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THE USE OF PROJECT TECHNOLOGIES IN THE CONTEXT OF TRAINING FUTURE EDUCATORS FOR PROFESSIONAL ACTIVITY IN THE CONTEXT OF INCLUSIVE EDUCATION IN PRESCHOOL EDUCATION INSTITUTIONS

The article discusses the methodological and practical aspects of preparing future educators for professional activities in inclusive education using project-based technologies. The article considers the peculiarities of implementing the project-based learning method. It is proved that project technologies, as a special type of intellectual activity, are promising and encourage creativity, independence, and mental activity, as well as optimization and intensification of the educational process. Particular attention is paid to the structure of project activities: preparation, planning, research, conclusions, presentation or report, evaluation of the result, and process. The developed algorithm of applying Bloom's taxonomy for the formation of inclusive competence during project activities based on the use of innovative technologies is presented. It is concluded that students' participation in such work is a means of thorough and conscious learning of the basics of inclusive pedagogy, the peculiarities of interaction with children with special educational needs, strengthens the professional orientation of education in higher education institutions, teaches to compare and contrast different ways of solving pedagogical problems that arise in the process of working in an inclusive educational environment.

Keywords: *future educators; inclusive education; inclusive competence; project; project activity.*

Introduction. In the conditions of online and blended learning, multidisciplinary learning and an increasing amount of educational material, integrated and contextual learning (complexity, interdisciplinary) becomes an important means of increasing the effectiveness and achieving the goals of practice-oriented learning, for the implementation of which project technologies were used in the study,

which were implemented in the study using innovative technologies, such as problem-based learning, modeling of pedagogical situations and professional activities, support (Levy, Little, McKinney, Nibbse, & Wood, 2010).

It involved the development of a portfolio (personal website) of a preschool teacher using SMART technologies (Specific, Measurable, Achievable, Realistic, Time-bound); technology strategy, e-coaching and online experience exchange. The application of which allowed us to form an objective view of universal design in education and reasonable accommodation in students based on the formulation of questions, problems and/or scenarios and to master the methods (actions, operations) of professional activity, which ensured a reduction in the adaptation period to work in an inclusive educational environment during pedagogical practice and further professional activity.

One of the directions of forming the readiness for professional activity of future educators is the formation of inclusive competence through the phased organization of project activities based on an integrated approach to the learning process in accordance with Bloom's taxonomy.

The purpose of the article is to reveal the main features of the project method in the process of preparing future educators for professional activities in the context of inclusive education in preschool education institutions.

Research methods: theoretical analysis (scientific literature, functional analysis) – to identify the main steps of project activities, the content and structure of project creation technology, as well as to analyze the existing practice of using this technology; modeling – to develop a comprehensive pedagogical system for the use of project technology in the educational process; generalization – to formulate conclusions and recommendations to ensure the effectiveness of the project method.

Presentation of the main material. The taxonomy developed by B. Bloom (1956) is based on five principles of learning (https://smpn2lobalain.sch.id/read/31/taksonomi-bloom).

Let us consider some of them in the context of the study.

Physical and spiritual maturity (physical maturity means that students' age and physical condition are sufficient to work in an

inclusive educational environment. While spiritual maturity means the psychological ability of students to participate in inclusive education).

Readiness (future educators must be prepared to draw up individual development programs for children with special educational needs and the documents necessary for education).

Understanding the goals (formulating the goals of the project activity is one of its main stages, as they affect the choice of teaching tools, teaching methods and assessment, each student must understand the goals of the project activity and the final result and understand the possibilities of its application in further work with children with special educational needs; the goals of the project activity can be formulated according to one model based on Bloom's taxonomy).

Seriousness (project activities should be accompanied by clearly defined results, all project participants should know the specifics of organizing the educational process in a preschool education institution, taking into account the age and individual capabilities of children with special educational needs, and make predictions about its effectiveness).

In general, Bloom's Taxonomy is a hierarchical structure that defines thinking skills from low to high levels. In 2021, Bloom's Taxonomy was revised by Krathwohl and other experts in the cognitive science stream and developed a revised Bloom's Taxonomy, according to which, as before the revision, the first three (lower) levels (memorizing, understanding, applying) are lower-order thinking skills, while the next three levels (analyzing, evaluating, creating) are higher-order thinking skills (http://bind.fkip.unila.ac.id/taksonomi-bloom-apa-dan-bagaimana-menggunakannya/).

In the course of the study, we have developed an algorithm for applying Bloom's Taxonomy to form inclusive competence in project activities based on the use of innovative technologies:

1. Reveal the purpose and goals of the project activity. The goal is to understand the end result of your actions. And the more detailed you are about this result, the better and easier you will be able to achieve the goal. Example questions for setting a specific SMART goal:

What result do you want to achieve with the chosen goal?

Why will these goals help you achieve the desired result?

Does the chosen goal fit with your project strategy and theme?

At the next stage, it is important to develop the logical structure of the project, identify the main (initial) concepts from which other concepts can be derived, and establish a logical relationship between them. For students, it becomes important to establish a clear list of knowledge to be acquired after the project and a list of skills to be mastered after the project.

2. Identify the general and professional competencies that correspond to the descriptors of the NQF Competency Standards, the Basic Component of Preschool Education (State Standard of Preschool Education) that you want to achieve, regardless of whether it is an increase in knowledge, skills, communication, autonomy and responsibility. In this case, it is necessary to take into account the peculiarities of the organization of the educational process in the institution of preschool education.

3. Identify the specifics of intellectual development in accordance with the project goal and Bloom's Taxonomy. It is important to remember that before you develop or create something, you must remember, understand, apply, analyze and evaluate (*Taksonomi Bloom: Model Dalam*…).

Cognitive domain: define the level of taxonomy at the level of memorizing, understanding, applying, analyzing, evaluating, creating.

Psychomotor domain: differentiate domains including perception, readiness, directed reactions, natural reactions (mechanisms), adaptation, complex reactions, creativity.

Affective domain: organize domains including perception, responsiveness, personal values (self-worth), organization, and characterization. Use appropriate key verbs to explain the depth of learning in the material, both in terms of project objectives, competencies, and indicators of achievement.

Memorization: basic learning (although it may include complex information). At this level, students may know key terminology on a particular topic or subject, relevant facts and figures, systems or theories that have been developed by others. When designing programs to develop intellectual capacities at this stage, it is important to remember that: before we can understand a concept, we must memorize it, and before we can apply it, we must understand it, so the next step is comprehension.

Understanding: In the preschool years, exploratory cooperation and communication can be realized by assigning different roles and responsibilities to children during group work, focusing on collective activities to solve common problems (Martina van Uum, Verhoeff, & Peeters, 2016). Discuss problematic issues during group conversations, games, quests, encourage students to engage in dialogue, help them formulate conclusions and explain their actions and ideas to solve a particular problem.

In the process of forming theoretical knowledge about the pedagogical essence of learning and its design, knowledge of inclusive education serves as a means of categorical synthesis, in which this knowledge is summarized under pedagogical categories. In this view, the student does not act as a separate subject of cognitive activity, but as a representative of a system of objectively existing didactic relations that moves from abstract didactic knowledge to specific knowledge in the field of inclusive education, so the main transition from theoretical knowledge to its application in practice becomes possible.

The next step is evaluation. Choosing the right tools and interpreting the results will allow you to develop recommendations and come up with innovative ideas.

When evaluating the results of project activities, you need to remember

- any achievement can and should be recognized as a positive, meaningful result;
- it should be personalized, i.e. associated with the name of the person to whom it belongs;
- victory cannot be big or small, it can be noticed and unnoticed;
- anyone can do something better than others;
- experiencing one’s own success develops the emotional sphere of the personality, and empathizing with the success of another - the moral sphere;
- professional achievements of a teacher are personal achievements of his/her students;
- any certification procedure should provide an opportunity to gain experience in the realization of one’s intellectual, creative, communicative, and other abilities and skills.

To succeed in project activities, you need to master social, emotional, and critical thinking skills to analyze and respond to increasingly complex situations, as well as to recognize, understand, and manage your own emotions appropriately. Therefore, at the last stage of creation, it is necessary to modify information, combine it with the information obtained, and then create new information based on it.

4. Select appropriate learning tools and technologies using Bloom's cognitive wheel (*Bloom's Verb and Task Wheel*) (the choice of tools and technologies can be made in the outer green circle).

It should be noted that in the process of project activities, future educators develop the ability to analyze the situation, choose the means and technologies of inclusive education.

Thus, the project activity of future educators as the basis for the formation of inclusive competence acquires new features, and with it the methodology for preparing future educators for inclusive education is transformed.

Firstly, the main task of the class is not to report and test knowledge, but to identify the experience of inclusive education in accordance with the peculiarities of working in IES and to actualize this content.

Secondly, students do not just listen to the teacher, but constantly cooperate with him or her and their classmates, express their opinions, share information, discuss and select relevant and pedagogically sound information.

Thirdly, students are constantly searching for the right (wrong) answers, analyzing various positions, alternatives, points of view, and opinions, linking them to the goal and objectives of the project.

Fourthly, the teacher does not force, but encourages students to try out tools and technologies, taking into account the relevance of their use in project activities and their appropriateness in inclusive education. It should be noted that during joint project activities, new knowledge and skills are not "depersonalized" but become personally meaningful, each stage of the project becomes a form of teamwork in small groups to solve common problems, including the use of online technologies.

Project activities involve the use of certain tools and technologies that ensure their effectiveness. The educational process involves the unity of educational, upbringing and developmental functions, "...by

providing children with a safe environment and adapting it to meet specific learning needs, the teacher helps children to cooperate, participate in various activities and tasks, are not afraid to take risks and take on more complex tasks both in the educational process and in everyday situations" (Рейпольська, Гудим, Зайцева, Луценко, Луценко, & Цвєткова, 2021, p. 155).

5. Reflect on the project activity, taking into account the peculiarities of group interaction and cooperation in the process of inclusive education, focusing on the results of reflection, rather than its procedural mechanisms or individual differences in the implementation of project tasks.

For example: discuss the material studied at the end of the lesson, focusing on new knowledge and skills, what you liked (disliked) and why; what you would like to do again, what you would do differently; use not only assessment (encouragement) of the correct answer, but also analysis of the thinking activity, tools and methods used, what are the advantages and disadvantages of their use, be sure to focus on possible mistakes and consequences; argue for the assessment (correctness, independence, originality); prepare and discuss tasks for independent study.

It has been experimentally confirmed that the effectiveness of the formation of inclusive competence of future educators is ensured by their involvement in the reflection of design processes, which provides a qualitatively new level of development of project skills.

Let's take an example of inclusive education in ABA therapy.

Goal setting: to change undesirable behavior using the ABA therapy technique.

Means to achieve the goals: behavior analysis; teaching alternative ways of behavior; using reinforcement techniques; training parents to work together to achieve the result (consultations, individual conversations, workshops).

Description of the future result: the child will stop being capricious when he/she wants something.

Let's look at the behavioral analysis scheme.

1. Cause (purpose) of undesirable behavior;

2. The behavior itself (identification, awareness of undesirable behavior);

3. Consequences of the behavior (either reinforcement or punishment);

4. Context (where the behavior is observed, with whom).

Teaching alternative ways of behavior.

You can replace bad behavior with good behavior. For example: a child is always capricious when he wants something. It is necessary to teach the child to point to the object of desire or to say. If he/she is crying, ask: "What do you want?." The difficulty is that parents constantly need to show willpower and not give in to the child's manipulations. Do not give the desired object until the child calms down. The child learns that it is not necessary to cry (Сорочан, 2023).

The most effective way to change bad behavior is to use reinforcement techniques. Behavior that is followed by positive reinforcement is more likely to be repeated. There are different types of reinforcement: social (paying attention, complimenting, smiling, looking), specific (a gift, privileges for something), etc.

Training parents to work together to achieve results. Using reinforcement techniques to change behavior is a fairly simple and straightforward method from a theoretical point of view, but it is quite difficult to implement correctly in practice. Some parents, for example, find it difficult to express their support, praise, or say something nice to their child, and try to be reserved and save their joyful emotions for those situations when the behavior is perfect. The mistake in this case is to underestimate the effect of a few but sincerely spoken words.

On the other hand, there are parents who take the second extreme position, using reinforcement too often, regardless of the child's behavior. In this case, the reinforcement may lose its effectiveness because it is not connected to the behavior that is being rewarded.

For reinforcement to be effective, it should be given immediately after a good behavior.

In the beginning, when you need to increase the frequency of a behavior that the child rarely exhibits, it should be reinforced every time the child behaves well. Then, gradually, as the behavior becomes more frequent and more familiar, the frequency and amount of praise should be reduced.

Reinforcement of a specific type, such as toys, money, sweets, or privileges, can be very helpful in correcting behavior. Some parents are not always sure about the usefulness of specific reinforcement because they feel that they are "bribing" the child to behave well. But in any

case, we should not forget that each of us works to get a specific reinforcement – money – and the term "bribe" implies that someone is paying for something illegal (Петро, & Дакомо, 2019).

During the development and implementation of each stage of the project activity, each stage was carried out sequentially during lectures, seminars, laboratory and practical classes, which ensured the gradual formation of inclusive competence of future educators. Students defended their projects in the form of a presentation with answers to questions from the audience; teachers of professionally oriented disciplines, psychologists, and preschool teachers were invited to the defense. When evaluating the results of each team's work, the following criteria were taken into account: the relevance of the selected tools and technologies to the topic and purpose of the project, the website, the possibility of practical implementation of the project in the inclusive educational environment of the preschool, team activity, etc.

An important stage is the testing of projects during the internship, during which future educators study specific projects, observe the implementation of these projects, analyze the organizational, educational and developmental, diagnostic, prognostic, and advisory and communication activities of educators and assistant educators, offer their own options for methods, tools, and technologies of work, compare the developed projects with real pedagogical practice and implement them, draw conclusions about the correctness and ways to improve their activities.

Conclusions. We believe that students' participation in such work is a means of thorough and conscious learning of the basics of inclusive pedagogy, strengthens the professional orientation of education in higher education institutions, teaches them to compare and contrast different ways of solving pedagogical problems that arise in the process of working in IES. As a result of the reflection of project activities, the levels of design skills at the beginning and end of pedagogical design are recorded and compared, and positive and negative results are analyzed.

Work on projects developed such skills as: defining the purpose of the project, predicting the final result, evaluating the options proposed for solution and choosing the best ones, preparing a project concept, creating targeted programs, determining the conditions for their solution, finding possible options for correcting educational and pedagogical processes. The design processes were as follows: situation

analysis, problem identification, goal setting, development of project implementation tools, fixing the expected results and criteria for their achievement.

Therefore, in order to strengthen the practical orientation of preparing future educators for inclusive education and developing their inclusive competence, it is necessary to use innovative technologies in the educational process aimed at developing skills and abilities of systemic thinking and solving real problem situations in an inclusive educational environment

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ВИКОРИСТАННЯ ПРОЄКТНИХ ТЕХНОЛОГІЙ У ПІДГОТОВЦІ МАЙБУТНІХ ВИХОВАТЕЛІВ ДО ПРОФЕСІЙНОЇ ДІЯЛЬНОСТІ В УМОВАХ ІНКЛЮЗИВНОГО НАВЧАННЯ В ЗАКЛАДАХ ДОШКІЛЬНОЇ ОСВІТИ

У статті розглянуто методичні та практичні аспекти підготовки майбутніх вихователів до професійної діяльності в умовах інклюзивного навчання за допомогою проєктних технологій. Встановлено, що проєктна діяльність сьогодні є однією з найперспективніших складових освітнього процесу. Це пояснюється тим, що вона надає здобувачам освіти можливість розвивати творчі здібності та забезпечує самореалізацію, а також створює умови для розвитку їхніх життєвих і професійних компетенцій. Розглянуто питання про особливості впровадження методу проєктного навчання. Доведено, що проєктні технології, як особливий тип інтелектуальної діяльності, є перспективним і спонукає до творчості, самостійності та розумової

активності, а також до оптимізації та інтенсифікації освітнього процесу. Особливу увагу приділено структурі проєктної діяльності: підготовці, плануванню, дослідженню, висновкам, поданню або звіту, оцінюванню результату і процесу. Представлено розроблений алгоритм застосування таксономії Блума задля формування інклюзивної компетентності під час проєктної діяльності, що базується на застосуванні інноваційних технологій. Зроблено висновок про те, що участь студентів у такій роботі є засобом ґрунтовного та свідомого засвоєння основ інклюзивної педагогіки, особливостей взаємодії з дітьми з особливими освітніми потребами, посилює професійну спрямованість навчання в закладах вищої освіти, навчає зіставляти та порівнювати різні способи вирішення педагогічних проблем, які виникають у процесі роботи в інклюзивному освітньому середовищі.

Ключові слова: *майбутні вихователі; інклюзивне навчання; інклюзивна компетентність; проєкт; проєктна діяльність.*

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