Project-Based Learning

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Annotation. The article considers project-based learning as a modern educational approach aimed at developing students' key competences of the 21st century. The authors analyse the essence of project-based learning, its advantages and disadvantages, and offer practical recommendations on the organisation of project activities in the educational process. The authors emphasise that project-based learning promotes the formation of students' independence, responsibility, critical thinking, creativity and teamwork skills.

Keywords: project-based learning, project method, 21st century competences, educational process, educational project, project activity, independence, responsibility, critical thinking, creativity, teamwork.

INTRODUCTION

In today's world, which is characterised by rapid changes and a high degree of uncertainty, education must meet the challenges of the time and prepare students for life in new conditions. One of the effective ways to achieve this goal is project-based learning, which allows students not only to acquire knowledge, but also to develop key competences necessary for successful self-realisation in the 21st century.

Project-based learning is a pedagogical approach that involves organising the learning process on the basis of projects, i.e. purposeful activity of students aimed at solving a specific problem or achieving a certain result. In the process of working on a project, students independently plan their activities, search for necessary information, analyse it, make decisions and take responsibility for the result of their work.

This approach goes beyond traditional teaching, where the student acts as a passive listener and the teacher as a transmitter of knowledge. In project-based learning, the student becomes an active participant in the educational process, independently defining goals, objectives and research methods. They learn not only to acquire knowledge, but also to apply it in practice, solve real problems and create their own products.

Project-based learning is not just about completing assignments or preparing presentations. It is, above all, a process of research, creativity and co-operation. Pupils learn to formulate questions, search for answers, analyse information, think critically, argue their point of view and work in a team. It is important to note that project-based learning is not limited to one subject. It can be interdisciplinary, combining knowledge and skills from different areas. This approach allows students to see the connections between different subjects and gain a holistic view of the world.

Project-based learning is not only an effective way to develop key competences, but also a powerful motivational factor. Pupils working on projects that are interesting to them are more involved in the learning process and enjoy learning. In this article we will consider in detail what project-based learning is, its main characteristics and principles, as well as offer practical recommendations on how to organise project activities in the educational process.

MAIN PART

The essence of project-based learning is that students acquire knowledge and develop skills not through passive perception of information, but through active participation in project activities. Project work allows students to apply the knowledge they have learnt in practice, see its practical relevance and gain experience in solving real-life problems.

Project-based learning has a number of advantages that make it so attractive in the modern educational space. Firstly, it promotes the development of independence and responsibility. In contrast to traditional teaching, where the student often acts as an executor, in project activities he/she defines goals, objectives, research methods and is responsible for the result of his/her work. Secondly, project-based learning develops critical thinking. Pupils learn to analyse information, identify problems, formulate hypotheses, argue their point of view and evaluate the results of their work. Thirdly, project activities stimulate creativity. Pupils get an opportunity to generate ideas, look for non-standard solutions and realise their creative ideas. Fourthly, project work promotes the formation of teamwork skills. Pupils learn to agree, distribute roles, listen to each other and make joint decisions. Fifthly, project-based learning increases motivation for learning. Pupils working on projects that are interesting to them are more involved in the learning process and enjoy learning. They see the practical relevance of their work and have the opportunity to choose their own topic and research direction. Finally, project-based learning contributes to the formation of 21st century competences such as communication, cooperation, critical thinking and creativity, which are necessary for successful self-actualisation in the modern world.

The development of independence and responsibility is one of the key advantages of this approach. Project work does not tolerate formalism.

The children themselves choose the topic, search for information and plan the stages of work. The teacher acts more like a mentor, helping with advice, but not imposing ready-made solutions. It is this kind of independence that forms responsibility for the result, the ability to make their own decisions and be responsible for them. For example, a group of pupils working on the project "Environmental Problems of Our City" independently determines what aspects they will study, how they will collect information, what solutions they will propose to improve the situation. The formation of critical thinking is another important benefit of project activities. Children learn to analyse information, separate facts from opinions, identify cause-and-effect relationships. They learn to formulate hypotheses and test them in practice, as well as to evaluate the results of their work, drawing conclusions and learning from failures. For example, when working on the project "History of my family", a pupil does not just collect a family tree, but also tries to understand what historical events influenced the fate of his/her ancestors, analyses the information obtained and draws his/her own conclusions.

The development of creativity is also an integral part of project-based learning. The children get an opportunity to show their imagination, to offer unconventional solutions, to realise their most daring ideas. Project activities stimulate creative thinking and help to reveal the potential of each pupil. For example, when creating the project "Shadow Theatre based on Russian fairy tales", pupils not only come up with a script and make puppets, but also look for original ways of staging, experiment with light and sound.

Developing the ability to work in a team is another important advantage of project-based learning. Project work often involves co-operation with other students, which contributes to the development of teamwork, communication and interaction skills.

Students learn to negotiate, distribute responsibilities, listen to and understand each other, and resolve conflicts. For example, when creating a school website, students are divided into groups, each of which is responsible for a different section. They learn to co-ordinate their actions, share information and work together to achieve a common goal.

Increased motivation to learn - project activities usually arouse pupils' interest and motivation to learn, as they see the practical significance of their work and are given the opportunity to choose their own topic and direction of research. Pupils who are enthusiastic about their project are willing to spend time and effort on it, search for additional information on their own, and seek help from their teacher or parents. For example, a pupil with a passion for space enjoys working on the project "Model of the Solar System", independently studying scientific literature, constructing a model and preparing a presentation.

All this makes project-based learning a powerful tool for personal development, preparation for life in the modern world, where not only knowledge is in demand, but also the ability to apply it, to think creatively, to work in a team and take responsibility for their decisions.

Despite its many advantages, project-based learning also has some disadvantages that need to be taken into account when organising the educational process.

Demanding resources is one of the main challenges of project-based learning. Successful projects require sufficient time, materials, equipment and, most importantly, qualified teaching staff. For example, students may need special tools, parts and software to create a complex technical project such as a robot or a model aeroplane. The teacher, in turn, needs to have the knowledge and skills to help students solve technical problems, as well as to organise teamwork and supervise the project.

The complexity of assessing outcomes is another potential disadvantage of project-based learning. Assessing the outcomes of project activities can be challenging because they are not always expressed in concrete terms. For example, how can we assess a student's creativity when creating an art project or teamwork skills when doing a group project? To solve this problem, it is necessary to develop clear evaluation criteria that take into account not only the result, but also the process of working on the project and the contribution of each participant.

The need for careful planning - successful implementation of project-based learning requires careful planning and organisation of the learning process. The teacher should define the topic of the project, formulate goals and objectives, select the necessary resources, develop a work plan and anticipate possible difficulties. Without careful planning, the project can become a chaotic activity that will not produce the expected results. For example, if the teacher does not think in advance about how the roles in the group will be organised, students may experience conflicts and inefficient use of time.

It is important to note that the disadvantages of project-based learning are not insurmountable. If the learning process is properly organised and possible difficulties are taken into account, project-based learning can become an effective tool for developing students' key competences and increasing their motivation for learning.

To successfully organise project activities, several key principles must be observed. The relevance and practical significance of the project topic play a crucial role in motivating students. Imagine students researching environmental problems in their neighbourhood or developing a prototype of a smart feeder for homeless animals. Such projects

are not only interesting to children, but also have real value to society. The topics can be related to the students' interests, the material they are studying, or social issues they care about.

Student autonomy is one of the most important principles of project-based learning. Students should be able to choose their own topic, formulate goals and objectives, plan their activities, search for information and make decisions. Of course, the teacher plays the role of a mentor and helper, but the main idea is that pupils should "lead" their own project. For example, if children are interested in the history of their town, they can decide for themselves what aspect of this topic they want to research, how they will search for information (in the library, on the Internet, by interviewing local people) and in what form they will present the result of their work (it can be a presentation, a video film, a website or even a theatre production).

Co-operation and collaboration - project work often involves group work. Children learn to negotiate, assign roles, listen to each other and make joint decisions. For example, when creating a school environmental project, one group might research the state of the air, another group might research rubbish collection and recycling, and another group might inform students about environmental safety rules. At the end of the work, the groups join their efforts to achieve a common goal.

Reflection and evaluation - at each stage of the project, students should have the opportunity to reflect on and evaluate their work. They can analyse what went well and what could have been done better, and make adjustments to their work. Reflection can be individual or group, written or oral. For example, after completing a project, students can write a report in which they describe their work, what they have learnt and what they have learned, as well as what difficulties they experienced and how they overcame them.

The organisation of project activities in the educational process can be carried out in different ways. For example, students may be offered ready-made project topics, or they may choose their own direction of research. Projects can be individual or group, short-term or long-term. The forms and methods of project work can be very diverse: it can be a research, an experiment, a creative project, a social action, etc.

It is important to note that project-based learning is not a universal method of learning and cannot replace traditional forms of learning. However, it can be an effective complement to them, allowing students to gain experience of independent activity, develop key competences and increase motivation for learning. Project-based learning is not just a method, it is a philosophy of education that puts the student with his/her interests and needs at the centre of the learning process.

CONCLUSION

Project-based learning is a modern educational approach that plays an important role in preparing students for life in the 21st century. It contributes to the formation of students' independence, responsibility, critical thinking, creativity and teamwork skills. For successful implementation of project-based learning it is necessary to observe a number of principles and create the necessary conditions. Project-based learning can become an effective tool for improving the quality of education and preparing students for successful self-realisation in the modern world.

In today's world, which is characterised by high dynamism and constant change, project-based learning becomes not just a desirable but a necessary element of the educational process. It prepares graduates not only for success in examinations, but also for solving real-life problems that they will face after graduation.

Project-based learning allows students to actively apply their knowledge in practice, developing the

ability to link theory to life. It stimulates research interest, helps to learn how to formulate hypotheses, plan experiments, analyse data and draw valid conclusions. It is important to emphasise that project-based learning is not only individual work. Often projects involve teamwork, where students learn to communicate effectively, co-operate, resolve conflicts and achieve a common goal. These skills are necessary not only in learning activities, but also in future professional life.

Project-based learning also promotes the development of creative thinking. Pupils get the opportunity to generate ideas, look for non-standard solutions, experiment and create their own products. This is especially important in today's world, where innovation and the ability to adapt to new conditions are valued.

For successful implementation of project-based learning, it is necessary to create an appropriate educational environment in the school. This implies availability of necessary resources, training of teachers who can act as mentors and facilitators, as well as development of an evaluation system that takes into account not only the result but also the process of working on the project. Project-based learning is an investment in the future. It equips students with the necessary knowledge, skills and competences for successful self-realisation in the modern world. It is an effective way to prepare graduates for a life full of challenges and opportunities.

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