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Revealing the Creative Potential of Students Through Active Learning Methods in Azerbaijan

Ujawnianie potencjału twórczego uczniów poprzez aktywne metody nauczania w Azerbejdżanie

Introduction

One of the most significant tasks of modern pedagogy is the early identification, support, instruction, and development of gifted children

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(Məhərrəmov, 2020). The accelerating pace of life, the recognition of human potential as a fundamental resource for societal progress, and the increasing emotional and informational demands necessitate the comprehensive development of individuals as active and creative personalities. In such circumstances, it is insufficient to consider only the natural abilities of gifted children for timely identification and development of their potential; it is equally important to prioritize modern and innovative approaches within the educational process.

Among the foremost challenges faced by 21st-century educational systems is the cultivation and manifestation of students' creative potential. The main goal in this regard is to meet the growing demand for innovative and creative knowledge in an increasingly globalized world. Consequently, instead of traditional teaching methods, active learning techniques that encourage students' participation, critical thinking, and creativity are increasingly being recognized as a central objective of education (Hüseynova, 2017).

In this regard, educational reforms implemented in our country, particularly the adopted "Concept of General Education in the Republic of Azerbaijan (National Curriculum)," have identified the development of creative and critical thinking skills as a priority direction. We cannot teach students to compete with machines (robots) that are smarter than they are; instead, we must educate them in ways that distinguish them from machines. Only through this approach will they have a chance to exist and thrive thirty years from now (Whiting, 2019).

Consequently, one of the primary objectives of education in the modern era is not merely the transmission of information but also the cultivation of individuals' creative potential. Educational systems should be designed in such a way that students are encouraged not only to acquire knowledge but also to apply it innovatively and to generate new ideas.

Research problem

Research and pedagogical practice in this field indicate that the development of creative potential and the effective implementation of active learning methods in Azerbaijan are hindered by several significant challenges and systemic issues:

- A key issue is the mismatch between gifted children's individual psychological traits and natural interests, and the standardized curriculum requirements, hindering their full potential development.

- Gifted children often face challenges in social communication, cooperation, and group activities, negatively impacting their socio-emotional development and potentially leading to social isolation.
- Insufficient psychological and pedagogical competence among teachers and parents in identifying and supporting gifted children at early stages limits recognition of diverse giftedness and appropriate interventions, reducing instructional effectiveness and hindering creative potential realization.

Theoretical Background

The intellectual efforts invested in this field, the increasing demands placed on education, and the individual's social responsibility all contribute to a growing recognition of the importance of working with gifted children (Runco & Jaeger, 2012). Psychological and pedagogical work with gifted learners plays a crucial role in the formation of their personalities, self-confidence, motivation, and future academic trajectories.

Therefore, to ensure the effectiveness of working with gifted children, it is especially important to apply active learning methods within the educational process that are tailored to their individual characteristics and promote creativity. Active learning methods refer to approaches that enhance learners' acquisition of knowledge, cognitive independence, mental engagement, and creative thinking (Nəzərov, 2012). International educational research similarly defines active learning as instructional practices that require students to participate meaningfully through discussion, inquiry, collaboration, reflection, and problem-solving rather than passive listening (Bonwell & Eison, 1991; Prince, 2004).

From this perspective, the methods employed in the educational process should not be limited solely to the transmission of information but must also ensure the active engagement and creative participation of students (Bonwell & Eison, 1991). This approach allows for a clearer understanding of the essence of interactive learning. Interactive learning fundamentally involves creative activity within the process of reciprocal interaction (Nəzərov, 2012). According to L.S. Vygotsky (Vygotsky, 1978) learning develops most effectively through social interaction, dialogue, and collaborative engagement, which makes interactive learning especially relevant for creativity development.

Such characteristics of interactive learning necessitate the integration of various methods such as debates, role-playing games, brainstorming, and other techniques into the teaching process. These methods are particularly significant in fostering students' creative and critical thinking skills. Research conducted by E.P. Torrance, (Torrance, 1974) demonstrated that environments encouraging questioning, divergent thinking, and idea generation significantly increase creative performance among students. Likewise, studies in the United States and Australia found that classroom discussion and inquiry-based learning improve originality, confidence, and reasoning abilities.

A key element of debates is critical thinking. Through structured argumentation, students learn to analyze evidence, compare perspectives, and defend ideas logically. Research by P.A. Facione (Facione, 1990) emphasizes that debate-based instruction strengthens interpretation, evaluation, and inference skills. Role-playing, on the other hand, cultivates students' creative imagination and enhances their sense of involvement. When applied, this method enables students to become, in a sense, live participants in the events under study (Nəzərov, 2012). International studies have also shown that simulation and role-play increase empathy, problem-solving capacity, and communication competence, particularly among adolescents.

In this regard, various interactive methods and techniques employed in the learning process, including debates and role-playing games, significantly contribute to the development of students' critical and creative thinking skills. Brainstorming activities, for example, help learners generate multiple responses to a problem, while project-based learning develops planning, teamwork, and innovation skills. According to Ken Robinson, (Robinson, 2011) schools should create conditions where imagination and originality are treated as equally valuable as academic knowledge.

For the effective organization of the educational process with gifted students, it is essential to utilize intellectual marathons, various competitions and quizzes, as well as oral and role-playing activities. These approaches enable gifted students to select the most suitable form of creativity and to demonstrate their potential capabilities. Consequently, this serves as a stimulus for their future development (Əliyev, Əliyeva, Cabbarov, 2011). Similar approaches are widely used in Singapore, South Korea, and Finland, where enrichment programmes, competitions, and innovation labs are designed to support talented learners.

In schools, teachers can organize the educational process with gifted, talented, and intellectually capable students through various forms, with the primary goal being the comprehensive and holistic development of the student's personality (Tomlinson, Carol A., 1995). Carol Ann Tomlinson particularly emphasizes differentiated instruction where content, process, and assessment are adapted according to students' readiness levels and interests. This model has been widely recognized internationally as one of the most effective approaches for gifted education.

Overall, both national and international scholarship confirms that active and interactive learning methods are essential for unlocking the creative potential of gifted students. Their successful implementation not only improves academic achievement but also supports leadership, innovation, emotional intelligence, and lifelong learning competencies required in contemporary society.

Methodology

Research Objectives

The primary aim of this study is to determine the impact of active learning methods on the development of students' creative and critical thinking skills in secondary schools.

The specific objectives are:

- To evaluate how active learning methods influence students' creative thinking
- To analyse students' perceptions of the effectiveness of teaching methods used in lessons
- To examine teachers' perspectives on the role of active learning in developing students' skills

Research Problems (Research Questions)

This study seeks to answer the following questions:

1. How do active learning methods affect students' creative thinking?
2. To what extent do teaching methods used in lessons contribute to the development of students' creative skills, according to students?
3. How do teachers evaluate the impact of active learning methods on students' creative and critical thinking skills?
4. What factors influence the effectiveness of implementing active learning methods in the classroom?

Research Method

A quantitative research approach was employed in this study. Data were collected using a survey method and analysed statistically to ensure objectivity and comparability with existing scientific perspectives.

Techniques and Instruments

- **Technique:** Survey (questionnaire-based data collection).
- **Instrument:** Structured questionnaire.
Instrument characteristics:
 - » Consisted mainly of closed-ended questions;
 - » Included multiple-choice and Likert-type items to measure attitudes and perceptions.
 - » Covered three main areas:
 1. The impact of active learning methods on creative thinking (see Figure 1);
 2. Students' evaluation of teachers' methods (see Figure 2);
 3. Teachers' assessment of the impact of active learning methods (see Figure 3).

Sample and Sampling Method

- **Sample size:** 85 students and 77 teachers.
- **Sampling method:** Purposive and convenience sampling (participants were selected from several accessible secondary schools across the country).

Duration of the Study

The study was conducted during the 2024–2025 academic year (September 2024–May 2025).

Ethical Considerations

- The study involved students under the age of 18.
- Therefore, informed consent from parents/guardians was required.
- Participation was voluntary and anonymous.

The study was approved by the Ethics Committee of Azerbaijan State Pedagogical University. Written informed consent was obtained from all participants and, where applicable, from their parents or legal guardians. Participation was voluntary, and all data were collected anonymously and treated confidentially.

Statistical Methods

- The collected data were analysed using:
- Descriptive statistics, including Frequencies and Percentages.
- Data were presented visually through charts and graphs (Figures 1–3)

Conclusion of Methodological Approach

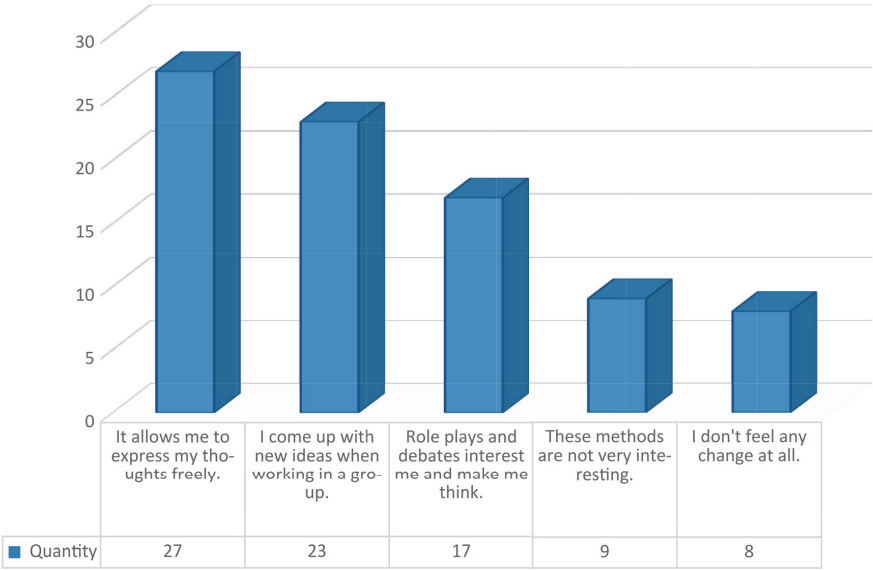
This methodological framework ensures a systematic and objective analysis of both students' and teachers' perspectives. However, incorporating qualitative methods (e.g., interviews or observations) in future research could provide deeper insights into the effectiveness of active learning methods.

Findings

The results of the conducted research indicate that the implementation of active learning methods positively influences the development of students' creative and critical thinking skills. However, factors such as the teachers' level of preparedness, the conditions of the learning environment, and the suitability of the methods to students' needs still pose challenges in the application of these methods. Therefore, it is essential to undertake certain improvements and support measures to more effectively reveal and develop creative potential. Based on the research findings, the following recommendations are proposed:

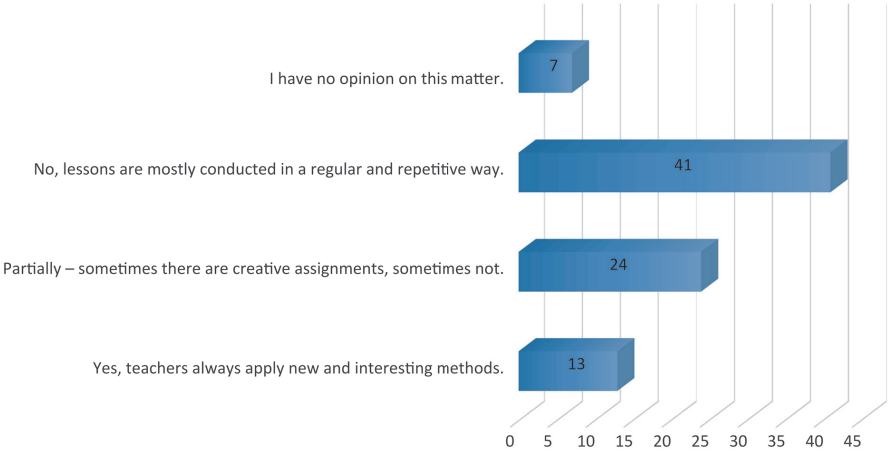
- Regular training sessions and seminars on the application of active learning methods should be organized for teachers, supporting the development of their creative and critical thinking skills.
- Active methods such as debates, role-playing games, and brainstorming should be broadly and purposefully implemented in the educational process, with methods selected according to the interests and needs of students.
- A favourable, supportive, and interactive learning environment should be created to facilitate the emergence of students' creative potential.
- New approaches and innovative methods related to active learning should be continuously applied in educational institutions and adapted to the evolving demands of teachers and students.
- To increase students' interest and motivation in the application of active learning methods, additional activities such as intellectual marathons, competitions, and quizzes should be organized.

Figure 1. Students’ responses regarding the impact of active learning methods on the development of creative thinking.



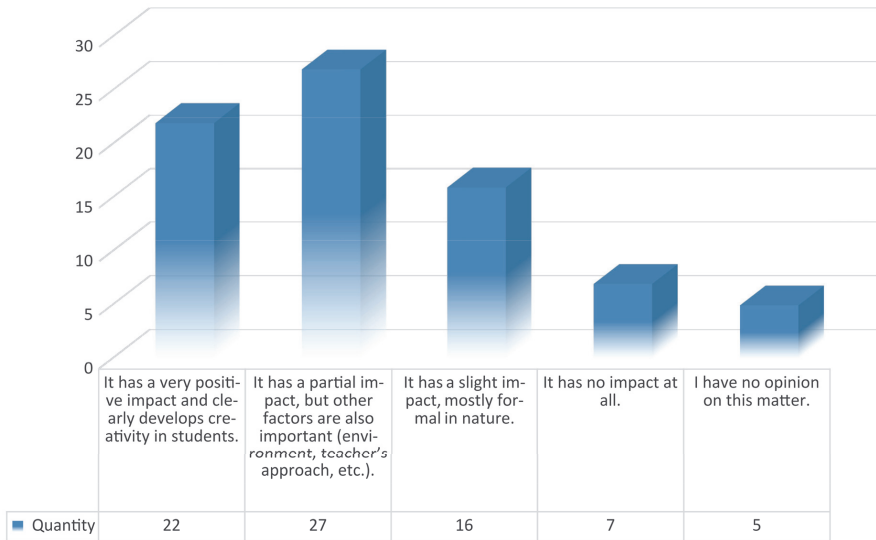
Source: Author’s own study

Figure 2. Students’ assessment of teachers’ methods for developing creative skills (Question: In your opinion, do the methods applied by teachers during lessons sufficiently contribute to the development of your creative skills?) (9).



Source: Author’s own study

Figure 3. Teachers' opinions on the impact of active learning methods on students' creative and critical thinking skills (Question: In your view, how does the implementation of active learning methods (debates, role plays, brainstorming, etc.) affect the development of students' creative and critical thinking skills?) (10).



Source: Author's own study

Discussion

The findings of the present study demonstrate that active learning methods make an important contribution to the development of students' creative thinking and the revelation of their creative potential. Most student respondents indicated that strategies such as group work, debates, role-play, brainstorming, and educational games help them express their ideas more freely, think independently, and generate original solutions. These results are consistent with the constructivist approach, which emphasizes that students learn more effectively when they actively participate in the learning process rather than passively receiving information.

Similar conclusions have been reported in international research. For example, C. C. Bonwell and J. A. Eison, found that active learning increases student engagement, analytical reasoning, and problem-solving ability. Likewise, M. Prince, concluded that interactive teaching methods significantly improve critical thinking, collaboration, and creativity in classroom settings.

Studies conducted in Finland and Singapore have also shown that student-centered learning environments foster innovation, independent learning habits, and flexible thinking skills among school students.

The results of this study are also relevant to the educational context of Azerbaijan. Recent educational reforms in the country have emphasized competence-based curricula, learner-centred teaching, and the integration of modern pedagogical technologies. Research by Azerbaijani scholars has noted that interactive teaching methods positively influence students' motivation, communication skills, and academic achievement, particularly when teachers effectively manage classroom participation and collaborative learning tasks. Therefore, the present findings support ongoing national efforts to modernize teaching practices in secondary education.

At the same time, the study revealed that many students believe teachers still rely on conventional and repetitive lesson formats. Nearly half of the surveyed students reported that creative methods are not sufficiently applied during lessons. This suggests that although active learning is recognized in theory, its practical implementation remains inconsistent. Similar challenges have been documented in other countries undergoing educational transition, where teachers may support innovation conceptually but experience difficulties in classroom application because of limited training, time constraints, overcrowded classes, or insufficient teaching resources.

Teachers participating in this study also acknowledged that the effectiveness of active learning depends not only on the method itself but also on external factors such as the teacher's professional competence, school climate, and classroom environment. This finding corresponds with the studies in the United Kingdom and Canada, where researchers found that teacher preparedness and institutional support are decisive variables in successful creative pedagogy. Without these conditions, even well-designed active learning strategies may produce limited outcomes.

Another important finding concerns the group of students who reported low interest or no change resulting from active learning methods. This indicates that a single teaching strategy cannot meet the needs of all learners. International literature similarly emphasizes the need for differentiated instruction, whereby teachers adapt methods according to students' learning styles, motivation levels, and socio-cultural backgrounds. In the Azerbaijani

context, this may require more flexible lesson planning and broader use of digital tools, project-based tasks, and inclusive group activities.

Overall, the study confirms that active learning methods are effective instruments for revealing students' creative potential, but their success depends on systematic teacher training, continuous methodological support, and a stimulating educational environment. For Azerbaijan, strengthening teachers' professional development and expanding innovative classroom practices may significantly enhance students' creativity, critical thinking, and readiness for future academic and professional challenges.

Conclusion

The results of this study indicate that active learning methods are an effective instrument for developing students' creative and critical thinking skills and for revealing their creative potential. Strategies such as group work, debates, brainstorming, role-play, and problem-based tasks encourage students to participate actively in the learning process, express original ideas, and develop independent thinking abilities. Therefore, active learning should be regarded as one of the key pedagogical approaches within modern educational systems.

At the same time, the findings demonstrate that the successful and high-quality implementation of these methods depends largely on teachers' professional competence, methodological readiness, and the overall educational environment. Where teachers rely mainly on traditional teaching approaches, the opportunities for creativity development may remain limited. Consequently, continuous teacher training, improved classroom resources, and supportive school leadership are essential for maximizing the benefits of active learning practices.

From a practical perspective, the results of this research may be used by educational institutions, school administrators, curriculum developers, and policymakers in Azerbaijan. The findings can support the design of teacher professional development programmes focused on innovative teaching strategies, the integration of learner-centred methods into school curricula, and the preparation of methodological guidelines for secondary schools. In addition, universities responsible for teacher education may use these results to strengthen future teachers' competencies in creativity-oriented pedagogy.

The study also provides useful implications for the modernization of general education in Azerbaijan, particularly in relation to competence-based reforms and the development of 21st-century skills. Expanding the use of active learning methods may contribute not only to higher academic achievement but also to stronger communication, collaboration, leadership, and problem-solving abilities among students.

For future research in Azerbaijan, several directions are recommended. First, broader large-scale studies involving different regions and school types should be conducted to obtain more representative national data. Second, comparative studies between urban and rural schools may help identify contextual differences in the implementation of active learning. Third, longitudinal research is needed to examine the long-term effects of active learning on students' creativity and academic performance. Fourth, future studies may investigate the role of digital technologies, artificial intelligence tools, and blended learning environments in enhancing creative potential through active methodologies.

In conclusion, active learning methods possess substantial educational value, but their effectiveness requires systematic institutional support, teacher preparedness, and continuous innovation. Strengthening these areas can significantly contribute to the development of creative, independent, and future-ready students in Azerbaijan.

Abstract: The purpose of this study is to investigate the manifestation of students' creative potential through active learning methods in Azerbaijan. In contemporary pedagogy, the development of creative and critical thinking skills is essential for the education of gifted children. The study involved 85 students and 77 teachers, and the impact of active learning methods such as debates, role-playing games, and brainstorming on creativity was evaluated through surveys. The results indicate that although active learning methods generally have a positive effect, there are certain challenges in implementation and insufficient teacher preparedness. Therefore, it is considered crucial to enhance teachers' professionalism and optimize the educational environment in the future.

Keywords: creative potential, education in Azerbaijan, interactive learning, student development, gifted children

Streszczenie: Celem niniejszego badania jest analiza ujawniania się potencjału twórczego uczniów poprzez zastosowanie aktywnych metod nauczania w Azerbejdżanie. We współczesnej pedagogice rozwijanie umiejętności twórczego i krytycznego myślenia stanowi istotny element kształcenia dzieci zdolnych. W badaniu uczestniczyło 85 uczniów oraz 77 nauczycieli, a wpływ aktywnych metod nauczania, takich jak debaty, gry fabularne oraz burza mózgów, na rozwój kreatywności oceniano za pomocą ankiet. Wyniki badań wskazują, że choć aktywne metody nauczania mają na ogół pozytywny wpływ, istnieją pewne trudności w ich wdrażaniu oraz niewystarczające przygotowanie nauczycieli. W związku z tym za kluczowe uznaje się podnoszenie profesjonalizmu nauczycieli oraz optymalizację środowiska edukacyjnego w przyszłości.

Słowa kluczowe: potencjał twórczy; edukacja w Azerbejdżanie; uczenie się interaktywne; rozwój uczniów; dzieci zdolne.

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