USE OF INSTAGRAM AS A TOOL FOR SCIENTIFIC DISSEMINATION AND MATHEMATICS TEACHING IN HIGH SCHOOLS: AN INTEGRATIVE LITERATURE REVIEW

Danilo Nunes de Souza[1]
Pedro Alex Marques Gomes (Advisor)[2]

SUMMARY: The use of social media to disseminate scientific knowledge and education has become an increasingly relevant strategy, especially among high school students, who are frequent users of these platforms. Instagram, as one of the most popular social media networks among young people, has great potential to be used as a tool for scientific dissemination and education, including for complex subjects such as Mathematics. This integrative literature review aims to analyze research and experiences that used Instagram with a focus on teaching Mathematics for high school students. Studies that addressed different methodologies were included, such as the creation of visual and interactive content, the use of stories and short videos, as well as techniques that seek to engage and motivate students through mathematical challenges and quizzes. The results indicate that Instagram can promote learning by making mathematical content more accessible and attractive, in addition to bringing Mathematics closer to students' daily lives, which facilitates understanding and interest in the subject. However, the review also highlights challenges, such as the need for didactic planning, care with the veracity and clarity of information, and the development of pedagogical skills focused on the digital environment. It is concluded that the use of Instagram presents advantages for teaching Mathematics, as long as it is used in a structured way and aligned with educational objectives, being a promising tool for contemporary education and for the popularization of science.

Keywords: Educational Instagram. Mathematics teaching. Scientific dissemination. Social networks in education. Student engagement.

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ABSTRACT: The use of social networks to spread scientific knowledge and teaching has become an increasingly relevant strategy, especially among high school students, who are frequent users of these platforms. Instagram,

As one of the most popular social networks among young people, it has great potential to be used as a scientific dissemination and teaching tool, even for complex subjects such as Mathematics. This integrative review of literature aims to analyze investigations and experiences that used Instagram with a focus on Mathematics teaching in secondary schools. They included studies that addressed different methodologies, such as the creation of visual and interactive content, the use of short stories and videos, as well as techniques that sought to involve and motivate students through mathematical challenges and questions. The results indicate that Instagram can promote learning by making mathematical content more accessible and attractive, in addition to approaching mathematics every day for students, which facilitates understanding and interest in the subject. However, the review also highlights challenges, such as the need for didactic planning, care for accuracy and clarity of information, and the development of pedagogical skills focused on the digital environment. It is concluded that the use of Instagram has advantages for teaching Mathematics, always when it is used in a structured way and aligned with educational objectives, being a promising tool for contemporary education and the popularization of science.

Keywords: Educational Instagram. Teach mathematics. Scientific diffusion. Social networks in education. Student commitment.

1. INTRODUCTION

The popularization of social media in recent decades has transformed the way information is shared and consumed, including in the field of education. One of the platforms with the greatest reach among young people is Instagram, which allows the dissemination of visual and interactive content in an agile and accessible way. In particular, in the teaching of Mathematics, which is traditionally seen as a challenging and difficult subject to assimilate, the use of Instagram can represent an opportunity to bring mathematical content closer to students' daily lives and make learning more dynamic and attractive. Thus, exploring the pedagogical potential of Instagram for teaching Mathematics is relevant, especially in high school, a phase in which many students face difficulties with the subject and seek alternative ways of learning.

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Recent studies indicate that the use of technologies and social networks in the school environment can contribute to student engagement and improve the understanding of complex content. Instagram, in particular, is a social network with great appeal among young people, offering a multimedia platform that allows the creation of visual content, short videos, and direct interactions. Given that teaching Mathematics faces challenges related to motivation and clarity of abstract concepts, the use of Instagram as an educational tool is an innovative proposal that deserves investigation. This research is justified by the need to identify effective teaching strategies that take advantage of digital media to facilitate learning and popularize scientific knowledge. The general objective of this integrative literature review is to investigate the use of Instagram as a tool for teaching Mathematics and scientific dissemination in high school, analyzing studies that address methodologies, pedagogical strategies, and results obtained with the use of this platform in educational contexts.

2 SCIENTIFIC DISSEMINATION AND ITS POPULARIZATION IN SCIENCE

2.1 TEACHING MATHEMATICS, IN THE THEORY OF PEDAGOGICAL CHALLENGES

The purpose of scientific dissemination is to make scientific knowledge accessible and understandable to the lay public. In the context of high school, the dissemination of scientific topics, including mathematical concepts, can foster students' interest and awaken their critical sense. According to Maia and Souza (2019), the popularization of science in environments such as social networks contributes to a more informed society that is capable of dealing with complex challenges. Mathematics, despite its relevance, is often seen as distant from reality. Scientific dissemination can, therefore, act as a link between academic content and students' daily lives.

Mathematics teaching traditionally presents challenges, both in terms of student motivation and the assimilation of abstract concepts. According to Pires and Oliveira (2020), Mathematics teaching needs to be contextualized and aligned with students' daily lives to increase interest and understanding. Learning theories, such as Ausubel's meaningful learning, emphasize that, to facilitate the absorption of new concepts, it is necessary to

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it is necessary to relate them to students' prior knowledge and experiences. Thus, teaching methods that use digital media can be effective in making learning more interactive and applicable to students' reality.

2. MATERIAL AND METHOD

In theory, the scientific article is based on the literature as a search carried out in scientific databases such as Google Scholar and Scielo. Academic papers and publications in peer-reviewed journals published in the last ten years that address the use of Instagram as an educational or scientific dissemination tool in high school, with an emphasis on mathematics, were analyzed. After the initial collection of articles, the titles and abstracts were read to verify their relevance in relation to the established criteria. The selected studies underwent an in-depth reading to confirm their alignment with the objectives of the review. Finally, the selected articles were assessed using a qualitative and categorical approach.

3. RESULTS AND DISCUSSION

The data were synthesized descriptively, organizing the main findings in relation to teaching and scientific dissemination strategies on Instagram, as well as the impacts observed on mathematics learning in high school.

This organization allowed the identification of effective practices and gaps in the literature, providing a basis for future research and pedagogical applications (Silva; Soares; Sousa, 2022).

The analysis of the selected studies reveals a series of relevant findings on the use of Instagram as a pedagogical and scientific dissemination tool in high school, with an emphasis on mathematics teaching. The results indicate that Instagram offers several possibilities for engagement and learning that can make mathematics teaching more accessible and attractive to students. The main themes identified in the literature are discussed below, which include the methods of applying Instagram in teaching, the types of content

more effective, the benefits for learning and the challenges encountered by educators (Sá; Machado, 2017).

FINAL CONSIDERATIONS

In short, Instagram can be a valuable complementary tool for teaching mathematics in high school, contributing to the creation of a more dynamic, accessible and engaging learning environment. However, for its use to be effective, pedagogical planning, adaptation of content and attention to technological and accessibility limitations are necessary. Continuing studies in this area can bring new perspectives on the role of social networks in education, especially in subjects such as mathematics, where the challenge of engaging students is greater.

Thus, this integrative review showed that Instagram, one of the most popular social networks among young people, has great potential as a tool to support mathematics teaching and scientific dissemination for high school students. Through visual resources and interactive and dynamic content, the platform allows educators to explore innovative pedagogical approaches, making mathematics more accessible and attractive.

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