрения различных технологий, направленных на обеспечение содержания правового обучения: внедрение практикумов по обсуждению правовых документов, решение и обсуждение правовых ситуаций в профессиональной деятельности и т. п.

Учитывая субъективные и объективные факторы, влияющие на эффективность работы по формированию правовой компетентности будущего специалиста, определены преимущества различных технологий профессионально-правовой подготовки будущего инженера-педагога. Отмечена целесообразность использования объяснительно-ознакомительных технологий профессионально-правовой подготовки на первых этапах обучения студентов в вузе. Определены преимущества технологии проблемного обучения, основными методами которой является проблемное изложение учебного материала, эвристический метод (частично-поисковый), поисковый метод, исследовательский метод выдвижения гипотез, верификация и т.п. В качестве эффективных технологий обеспечения профессионально-правовой подготовки будущего инженера-педагога рассмотрены технологии обучения в сотрудничестве, или интерактивные технологии. Выяснена перспективность использования проектной технологии в формировании профессионально-правовой компетентности будущего инженера-педагога. В качестве разновидности проектной технологии, перспективной для творческого самостоятельного усвоения правовых знаний, рассмотрены возможности использования «кейс»-метода.

Сделан вывод о необходимости учета этапности системы профессионально-правовой подготовки будущих инженеров-педагогов в технологическом обеспечении ее содержания в условиях высшего учебного заведения.

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