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Development of special competencies of future primary school teachers based on the use of the project method

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Abstract

Relevance. The relevance of the study is explained by the fact that the key factor determining the quality and effectiveness of primary school work is undoubtedly a competent teacher. The project method emphasises the considerable role of the future teacher in the changing modern school. The qualities of a good teacher develop competent pedagogical knowledge, which is engaged in the search and development of desirable qualities and traits that should be characteristic of a future teacher when using the project method. The harmonious coexistence of all elements of competencies determines the full personality of the teacher. Competencies determine the qualifications of specialists, act as a kind of guarantee of proper work and success.

Purpose. The purpose of the study is to identify the criteria and conditions for the development of special competencies of future primary school teachers based on the use of the project method.

Methodology. The methodological basis of the research is the following approaches: theoretical, empirical, didactic.

Results. A characteristic feature of competence is its subjectivity, and a special attribute is the dynamics manifested in action with a harmonious combination of knowledge, skills, understanding, and desires that meet the needs of primary classes. Regarding the competencies of future teachers, the following types and areas of pedagogical education are distinguished: subject knowledge, transfer of subject knowledge, classroom management, assessment and recording the progress of individual students, further professional self-improvement. An effective future primary school teacher is a

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person who, in addition to subject and material competencies, has a high pedagogical qualification necessary for systematic reflection and problem-solving.

Conclusions. The practical value of the research lies in the use and implementation of the project method to develop special competencies of future primary school teachers.

Keywords: students; qualifications; professional development; knowledge; skills.

Introduction

The actual preparation and functioning of the future primary school teacher are essential. Core competencies are crucial in the aspect of free movement in subject matters, methodological solutions, and learning outcomes. Such preparation should include proper structuring of the material and displaying the relationships between its elements inside the components of the project method and outside it. The importance of the project method is conditioned by the fact that students learn about comprehensive and holistic development. Thus, the thorough preparation of the future teacher should go far beyond the material contained in the manuals for students. When analysing the special competencies of a modern teacher, it is necessary to pay attention to modernisation trends in this area. Firstly, it is necessary to expand one's subject knowledge from other fields, since integrated and block-based learning is characteristic of modern schools and interdisciplinary learning. Secondly, the dynamic development of knowledge in certain areas requires the teacher to constantly update and refine it. It is crucial not to spread outdated knowledge that does not consider the latest scientific discoveries. The wealth of knowledge, in turn, requires constant refinement and prioritisation. Extensive knowledge is as much a threat to the future teacher as limited knowledge. Modern didactics develops various analysis theories and structures the teaching content, the mastery of which is also included in the sphere of special competencies of primary school teachers.

The vast field of psychological and pedagogical knowledge of the future modern teacher allows finding a theoretical basis for diagnostic, didactic, and educational activities [1]. The teacher must possess knowledge in the field of pedagogical psychology, the ability to use these skills to get acquainted with students, organise the educational process at school, monitor and evaluate students. The organisation of these processes is based on certain theoretical assumptions, regardless of whether they are hidden or properly informed. The knowledge and skills that constitute this type of competence are undoubtedly very broad. It is difficult to define them fully, as evidenced by the variety of definitions by the authors. Psychological concepts of human functioning follow from the principles and methods of effective learning, which is especially valuable in the organisation of the educational process [2]. Therefore, the future teacher should be familiar with the assumptions and teaching procedures characteristic of behaviourism, cognitivism, humanistic concepts, and basic mechanisms of education, containing theoretical and methodological knowledge about patterns through the prism of the project method. Thus, the subject of cognition is the features of the students' development and their individual characteristics, which include: intelligence, interests, cognitive style, level of aspiration, learning motives [3].

The didactic and educational work of a future primary school teacher should be preceded by research activities. Acquaintance with students is an indispensable link in the work of a teacher. The teacher's knowledge and skills allow identifying the developmental and individual characteristics of students necessary for the social and educational environment. Cognition consists of descriptive and explanatory components. The first part is a description of phenomena, character traits, or behaviour. The second is the search for mechanisms of such behaviour, its causes, the detection or identification of sources associated with such a feature or phenomenon [4].

The recognition by the teacher of a certain type of intelligence in the student creates completely new opportunities for individual and effective didactic and educational work. Acquaintance with students takes place using correctly selected methods, techniques, and tools. The most commonly used are: observation, interview, project, survey, and sociometry. The possibility of introducing them into the activity is one of the important special competencies of every future teacher. The educational process should be purposeful, well-organised, and pre-planned. In pedagogical practice, special competencies are developed, which are reflected in the independent choice of the teaching content, the creation of original programmes, innovative and creative implementation, criticism of assessments, reflection in the evaluation of educational processes. However, the essence of the teaching profession is communicative, interpretive, and social competencies related to educational skills. Skills are considered one of the most important advantages of a modern teacher for the implementation of the project method.

Thus, the development of programmes, plans, and projects is an integral area of competence of a modern teacher [5; 6]. The purpose of the study is to identify the criteria and conditions for the development of special competencies of future primary school teachers based on the use of the project method.

Materials and Methods

The methodological basis of the research is the following approaches: theoretical, empirical, didactic. The theoretical method not only defines individual facts but also combines the criteria of relationships and dependencies, including causal relationships. The planned information is collected and interpreted as an event affecting the elements and processes of the educational system based on the project method. As a research method, it collects pedagogical materials and details the problems of acquiring special competencies. Its theoretical information allows formulating theses, which contribute to establishing contact and creating conditions for conducting preliminary and fundamental preparations. It also allows making scientific cyclical generalisations fully based on

facts, completing one cycle and starting the next. The future teachers can support their theoretical assumptions in an improvised way. Those assumptions can always be abandoned if the facts do not match the forecasts. The process lasts on an ongoing basis, and it can be repeated. This method of research differs from simple perception since it is a continuous and purposeful process. It should be objective, and therefore effectively counteract subjective restrictions.

The empirical approach implies consideration in the pedagogy of man and education, which includes a set of facts that can be investigated, described, and explained. Its main task is to diagnose educational facts and explain educational reality. It develops clear logical and analytical basic concepts based on pedagogical technologies and special competencies. However, this methodology does not allow formulating values and rules of behaviour, since values and standards cannot be derived from facts. From a logical standpoint, the gap between the current achievements and what should be achieved cannot be supplied. It accepts only those pedagogical elements that are teleological and causal, while practical pedagogy provides answers to questions about standards and values related to professional activity. Abstractness manifests itself in unprecise, ambiguous, indefinite, and emotional ways of expressing various competent judgments, aiming to transform the education of primary school students into clear concepts of the project method.

The didactic paradigm provides an opportunity for the future primary school teacher to participate in the emergence and discovery of multiple competencies. It implies an appropriate area in which teachers can express themselves to constantly enhance consistent qualities through self-improvement and cognition of the surrounding world according to the principle of the hermeneutic spiral and the project method. Such an understanding is part of the dynamic advancement of special competencies which allow identifying their development factors and the ways they can help in one's activities. This method is one of the reflexive ones, respectively, the answers to the problems are presented from the standpoint of understanding pedagogical benefits as a process of development throughout life, the course of which reflects a set of developed attitudes. It demonstrates formative actions that determine aspects of self-awareness since people with the ability to know themselves can understand the ongoing educational changes of primary classes. Self-awareness develops adequate self-esteem, which allows the future teacher to set appropriate tasks and be successful.

Results

Special competencies are essential for the so-called technological approaches to the educational process, where praxiology is the basis of the activities performed, the theory of organisation and management. The structure of the management process consists of the following components: activity planning, organisation of work, motivation of students, control of results. The approach to work at school from the standpoint of management theory is gaining relevance. The school becomes a company that must comply with the rules of modern management and organisation. It is vital for a future teacher to plan and

develop school activities since it has been proven that long-term procedures have a considerable impact on the effectiveness of the school. Therefore, the teacher needs to know what the design process consists of, what stages there are, and what form project methods can take. There are such activity types of a future teacher that require preliminary planning or organisation: the creation of original curricula for individual subjects and educational trajectories, development of scenarios of educational activities, the school's educational programme, tests and other tools to evaluate student performance, procedures and tools for acquaintance with students and their environment, plans to improve teacher's professional advancement [7]. The current area of competence creates operational knowledge about the subjects, the essence, and the principles of the educational process implementation.

Considering the latest educational methods of projects, the educational process is defined as a set of actions of the teacher and students, in which the teacher creates conditions for the independent acquisition of knowledge. Such an educational process gives the best results, respectively, future teachers begin to apply certain models of acquiring knowledge and skills. The patterns according to which the learning process takes place, and the resulting directives addressed to the teacher and students, are called the principles of learning. Knowledge of the rules and the ability to apply them in implementing the educational process is a kind of alphabet of didactic and methodological special competencies of the future teacher. The educational process of primary classes is provided using various teaching tools and means, including the project method, which should be adapted to the objectives of classes, the content of the educational material, the characteristics and capabilities of students. The methodological solutions used by the teachers depend on their didactic and methodological competencies, which are acquired by mastering all teaching methods, especially research and activating ones. The most important of these methods are achieving special didactics in this area: problem method, exercises, master classes, working with text, working on a computer, discussion, case studies, brainstorming, staging, worksheets, project method, mental maps [8].

The competencies of a modern future teacher, which consist in teaching and learning, should acquire appropriate communications from this range. Communicative competencies are knowledge about the communication process, the ability to effectively transmit and receive information. Communication in the educational process is primarily communication between a teacher and students. To understand the importance of special communicative competencies, it is necessary to raise awareness, which determines the relations between communicating people. Information in communication is transmitted in the form of verbal and non-verbal signals, that is, through facial expressions, body position, gestures, tone of voice, vision, and spatial distance. The recipient perceives these signals and sends messages based on their competencies, needs, and feelings. The relationship between the sender and the recipient is a contact. In teaching and educating primary classes, the closest possible contact and participation in the completion of tasks take place. The huge role of mass media in modern

education necessitates special teacher competencies related to media communication. Media competencies are a system of consciously chosen procedures, methods of activity, regulatory and organisational documents, sources of knowledge, material and technical resources that future teachers can use to teach and improve their professional work.

Monitoring and evaluation is a necessary link in a well-organised educational process, hence the need for appropriate competencies of the future teacher. When analysing this area of competence, it is important to consider the fact that evaluation is one of the most important processes in teaching and learning in the context of the project method. The key aspects of monitoring and evaluation, principles and methods of reliable verification of learning outcomes, highlight teacher qualification standards related to evaluation, falling within the scope of the so-called educational conclusion. A competent teacher is able to choose the tools for evaluating a didactic solution, create diagnostic tools, and also use them to measure students' achievements and interpret the results they receive. The evaluation of the quality of school work, most frequently carried out by the teaching staff, requires competencies that exceed the ones related to the control of student achievements [9]. Future teachers also face particularly difficult tasks in terms of grading and sampling textbooks, since the offer is extremely wide in this area. Therefore, it is necessary to use the appropriate tools, considering the relevant criteria. A good textbook should perform informational, motivational, self-educational, transformational, and control-correcting functions for primary school students.

The reforms of the education system offer new opportunities for future primary school teachers to develop and evaluate school curricula. Such creative works that are interesting for a teacher require new design and evaluation skills. It is known that the current curricula do not contain materials aimed at the development of special competencies. For that reason, teachers should take personal initiative in acquiring knowledge and skills of designing and evaluating projects through advanced training courses and the use of literature as part of self-education. These circumstances allow talented and ambitious teachers to be creative and innovative. However, it should be emphasised that the necessary special competencies should cover several educational areas. The reforms of the education system introduce levels of professional advancement of teachers to encourage and oblige them to continuous professional development. Special competencies are necessary for obtaining various degrees of professional development. The competent teacher is aware of the problems of the school environment, knows how to cooperate with this environment, gets acquainted with the organisation and rules of functioning of the school they work in. They can perform activities in an effective project way, self-analyse and self-evaluate their activities. The ambitions of teachers should include general education and self-improvement. These types of competencies, called desirable, increase the prestige of teachers and allow them to perform tasks more efficiently [10; 11]

Lifelong learning and self-improvement are the leading ideas of modern education. It is especially relevant for

teachers – the main agents of the learning process. In the pedagogical aspect, creative teachers shape their professional personality through self-education, continuous professional development, improvement of their own skills, participation in scientific and methodological research, innovative activities, search for new areas and tasks in didactic and educational work. A set of special competencies can be developed, modified, and supplemented, they are not fragmented. The presented set is conditional, but it allows better and more accurately analysing various aspects of the work of a future primary school teacher in the context of the project method. It is also important to understand that the professional and effective activity of a teacher is determined by the special dynamism of various competencies that are constantly developing and improving. The reality in which the school operates imposes completely different requirements. Observation shows that only systematic and fairly rapid changes can be effective. In this case, the best results are achieved through self-development. The world expects innovative solutions, and they are possible using non-schematic thinking and professional actions [12; 13]. State institutions and training systems adopt new concepts and indicate new priorities for action.

In the face of the ever-changing educational reality and the devaluation of various definitions, the attitude of education to the improvement of key special competencies provides a constant perspective for development. It is worth providing a space for education in the field of creativity and innovation, improving teamwork in school actions. This will be facilitated by the development of social and civic competencies, cultural awareness and self-expression. The process of teaching primary classes, along with the improvement of competencies in subjects, contributes to the development and strengthening of creative and innovative approaches, which raises the awareness of the importance of working together using the project method. It seems that special competencies within the framework of the main curricula of general education are a kind of panacea for all ailments of school education. If competencies are changed without further reflection on the cases as phrases and discussions about innovations, they become useless, cease to be the basis of learning. They need to be given a functional meaning, which is implemented based on the school and its environment in the didactic and educational processes. Competencies should be perceived as targeted actions in certain areas, within the framework of the learning process and time categories. Their semantic meanings will determine the professional attitude, the full set of skills, knowledge, and awareness [14; 15].

Creative thinking is a prerequisite for the introduction of innovations, that is, the development of new spaces that have not yet been discovered by the project method. It is important to use it in external support to show various ways of shaping an attitude to creativity and innovation, improving teamwork, open and effective communication within the appropriate framework. Creativity is applicable to the cognitive system and to the human personality. It has a much broader meaning – it is one of the components of the life attitude. Creativity offers new tasks for students, it makes them motivated to acquire new knowledge and skills. It allows approaching problems flexibly, using

various strategies that enhance one's sense of free will. A prerequisite for the implementation of the project method is innovative activity, which establishes a creative attitude and the possibility of implementing new solutions. It is impossible to establish an innovative attitude without certain attempts and implementation of projects [16; 17]. Only action allows testing the assumptions made, teaches flexibility in finding solutions and willingness to take risks, necessary in the development of innovations. The development of innovations is the creation of an environment in which the educational process is based on the strengths of the student and develops their self-esteem and freedom of will. The improvement of interaction at school occurs primarily through the introduction of the necessary knowledge and skills, the development of an attitude to co-education in obtaining the necessary knowledge. This way of learning is possible when future teachers work together, contributing to the teamwork required to accomplish a common task.

Discussion

The project method is one of the most ambitious and effective teaching methods. Its main didactic principle is that students independently acquire knowledge and test their skills in specific life situations, and do not get them theoretically. This is a complex task that is performed at a certain time and requires future primary school teachers to perform various and independent actions that bring them closer to solving the problem posed at the beginning of the project. The project method teaches how to solve real problems and focuses on issues of students' interest. Students decide on their own how to implement a specific topic, formulate a problem, interpret it, analyse and solve it. It is worth emphasising that the teacher can let the students explain the issue under discussion and offer a more precise specific topic. The project method combines educational content from different fields and sciences to perform team project work, develop skills such as: taking responsibility, creative thinking, independent learning, planning and organisation of work. In fact, the method is interdisciplinary. The implementation of the project requires students to independently acquire knowledge in many subjects, blurring the boundaries between school and extracurricular life. An innovation compared to a classical school is conditioned by the presence of a teacher as a friend who chooses the main purpose of the project and the thematic area, consulting with primary school students [18; 19].

The teacher aims the educational process and students' activities, helps them, gives instructions and explanations, if necessary, while assuming a different, more complex role of a guide and a kind adviser in group processes. The emphasis shifts from teacher to student. When implementing the project, the student's interests, abilities, and needs are considered. The project develops the ability to work in a group, responsibility for one's own and group activities. 98% of teachers admit that the project method allows developing interpersonal skills and preparing students for professional work. According to teachers, the most important skills in the current labour market are communication, teamwork, creativity, innovation, the use of modern technologies, time planning and organisation. These are abilities that can be developed by using the

project method. Each primary school student develops at an individual pace [20-22]. It is important not to pay too much attention to evaluation during the educational process since learning is also intended for the development, acquisition of skills and knowledge, and evaluation may block the internal motivation of the student. The time allotted for the project depends on the age of the students and their abilities, on the scope of issues covered by the project. Most frequently, a project requires a longer period of time, for example, a month, a semester or a year. The time must be accurately indicated in the schedule.

Among the many methods of activating modern educational programmes for primary school students, the methodology of projects is very commonly chosen. Within the framework of these and other dilemmas, the future teacher must look for the optimal and possible solutions in the conditions of the functioning of the school [23; 24]. It is also important that the development of key competencies is mentioned in the main curriculum of general education, where they are described as skills. Educational programmes also determine the requirements of the state for schools and institutions. The Regulations establish the responsibilities of schools depending on the level of quality that is to be achieved. These are detailed requirements for the work of the school, which are used for pedagogical supervision at the level of the probation service. They offer a variety of educational suggestions in terms of creativity, innovation, and teamwork. It is important for a teacher to collect information from various sources to objectify the decisions made. When preparing to build a project concept, it is worth creating a map of information sources. Such a list does not exhaust all the possibilities in which the teacher acts. Therefore, the conclusion is to encourage future teachers to create innovative and creative components, which should lay a good foundation in terms of building enthusiasm and obtaining fairly rapid effects that constitute the final and considerable result. It is necessary to consider the identification of certain categories of subjects, which will be useful for further clarifying the areas of school development and building diagnostic tools.

Considering the physiological and psychological potential of future primary school teachers, the qualification of competencies determines the capacity, which arises in close connection with the awareness of responsibility, attitude to work, and moral maturity of a specialist. Special competencies are the general predispositions of teachers, allowing them to be considered capable of performing tasks or functions [25; 26]. These are the features of functional adaptation to fulfil roles and tasks that arise in learning activities and are the result of changes in this profession and the adoption of the right attitude in accordance with knowledge, efficiency, judgments, and necessary values. A primary school teacher shapes a person by creating their personality and consciousness. Incorrect behaviour of the teacher can distort the personality, the intellectual and emotional development. The basis of his professional responsibility is ethical sensitivity [27-29]. The problem of pedagogical morality, in a broad sense, not only in the field of special professional competencies, is urgent in the work of a teacher, it is covered in various charters, observing the

basic moral principles. In terms of professional morality, neglecting the issue of loyalty to the state may limit the scope of the problem presented.

The development of independent thinking and respect for the rights of the student emphasises instrumental qualifications and general professional competencies. The basis for a comprehensive qualification is general knowledge of the educational process, and a special qualification is knowledge of the specific features of the future teacher's work, that is, the awareness that the teacher acts in unique, open, and non-schematic situations [30; 31]. Despite the many permanent elements and the apparent stability that teachers create, educational situations are unique, since in each of them the teacher deals not with things, but with primary school students. Since a student is a unique individual, it is impossible to predict in advance what task the teacher will face, what problem the student will ask to solve. The professional experience of a teacher, even the richest, is invariably temporary and incomplete in the face of the fact that each student is individual and that every day they become someone else, transforming and developing. Such activity, although it affects the change in the student's personality, is not technical, since this is an action that obeys the imperatives of communicative rationality, related to the ethics of speech and the logic of dialogue. The ability to perform professional activities well or effectively in accordance with the standards required in the workplace, with the support of certain sets of skills, knowledge, and psychophysical characteristics that a teacher should possess are the factors that ensure the ability to develop special competencies [32; 33].

The development of special competencies based on the project method is a broader concept, covering the qualifications necessary to perform the professional activity and the ability to adapt to new situations and mechanisms that require a lot of initiative and commitment, leading to effective actions. Preparation for certain tasks within the profession, specialisation, position, and organisation includes competencies that describe what the future primary school teacher has learned and what measures can be taken in the appropriate situation. Knowledge can be about facts, events, procedures, or theories. Such competencies are related to the technical knowledge of teachers, which is related to the possibility of achieving purposes. Technical knowledge turns out to be useful in three ways: it indicates the purposes to be achieved; provides information on methods that are verified or repeatable; determines the means and conditions on which the possibility of achieving purposes depends. Competencies related to the skills and abilities of the project method are among the factors necessary for success in a particular task. These include well-known communicative, mental, interpersonal, organisational, technical, business, leadership, and self-management skills. In the case of a teacher's profession, practical and moral knowledge is of great importance, that is, the type of

experience that is acquired through communication and manifests itself in various ways [34; 35].

Conclusions

Thus, the special competencies of the project method allow mobilising students and awakening their curiosity and desire to learn. Teachers in the modern world, due to the scope of their competencies, have a decisive influence on didactic and educational achievements, the activities of modern schools and the quality of education. Qualifications obtained in the framework of formal training are not enough for current activities. Knowledge and skills should be updated and maintain a balance between subject and pedagogical competencies. The school becomes a place where an educational and learning society is created. A teacher, in addition to basic and pedagogical training, should be able to maintain interpersonal contacts, if necessary, and teach students to do so as well. Changes in the education system pose new challenges for future primary school teachers in terms of their professional qualifications.

The use of the project method contributes to the creation of conditions related to the introduction of changes in education, which will be aimed at making curricula and methods more effective than at present, in terms of the development of innovative and special competencies in future primary school teachers. Such a process is aimed at increasing the ability of the economy to create modern products and services since pedagogical education is an integral element of the influence of the common national qualities of the education system and the state in general. The education system is only marginally responsive to future trends. The above refers not only to preparing for the needs of the labour market. Consequently, the structure of education should not be focused on the short-term purpose of reducing youth unemployment, but also to ensure that they do not remain unemployed. This study satisfies the need to introduce new ideas into the theory of management and covers the role of soft and hard special competencies of teachers. Those competencies reflect the actual state of affairs and determine the aspirations for the development of a young, multivariate, autonomous, creative, free and, most importantly, independent person.

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Conflict of Interest

None.

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Розвиток спеціальних компетентностей майбутніх учителів початкової школи на основі використання методу проектів

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Анотація

Актуальність. Актуальність дослідження полягає в тому, що ключовим фактором, який визначає якість та ефективність роботи початкової школи, безперечно, є компетентний учитель. Метод проектів підкреслює значну роль майбутнього вчителя в змінній сучасній школі. Якості хорошого вчителя формують компетентну галузь педагогічних знань, що займається пошуком та розробкою бажаних якостей та рис, які мають бути характерними для майбутнього педагога при використанні методу проектів. Гармонійне співіснування всіх елементів компетентностей визначає повноцінну особистість педагога. Компетенції визначають кваліфікацію спеціалістів, виступають своєрідною гарантією належної роботи та успіху.

Мета. Мета дослідження – визначити критерії та умови формування спеціальних компетентностей майбутніх учителів початкової школи на основі використання методу проектів.

Методологія. Методологічною основою дослідження є такі підходи: теоретичний, емпіричний, дидактичний.

Результати. Характерною рисою компетентності є її суб'єктивний характер, а особлива ознака – це динаміка, що виявляється у дії з гармонійним поєднанням знань, навичок, розуміння та бажань, що відповідають потребам початкових класів. Щодо компетенцій майбутнього вчителя виокремлюють такі види та напрямки педагогічної освіти: предметні знання, передача предметних знань, управління класом, оцінювання та фіксування успішності окремих учнів, подальше професійне самовдосконалення. Ефективний майбутній учитель початкових класів – це людина, яка, окрім предметної та матеріальної компетентностей, має високу педагогічну кваліфікацію, необхідну для системної рефлексії та вирішення проблем.

Висновки. Практична цінність дослідження полягає у використанні та реалізації методу проектів з метою формування спеціальних компетентностей майбутніх учителів початкової школи.

Ключові слова: студенти; кваліфікація; професійний розвиток; знання; навички.