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ДИДАКТИЧНІ ОСОБЛИВОСТІ ПЕДАГОГІЧНИХ ТЕХНОЛОГІЙ У ПІДГОТОВЦІ ВЧИТЕЛІВ ПОЧАТКОВИХ КЛАСІВ

Анотація. У статті визначено теоретичні аспекти щодо освітніх технологій, їх значення в організації освітнього процесу загальної середньої освіти та вищої освіти. Окреслено потенціал та завдання освітніх технологій у підготовці майбутній учителів початкової школи в умовах інноваційної діяльності та реформи Нової української школи. Обґрунтовано ефективність взаємодії учасників освітнього процесу в позиціях «викладач-студент», «студент-студент». Розкрито особливості застосування інтерактивних педагогічних технологій, що передбачають створенню атмосфери співпраці, взаємодії, співнавчання, взаємонавчання. Окреслено вимоги до професіоналізму вчителя в інтерактивному навчанні (наявність особистісних якостей, гуманістичної позиції, готовність до співпраці з учнем, оточенням, батьками та інше). Виокремлено основні показники професіоналізму вчителя як прояву його готовності до співпраці. Описано організацію інтерактивного навчання, яка передбачає використання рольових ігор, опрацювання дискусійних питань, моделювання життєвих ситуацій, спільне розвязання проблеми на основі аналізу обставин та відповідної ситуації. Визначено роль та значення, завдання технології розвивального навчання. Зокрема, з-поміж завдань, важливих у професійній підготовці вчителів початкової школи, виокремлено завдання розвивального навчання, до яких віднесено вміння самостійно міркувати, сперечатися, відстоювати свої думки, ставити запитання, бути ініціативним у набутті нових знань, критично мислити. У процесі підготовки до уроку вчителем цілеспрямовано здійснюється добір таких засобів, які будуть сприяти інтенсивному формуванню особистості учнів. Розкрито особливості проєктної технології: специфіка, класифікації та особливості організації. Педагогічні технології можуть бути мобільними, що робить їх надзвичайно ефективними в процесі професійно-педагогічної підготовки майбутнього вчителя початкової школи.

Ключові слова: сучасні педагогічні технології, освітні технології, інтерактивні технології, розвивальне навчання, технології проєктного навчання, фахова підготовка майбутніх учителів початкової школи.

DIDACTIC FEATURES OF PEDAGOGICAL TECHNOLOGIES IN THE TRAINING OF PRIMARY SCHOOL TEACHERS

Abstract. The article identifies theoretical aspects of educational technologies and their significance in the organization of the educational process in general secondary education and higher education. The potential and objectives of applying educational technologies in the training of future primary school teachers in the environment of innovation and reform of the New Ukrainian School are outlined. The efficiency of the interaction between the educational process participants in "teacher-student" and "student-student" positions is substantiated. Specific aspects of the application of interactive pedagogical technologies that facilitate an atmosphere of cooperation, interaction, co-learning, mutual learning, are identified. The requirements for the teacher's professionalism in interactive learning (vivid personal qualities, humanistic approach, willingness to cooperate with students and their parents, as well as within the educational environment, etc.) are outlined. The willingness to cooperate is highlighted as the main indicator of a teacher's professional level. The organization of interactive learning is described, which involves the use of role-playing games, discussion-based learning, situational modeling, collaborative problem solving, according to the relevant circumstances and situation. The role and significance, tasks of developmental learning technology are set out. In particular, among the tasks important in the professional training of primary school teachers, the tasks of developmental learning include the ability to think independently, argue, defend one's opinions, ask questions, be proactive in acquiring new knowledge, think critically. In preparation for the lesson, the teacher purposefully selects such tools that will contribute to the intensive formation of students' personalities. Features of design technology are revealed: specifics, classifications and features of the organization. Pedagogical technologies can be mobile, which makes them extremely effective in the process of pedagogical and specialized training of future primary school teachers.

Keywords: modern pedagogical technologies, educational technologies, interactive technologies, developmental learning, project-based learning technologies, professional training of future primary school teachers.

INTRODUCTION

The problem formulation. Today's primary education is undergoing structural changes in conceptual approaches to its functioning, goals, content, means and results. Until recently, lesson was perceived by a primary school teacher from the viewpoint of teaching students. Instead, the Concept of the New Ukrainian School (Hryshchenko, 2016)

focuses on the organization of primary school students' activities in the classroom with the aim to achieve personal results, development of talents and abilities, competencies and cross-cutting skills according to children's age and individual psychophysiological traits and needs.

This new paradigm of education requires that future primary school teachers not only be prepared to manage typical pedagogical situations, but also possess the ability to build their educational interaction with students on the principles of partnership pedagogy and creative approach – which emphasizes the need for focused development of creative and communicative competencies for students of pedagogy. These tasks can be implemented efficiently through the use of educational technologies in the pedagogical training process.

The conceptual basis for the improvement and further development of higher pedagogical education is embedded into the recent legislation and regulations, including the Laws of Ukraine "On Education" (2017), "On Higher Education" (2014), the National Strategy for Education in Ukraine until 2021 (2013) , The Pedagogical Constitution of Europe (2013), the Concept of the Development of Pedagogical Education (2018), the Concept of the New Ukrainian School (2017), the Fostering Education Project implemented by the LEGO Foundation (Kingdom of Denmark, 2010) in Ukraine, etc. The Concept of the New Ukrainian School states that today we should talk about the new role of a teacher – not as the only mentor and source of knowledge, but as a coach, facilitator, tutor, moderator in the individual educational trajectory of a child (Hryshchenko, 2016). This transformation of the teaching profession calls for the pedagogical training system to become more flexible and sensitive than it has traditionally been.

Theoretical background. Research on various aspects of pedagogical technologies is ongoing on both in Ukraine and internationally. A retrospective analysis of pedagogical technologies that can improve the efficiency of the learning process for students was performed by D. Alfimov, A. Andrzejewska, J. Bednarek, O. Yankovych and others. I. Dychkivska, N. Navolokova, A. Nisimchuk, O. Padalka, O. Piekhota, O. Shpak, I. Smoliuk and others are actively engaged in research of modern pedagogical technologies. The studies by S. Dubiaha, T. Sazonenko, S. Sysoieva contribute to the discussion on different approaches to the definition of pedagogical technologies. Specific features of this phenomenon have been the subject of studies by S. Bondar, V. Bykov, S. Dubiaha, O. Piekhota and others. I. Chernokozov, O. Gluzman, L. Khomich, N. Machinskaya, N. Nechaeva, G. Vasyanovich, V. Yakunin are modeling the process of professional training of future teachers as well as studying other aspects of pedagogical professional training. The essence of educator's creativity was considered in the works of A. Aleinikov, D. Bogoyavlenskaya, M. Fitsula, I. Hrynenko, Z. Kalmykova, V. Kan-Kalyk, Z. Kurliand, O. Morozov, V. Shakhov, S. Sysoieva, I. Ziaziun, and others.

THE PURPOSE OF THE RESEARCH is to outline the didactic aspects and conditions of the application of pedagogical technologies in the training of future primary school teachers.

The "technology" concept emerged in the international academic discourse in the 1940s in contrast to the generally accepted concept of "method". The use of this term in education and pedagogical science was initially associated with the development of engineering technologies and the use of new audiovisual teaching aids. In the 1960s, the concept of "technology" has evolved and the term was primarily used in conjunction with the introduction of programmed learning, the use of computing machines in education and the general school reform in America and Europe.

Until the present day, the term has undergone further transitions, from "technology in education" through "education technology" to "pedagogical technology".

The "Glossary of Terms on Education Technologies" (Glossary of terms on education technology, p. 43), as well as the Modern Psychological and Pedagogical Dictionary, ed. by O. Shapran (Shapran, 2016, p. 292), define the concept of "pedagogical technology" as a systemic method of planning, formation, implementation and evaluation of the entire process of teaching and learning based on the availability and interaction of human and technical resources, aiming to achieve a more efficient format of education.

According to the Reference Dictionary of Professional Pedagogy, pedagogical technology is a combination of psychological and pedagogical attitudes that make up a special selection and layout of forms, methods, tools, techniques, educational tools, which provide an opportunity to achieve effective results in mastering professional competencies, development of personal and moral qualities (according to B. T. Likhachev). "Pedagogical technology" is defined as the art of using the results of academic research in the field of education; a project of pedagogical system, which is implemented in practice; a set of tools and methods of the educational process that will undoubtedly lead to the planned result; the process of goal-setting and objective control over the results obtained; a systemic method of formation, implementation and evaluation of the entire process of teaching and learning based on the interaction of human and technical resources available (Semenova, 2006, p. 132).

Thus, the foundations of this concept are formed by the processes of design, modeling, forecasting, and programming, which are aimed at streamlining the pedagogical environment.

RESULTS OF THE RESEARCH

The importance of innovative processes in training and professional development of teachers for schools of various types is growing with the integration of Ukrainian educational system into the Pan-European educational space. As a teacher's role in teaching and education is growing consistently, their personality is increasingly gaining impact in the process. Therefore, mastering the pedagogical technologies is an indispensable element of the organization of the educational process today. Every pedagogical technology requires a conceptual substantiation. A pedagogical technology must be based on conceptual ideas that will determine the content, the ways of interaction between participants of the educational process, and the necessary activities.

The structure of "pedagogical technology" category may be detailed as follows:

1. Conceptual part (brief description of ideas, hypotheses, principles that help to understand it).
2. Content part (learning objectives, scope and nature of educational content).
3. Procedural part – technological process (organization of the educational process, methods of cognitive activity of students, methods and forms of work of the teacher, diagnostics of the educational process).
4. Program and methodological framework (curricula and programs, teaching and methodological manuals, teaching and diagnostic aids).
5. Professional component (reflection of the dependence of the successful implementation and reproduction of the designed pedagogical technology on the level of pedagogical skills of the teacher) (Prokopenko, 2018, p. 86).

A pedagogical technology designs and implements a learning process that must guarantee the achievement of goals, therefore, timely feedback is cross-cutting for the entire learning process. The organization of the educational process in the present-day higher education is seeing a considerable shift of the responsibility for learning outcomes to students. Such requirements may seem new or unusual to many, but the organization of educational activities in this format brings about a considerably higher level of efficiency.

With wide-ranging changes in educational priorities, the positions of both the teacher and the student are also changing. Teachers are no longer 'broadcasting' knowledge; instead, they specifically facilitate the process of multilateral communication between students, creating such conditions, in which every student would be able to work in different ways based on their own experience. The position of students also changes as they become creators of their own knowledge. Multifaceted communication in learning enables the construction of knowledge through the activity of all participants in the educational process: by engaging in real processes that produce thoughts and actions, they acquire experience and knowledge. Such multifaceted communication is a distinctive feature of interactive learning, which involves interaction between all participants in the educational process, both in "teacher-student" and "student-student" positions. Dialogue is always an integral feature of interactive learning.

Interactive learning facilitates the formation of skills and abilities, evaluation activities, the development of values, creating an atmosphere of cooperation and interaction. The teacher becomes a true leader in the interactive environment, projecting such values as professionalism, personal qualities, humanistic attitude, onto the audience. The professionalism of the teacher is most prominently manifested through their readiness to cooperate with students, their parents, and the learning environment. We have identified the main indicators of teacher professionalism as a manifestation of their willingness to cooperate: mastery of interactive learning technologies; awareness of acquired theoretical knowledge and their application; ability to study, analyze and critically evaluate their own professional activities; ability to combine theory and practice; ability to operate with the results of research activities at the professional level; ability to improve their activities, identify errors and find ways to eliminate or correct them; professional mobility (Komar, 2008, p. 48).

Interactive learning is a process of co-learning, or mutual learning (also referred to as collective, group, or collaborative learning), in which the teacher and the student are equal participants; they understand what they do, reflect on what they know, can and do. Some of the formats of interactive learning include role-playing games, discussion questions, situational modeling, collaborative problem solving, based on the analysis of the relevant situation and circumstances.

The education and training in today's society is aimed at holistic development of the individual, and academics and practical educators are working to theoretically substantiate and practically implement such training methods and processes, which would ensure the formation of a personality with elevated spiritual needs and well-developed cognitive abilities. Developmental learning is focused on building communication and cooperation skills. In contrast to the traditional approach, a teacher is not expected to instruct, explain and demonstrate things to students, but to organize a collaborative search for a solution to any specific educational problem.

With this approach, the correct answer will not always be obtained quickly, as learning the logic of dialogue and discussion and solving a task together takes more time; situations may arise in which students will not be able to find the correct answer over the course of one lesson. Still, this logic of the learning process is justified by the experiments of N. Podiakov, who wrote that a properly constructed thinking process is characterized by the emergence of vague, unclear knowledge and questions, which precedes the formation of clear knowledge (Problems of developmental education of junior schoolchildren in Ukrainian). Consequently, the sooner students obtain the correct answer, the shorter is their thought process, and the less opportunity they have for development. Developmental learning relies on continuous communication: when a student realizes what they do not know or cannot do, they need to act to find the solution, and the teacher is involved in the process as a more experienced partner. The teacher's opinion in this process is not the source of truth but simply one of the possible points of view, which needs to be correlated with the student's own opinion and opinion of their peers. Such communication stems from the very nature of research learning activities: one cannot find the truth alone, participants must work together as a group and actively communicate their ideas and opinions.

When defining the concept of "developmental learning", experts identify two main features. The first is the presence of a consciously realized goal. According to psychological studies (V. Davydov, O. Dusavytskyi), the goal of developmental learning is for children to develop the basics of theoretical thinking, and its main task is not only to ensure the child's acquisition of scientific knowledge necessary, but also to ensure that in each lesson, students master this knowledge consciously, and then use new ways of acquiring knowledge with an ever-increasing degree of independence. Other tasks of developmental learning include teaching children to think independently, argue, defend their opinions, ask questions, and be proactive in acquiring new knowledge. A characteristic feature of developmental learning is that beside the didactic goal, before each lesson, the teacher also consciously establishes developmental and educational goals, based on the

learning materials and intellectual, emotional, and psychological capabilities of students. Thus every student is always aware of the purpose of a subject, a system of lessons, and a particular lesson. The second feature of developmental learning is intensive development of personality traits of the student. The teacher planning a developmental learning process will purposefully select such tools that will contribute to this objective. Thus, developmental learning not only ensures that students fully master the required knowledge, skills and abilities, but also directly stimulates the overall development of a student's personality.

When applied in a learning process, this technology encourages students to engage in their own cognitive, research, or design activities in order to successfully complete a project on a specific assigned subject. The concept of project is commonly applied in the context of this technology, defined as the task for students, presented in the form of a problem; a form of collaborative educational, creative or playing activity of students, in which they pursue a common goal and agree upon the necessary individual actions aimed at solving this problem; the result of this activity. Various classifications of project types are offered in contemporary academic and methodological works. The following types of projects are distinguished based on the dominant method or type of educational activity: research (related to research activities, including the formulation of a hypothesis with its subsequent testing, as well as discussion and analysis of results); creative (requires the implementation of the most free and unconventional approach to project activities and presentation of its results); role-playing (involves the choice of participants in the roles of literary or historical characters, fictional characters with the subsequent reproduction of various social or business relationships through game situations, where the outcome of this game is not predetermined); informational (focused on collecting information about a particular object or phenomenon in order to analyze, summarize and present information to a wide audience); practice-oriented (aimed at obtaining a real result of an applied nature, reflecting the interests of project participants or an external requestor), etc. (Yevsiukov, 2020, p. 126).

The scientific literature also offers a classification of projects by duration: 1) short-term; medium duration; long-lasting; 2) mini-projects (covering one lesson or even part of it; short-term projects (usually covering 4 to 6 lessons); 3) weekly projects (conducted during a certain project week); 4) long-term (lasting for several months or even years).

Implementation of project-based technologies in a modern school requires compliance with the following requirements: Identification of a topical problem for the project, the solution of which involves research based on the use of integrated knowledge; Clear formulation of the purpose of the project; High theoretical, practical, cognitive significance of the expected results of project activities; Establishing the structure and stages of project work; Setting time limits for project implementation; Creating a situation of success for each project participant; Use of academic research methods (Prokopenko, 2018, p. 206).

Students' work on the project is implemented in the following stages:

- Preparation (definition of the research problem, topic, goals and objectives of the project activity; hypothesis of their solution; discussion of research methods).
- Planning (analysis of the selected problem, development of an action plan, clarification of criteria for evaluating the process and results of project activities, distribution of tasks (responsibilities) among project participants).
- Research (collection of the necessary information, processing the information and finding solutions to sub-problems).
- Formulation of results and (or) conclusions (analysis of the received data; formulation of conclusions).
- Evaluation of the process and results of work on the project (preparation of final results; summarizing, if necessary, making the necessary adjustments, formulating final conclusions) (Dubiaha, p. 38).

Educators should be aware of the following typical problems that may arise in course of the introduction of project technology in the educational process:

1) The use of this technology requires deep theoretical and practical knowledge, as well as creative thinking, on the part of teachers, which not each of them may be prepared for.

2) Misalignment between a teacher's choice of the type of educational project and the set goals and objectives, which may significantly reduce the motivation of project developers and negatively affect the level of their academic success.

3) Unclear structuring of the subject and definition of the range of problems for the development of an educational project.

4) Participants in project activities may not fully understand the purpose, goals and objectives of the educational project, and as a consequence, may not achieve the goal.

5) Participants may be unprepared for the educational project for various reasons, such as lack of theoretical knowledge, complexity of the project, unwillingness to work in a team, etc.

6) Insufficient material and technical means of an institution may complicate the work on the project for its participants.

7) Lack of interaction between teachers to develop interdisciplinary projects.

8) Impossibility of using necessary computer technology, etc. (Prokopenko, 2018, p. 209).

Obviously, in order to ensure the success of the educational process, the above problems need to be mitigated in a timely manner.

CONCLUSIONS AND PROSPECTS OF FURTHER RESEARCH

Pedagogical technologies may be perceived in three different dimensions, ranging from academic theory that explores the most rational ways of learning, to system of tools, principles and regulations used in teaching, and finally to actual learning process. Pedagogical technologies can be mobile, which makes them extremely effective in the process of professional and pedagogical training of future primary school teachers. Significant importance

of all participants in the educational process is a distinctive feature of these technologies, which equally includes the personalities of teachers and students. For their successful functioning within a pedagogical system, all of the system components need to be well-regulated and aligned. Modern pedagogical technologies arise of a synthesis of pedagogical theory and practice. They blend together elements of traditional experience and innovations created by the social progress and overall humanization and democratization of the society.

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