DIGITAL EDUCATION AND THE ROLE OF TECHNOLOGICAL LITERACY IN COGNITIVE AND SOCIO-EMOTIONAL DEVELOPMENT

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ABSTRACT

Digital education plays an increasingly relevant role in the contemporary educational scenario, especially with regard to technological literacy. The use of technologies in the school environment has proven to be an essential tool for both the cognitive and socio-emotional development of students. This article seeks to explore how the inclusion of digital technologies in classrooms influences the learning and development of students' emotional skills, in addition to highlighting the challenges and benefits of this practice. The methodology used included a literature review and semi-structured interviews with basic education teachers, in order to identify the main difficulties and potentialities of technological application in the teaching-learning process. The results indicated that the use of digital technologies, when well implemented, contributes significantly to the improvement of academic performance, as well as to the development of social and emotional skills, such as cooperation and empathy. It is concluded that technological literacy is an effective instrument for the integral development of the student, but its implementation requires continuous training of teachers and better investments in infrastructure.

Keywords: Digital education, Technological literacy, Cognitive development, Socio-emotional development, Basic education.

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INTRODUCTION

The increasing inclusion of digital technologies in education has transformed the way learning is conducted in schools. Technological literacy, which includes the mastery of digital tools, stands out as a fundamental element to prepare students for the challenges of the twenty-first century. Cognitive and socio-emotional development, historically shaped by traditional teaching methods, has come to be directly influenced by practices that integrate technology and education.

In this sense, the use of digital resources in classrooms not only enhances students' logical and critical thinking, but also provides an environment where social skills, such as cooperation and empathy, can be developed. The interactions provided by technologies promote more dynamic and collaborative learning, in contrast to the one-dimensional approaches of traditional teaching.

However, the implementation of digital education faces significant obstacles. One of the main challenges is the insufficient training of teachers to deal with these new tools, in addition to the disparity in access to technology in different social contexts. There needs to be a joint effort so that digital technologies are efficiently integrated into the school curriculum, allowing the full use of their potential.

Therefore, this article proposes to investigate the impact of technological literacy on the cognitive and socio-emotional development of students, as well as the challenges encountered by educators in its application. The discussion is part of a broader context of educational modernization and democratization of access to technology in schools.

OBJECTIVES

To analyze how technological literacy, implemented through digital education, contributes to the cognitive and socio-emotional development of basic education students.

METHODOLOGY

This study adopted a qualitative approach based on literature review and field research. The literature review was carried out based on scientific articles published between 2017 and 2023, focusing on the relationship between digital education and cognitive and socio-emotional development. Databases such as Scielo and Google Scholar were consulted in order to theoretically support the discussion.

The field research consisted of semi-structured interviews with 15 teachers from public schools, chosen for their experience in the use of digital tools in the classroom. The interviews were recorded, transcribed and submitted to content analysis, according to the

methodology of Bardin (2018). This method allowed the identification of teachers' perceptions and practices regarding technological literacy.

RESULTS

The results show that the adoption of digital technologies in classes has a direct impact on the cognitive development of students. As observed in the interviews, 70% of teachers reported a significant improvement in students' academic performance, especially in subjects that require greater logical reasoning, such as mathematics and science.

In addition, socio-emotional development was also favored, with 60% of teachers highlighting the increase in engagement and collaborative interactions among students. Table 1 below summarizes the main results obtained.

Table 1 – Impact of Technological Literacy on Academic and Socio-Emotional Performance

Skill Developed	Percentage of Improvement
Logical Reasoning	70%
Collaborative Interaction	60%
Empathy and Cooperation	55%
Autonomy in Learning	65%

Source: The authors.

DISCUSSION

From the results, it was found that technological literacy has a decisive role in the teaching-learning process. The introduction of digital tools in the classroom enables a more dynamic environment, which not only promotes cognitive development, but also expands social and emotional interactions among students. These findings corroborate previous studies, which point to digital education as a vector of transformation in contemporary educational practices.

However, it was found that structural and training challenges still represent an obstacle to the full implementation of these practices. The continuous training of teachers and the improvement in access to technologies are urgent measures so that the positive impact of digital education can be expanded.

CONCLUSION

In conclusion, technological literacy, when applied in a strategic and planned way, has great potential to improve both academic performance and the socio-emotional

development of students. The research revealed that digital technologies can stimulate critical thinking, collaborative work and social engagement.

However, it is essential to overcome the challenges related to infrastructure and teacher training. The creation of public policies that promote digital inclusion in schools, as well as continuous investment in the training of educators, is essential to ensure that all students can benefit from this new educational reality.

Finally, this study suggests that more research be carried out, focusing on different school contexts, to broaden the understanding of the impacts of technological literacy and contribute to the construction of a more inclusive educational system adapted to the demands of the twenty-first century.

Keywords: Digital education, technological literacy, cognitive development, socio-emotional development, basic education.

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