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DYNAMED: AN ACTIVE APPROACH TO IMPROVING LEARNING IN THE SUBJECT OF SCIENTIFIC METHODS IN MEDICINE

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Abstract: Teaching scientific methodology in medical courses is a major challenge, requiring strategies capable of improving and enhancing the learning process for students, developing critical skills for searching, interpreting, and applying scientific results. Given this scenario, the use of technological tools in higher education has proven to be a necessary and effective strategy for improving the quality of student learning. Among these tools, Dynamed stands out, a database based on scientific evidence that provides up-to-date and reliable information for health professionals, especially physicians and medical students. This study is an experience report that investigated the effectiveness of using Dynamed in improving the search for scientific articles by students enrolled in the Scientific Methods in Medicine course. A total of 41 students from the medical course at the São Lucas University Center in Ji-Paraná were instructed to search for different types of articles in random databases and then perform the same search using Dynamed. A comparative analysis of the articles submitted by the students in the first and second stages showed a significant improvement in the quality of the articles found, with 50% of the articles being studies published in journals without Qualis (70% of predatory journals) and the others distributed in Qualis B2 (40%) and B1. (10%), with no studies found with a Qualis rating above A4. After receiving guidance on how to use Dynamed, 55% of the articles were from publications in Qualis A3 and A4 journals, 25% in B1, and 20% between B2 and B4. The results obtained highlight the importance of using reliable scientific technologies as a teaching resource.

Keywords – Higher education. Technological tools. Dynamed. Active learning. Scientific qualification.

INTRODUCTION

Teaching scientific methodology in medical courses is a major challenge, as it involves developing students' critical skills in searching for, interpreting, and applying scientific evidence (Santos et al., 2023). The rapid expansion of scientific production, coupled with the growing number of low-quality publications, makes it essential to develop active teaching strategies that enable students to select reliable and relevant information for their academic and professional training (Freitas et al., 2015).

Active pedagogical tools are those that place students as protagonists of their own learning, stimulating critical thinking, autonomy, and practical problem solving. In the context of scientific methodology, these approaches range from problematization and case-based learning to the use of innovative technologies that assist in the search and selection of qualified scientific literature (Marques et al., 2021).

One of the main difficulties faced by medical students when starting the Scientific Methods course is identifying reliable scientific articles. When conducting bibliographic research, many students resort to generic databases or non-specialized sources, resulting in the use of literature with less academic impact. This problem can compromise the quality of the research conducted and hinder the understanding of fundamental concepts of evidence-based practice (Lima-de-Paula et al., 2019).

The use of technological tools can act as a facilitator in this process, providing access to accurate, high-quality content. One such tool is Dynamed, an evidence-based knowledge base that assists physicians and students in their search for up-to-date and relevant scientific information. Dynamed allows users to find high-impact articles that are best qualified according to rigorous scientific criteria, representing an efficient alternative to traditional searches (Rocha et al., 2023).

In this study, we investigated the effectiveness of Dynamed as an active pedagogical tool in the Scientific Methods in Medicine course, through the application of this resource by first-year medical students at the São Lucas University Center in Ji-Paraná, in the first semester of 2025. Our hypothesis is that the use of this technology significantly improves the quality of scientific sources found by students, helping to build critical thinking based on academic practice. By comparing searches performed before and after the introduction of Dynamed, it was possible to assess the impact of this approach and suggest its implementation as a teaching strategy in medical education.

Thus, this study contributes to the discussion on the use of technological tools as active strategies in teaching scientific methodology, highlighting their importance for the quality of learning and the development of skills essential to evidence-based medical practice.

The objective of this study was to evaluate the impact of using Dynamed on the quality of scientific articles found by medical students, comparing the quality of sources obtained before and after the introduction of the tool in the Scientific Methods in Medicine course.

MATERIALS AND METHODS/ METHODOLOGICAL PROCEDURES

The study was conducted between January and February 2025, with 41 first-year medical students from the São Lucas Ji-Paraná University Center in Ji-Paraná, Rondônia. More specifically, it was conducted in the Scientific Methods in Medicine course.

Initially, students were instructed to search for at least five scientific articles of different types (experience reports, case reports, literature reviews, short communications, experimental articles, clinical trials, clinical protocols, and others). At this initial stage, the search was conducted without the use of specific tools, and the articles were found randomly on the web.

A total of 215 articles were collected, classified according to the Qualis rating <<https://sucupira-legaldo.capes.gov.br/sucupira/public/consultas/coleta/veiculoPublicacaoQualis/listaConsultaGeralPeriodicos.jsf>> for articles published in national journals; and the Scopus platform <<https://www.scopus.com/sources.uri>> for articles published in foreign/international journals; in this case, the tabulated equivalence was applied, A1 to A4, B1 to B5, and C.

In the class following, was presented the tool Dynamed <<https://www.dynamed.com/browse/drug-interactions>> , and the academics redid the searches using this resource. A total of 205 articles were gathered in this new search and then reclassified according to their national and international qualification.

Among all the publications collected, predatory journals were checked using the

PredaQualis platform <<https://predaqualis.netlify.app/lista/>>.

RESULTS AND DISCUSSION

In the first random search, medical students found that 50% of articles were published in journals without Qualis, 40% were published in Qualis B2, and 10% were published in Qualis B1 journals. No journals with Qualis above A4 were found. Among the articles without Qualis, after checking the PredaQualis Platform, it was found that 70% of the publications were made in predatory journals.

After receiving guidance on searching Dynamed, 55% of articles published in A3 and A4 journals were found, 25% of articles in B1, and 20% of articles between B2 and B4. No publications in predatory journals were found among the articles searched in Dynamed.

The comparison between the two moments of the study demonstrates that the use of technological tools can direct students to higher quality sources, promoting more efficient and informed learning. Dynamed proved to be a viable and effective alternative for teaching the search and selection of qualified scientific literature, standing out as an essential resource for training more qualified professionals in the health field.

Active teaching practices, mediated by digital technologies, have proven effective in promoting more meaningful and engaged learning. By integrating technological tools into the educational process, students cease to be mere passive recipients of information and become protagonists in the construction of knowledge. This is achieved through methodologies that encourage acti-

ve participation, collaboration, and critical thinking (Kist et al., 2024).

The use of digital resources, such as interactive software, online learning platforms, and educational applications, facilitates the implementation of active methodologies, such as the flipped classroom, project-based learning, and gamification. These approaches promote a dynamic learning environment where students are encouraged to explore, question, and apply knowledge in a practical way (Teixeira et al., 2024).

In the context of health, tools such as Dynamed have stood out in directing students to high-quality sources of information. The introduction of DynaMed has resulted in a significant improvement in the quality of articles found by students. This evidence reinforces the role of digital technologies in promoting more efficient and informed learning, which is essential for training skilled healthcare professionals (Oliveira et al., 2022).

In addition, the integration of digital technologies into teaching practices contributes to the development of digital skills in students, preparing them for the challenges of the contemporary world. For teachers, this integration requires an adaptation of teaching methodologies and a continuous investment in training for the effective use of these tools (Carneiro et al., 2020).

In short, active pedagogical practices mediated by digital technologies represent a promising approach for current education, promoting more participatory and critical learning that is aligned with the demands of contemporary society.

FINAL CONSIDERATIONS OR CONCLUSION

The use of technological tools such as Dynamed has proven to be an effective active strategy for improving scientific learning in medicine. The comparison between searches conducted with and without Dynamed showed a significant improvement in the quality of the articles selected by students. The implementation of technological resources in higher education should be encouraged, providing more critical, efficient, and evidence-based learning.

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