Creativity in Innovative Teaching, the Role of Teachers in Integrating Creativity and Critical Thinking Through Technology

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Abstract

Innovative teaching and creativity play a fundamental role in fostering critical thinking and creative skills among students. In alignment with the Sustainable Development Goals, education must implement strategies that encourage exploration, collaboration, and active student engagement. The integration of technology in the teaching process presents a valuable opportunity to enhance instructional effectiveness; however, a significant challenge remains the lack of technological competencies among teachers, particularly in rural areas. This study is grounded in constructivist theory and employs a mixed-methods approach, combining qualitative and quantitative research. To collect relevant data, interviews and focus groups were conducted with teachers and students, while surveys were administered to 784 students and 70 teachers from urban and rural schools in Tirana. To ensure the reliability and validity of the research instruments, the questionnaires were piloted with 50 pre-service teaching students. The results indicate that creative teaching methods and technology integration positively impact student engagement and the development of critical thinking skills. However, a considerable number of teachers face challenges in incorporating technology into their teaching practices. Therefore, it is recommended that continuous professional development programs be implemented for teachers and that digital platforms be effectively integrated into the education system to enhance teaching and learning quality.

Keywords: Creativity in Teaching, Critical Thinking, Constructivism, Educational Innovation, Sustainable Development (SDG4), Technology in Education

INTRODUCTION

In the era of globalization and advanced technology, education requires new approaches to equip individuals with creative skills and critical thinking, which are essential for both academic and professional success. Innovative teaching is not merely a modern pedagogical approach but a necessity for enhancing the quality of education and preparing new generations for the challenges of the 21st century. Creativity in teaching directly influences how students perceive and assimilate knowledge, while critical thinking enables them to analyze, evaluate, and solve problems effectively.

However, one of the main challenges in the education system is that many teachers still rely on traditional teaching methods, which often fail to stimulate creativity and independent thinking among students. Furthermore, although technology is transforming the learning process, not all teachers are adequately prepared to fully utilize technological advancements in their teaching. This gap between students' technological skills and teachers' preparedness to integrate these tools pedagogically creates a significant challenge.

This study examines the role of teachers in integrating creativity and critical thinking into teaching while also exploring the impact of innovative methods and technology on the learning process. Through a combination of quantitative and qualitative methods, this research investigates teachers' and students' perceptions of this approach and proposes strategies to improve the implementation of creative methodologies in the educational curriculum. The study's findings aim to contribute to the development of more effective pedagogical practices, helping teachers integrate innovation into teaching to foster a more dynamic and enriching learning environment.

THEORETICAL FRAMEWORK

Creativity and critical thinking in teaching are two fundamental components of education that contribute to shaping individuals into independent and innovative thinkers. These skills are essential for addressing the challenges of the 21st century, as they influence how students process information and construct new knowledge. Innovative teaching relies on various pedagogical methods, including active learning techniques, the use of language games, and technology as tools to foster exploration and creativity.

Teaching plays a crucial role in developing an education system that supports global sustainable development, in alignment with the United Nations' Sustainable Development Goals. In this context, innovative teaching methods facilitate the development of critical and creative thinking as cognitive processes.

According to Paul & Elder ([2002](#)), critical thinking, although a cognitive process, enables individuals to analyze, reason, and evaluate information before making decisions and generating new ideas. On the other hand, Runco & Jaeger ([2012](#)) emphasize that creative thinking allows individuals to develop innovative ideas and solutions to problems, highlighting that while creativity is associated with idea generation, innovation relates to the implementation and dissemination of these ideas in society. These two processes are supported by constructivist learning strategies, where students actively engage in building their knowledge through exploration, experimentation, and interaction.

Piaget ([1952](#)) asserts that children construct knowledge through experiences and active exploration, whereas Vygotsky ([1978](#)) emphasizes the role of social interaction in learning. Bruner ([1996](#)) further developed this approach, stressing that effective teaching should be interactive and stimulate students' curiosity. In line with his constructivist theory, Bruner argues that students should be actively involved in constructing their own

knowledge by exploring and experimenting with concepts rather than passively memorizing them. Constructivism supports the development of creative skills, critical thinking, and communication in teaching and learning.

According to Jonassen (2011), constructivist strategies include teaching through discovery learning, project-based activities, and group work, all of which contribute to the development of critical and creative thinking. He emphasizes that cognitive and technological support helps students structure and solve problems effectively, arguing that when teachers implement constructivist-based techniques, they provide a deeper learning experience that prepares students for real-world situations.

Innovative teaching is a process that relies on various pedagogical methods, including active learning techniques, the use of language games, and technology as tools to foster exploration and creativity (Tahiri, 2021). Meanwhile, Hargreaves & Fullan (2012) highlight that fostering an open environment for discussion and problem-solving enhances critical and creative thinking skills. They argue that a successful education system requires investment in teachers' professional development and the cultivation of a collaborative culture, which is supported by three main forms of capital: human capital, referring to teachers' skills and individual preparation; social capital, emphasizing the importance of collaboration among colleagues; and decision-making capital, which involves the ability to make informed decisions based on experience and academic research.

Facione (1990) emphasizes the importance of integrating critical thinking into educational curricula, highlighting its essential role in preparing individuals who can independently analyze, evaluate, and interpret information. Furthermore, Facione (2011) states that creative or innovative thinking is the type of thinking that leads to new knowledge, new approaches, new perspectives, and entirely new ways of understanding and conceptualizing things, allowing individuals to perceive the world from a different perspective.

In this context, the focus is placed on active teaching methods, the role of the native language, and language-based games, which not only foster the development of critical and creative thinking by creating a rich learning environment but also enhance students' linguistic and analytical skills. Through these games, students learn to collaborate, respect different viewpoints, and develop civic and human values.

A significant study by UNESCO (2016) indicates that the use of the mother tongue can enhance student engagement in the learning process, providing opportunities for deeper comprehension and the application of knowledge in local contexts.

According to the legal framework and strategic documents, such as the National Strategy (2021–2026), the Pre-University Curriculum Framework (2014 and 2015), Law No. 69, dated 21.06.2012, on Pre-University Education, and the teaching plans (AMU & AML) developed by the Ministry of Education and Sports, the importance of the mother tongue is emphasized as a fundamental tool for transmitting knowledge and fostering a stronger connection between students and their surrounding environment.

Tahiri & Hadaj ([2022](#)) focus on the impact of mother tongue instruction on the development of linguistic skills, communicative competencies, and the enrichment of children's vocabulary. This approach is essential for preparing individuals capable of navigating the complexities of modern society and contributing to a sustainable future.

The Role of Communication in Teaching; Communication is a fundamental factor in the teaching process, influencing not only the transmission of messages but also how they are received and understood by students. To illustrate the importance of clear and empathetic communication, a well-known philosophical folk story tells:

"*When two people are angry with each other, their hearts grow distant. To bridge this distance and hear one another, they must shout. The angrier they become, the farther apart they move, and the louder they must shout to be heard. However, when two people love each other, they do not shout; instead, they speak gently because their hearts are close together.*"

This illustrates that the approach to communication is essential in teaching, as empathetic and calm communication helps create a positive learning environment and strengthens the bond between teachers and students. Pedagogical studies show that teachers who use mindful and emotionally controlled communication improve not only classroom discipline but also student motivation and engagement (Goleman, [1995](#)).

According to UNICEF ([2018](#)), the importance of inclusive education is emphasized, aiming to eliminate barriers that limit learning and participation. The pandemic highlighted the issues of passive learning and the loss of emotional connection with students. The Belgian psychologist Eric De Corte suggests four key learning principles: Constructivism, Self-Regulation, Contextualization, and Collaboration, which support the integration of technology and innovation in the educational process.

Despite the increasing use of innovative methods, a significant challenge remains teachers' familiarity with technology, which directly affects their ability to effectively integrate digital tools into teaching. Students, especially those in urban areas, are often more advanced in using technology than their teachers (Prensky, [2001](#)). This creates a digital gap that can impact the effectiveness of teaching.

The gradual integration of digital tools such as distance learning, interactive platforms, and the use of artificial intelligence in education is transforming the way the learning process unfolds (Selwyn, [2016](#)).

Neil Selwyn, in his book *Is Technology Good for Education?* ([2016](#)), analyzes the impact of technology on the education system, examining both its benefits and challenges. The author argues that while technology promises to enhance teaching and learning, it often fails to meet expectations due to factors such as unequal access, educational policies, and the way technology is integrated into teaching practices. Selwyn emphasizes the importance of adopting a critical approach to the use of technology in education, considering its long-term impact on students, teachers, and the education system as a whole.

Tahiri ([2021](#)) emphasizes that the integration of technology in teaching enhances innovative education by creating new opportunities to foster creativity and interactive learning. The study argues that the effective use of

technology can help personalize the learning process and improve student engagement. Mayer ([2005](#)) highlights that multimedia learning is more effective when information is presented in a balanced way through visual and verbal channels, supporting the cognitive theory of multimedia learning. Furthermore, Mayer emphasizes that the use of innovative communication methods, such as technology and digital platforms, influences how students learn and interact with educational content.

According to recent studies, the use of technological tools such as virtual simulations and artificial intelligence for personalized learning can improve students' academic performance. Chen et al. ([2020](#)) emphasize the importance of artificial intelligence (AI) in education, analyzing its applications and effects on educational administration, the teaching process, and learning.

UNESCO ([2019](#)) highlights that AI is a developing technological field with the potential to change every aspect of social interactions. In education, AI has begun to introduce new solutions for teaching and learning, creating both opportunities and challenges in educational policies. García-Martínez et al. ([2023](#)) examine the impact of artificial intelligence and computer sciences on student performance. The results show that integrating AI and computer sciences into the learning process has a positive impact, increasing students' motivation and engagement in learning.

METHOD

This study follows a mixed-methods approach, combining qualitative and quantitative methods to provide a comprehensive analysis of the impact of creativity on innovative teaching and the role of teachers in integrating creativity and critical thinking. The study is based on constructivist theory and includes an analysis of foreign literature and documents from the Ministry of Education and Sports.

Research Methods

Qualitative methods utilized include semi-structured interviews with teachers to analyze pedagogical practices and approaches to innovative methods. Analysis of teaching materials to assess the integration of technology in the teaching process. Focus groups with students to understand their perceptions and experiences regarding creativity in learning.

Quantitative methods utilized include structured surveys with 784 students and 70 teachers from urban and rural schools in Tirana. Statistical analysis of collected data, using descriptive methods (%) to interpret results in tables.

Data Collection Instruments

Questionnaires: Structured and semi-structured, including multiple-choice questions and rating scales. These focus on the effectiveness of teaching methods, the impact of innovative approaches on critical thinking, and the importance of technology in education.

Interviews and focus groups: Conducted with a selected group of teachers and students for a deeper analysis of their experiences.

Validity and Reliability of Data

Questionnaires were piloted with 50 education students to assess question clarity and make necessary adjustments. Interviews and focus groups were documented and transcribed for a more accurate content analysis.

Study Limitations

Despite efforts for a comprehensive analysis, this study has certain limitations: (i) The sample includes only schools from Tirana, limiting the generalizability of results at the national level, (ii) Participants' responses may be influenced by subjective perceptions, especially in self-reported questionnaires, and (iii) Limited time and resources prevented the inclusion of a broader sample from other regions of Albania.

RESULTS AND DISCUSSION

Results

Teacher survey results

Based on the survey results with teachers, Table 1 and Figure 1 provide key conclusions regarding the use of creativity and technology in innovative teaching.

Table 1. Survey results table for teachers.

| Questions	Always (%)	Often (%)	Sometimes (%)	Rarely (%)	Never (%)
1. How often do you use innovative and creative methods in teaching?	13%	52%	21%	12%	2%
2. Do you use creative methods, and which ones do you use most often?	25%	24%	20%	16%	15%
3. Do you think creativity improves student outcomes?	13%	52%	21%	12%	2%
4. How often do you use technology in teaching?	14%	21%	39%	11%	15%
5. Do you think students are more skilled in using technology than teachers?	13%	52%	21%	12%	2%
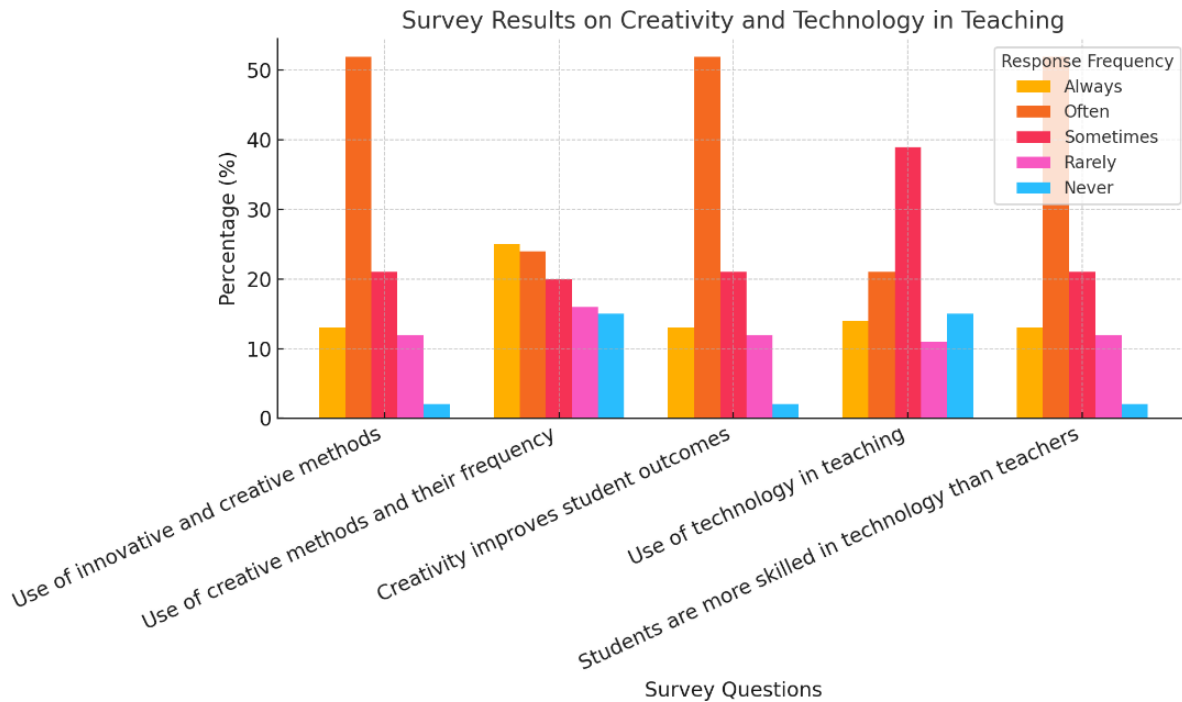
Figure 1. Chart of survey results for teachers.

Question 1. Use of innovative and creative methods.

52% of teachers report that they often use innovative and creative methods in teaching, while 13% use them always. This indicates that the majority of teachers have a strong tendency to implement new strategies in teaching. However, there is still room for improvement, as 33% of teachers use these methods only occasionally or rarely.

Question 2. Most commonly used creative methods.

Project-based learning (25%) and debates/discussions (24%) are the most preferred methods, showing that teachers prioritize activities that actively engage students. The use of games in teaching (20%) and technology (16%) is lower, suggesting a need for additional training or resources to integrate these methods more effectively. 15% of teachers mentioned other methods, reflecting a diverse approach to creative teaching.

Question 3. How often do you use technology in teaching?

Only 14% of teachers report that they always use technology in the teaching process, while 21% use it often. 39% use it occasionally, suggesting partial integration of technology and possibly a lack of necessary tools or skills for continuous implementation. 17% of teachers (11% rarely and 6% never) do not use technology in teaching, indicating significant room for improvement in the digitalization of the educational process.

Question 4. Do you think students are more proficient in using technology than teachers?

52% of teachers believe that students are often more proficient in using technology than they are, while 13% think this is always the case. Only 12% believe this happens rarely or never, showing a general perception that students have stronger digital skills compared to their teachers. This highlights the need for more training for teachers in technology to ensure they are well-prepared to use digital tools effectively in teaching.

Question 5. Do you think creativity impacts students' academic performance?

52% of teachers believe that creativity often has a positive impact on students' academic performance, while 13% think it always plays a significant role. Only a small percentage (12%) of teachers report that creativity has little or no effect. These results indicate a strong awareness of the importance of creativity in students' academic development.

Table 2. Challenges and suggestions from teachers.

Main Challenges in Implementing Innovative Methods	Key Barriers to Using Technology in Teaching	Suggestions for Improvement
Lack of training	Lack of equipment	More training for teachers
Lack of didactic tools	Lack of technological knowledge	Greater institutional support
Lack of institutional support	Lack of internet access	More advanced equipment in schools

Most teachers frequently use innovative methods, but there is still a need for greater involvement of all educators in this process. Project-based learning and debates are the most commonly used strategies, while technology and games could be further integrated. The use of technology remains limited, with a high percentage of teachers using it only occasionally or rarely. Students are perceived as more proficient in technology than teachers, highlighting the need for additional training for educators. Teachers recognize creativity as a key factor in improving student outcomes, emphasizing the need for policies that support a more creative approach within the education system.

Student survey results

Based on the survey results from students, Table 3 and Figure 2 allow us to draw key conclusions regarding the use of creativity and technology in innovative teaching.

Table 3. Student survey results.

Questions	Always (%)	Often (%)	Sometimes (%)	Rarely (%)	Never (%)
1. Do you like when the lesson is conducted	63%	30%	7%	0%	0%

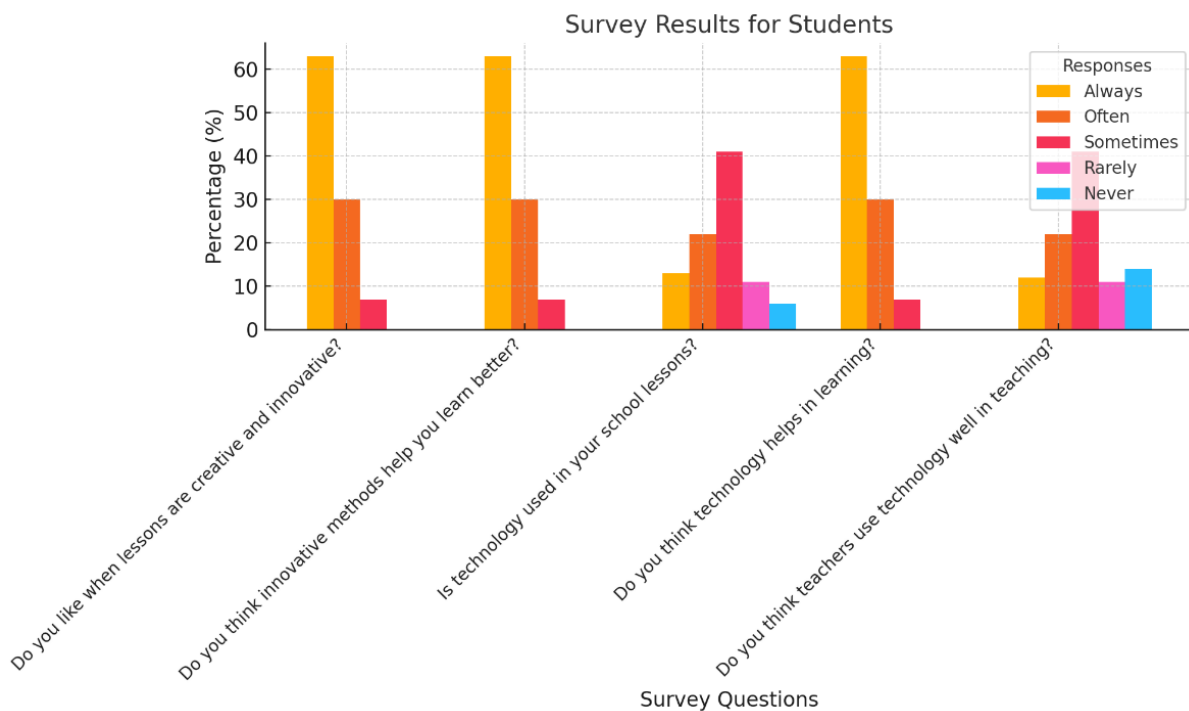|					
creatively and innovatively?					
2. Do you think innovative methods help you learn better?	63%	30%	7%	0%	0%
3. Is technology used in your school lessons?	13%	22%	41%	11%	6%
4. Do you think technology helps in learning?	63%	30%	7%	0%	0%
5. Do you think teachers know how to use technology well in teaching?	12%	22%	41%	11%	14%

Figure 2. Graph of student survey results.

The student survey results indicate a strong preference for creative and innovative methods in the learning process. Below is a detailed analysis of each question:

Question 1. Do you like when lessons are conducted in a creative and innovative way?

63% of students responded "Always," while 30% chose "Often." Only 7% selected "Sometimes," and no student expressed a lack of interest in creative teaching. These results suggest that creativity in teaching is well-received and positively influences student engagement.

Question 2. Do you think innovative methods help you learn better?

The results are identical to the first question:63% responded "Always," 30% chose "Often," 7% selected "Sometimes." This indicates that students not only enjoy creativity in teaching but also find it beneficial for knowledge acquisition.

Question 3. Is technology used in your school's lessons?

Only 13% of students stated that technology is "Always" used in teaching, while 22% said "Often." The highest percentage (41%) selected "Sometimes," suggesting that technology is not consistently integrated into the learning process. Additionally, 11% responded "Rarely," and 6% said "Never," highlighting that there is still room for improvement in this area.

Question 4. Do you think technology helps in learning?

The results are the same as for creativity in teaching: 63% answered "Always," 30% "Often," and 7% "Sometimes." This suggests that students consider technology a highly valuable tool for learning.

Question 5. Do you think teachers know how to use technology effectively in teaching?

Only 12% of students chose "Always," while 22% answered "Often." The highest percentage (41%) selected "Sometimes," while 11% chose "Rarely" and 6% "Never," indicating a lack of confidence in teachers' technological skills. These results highlight the need for further teacher training in the use of technology in the classroom.

Table 4. Student preferences and suggestions.

Areas where Students Want more Technology	Most Effective Teaching Methods for Students	Suggestions for more Innovative Learning
Visual presentations	Games and hands-on activities	Increased use of technology
Educational games and apps	Group projects and teamwork	Learning through experiments
Virtual experiments	Debates and discussions	Stronger connections to real-life situations
	Use of technology	More creative activities
Areas Where Students Want More Technology	Most Effective Teaching Methods for Students	Suggestions for More Innovative Learning

Students highly value creative and innovative learning. Technology is seen as an essential tool for learning, but it is not always present in the classroom. There is a gap between students' expectations and teachers' technological skills, suggesting the need for investments in training and technological equipment in schools.

Discussion

How does teacher creativity influence student learning?

The analysis of how teacher creativity affects student knowledge acquisition confirms that creativity plays a crucial role in the learning process. It helps engage students more effectively and enhances their ability to retain knowledge. Innovative methods such as learning through games, projects, and debates create a dynamic environment where students develop critical and analytical skills. According to the collected data, 65% of teachers report that creative teaching methods positively impact student outcomes, while *93% of students* express a preference for innovative learning approaches.

Are there significant differences between teacher and student perceptions?

The data reveals a *notable gap* between teacher and student perceptions regarding creativity and technology in teaching. While 52% of teachers believe they frequently use innovative methods, only 38% of students perceive this as true. Similarly, in terms of technology use, 43% of teachers report regular integration of technology, whereas only 35% of students feel it is sufficiently incorporated into the learning process. These findings suggest a disconnect between teacher. practices and student expectations, highlighting the need for more alignment in teaching methods.

CONCLUSIONS AND SUGGESTIONS

Conclusions

This study demonstrates that integrating creativity and critical thinking in teaching enhances students' analytical and creative skills, preparing them for academic and professional challenges. The use of innovative methods and modern technology increases engagement and interactivity in the learning process. However, their implementation faces challenges due to a lack of training and necessary infrastructure.

Innovative teaching, supported by constructivist strategies and digital technology, enables a more effective learning approach by fostering critical thinking and creative problem-solving. Furthermore, the inclusion of pedagogical techniques such as debates and case study analysis helps students develop diverse perspectives and advanced thinking skills.

Despite the potential of technology in education, many teachers struggle to integrate it, primarily due to insufficient training, limited access to devices, and a fragmented institutional approach. To overcome these challenges, a more structured and policy-supported strategy is needed.

Key challenges
- Lack of continuous training for teachers on innovative methodologies and the use of technology in education.
- Limited access to devices and the internet, especially in rural areas, creating inequalities in education.

- Resistance to change and lack of institutional support for integrating technology into teaching.
- Shortage of digital materials, restricting opportunities for personalized learning.
- Disparities in technological skills between teachers and students, affecting the effectiveness of innovative teaching methods.

Recommendations

- Continuous teacher training on innovative methodologies and the effective use of technology in education.
- Development and distribution of digital materials to support more personalized learning.
- Ensuring access to devices and the internet for all students and teachers to eliminate educational inequalities.
- Utilization of digital platforms and educational applications to enhance interactivity and teaching efficiency.
- Integration of creative methods into curricula, such as debates, problem-solving, and case study analysis.
- Institutional support and educational policies that promote innovation and technology in teaching.

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