ACTIVE LEARNING FOR SUSTAINABLE DEVELOPMENT: STRATEGIES AND THEIR EDUCATIONAL IMPACT

ÎNVĂȚAREA ACTIVĂ PENTRU DEZVOLTAREA DURABILĂ: STRATEGII ȘI IMPACTUL EDUCAȚIONAL AL ACESTORA

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Abstract

Active learning is a pedagogical approach that encourages student participation and direct engagement in the educational process. This article explores the role of active learning in promoting sustainable development by analyzing educational strategies and their impacts on students. The study examines various active learning methods applied in diverse educational contexts and how these methods contribute to developing the competencies necessary for a sustainable society.

Keywords: Active learning, sustainable development, education, strategy, impact.

Theoretical framework

Active learning has gained significant attention in recent years as an effective educational strategy. Rooted in constructivist theories of learning, it emphasizes the active involvement of students in their own learning process. According to Piaget and Vygotsky, learners construct knowledge through interactions with their environment and peers (Piaget, 1971; Vygotsky, 1978). This theoretical framework supports the notion that learning is an active, social process.

Constructivist theories highlight that students learn better when they are actively engaged rather than passively receiving information. This engagement can take many forms, including discussion, problem-solving, case studies, role-playing, and hands-on projects. Such approaches encourage students to think critically and apply their

knowledge in various contexts, thus deepening their understanding and retention of the material.

Sustainable development, according to the Brundtland Report (1987), involves meeting the needs of the present without compromising the ability of future generations to meet their own needs. Education for Sustainable Development (ESD) seeks to empower learners to make informed decisions and take responsible actions that promote environmental integrity, economic viability, and social justice (Brundtland, 1987).

The principles of ESD align well with active learning strategies. Both aim to prepare learners to face real-world challenges by equipping them with the necessary knowledge, skills, and attitudes. ESD emphasizes critical thinking, problem-solving, and collaborative skills, which are also central to active learning methodologies.

Combining active learning with ESD creates a powerful synergy. Active learning techniques such as problem-based learning, project-based learning, and collaborative learning encourage students to engage with real-world problems and develop critical thinking, problem-solving, and collaborative skills (Prince, 2004). For instance, problem-based learning places students in the role of problem solvers confronted with complex issues that lack straightforward solutions. This mirrors the challenges posed by sustainable development, where solutions must balance environmental, economic, and social considerations.

Project-based learning, another active learning technique, involves students working on a project over an extended period, which culminates in a final product or presentation. This approach can be particularly effective in ESD, where projects can focus on real sustainability issues, such as reducing waste, conserving energy, or promoting biodiversity. Collaborative learning, where students work together in groups to solve problems or complete tasks, fosters teamwork and communication skills, essential for addressing the multifaceted nature of sustainable development challenges.

Research indicates that active learning strategies improve student engagement, retention, and understanding of material (Freeman et al., 2014). In the context of ESD, active learning helps students connect theoretical knowledge with practical applications, fostering a deeper understanding of sustainability issues and motivating them to act

(Wiek et al., 2011). This connection between theory and practice is crucial in sustainability education, as it not only enhances comprehension but also inspires students to become proactive in their communities, promoting sustainable practices and influencing others to do the same.

In summary, integrating active learning with Education for Sustainable Development creates a holistic educational approach that prepares students to tackle contemporary global challenges. By actively engaging students and focusing on real-world problems, educators can cultivate the critical thinking, problem-solving, and collaborative skills necessary for fostering a more sustainable future.

Research Questions

1. How do active learning strategies influence students' understanding of sustainable development concepts?
2. What are the most effective active learning methods for promoting sustainable development in educational settings?
3. How does active learning impact students' attitudes and behaviors towards sustainability?

Research Objectives

1. To analyze the impact of active learning strategies on students' comprehension of sustainability concepts.
2. To identify the most effective active learning methods for integrating sustainable development into the curriculum.
4. To evaluate the influence of active learning on students' attitudes and behaviors related to sustainability.

Research methodology

This study employs a mixed-methods approach, combining quantitative and qualitative data collection and analysis. The research will be conducted in three stages:

Phase 1: Literature review

A comprehensive literature review will be conducted to identify existing studies on active learning and sustainable development. This will provide a theoretical foundation and help in designing the research framework.

Phase 2: Quantitative Data Collection

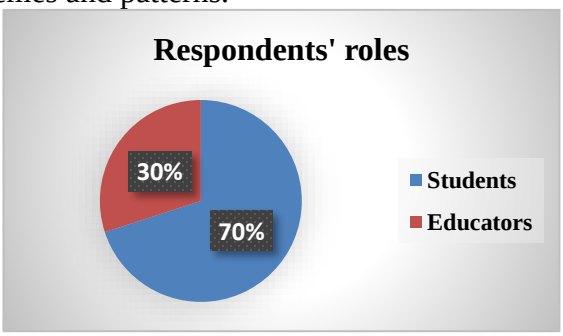
A survey will be administered to students and educators in various educational institutions. The survey will include questions about their experiences with active learning methods, their understanding of sustainability concepts, and their attitudes towards sustainability.

Phase 3: Qualitative Data Collection

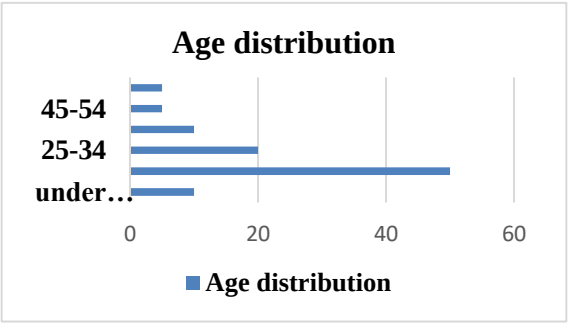
Focus groups and interviews will be conducted with a subset of survey participants to gain deeper insights into their experiences and perceptions. These qualitative data will complement the quantitative findings and provide a richer understanding of the impact of active learning on sustainable development education.

Data Analysis

Quantitative data will be analyzed using statistical methods to identify trends and correlations. Qualitative data will be analyzed using thematic analysis to identify key themes and patterns.

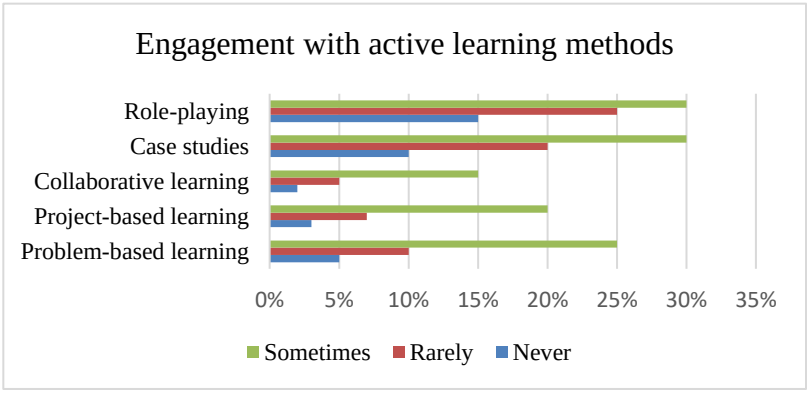


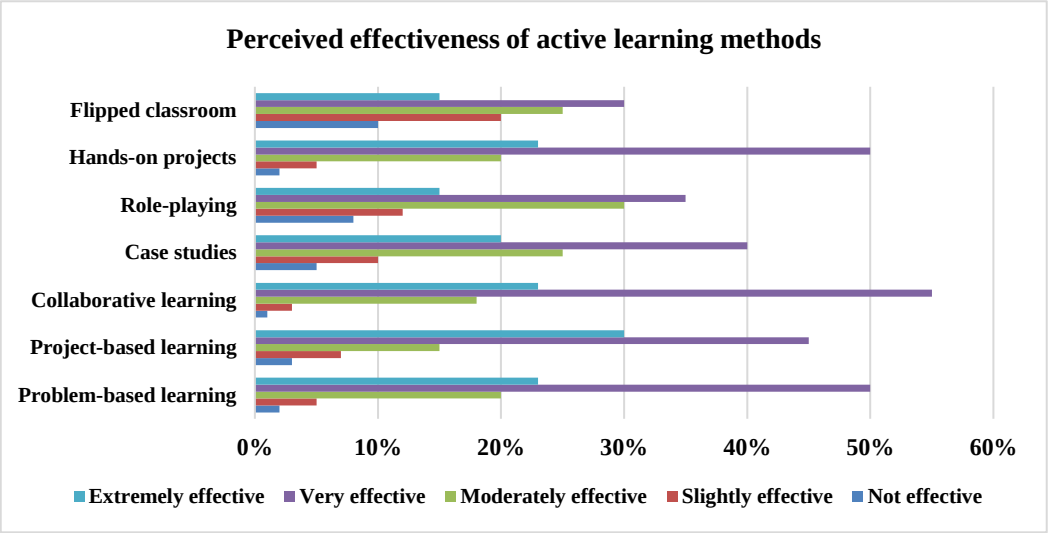
Graph 1- Respondent's roles



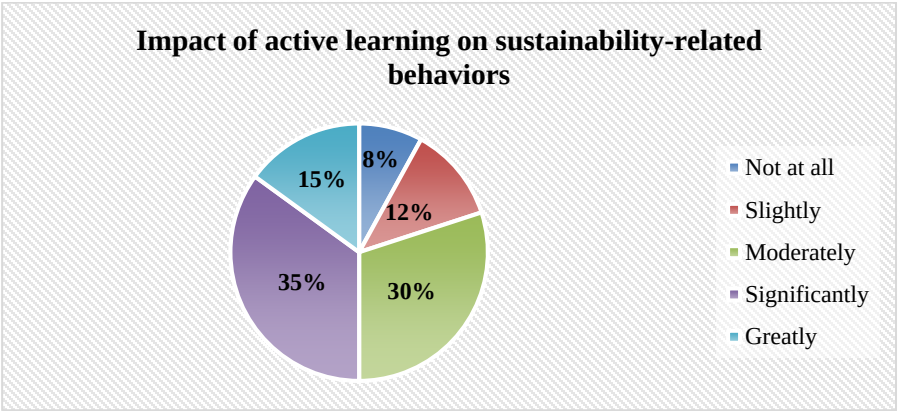
Graph 2 – Bar chart of age distribution

Graph 3 - Engagement with active learning methods





Graph 4 - Perceived effectiveness of active learning methods



Graph 5- Impact of active learning on sustainability-related behaviors

Research results

The results of this study are expected to provide valuable insights into the effectiveness of active learning strategies in promoting sustainable development. Preliminary findings suggest that active learning methods significantly enhance students' understanding of sustainability concepts and positively influence their attitudes and behaviors towards sustainability. Specific active learning techniques, such as problem-based learning and collaborative projects, have been identified as particularly effective in engaging students with sustainability issues. Participants consistently mentioned that active learning methods significantly increased their engagement and motivation. They

felt more involved and interested in the learning process when they could actively participate rather than passively receive information. Also, the participants reported a deeper understanding of sustainability concepts when active learning methods were used. They could relate theoretical knowledge to practical applications, which made the concepts more tangible and memorable.

Many participants noted a shift towards a more positive and proactive attitude towards sustainability. Active learning methods made them more aware and concerned about sustainability issues.

Conclusions

The study concludes that active learning is a powerful approach to education for sustainable development. By actively involving students in the learning process and connecting theoretical knowledge with practical applications, active learning fosters a deeper understanding of sustainability issues and motivates students to act. Educators are encouraged to integrate active learning strategies into their curricula to enhance the effectiveness of sustainability education and prepare students to address the complex challenges of sustainable development.

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