Formation of supraprofessional competencies for successful professional activity of a bachelor of ecologist

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Abstract. Modern society faces a number of environmental problems, such as environmental pollution, depletion of natural resources and climate change. In this regard, the professional activities of ecologists are becoming more and more in demand and important. However, in order to successfully fulfill their duties and effectively solve environmental problems, a bachelor in ecologist needs to have not only professional knowledge, but also trans-professional competencies. The purpose of the study: this article will consider the formation of supraprofessional competencies for the successful professional activity of a bachelor of ecologist.

Scientific hypothesis: The formation of trans-professional competencies, such as communication skills, teamwork, analytical thinking and decision-making, the ability to self-organize and self-develop, is a necessary condition for the successful professional activity of a bachelor of ecologist.

1 Introduction

Modern society faces a number of complex environmental issues such as climate change, biodiversity destruction and environmental pollution. The solution of these problems requires an integrated approach and the participation of ecologists in it. However, in order to successfully fulfill his duties, a bachelor of ecologist must have not only professional knowledge, but also trans-professional competencies [1].

For this study, we used a variety of information gathering methods such as document analysis, surveys, interviews, and observations. When analyzing the documents, special programs for training ecologists in universities and scientific articles devoted to the formation of supraprofessional competencies in bachelors of ecologists were studied. We also conducted surveys among students and graduates of environmental faculties of various universities using Google forms. The surveys included questions about the availability and development of supraprofessional competencies, the importance of these competencies for professional activity, and ways to obtain them. The results of the surveys made it possible to assess the current situation in the field of the formation of supraprofessional competencies among bachelors of ecology.

Comparative analysis and synthesis of scientific sources on this topic made it possible to identify key aspects of the formation of supraprofessional competencies in bachelors of ecology.

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Based on the results of the analysis, several main groups of competencies were identified:

- Communication skills;
- Critical thinking;
- Ability to work in a team;
- The ability for self-organization and self-development is a necessary condition for the successful professional activity of a bachelor of ecologist.

Cross-professional competencies are skills and abilities that go beyond a narrow specialization and allow you to perform professional duties more efficiently. They include qualities such as communication skills, leadership, critical thinking, teamwork and decision making.

Supraprofessional competencies play an important role in the successful professional activity of a bachelor of ecologist.

- Communication skills allow them to interact effectively with colleagues, clients and other stakeholders;
- Critical thinking helps them analyze complex environmental problems and find innovative solutions;
- Teamwork and decision-making skills allow them to collaborate effectively with other environmentalists and make important decisions.

The formation of supraprofessional competencies begins while studying at the university. The Bachelor of Ecology should be able to develop communication and teamwork skills through group projects and discussions. It is also important to develop critical thinking and decision-making skills, which can be achieved through the analysis of real environmental problems and the search for solutions.

In addition, students should be given opportunities to develop leadership skills. They may be appointed as group project managers or organizers of environmental events. Such experiences will help them develop leadership and management skills.

In general, the analysis of documents, surveys, interviews and observations made it possible to obtain reliable information about the process of formation of supraprofessional competencies in bachelors of ecologists. These data can be used to optimize training programs for ecologists and develop specialized courses aimed at developing the necessary competencies for successful professional activity.

2 Name of the game: "Technician Leader: The Road to Success"

Name of the game: "Technician Leader: The Road to Success"

Purpose of the game: Development of leadership qualities and skills of bachelors of technical fields through solving business problems.

Rules of the game:
1. The game is played in teams of 4-6 people.
2. Each team chooses a captain who will coordinate the work of the team and make the final decisions.
3. The game is played in several stages, each of which includes the solution of a specific business case.
4. At each stage, teams receive a task that they must complete in a limited time.
5. After completing the task, the teams present their solutions and explain their actions and decisions.
6. Teams are judged on the effectiveness of the solution, teamwork and leadership qualities of the captain.
At the end of each stage, the winner who scored the most points is announced. Examples of tasks for each stage:

Stage 1 - Project Planning: Teams are asked to plan and organize the execution of a complex technical project. Conditional data is used, such as due dates, budget, resources. Purpose: to show the ability to build a strategic plan and allocate resources.

Stage 2 - Teamwork: Teams are asked to solve a collective technical problem that requires interaction and communication between participants. Purpose: to show the ability to effectively interact in a team, exchange information and make decisions collectively.

Stage 3 - Project Leadership: Teams are asked to take on the role of project leader, making decisions as the task progresses and coordinating the work of the participants. Purpose: to show the ability to make decisions under pressure, effectively distribute tasks and motivate the team.

Stage 4 - Presentation and Feedback: Teams present their solutions and receive feedback from the jury and other teams. Purpose: to develop public speaking skills and the ability to accept criticism for further growth.

Awards: The winning team receives certificates of the best leaders and recognition as the most effective team.

This business game will allow bachelors of engineering to develop leadership qualities such as planning, teamwork, decision making and presentation skills that will be useful to them in their future careers.

3 Game name: "Technocreative: Develop your creative thinking"

Purpose of the game: Development of creative thinking among bachelors of technical fields through the solution of technical problems and the search for innovative solutions.

Participants: Bachelors of technical fields, divided into teams of 4-6 people.

Duration of the game: 2 academic hours.

Rules of the game:
1. Preparation:
   - Prepare several technical tasks related to the field of study of the participants. Tasks may involve developing a new product, improving an existing technology, or finding a solution to a complex engineering problem.
   - Create a set of tools and materials needed to solve problems. These can be designers, electronic components, computers, etc.
   - Divide the participants into teams and assign a leader to each team.

2. Gameplay:
   - Each team receives one of the technical tasks and a set of tools.
   - Teams must work together to develop and present an innovative solution to a problem.
   - Participants must use their technical knowledge, creative thinking and collaboration to find the most effective and innovative solution.
   - Teams have limited time to solve the problem (e.g., 30-60 minutes).
   - At the end of the time, each team must present their decision to the rest of the participants and the jury.
   - The jury evaluates each solution according to the criteria of creativity, technical feasibility and potential practicality.

3. Rating:
   - The jury announces the winner, taking into account the scores of their decisions.

Game advantages:
- Develops creative thinking in bachelors of technical fields.
- Improves communication and collaboration within the team.
- Promotes the development of decision-making and problem-solving skills.
Increases motivation and interest in the studied area.

Allows students to put their technical knowledge into practice and find innovative solutions.

The business game "Technocreative: Develop your creative thinking" provides bachelors of technical fields with the opportunity to apply their knowledge and skills in practice, develop creative thinking and learn how to find innovative solutions. The game promotes the development of communication, cooperation and decision-making skills, which are important in professional work in the technical field.

4 Case task for the development of communicative competencies

Situation 1: You are a bachelor in environmental science and work for an environmental organization. Your team received a grant to conduct a study on the impact of water pollution on local ecosystems. As part of the project, you need to collaborate with other professionals, including biologists, geologists, chemists, and sociologists. Your task is to develop a research plan and ensure effective interaction and communication within the team.

Task: You need to meet with team members to discuss and clarify the objectives of the study, determine the roles and responsibilities of each participant, and plan further steps. During the meeting, it is necessary to ensure the active participation of all team members, to establish an open and productive environment, and to resolve possible conflicts and disagreements.

Expected results: after the meeting, the team should have a clear understanding of the objectives of the study, the roles and responsibilities of each participant, as well as the action plan. In addition, communication within the team must be improved, and team members must be ready to communicate effectively and resolve emerging issues and problems.

Situation 2: You are a student at a technical university and you have a project in which you need to work in a team to develop a new technical device. Your team consists of students from different technical fields such as engineering, electrical engineering, programming and mechanics. Your task is to ensure effective interaction and communication within the team for the successful implementation of the project.

Task: You need to organize a meeting with team members to discuss and clarify the goals of the project, determine the roles and responsibilities of each participant, and plan further steps. During the meeting, it is necessary to ensure the active participation of all team members, to establish an open and productive environment, and to resolve possible conflicts and disagreements.

Expected results: after the meeting, the team should have a clear understanding of the project goals, the roles and responsibilities of each participant, as well as the action plan. In addition, communication within the team should be improved, and team members should be ready to communicate effectively and solve emerging issues and problems using various communication skills, such as listening, expressing their thoughts and ideas, arguing and persuading other participants.

4 Game name: "Ecological Evolution: Grow and Learn"

The purpose of the game: development of skills of self-organization, self-education and solving environmental problems.

Participants: bachelors of the ecological direction, divided into equal teams (3-5 people in each team).

Duration of the game: several days of 6 academic hours each.
5 Conclusions

The formation of supraprofessional competencies is an important aspect of the education of a bachelor of ecologist [7]. They allow them to successfully fulfill their professional duties and effectively solve environmental problems. The development of communication skills, leadership, critical thinking, teamwork and decision making should be included in the curriculum and supported during training [8,9]. This is the only way bachelors in ecologists will be able to become sought-after specialists and contribute to solving the environmental problems of modern society.

References

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