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DEVELOPMENT OF SELF-MANAGEMENT, TEAMWORK, LEADERSHIP, TIME MANAGEMENT SKILLS THROUGH PROJECT ACTIVITIES

Abstract. The article is devoted to the development of the principles of project activities. In the state compulsory education standard, projects are used as a form of state final certification. Because project activity arouses interest, allows you to develop social skills in the process of group interaction, acquires research experience, and forms skills such as creative thinking. Acquired skills increase the level of motivation of students, allows to increase the initiative of students.

The article analyzes the content of project activities based on documents in the field of education. Pedagogical literature was effectively used in revealing the historical aspects of the project. The effectiveness of applying project activities to students is the development of self-management skills, teamwork, leadership, and time management. The effectiveness of the formation of students' skills through project activities in the study of biological disciplines has been studied. The development of these skills in solving problems that we face in life has a positive effect on their becoming a person.

In improving the quality of education, it is important to form scientific thinking in the process of teaching biology that meets academic requirements and objectively assess a specific scientific problem, determine ways to solve it. Each project action represents a specific situation in which solutions are required using logical analysis. During the experiment, experiments on the formation of cognitive interest, demonstration of biological and other methods were used. During the writing of the scientific article, the results of an experiment on the development of self-management skills, teamwork, leadership, and time management through project activities were summarized.

The authors conducted a comparative analysis of the results of the assessment of students' project skills before and after the completion of the project. It can be concluded that training based on project activities and self-management skills, teamwork, leadership, and time management is in demand today.

Key words: Project activity, self-management, teamwork, leadership, time management skills, project learning, student-oriented, problem-oriented, biology.

Introduction

Science is developing rapidly, therefore it is normal for human skills to develop rapidly. Whether it is a student or a learner, the years spent at university and school undergo great physical and social-emotional changes. These changes have a profound impact on the fact that students are engaged in research projects. The main problem in raising the motivation of students is to guide them to scientific research work. Conceptual education based on comprehensive study of phenomena, including scientific project activities, is currently considered by many developed countries as one of the most progressive methods of modern education. Because directing students to a deeper study of nature strengthens the ability to think creatively and increases the quality of education.

The use of various methods of teaching contributes to increasing and maintaining interest in the subject, research activity through design and action of students to better master the

educational material. Knowledge given correctly by any teacher and consciously received by the learner differs in its depth, strength, and effectiveness. A real teacher should not be a teller of specific knowledge, but a person who shows the way to master that knowledge. In acquiring knowledge - active participation of learners, application of acquired knowledge and skills, as well as further acquisition of knowledge on their own, forms values in the process of living. The scheme of cooperation between the teacher and the learner has become a factor of personality development and self-determination. The effectiveness of using scientific project activities in pedagogical activity is the formation of general educational skills and self-management, teamwork, leadership, and time management skills.

Today, the dynamics of information complexity is exceeding its speed. The transition to an updated curriculum today requires teachers to solve many problems in the field of education. And within the updated program, the school needed the following teaching methods:

1. Formation of students' creativity, active initiative position;
2. Development of research, reflective, self-assessment skills and abilities;
3. Formation of competences related to research service experience;
4. Development of students' cognitive interest;
5. Implementation of the principle of connecting education with life.

Teachers turned to project activities to solve their didactic tasks. The basis of the design activity is the idea that constitutes the meaning of the concept of "project", its pragmatic orientation to the result that can be obtained when solving a certain meaning. To achieve such a result, students should be taught to think independently, find problems and solve them. For this purpose, it is necessary to learn from various fields, to be able to predict outcomes and possible situations. During the analysis of scientific and teaching-methodical literature, we paid attention to the following issue: the use of design technologies shows that teaching biology is a very effective tool in organizing the learning process.

The main task of teaching in a modern school is to improve the quality of education. It is determined that every student is able to discover their potential. According to the research of many scientists, every child is talented. Developing self-management, teamwork, leadership, and time management skills through project activities is an important step. In addition, another issue in biological education is the ability of students to independently acquire knowledge through scientific projects, to be able to apply it in practice, to improve and supplement it. It should be noted that many universities in any field, including pedagogical ones, have the opportunity to conduct projects, but they do not always use their full potential in education. Umirzakova et al. (2020) stated in the article that today, students need to conduct environmental research in the local area where they live, and all conditions are created for it. Conducting research through project activities not only provides accurate information about nature, but also provides an opportunity to form an important personal relationship to nature in general.

Different approaches to project management (traditional, flexible, hybrid) in different contextual contexts (organizational industry, project type, novelty, technology, complexity, and pace) affect project profitability criteria (Ciric Lalic, et al., 2022).

The purpose of the research is to study the effectiveness of self-management, team work, leadership, and time management skills formation for students in the teaching of biological subjects at universities and schools.

To achieve the goal of the research, it is necessary to solve the following tasks:

1) Study and analysis of foreign and domestic pedagogical literature that reveals the historical aspects of the project of students in the teaching of biological subjects at universities and schools;

2) Based on the main documents in the field of education, preparation of the methodological justification of the content of the project activities in the teaching of biological subjects in universities and schools;

3) Conducting an experimental competition of students' courses on project activities in the teaching of the subject "Biology" for 7th graders;

4) Conducting an examination of the educational product and analyzing the results of the pedagogical experiment, describing the motivational and educational effects; Finding ways to solve problems through self-management, teamwork, leadership, and time management skills in project activities;

5) Study of the state of scientific project teaching in the practice of biological education at a higher educational institution and school;

6) Consideration of socio-emotional skills developed in students through scientific projects (Petuhova, 2013).

Mavrina I. (2020) uses project activities in a purposeful, planned manner in modern education. It has been shown that it is a method proven to be necessary for the formation of personal qualities and inclusion of an individual in society.

The main goal of the updated standard is to apply active methods to students. One of the requirements of modern educational standards is to maintain the equality of knowledge and skills and offer reasonable methods. Educational systems are offering modern methods that generally conform to the same state standard structure.

Grekhankina L.F. (2020) showed that project-based learning is seen as an alternative to the traditional classroom system in schools. Projects play an important role in forming a conceptual understanding of the subject "Biology". Develops thinking through scientific project activities of teachers and students in the classroom (work outside the classroom).

Taking into account the conceptual features of the teaching process of "Biology" that can meet the modern requirements for natural science education, it is necessary to take into account both the need to use traditional tools and the introduction of innovations, which affects the quality of independent individuality of learners. Yatheesh (2010) requires maximum independence and creative approach during the implementation of projects. However, a creative project has its own algorithm. First of all, it was emphasized that the formulation of ideas to determine the needs, the setting of requirements for the design object, their analysis, and the planning and preparation of the object. Fulfilling these requirements will develop students' self-management, teamwork, leadership, and time management skills.

The first goal during project activities is to identify emotion in the formation of social-emotional skills.

The main findings in project learning:

1) The student looks for a problem by himself, takes an organizational position. This process develops his creative abilities.

2) The educational process of teaching through project activities is based on the logic of each student's actions, and increases his motivation to study.

3) It is natural to have different approaches to the development of projects, the thought should not be double-edged as a process of influencing the development of the main mental and physiological aspects of the student in only one direction.

4) Convenient, individual performance of project activities carried out in a group can affect the student's level of development. If possible, age characteristics should be taken into account. And students can do projects individually.

5) Teaches how to apply basic knowledge in various life situations.

Terentyeva (2014) believes that the main factor is the stimulation of students' own activities in accordance with the above-mentioned rules of project activities. Self-regulation and self-control of learners play an important role in the selection of tasks during the project,

cooperation, formation of motivations for action, and the implementation of an individualized approach during the acceleration of the process of acquiring knowledge and skills.

Types of research activities in the project:

1. In express research, students conduct research independently and describe and formalize it. For example, observation of birds in their winter nest, observation of the behavior of domestic animals in winter conditions and protection from enemies, etc. Outside of class, scientific research activities include preparation and participation in biology Olympiads, competitions, participation in educational expeditions, ecological cources, creative works, writing essays.

2. During the learning experiment, the projects include laboratory and practical work. Learning experiment is one of the effective methods of learning. Students should be able to perform both laboratory and practical work during projects:

1) It is necessary to look at biological objects under a microscope, to know its technique;

2) To know the methodology of studying the composition of substances found in nature;

3) Being able to study the structure of the body;

4) Being able to observe living objects;

5) To be able to control the processes of life activity of an organism;

6) Study of superorganismic levels of organization of living matter (species and ecosystem).

3. Research competitions.

4. Summer tasks: creating a herbarium and collections from the completed tasks according to the updated program.

The above-mentioned pedagogical conditions contribute to the development of students' research activity skills. During the study, the student uses situations that encourage him to defend his opinion, to provide evidence, arguments, facts, to use methods of gaining knowledge and experience, to ask questions to the teacher and peers, to identify ambiguities, to understand knowledge in a deeper way. Gora (2014) believes that group work during project activities consists of work related to the active search for new information.

In order for the project method to be more productive and successful, it is necessary to know the requirements for it. It is necessary to be able to direct and use it correctly . (Azanbekova, 2022). A prerequisite for success in the implementation of projects is the search, knowledge of scientific problems, research methods. Scientific projects will fail if you do not know the methods of creative activity and cannot conduct statistics and mathematical calculations. Having a good knowledge of data processing skills, students can successfully organize scientific project activities. It's all about the technology of scientific design methods.

Problems of formation of students' cognitive interest are constantly changing nowadays. It is important for everyone in the world to be able to read, because to achieve success in life, you need to learn throughout your life. It is important to teach students to understand the value and meaning of their actions, to feel responsible for them (Grichik, 2014).

Human cognitive activity is a very complex process of interaction of external and internal conditions. External influences are decisive in the formation of a person's cognitive interest, but as a person's consciousness develops, internal conditions: experience, worldview, interests and needs play a major role in fixing the direction of his personality. These factors, in their contradictory unity, form a direction in the actions of an individual, which affects the entire development of psychological processes of a person (Gulenkova, 2018).

In addition, the formation of cognitive interest should be considered as a process related, firstly, to the procedural value of the activity that leads to the formation of cognitive interest, secondly, to the level structure of cognitive interest, and thirdly, to the procedural nature of the learning process, which is an organic part. The process of forming cognitive interest is interest.

On the basis of these theoretical rules, the goal of forming the cognitive interest of students can be clarified through a set of tasks: formation of cognitive interest, development of cognitive independence and research skills.

Taxonomy of goals of formation of students' cognitive interest: level of cognitive interest (reproductive activity); the level of cognitive independence (partly proactive activity); designed to provide the level of research skills (creative activity).

Muluk, S. et al., Conducted in 2021 with the aim of studying the factors that contribute to the success of high-achieving students in academic and public life through project work. The results of this study are expected to provide readers with important insights from the respondents ' experiences that can be used as references in academic or social fields. (Muluk, S. et al., 2021).

Methodology

- Acquaintance with pedagogical documents, review of scientific and methodical magazines;
- Analysis of curriculum for 7-9 grades of "Biology" subject at school;
- Studying the best experience of Kazakh teachers;
- Monitoring students;
- Conversation with students;
- Pedagogical: ethnopedagogical, ethnopsychological, sociometric tables, didactic test questions, control. Conducting surveys, conversations, interviews, questionnaires.

Results and discussion

According to the theoretical rules defining the requirements for the methodological system of teaching biology, the first stage of solving the tasks was aimed at forming the cognitive interest of students, which in turn was implemented step by step. In the course of the experiment, experiments on the formation of cognitive interest, demonstration of biological and other methods were used.

During the experiment, "6B01505-Biology teacher training" conducted project activities on several topics with the students of EP.

In the first phase of the research, it was important to maintain the interest of learners, their constant interest in the subject, the structure of the course, the logic, the search methods used in it, and the proof of new knowledge. Diagnostic tools-questionnaires for 1st-year students and schoolchildren have been developed. Examples of answers to survey questions are shown in Table 1 and described.

Table 1

The survey "Importance of studying biology for students and pupils"

	Ex The group is a student	**Ex The group is a pupil**	**Control group a student**	**Control group pupil**
My attitude towards "Zoology" and "Botany" subjects is positive	31-100%	18-75,0%	26-100%	15-60,0%
I believe that the development of self-management, teamwork, leadership, and time management skills are important for project work.	21-67,7%	15-62,5%	15-57,6%	14-56,0%
The reason why students became more interested in biology classes at school - I expanded my intellectual horizons in biology	22-70,9%	14-58,3%	14-53,8%	15-60,0%

- Could biology be useful in the future?	31-100%	21-87,5%	26-100%	11-44,0%
- What kind of university is it necessary to study biology at school?	20-64,5%	22-91,6%	16-61,5%	12-48,0%
- It is important for me to know the origin and structure of living organisms	19-61,2%	24-100%	12-46,2%	14-56,0%
High assessment of students' knowledge of biology	24-77,4%	21-87,5%	11-42,3%	15-20,0%
Students have an interest in biology outside the school curriculum	22-70,9%	22-91,6%	11-42,3%	11-44,0%
In biology classes, prefer to do laboratory work, test tasks, creative tasks, collective discussion of questions, making reports, as well as going on excursions.	25-80,6%	24-100%	14-53,8%	14-56,0%

As shown in Table 1, after analyzing the questionnaires of 1st-year students and schoolchildren, it is possible to conclude: 100% of students want to participate in "Zoology" and "Botany", 64% of students of the experimental group like biology, and education of the control group only 62% of recipients are not indifferent to biology.

For 70.9% of the students of the experimental group, "Biology broadened my intellectual horizons", 67.7% believe that the development of self-management, team work, leadership, and time management skills are important skills for performing project work; 100% believe that biology can be useful in the future. Studying biology at school is necessary for admission to which university - 64.5%; Why is it important to know the origin and structure of living organisms - 61.2%; Students' assessment of their knowledge in biology - 77.4%; Students' interest in biology outside the school program - 70.9%; Also, in biology classes, they prefer to do laboratory works, test tasks, creative tasks, collective discussion of questions, making reports, as well as going on excursions - 80.6% answered. Most students prefer to do laboratory work, test tasks, creative tasks, collective discussion of questions, make reports, and go on excursions in biology classes.

Many students were interested in biology as a school curriculum. From the obtained results, it can be concluded that students like to study biology, because they learn a lot, study the structure and diversity of plants, make observations in laboratory work, work with a microscope.

In order to determine the level of students' cognitive interest in the study of biology, we used the testing method. According to the results of testing, the summary of the experimental group is shown in Table 2 below. 38.7% of 31 students showed a high level, 45.2% showed an average level, and 16.1% showed a low level. During the experiment, it can be seen that the quality of students' education has changed during the work with projects. The high level changed to 38.7%-51.6%. The average level has decreased from 45.2% to 35.4%. And the low level decreased from 16.1 to 13.0%.

Table 2

Summary table for determining students' cognitive interest (experimental group determination period)

Level	**Before the experiment**		**During the experiment**	
High level	12	38,7%	16	51,6%
Average level	14	45,2%	11	35,4%
Low level	5	16,1 %	4	13,0%

As shown in Table 3 below, the educational levels are shown in the summary table that determines the cognitive interest of the experimental group by pupils.

20.9% of 24 students showed a high level, 58.2% showed an average level, and 20.9% showed a low level. During the experiment, it is possible to see that the quality of students' knowledge has changed during the work with scientific projects. The high level changed from 20.9% to -25.0%. The average level remained unchanged at 58.2%. And the low level - decreased from 20.9 to 16.7%.

Table 3

Summary table determining pupils' cognitive interest (experimental group identification period)

Level	**Before the experiment**		**During the experiment**	
High level	5	20,9%	6	25,0%
Average level	14	58,3%	14	58,3%
Low level	5	20,9%	4	16,7%

Based on the results of the testing, a summary table 4 of the control group consisting of students was created. 19.2% of 26 students showed a high level, 53.8% showed an average level, and 27.0% showed a low level. It can be seen that the quality of students' education has changed during the experiment. The high level remained unchanged at 19.2%. The average level has changed from 53.8% to 57.7%. And the low level - decreased from 27.0% to 23.1%.

Table 4

Summary table determining students' cognitive interest (control group determination period)

Level	**Before the experiment**		**During the experiment**	
High level	5	19,2%	5	19,2%
Average level	14	53,8%	15	57,7%
Low level	7	27,0%	6	23,1%

The summary of the control group consisting of students according to the test results is shown in Table 5. 28.0% of 25 students showed a high level, 52.0% showed an average level, and 20.0% showed a low level. It can be seen that the quality of students' education has changed during the experiment. The high level is down from 28.0% to 24.0%. We included in the plan the need to determine the cause. The average level has changed from 52.0% to 60%. And the low level – decreased from 20.0% to 16.0%.

Table 5

Summary table determining students' cognitive interest (control group determination period)

Level	**Before the experiment**		**During the experiment**	
High level	7	28,0%	6	24,0%
Average level	13	52,0%	15	60,0%
Low level	5	20,0 %	4	16,0%

Many possibilities of biology as a subject, variety of relevant topics, high level of integration with other sciences, various forms of organization of extracurricular activities in biology are perfectly combined with the use of scientific design technologies to implement the requirements of FGOS. The school course of biology provides wide opportunities for various and scientific project activities. Each section of the biology course can be divided into topics for the use of research projects.

The first level of formation of cognitive interests depends on the content of knowledge, interesting facts, and the study of real phenomena. Creative activity is reflected in the desire to perform planned tasks. This simple level of formation of cognitive interest is characteristic of students whose emotional component of cognitive interests dominates, and the pedagogical effect at this age consists mainly of forming a positive emotional relationship to the content of knowledge and the learning process.

The second level of the development of cognitive interests is characteristic of students who have begun to develop a cognitive interest in establishing cause-and-effect relationships, in knowing the important properties of objects and phenomena. The level of creative activity is reflected in the desire to reveal the essence of the studied processes and phenomena; the intellectual component of cognitive interests begins to prevail over the emotional. The scientific project plays a big role in students' ability to independently study biological processes and phenomena, solve problems, uncover problems, and form the essence of the studied concepts. This process is associated with the complexity of descriptive and investigative nature of activity.

Project activity is the interaction of students with each other and with the teacher.

Empirical basis of the research: 1st-year students of Abay Kazakh National Pedagogical University and schoolchildren of Almaty city were selected to conduct a pedagogical experiment. The number of students included in the experiment is 57. 31 students were included in the experimental group, consisting of 1st-year students studying "Botany", Zoology" courses, and 26 students were included in the control group. The experimental study was conducted in the 2nd year. 24 students from the 9th grade A, 25 students from the 9th grade B participated.

Research organization and stages:

In the first stage, an analysis of normative documents, pedagogical, psychological and methodological literature on the issue of project activities in teaching biological subjects at universities and schools was carried out; research topic, goal, objectives and methodology were formulated.

In the second stage, practical and experimental work was carried out on testing the educational course, the results of the pilot experiment were analyzed, the thematic program, the methodological and resource base of the scientific project were specified, and the methodology of the formative experiment was developed.

In the third stage, a formative experiment was conducted, quantitative and qualitative analysis of experimental data was conducted, data were collected, conclusions were formulated, and a thesis was formalized.

As one of the educational factors, the formative experiment on the formation of skills during project activities consists of 2 stages.

In the course of pedagogical practice held at the Abay Kazakh National Pedagogical University, students were divided into two groups: the experimental group (31 students) participated in the project work, and the second group (26 students) participated as a control group. During the experiment, "6B01505 – Biology teacher training" conducted project activity activities on several topics with the students of EP.

After analyzing the questionnaires of 1st-year students and schoolchildren, it is possible to conclude: 100% of students want to participate in "Zoology" and "Botany", 64% of students of the experimental group like biology, and only 62% of students of the control group - is not indifferent to biology.

For 70.9% of the students of the experimental group, "Biology broadened my intellectual horizon", 100% believe that the subject of biology can be useful in the future. Studying biology at school is necessary for admission to which university – 64.5%; Why is it important to know the origin and structure of living organisms – 61.2%; Students' assessment of their knowledge

in biology – 77.4%; Students' interest in biology outside the school program – 70.9%; Also, in biology classes, they prefer to do laboratory works, test tasks, creative tasks, collective discussion of questions, making reports, as well as going on excursions – 80.6% answered. Most students prefer to do laboratory work, test tasks, creative tasks, collective discussion of questions, make reports, and go on excursions in biology classes.

To sum up, a portrait of a versatile person who has a creative inclination and can master a scientific profession, feels responsible and brings everything to the end has emerged. In general, being a person who can manage several things at the same time, there is a chance to become a scientific methodologist or a creative person.

Conclusion

According to the results of the research, the project activity method is one of the leading methods in the educational process. The state educational standard of general education envisages the use of research projects as a type of state final certification. Organizes scientific project methods as the final work of students in higher educational institutions. Curiosity, in the process of group interaction, allows to develop social skills, to gain experience in research activities, to form skills such as creativity of thinking. Based on the above, we believe that the use of scientific project technologies in the educational process allows to increase the level of motivation and efficiency, independence and initiative of students.

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