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Pedagogical Strategies for the Development of Critical and Reflective Thinking in Students

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Summary

This article discusses the importance of developing critical and reflective thinking in students, in the context of 21st century education. The research, of a bibliographic and qualitative nature, is based on learning theories, such as constructivism and meaningful learning, and on educational theories, such as differentiated pedagogy and self-directed learning. Points out the need to break with the traditional teaching model and presents pedagogical strategies to promote critical and reflective thinking, such as Problem and Project Based Learning (ABP/PBL), structured debates and discussions, critical analysis of texts and Socratic questioning . The study highlights the potential of these strategies for developing essential skills for the 21st century, such as autonomy, problem solving, decision-making and creativity. Furthermore, it discusses the challenges and opportunities of implementing these strategies on a large scale, emphasizing the need for investments in teacher training and adaptation of school infrastructure.

Key words:critical thinking, reflective thinking, pedagogical strategies, problem-based learning, project-based learning.

Abstract

This article discusses the importance of developing critical and reflective thinking in students in the context of 21st-century education. The research, of a bibliographic and qualitative nature, is based on learning theories, such as constructivism and meaningful learning, and educational theories, such as differentiated pedagogy and self-directed learning. It points to the need to break away from the traditional teaching model and presents pedagogical strategies to promote critical and reflective thinking, such as Problem-Based and Project-Based Learning (PBL), structured debates and discussions, critical analysis of texts, and Socratic questioning. The study highlights the potential of these strategies for developing essential skills for the 21st century, such as autonomy, problem-solving, decision-making, and creativity. Furthermore, it discusses the challenges and opportunities of implementing these strategies on a large scale, highlighting the need for investments in teacher training and adaptation of school infrastructure.

Keywords:critical thinking, reflective thinking, pedagogical strategies, problem-based learning, project-based learning.

1. Introduction

Education in the 21st century faces the challenge of preparing students for a world in constant transformation, marked by globalization, accelerated technological advancement and the growing need for adaptation. In this scenario, the traditional teaching model, characterized by the standardized transmission of information and the lack of attention to students' individualities, has shown itself to be increasingly inadequate and ineffective. The need for a more personalized education, which takes into account the particularities of each student, has become increasingly evident, both in academic discourse and in educational policies. nationals.

The personalization of teaching emerges as a response to this demand for more individualized and relevant education for each student. This approach, which contrasts with the traditional "one size fits all" model, seeks to adapt the teaching-learning process to the needs, interests and individual characteristics of each student, maximizing their learning and development potential. Personalizing teaching is not just about offering different activities and resources for each student, but rather about creating a learning environment that respects and values each student's individuality, providing them with opportunities to explore their interests, develop their skills and to build your own knowledge

cement.

Educational technologies, in turn, play a fundamental role in this process of personalizing teaching. Tools such as adaptive platforms, intelligent tutoring systems, virtual reality, augmented reality and gamification offer a range of possibilities to adapt teaching to the individual needs of each student. These technologies, as Moran (2015) and Horn and Staker (2015) state, allow students to learn at their own pace, explore their interests, receive individualized feedback, and have access to resources and activities that meet their specific needs. Furthermore, educational technologies can facilitate communication and collaboration between students and teachers, creating a more interactive and engaging learning environment, as highlighted by Papert (1980) in his theory of constructionism.

This article aims to analyze the relationship between the personalization of teaching and educational technologies, exploring the theories that underlie this approach and the practices that make it possible. To this end, qualitative bibliographical research will be carried out, based on scientific articles, books and other relevant sources, which address the topic of personalization of teaching and educational technologies. The research will seek to identify the main theories and authors that support the personalization of teaching, such as the constructivism of Piaget (1970) and Vygotsky (1978), the meaningful learning of Ausubel (1968) and the theory of multiple intelligences of Gardner (1983). The educational technologies most used to personalize teaching will be analyzed, such as adaptive platforms, intelligent tutoring systems, virtual reality, augmented reality and gamification, and their impacts on student learning.

The relevance of this study lies in the need to understand how the personalization of teaching, mediated by educational technologies, can contribute to improving the quality of education and to the development of essential skills for the 21st century, such as critical thinking, creativity, collaboration and communication. As Griffin and Care (2012) state, “personalizing instruction can help students develop the skills and knowledge they need to succeed in school, work, and life.” Furthermore, personalizing education can promote equity and inclusion, by ensuring that all students have access to quality education, adapted to their needs and potential.

However, implementing teaching personalization on a large scale is not an easy task. There are significant challenges to be overcome, such as the lack of technological infrastructure in many schools, the need for teacher training to use educational technologies and resistance to change on the part of some educators and managers. Furthermore, the personalization of teaching requires a significant investment in human and financial resources, which can be an obstacle to its large-scale implementation, as shown by studies by Bray and McClaskey (2017) and Pane et al. (2017).

Despite the challenges, the personalization of teaching mediated by educational technologies has enormous potential to transform education and prepare students for the future. By offering more individualized, engaging and relevant teaching, personalization can contribute to the development of students who are more autonomous, creative and prepared for the challenges of the 21st century. This article seeks to contribute to the debate on the personalization of teaching and educational technologies, offering a critical and reflective analysis on the topic, based on a solid theoretical framework and empirical evidence. The research seeks to provide support for the formulation of public policies and pedagogical practices that promote a more equitable, inclusive and effective education, which prepares students for the challenges of the 21st century and which contributes to the construction of a more just and sustainable society.

2. Critical Thinking: Definitions and Characteristics

Critical thinking, like a beacon that illuminates the path of learning, transcends the mere passive absorption of information, encouraging the individual to question, analyze and build their own knowledge.
ment. According to Paul and Elder (2006), critical thinking is the ability to analyze information in a
rational and logical, questioning premises, identifying biases and developing consistent arguments.
This is not a mere negative criticism, but rather a deep and careful analysis, which seeks the truth
through reason and evidence.

Facione (2011) complements this definition, highlighting that critical thinking is the “key to intellectual autonomy”, as it allows the individual to evaluate information independently, without being carried away by other people's opinions or by false or biased information. The critical thinker is able to discern between reliable and unreliable sources, identify fallacious arguments and construct logical and coherent reasoning. He is not satisfied with superficial answers, but seeks knowledge in depth, questioning

the status quo and challenging preconceived ideas.

Critical thinking is not an innate gift, but rather a skill that can be developed and improved throughout life. Ennis (1985) identifies several components of critical thinking, such as clarity, precision, relevance, depth, breadth, logic and impartiality. The critical thinker seeks clarity in communication, avoiding ambiguities and inaccuracies. He is concerned with the relevance of information, seeking those that are relevant to the problem in question. He seeks depth in analysis, going beyond appearances and investigating the causes and consequences of phenomena. He seeks breadth of understanding, considering different perspectives and points of view. He seeks logic in argumentation, building coherent and consistent reasoning. And he seeks impartiality in the evaluation, avoiding prejudices and hasty judgments.

The development of critical thinking is essential for the formation of conscious and engaged citizens, capable of making informed decisions and actively participating in social and political life. In an increasingly complex and pluralistic society, critical thinking becomes an indispensable tool to navigate the sea of conflicting information and opinions, to identify the problems and challenges we face and to seek creative and effective solutions.

Reflective thinking, in turn, is a process of introspection and self-analysis, which invites the individual to examine their own experiences, beliefs and values. Schön (1983) describes reflection as a process of "thinking about one's own thinking", which allows the individual to learn from their mistakes and successes, adjust their strategies and improve their practice. Reflection is not a mere memory exercise, but rather an active process of constructing meaning, which involves the critical analysis of one's own experience and the search for new ways of thinking and acting.

Dewey (1933) reinforces this idea, stating that "reflection is the heart of learning", as it is through reflection that the individual transforms information into personal and applicable knowledge. Reflection is not limited to the academic sphere, but extends to all areas of life. By reflecting on their everyday experiences, individuals can develop skills such as problem solving, decision making and conflict management. Reflection is also a powerful tool for self-knowledge, allowing the individual to identify their values, interests, strengths and weaknesses.

Reflective thinking, like a river that flows and transforms over time, is a continuous and dynamic process, which feeds on experience and interaction with the world. By reflecting on their actions and their results, the individual can identify patterns of behavior, recognize their mistakes and successes, and learn from their experiences, as stated by Schön (1983) in his seminal work "The Reflective Practitioner". Reflection is not a mere act of passive introspection, but rather an active process of self-questioning and self-transformation, which allows the individual to construct meaning from their experiences and adjust their future actions.

Dewey (1933), in his work "How We Think", highlights the importance of reflection for learning, stating that "reflection is the type of thinking that consists of going back over an experience and reliving it in the imagination, in order to discover its meaning." When reflecting on their experiences, the individual not only remembers them, but reinterprets them, seeking new perspectives and insights that can enrich their understanding of the world and themselves. Reflection also allows the individual to question their beliefs and values, opening themselves up to new perspectives and possibilities, as Mezirow (1991) emphasizes in his theory of transformative learning.

Critical and reflective thinking, like two sides of the same coin, are complementary and interdependent skills, which strengthen each other. Critical thinking, with its emphasis on objective analysis and evaluation of information, provides the tools to dissect ideas, question assumptions, and construct solid arguments. Reflective thinking, in turn, with its emphasis on introspection and self-questioning, allows the individual to evaluate their own learning, identify their strengths and weaknesses, and adjust your strategies accordingly. Together, they form a virtuous learning cycle, in which analysis Criticism fuels reflection and reflection enhances critical analysis, boosting the individual's intellectual and personal development.

The interdependence between critical and reflective thinking is evident in several areas of knowledge and everyday life. For example, a scientist carrying out an experiment may use critical thinking to analyze the collected data and draw conclusions, and reflective thinking to evaluate the experiment's design, identify possible flaws, and plan further investigations. A professional faced with an ethical dilemma can use critical thinking to analyze different options and their consequences, and reflective thinking to consider their own values and moral principles when making a decision.

In short, critical and reflective thinking are essential skills for the 21st century, where Information is abundant and misinformation is a constant danger. As Facione (2011) states, "critical thinking is the key to intellectual autonomy", as it allows the individual to evaluate information independently and make informed decisions. Reflective thinking, in turn, is essential for continuous learning and personal development, as it allows the individual to learn from their experiences, question their beliefs and build a sense of identity and purpose. By developing these skills, the individual becomes more autonomous, more capable of learning throughout life and contributing to the construction of a more fair, democratic and sustainable society.

3. Importance for Learning and Development

The development of critical and reflective thinking is a fundamental foundation for the formation of autonomous individuals, capable of deftly navigating life's challenges, continually learning, making informed decisions and actively contributing to society. Autonomy, as Piaget (1970) emphasizes, transcends mere independence, being the ability to think and act for oneself, in a responsible and conscious way. Critical and reflective thinking are indispensable tools for achieving this autonomy, as they enable individuals to question the status quo, seek reliable information and form their own opinions, instead of simply passively accepting what is presented to them.

Problem solving, a crucial skill in many areas of life, also benefits from critical and reflective thinking. Polya (1945) outlines a four-step problem-solving process: understand the problem, develop a plan, execute the plan, and verify the solution. Critical thinking, with its emphasis on analysis and evaluation, helps to deeply understand the problem, identifying its causes and nuances. Reflective thinking, with its capacity for self-analysis and learning from experience, allows you to evaluate the effectiveness of the plan and identify possible flaws or opportunities for improvement. This combination of critical analysis and reflection enables a more comprehensive and effective approach to problem solving, leading to more creative and lasting solutions.

Decision-making, a complex and often challenging process, also benefits from the interaction between critical and reflective thinking. Kahneman (2011) highlights the importance of considering both fast, intuitive and emotional thinking, as well as slow, analytical and rational thinking, when making decisions. Critical thinking, by analyzing the available information and evaluating different options, helps to avoid impulsive decisions based on cognitive biases. Reflective thinking, in turn, allows the individual to consider their own values and emotions, ensuring that the decision made is consistent with their principles and life goals.

Creativity, the ability to generate new ideas and innovative solutions, is another fruit of critical and reflective thinking. By questioning the obvious, seeking new perspectives and combining information in an original way, critical and reflective thinking encourages the mind to think outside the box and find creative solutions to challenges. Guilford (1950) proposes a model of the structure of the intellect that includes creativity as one of the fundamental cognitive abilities, alongside convergent thinking (which seeks the correct answer) and divergent thinking (which seeks multiple solutions). Critical and reflective thinking, by promoting the analysis, synthesis and evaluation of information, contributes to the development of both convergent and divergent thinking, expanding the individual's creative potential.

Critical and reflective thinking are powerful tools that enable the individual to learn, solve problems, make decisions and create. By cultivating these skills, the individual becomes more autonomous, more aware of themselves and the world around them, and more capable of contributing to the construction of a more just, democratic and prosperous society. Education that values the development of critical and reflective thinking not only prepares the individual for academic and professional success, but also the team for life, for the challenges and opportunities it presents.

4. Pedagogical Strategies to Promote Critical and Reflective Thinking:

4.1 Problem and Project Based Learning (ABP/PBL)

Problem-Based Learning (PBL) and Project-Based Learning (PBL), as active teaching methodologies, emerge as effective alternatives to promote student protagonism and the development of essential skills for the 21st century. According to Schmidt (1983), PBL provides students with the opportunity to learn about a specific topic through the practical experience of solving

a real and relevant problem. This contextualized and challenging approach encourages critical and reflective thinking, as it requires students to analyze information, formulate hypotheses, test solutions and evaluate results, promoting deeper and more meaningful learning.

PBL, in turn, as defined by Blumenfeld et al. (1991), is an approach that encourages collaborative work in small groups to investigate and respond to a complex question, problem or challenge. Throughout the project, students engage in research, planning, execution and evaluation activities, developing skills such as teamwork, communication, research and creative thinking. PBL provides students with the opportunity to apply theoretical knowledge in practical situations, making learning more relevant and meaningful.

Both Problem-Based Learning (PBL) and Project-Based Learning (PBL) share the fundamental premise that learning is more effective when students are actively engaged in the construction of knowledge, as argued by several authors (Schmidt, 1983; Blumenfeld et al., 1991; Torp & Sage, 2002). When faced with real problems and challenges, students are motivated to seek solutions, research, experiment and collaborate with their peers, as highlighted by Jonassen (1999) in his work “Learning with technology: a constructivist guide for the design of teaching". This active learning process, which places the student at the center of the process, encourages the development of critical and reflective thinking, as stated by Brookfield (1987), as it requires students to analyze information critically, question assumptions, identify biases and construct arguments solids.

Furthermore, ABP and PBL provide students with the opportunity to develop essential skills for the job market and life in society, such as teamwork, communication, research and creative thinking. Teamwork, as highlighted by Johnson & Johnson (2009), is fundamental for solving complex problems, which require collaboration and the exchange of ideas between different people. Effective communication, both oral and written, is essential for presenting ideas, defending arguments and persuading others, as stated by Hargreaves and Fullan (2012) in their work “Professional Capital”. Research, in turn, is fundamental to seeking relevant and reliable information, and to building solid knowledge, as highlighted by Bruner (1960) in his theory of discovery learning. Creative thinking, finally, is essential to find innovative solutions to the challenges we face, as stated by Csikszentmihalyi (1996) in his work “Creativity: Flow and the Psychology of Discovery and Invention”.

ABP and PBL, as active teaching methodologies, offer a favorable environment for the development of these skills. By working in teams to solve problems and develop projects, students learn to collaborate, communicate effectively, research, and think creatively. These skills, which are increasingly valued in the job market and in society, prepare students for the challenges of the 21st century, such as globalization, automation and the need for continuous learning.

ABP and PBL are pedagogical strategies that promote student protagonism, the development of critical and reflective thinking and the acquisition of essential skills for the 21st century. By placing the student at the center of the learning process, these approaches make learning more relevant, meaningful and lasting, preparing students for the challenges of the contemporary world. As stated by Darling-Hammond et al. (2008), “project- and problem-based learning is a powerful approach to preparing students for success in college, career, and life.”

4.2 Debates and Structured Discussions

Problem-Based Learning (PBL) and Project-Based Learning (PBL), as active teaching methodologies, emerge as effective alternatives to promote student protagonism and the development of essential skills for the 21st century. According to Schmidt (1983), PBL provides students with the opportunity to learn about a specific topic through the practical experience of solving

a real and relevant problem. This contextualized and challenging approach encourages critical thinking and reflective, as it requires students to analyze information, formulate hypotheses, test solutions and evaluate results, promoting deeper and more meaningful learning.

PBL, in turn, as defined by Blumenfeld et al. (1991), is an approach that encourages working collaboratively in small groups to investigate and respond to a complex question, problem, or challenge. Throughout the project, students engage in research, planning, execution and evaluation activities, developing skills such as teamwork, communication, research and creative thinking. PBL provides students with the opportunity to apply theoretical knowledge in practical situations, making learning more relevant and meaningful.

Both Problem-Based Learning (PBL) and Project-Based Learning Projects (PBL) are based on the fundamental principle that learning is more effective when students are active protagonists in the construction of knowledge, in line with Dewey's (1938) ideas about the importance of experience in learning. When faced with real problems and challenges, students are motivated to seek solutions, research, experiment and collaborate with their peers, as highlighted by Jonassen (1999) in his work "Learning with technology: a constructivist guide for the design of teaching". This active, participatory approach not only increases student engagement and motivation, but also promotes the development of essential cognitive and social-emotional skills for the 21st century.

PBL and PBL, as active teaching methodologies, encourage the development of critical and reflective thinking, as they require students to critically analyze information, question assumptions, identify biases and construct solid arguments. According to Brookfield (1987), critical and reflective thinking are "processes of analyzing and evaluating ideas, beliefs and practices, with the aim of making informed decisions and acting responsibly". In ABP and PBL, students are challenged to analyze complex problems, seek relevant information, evaluate different perspectives and propose creative and effective solutions. This process of analysis and critical reflection contributes to the development of students' intellectual autonomy, enabling them to think for themselves and make informed decisions.

In addition to promoting the development of critical and reflective thinking, ABP and PBL provide students with the opportunity to develop essential skills for the job market and life in society, such as teamwork, communication, research and creative thinking. Teamwork, as highlighted by Johnson & Johnson (2009), is fundamental for solving complex problems, which require collaboration and the exchange of ideas between different people. In ABP and PBL, students work in groups to solve problems and develop projects, learning to cooperate, negotiate, deal with conflicts and value the different perspectives and skills of each team member.

Effective communication, both oral and written, is essential for presenting ideas, defending arguments and persuading others, as stated by Hargreaves and Fullan (2012) in their work "Professional Capital". In ABP and PBL, students have the opportunity to develop their communication skills by presenting their projects, defending their ideas and participating in debates and discussions. Research, in turn, is fundamental to seeking relevant and reliable information, and to building solid knowledge, as highlighted by Bruner (1960) in his theory of discovery learning. In ABP and PBL, students are encouraged to research different sources, evaluate the quality of the information and use it to construct their own arguments and solutions.

Creative thinking, finally, is essential to find innovative solutions to the challenges we face, as stated by Csikszentmihalyi (1996) in his work "Creativity: Flow and the Psychology of Discovery and Invention". ABP and PBL, by challenging students to solve complex problems and develop original projects, stimulate creative thinking, encouraging them to think outside the box, try new ideas and seek innovative solutions.

ABP and PBL are pedagogical strategies that promote student protagonism, the development of critical and reflective thinking and the acquisition of essential skills for the 21st century. By placing the student at the center of the learning process, these approaches make learning more relevant, meaningful and lasting, preparing students for the challenges of the contemporary world. As stated by Darling-Hammond et al. (2008), "project- and problem-based learning is a powerful approach to preparing students for success in college, career, and life."

4.3 Text Analysis and Information Sources

Critical analysis of texts and information sources is a fundamental pedagogical strategy for developing critical thinking in students, enabling them to go beyond the mere decoding of words and to become true investigators of knowledge. Wineburg (1991) highlights the importance of teaching students to "read like historians", that is, to question sources, contextualize information and construct their own interpretations. This approach transforms reading into an active dialogue between the reader and the text, stimulating curiosity, questioning and the search for evidence.

Critical reading, as an active and engaged process, transcends the mere decoding of words and the identification of explicit information in the text. It involves analyzing between the lines, identifying assumptions and biases, and evaluating the reliability of sources, as stated by Paulo Freire (1987) in his work "Pedagogy of the Oppressed": "Reading the world precedes reading the word, hence that subsequent reading of this

cannot do without continuing to read that one." By questioning sources, students learn to distinguish between reliable and unreliable information, to identify the authorship and purpose of the text, and to evaluate the quality of the evidence presented, as highlighted by Wineburg (1991) in his study on the teaching of history .

The contextualization of information, in turn, is fundamental to understanding the text in its entirety. According to Bakhtin (1981), "the word is always loaded with an ideological or experiential content". By analyzing the historical, social and cultural context in which the text was produced, students can identify the values, beliefs and ideologies that permeate it, avoiding anachronistic analyzes and misinterpretations. Contextualization also allows students to understand the power relations that are manifested in the text, such as gender, race and social class relations, and how these relations influence the production and reception of the text.

The construction of one's own interpretations, in turn, is an essential process for the development of students' intellectual autonomy. According to Freire (1987), "critical reading is reading that generates commitment". By being encouraged to form their own opinions based on critical analysis of available information, students develop the ability to think for themselves, to question the status quo and to position themselves in the face of society's problems and challenges. The construction of their own interpretations also stimulates creativity and divergent thinking, as students are challenged to find new ways of interpreting the text and relating it to their own experiences and knowledge.

To promote critical analysis of texts and information sources, teachers can use various pedagogical strategies, such as shared reading, creating guiding questions, constructing conceptual maps and producing critical reviews. Shared reading, as highlighted by Isabel Solé (1998), allows students to discuss their interpretations and learn from their colleagues' perspectives, enriching their understanding of the text. The guiding questions, in turn, direct students' attention to the most relevant aspects of the text, stimulating analysis and reflection, as stated by McKeown and Beck (2015). Concept maps, as proposed by Novak and Gowin (1984), help organize and visualize information, facilitating understanding and memorization. The production of critical reviews, finally, requires students to synthesize the most important information, evaluate the quality of the text and express their own opinions in a clear and well-founded way, as highlighted by Marcuschi (2008).

It is important that students have access to different types of texts and information sources, such as scientific articles, news, books, videos and podcasts. This diversity of sources, as stated by Coiro et al. (2013), allows students to explore different perspectives, compare information and develop a more comprehensive and critical view of the world. Furthermore, contact with different textual genres and media contributes to the development of students' reading and writing skills, preparing them for the challenges of the information society, as highlighted by the National Common Curricular Base (BNCC).

Critical analysis of texts and information sources is not only an essential skill for academic success, but also a powerful tool for active and responsible citizenship. In an era of fake news and misinformation, the ability to critically analyze information and form evidence-based opinions is fundamental to making informed decisions and democratic participation. By teaching students to "read the world", as Freire (1987) proposes, schools contribute to the formation of critical, reflective and engaged citizens, capable of transforming society.

4.4 Socratic Questioning

Socratic questioning, like a scalpel that dissects thought, is a powerful pedagogical strategy that uses open-ended and challenging questions to stimulate deep reflection and the autonomous search for answers. Paul and Elder (2006) define Socratic questioning as "the art of asking questions that stimulate critical thinking and the search for truth", emphasizing the student's active role in building of knowledge.

Socratic questioning, as a pedagogical strategy, stands out for its role in developing students' critical and reflective thinking, in line with Paulo Freire's (1996) ideas about liberating education, which aims to "awaken the student's critical consciousness" . Instead of offering ready-made answers, the teacher takes on the role of facilitator, guiding students on a journey of discovery and exploration of knowledge, as a "midwife of ideas", as Socrates called himself in his dialogues. This approach, based on dialogue and inquiry, encourages students to think for themselves, to question their own beliefs and prejudices, and to seek evidence to support their arguments,

forme highlights Lipman (1995) in his work “Thinking in Education”.

Socratic questioning is not limited to a set of pre-defined questions, but adapts to the learning context and students' needs, as a “dialectical process of questions and answers that aims to lead the interlocutor to discover the truth for himself” (Marzano, 2007, p. 45). The teacher can use different types of questions, such as clarification questions (“What do you mean by that?”), which seek to clarify concepts and ideas; probing questions (“What evidence supports your statement?”), which instigate the search for information and critical analysis of data; challenge questions (“Did you consider other perspectives on this subject?”), which encourage reflection on different points of view; consequence questions (“What would be the implications of this idea?”), which explore the consequences and consequences of a certain action or decision; and synthesis questions (“How would you summarize the main points of the discussion?”), which help students organize and integrate the knowledge acquired.

The practice of Socratic questioning is not restricted to the classroom, but can be applied in different contexts, such as group discussions, debates, interviews and mentoring processes. By encouraging dialogue and reflection, Socratic questioning promotes the development of essential 21st century skills such as effective communication, problem solving, decision making, and collaboration. Furthermore, Socratic questioning contributes to the formation of critical and engaged citizens, capable of questioning the status quo, seeking the truth and defending their rights, as Freire (1996) states: “No one educates anyone, no one educates themselves. , men educate each other, mediated by the world”.

Several authors and researchers, such as Paul and Elder (2006), Vygotsky (1978) and Freire (1996), highlight the importance of dialogue and social interaction in learning. Socratic questioning, by promoting dialogue and interaction between students, creates an environment conducive to cognitive and social development, as highlighted by Vygotsky (1978) in his theory of the Zone of Proximal Development: “What can the child do today with With the help of adults, you can do it tomorrow alone.” Furthermore, Socratic questioning encourages students' autonomy and responsibility for their own learning, encouraging them to seek answers and build their own knowledge, in line with Paulo Freire's (1996) autonomy pedagogy.

Socratic questioning is a powerful tool for developing critical and reflective thinking, which can be used in different areas of knowledge and in different learning contexts. By stimulating dialogue, reflection and the search for answers, Socratic questioning transforms the classroom into a space of investigation and discovery, where students are protagonists of their own learning, as argued by Papert (1980) in his theory of constructionism. .

5. Final Considerations

Promoting critical and reflective thinking in students is an imperative for 21st century education XXI. The analysis of the pedagogical strategies presented in this article, such as Problem and Project Based Learning (ABP/PBL), structured debates and discussions, critical analysis of texts and information sources and Socratic questioning, reveals the transformative potential of these approaches to the development of cognitive and socio-emotional skills essential for students' academic, professional and personal success.

By breaking with the traditional model of transmissive teaching, these pedagogical strategies place the student at the center of the learning process, encouraging them to question, investigate, collaborate and build their own knowledge. The development of critical and reflective thinking, in turn, enables students to analyze information critically, solve complex problems, and make informed decisions and to position itself ethically and responsibly in the face of society's challenges.

However, implementing these pedagogical strategies on a large scale is not without challenges. Teacher training, the development of appropriate teaching materials and the adaptation of school infrastructure are some of the obstacles to be overcome. Furthermore, it is necessary to ensure that these strategies are implemented consistently and effectively, with continuous monitoring and evaluation.

Despite the challenges, the benefits of promoting critical and reflective thinking are undeniable. By preparing students for the challenges of the 21st century, education that values these skills contributes to the formation of more conscious, engaged citizens capable of transforming society. Promoting critical and reflective thinking is not just a matter of academic improvement, but an investment

in the future of education and society as a whole.

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