A Systematic Literature Review on the Use of Nearpod for Interactive Learning

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Abstract

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education using a data-driven bibliometric approach from Google Scholar. Nearpod is an interactive learning platform that allows teachers to create more dynamic and participatory learning experiences through features such as quizzes, polls, and real-time collaboration. Using analytical methods such as VOSviewer and Publish or Perish (PoP), this study identifies publication trends, citation trends, and research focus in the period 2015-2025. The results of the analysis show that publications on Nearpod have started to increase since 2019 and peak in 2024. However, there is a decrease in the number of publications in 2025 which is likely due to changes in research focus or limited data available. In addition, Nearpod has been proven to contribute to increasing student engagement and learning outcomes, especially in the fields of STEM and online learning. The focus of the research has also evolved, from simply exploring the use of Nearpod in learning to evaluating its effectiveness in various pedagogical approaches. Although Nearpod has great potential in improving learning effectiveness, there are challenges that need to be overcome, such as infrastructure readiness, the digital access gap, and the need for more intensive teacher training. Therefore, this study recommends improving education policies that support technology integration, investment in digital infrastructure, and strengthening the capacity of educators in optimally utilizing Nearpod.

This study aims to analyze research trends related to Nearpod Interactive Learning in

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Introduction:

Education has undergone a significant transformation with the integration of technology, which has changed the way classroom learning is conducted and increased student engagement. The integration of technology in education has significantly transformed classroom learning and increased student engagement. This transformation encompasses various aspects, including the adoption of digital tools, the development of 21st-century competencies, and the need for educator training and infrastructure improvements. Online education and digital learning platforms have expanded access to educational resources, enabling self-directed and collaborative learning [1]. Interactive software in subjects such as mathematics also enhances student understanding and engagement, making learning more accessible [2]. Technology integration encourages critical thinking, creativity, and collaboration, essential skills to navigate global change [1], [3]. In addition, technology increases the effectiveness and inclusiveness of the assessment process, meeting diverse learning needs [4]. Despite its benefits, technology integration faces challenges such as disparities in access and lack of teacher training [2]. In addition, digital

disruption and reduced face-to-face interactions emphasize the need for a balanced approach [5]. Therefore, addressing these challenges is essential to ensure an equitable and effective learning experience for all students.

Nearpod is an interactive learning platform that allows educators to create more dynamic and participatory learning experiences through features such as quizzes, polls, and real-time collaboration. Nearpod is an interactive learning platform that significantly enhances educational experience through its various features, such as quizzes, polls, and real-time collaboration. Research shows that the use of Nearpod can lead to improved learning outcomes across a range of subjects and educational levels, making it a valuable tool for educators aiming to drive engagement and participation in their classrooms. Research shows that the use of Nearpod improves learning outcomes across a range of educational levels. Nearpod contributed to improved student numeracy skills with an effect size of 0.57 [6] and significantly improved elementary school students' learning outcomes with an N-Gain score of 0.71[7]. In secondary schools, Nearpod has also been shown to improve chemistry learning outcomes based on significant differences between pretest and posttest scores [8].

Although educational technologies such as Nearpod promise to improve learning effectiveness, there are still challenges in its implementation, including curriculum adaptation and infrastructure readiness. The implementation of educational technologies such as Nearpod presents significant opportunities to improve learning outcomes but is accompanied by significant challenges. These challenges primarily revolve around curriculum adaptation and infrastructure readiness to support the technology. Integrating Nearpod into the curriculum requires alignment with educational standards and learning objectives. Research shows that Nearpod-based media can be adapted to various subjects and educational contexts [7], [9]. In addition, teachers need to receive adequate training so that this technology can effectively support pedagogical strategies without adding complexity to learning [10]. Infrastructure limitations, such as internet access and electricity, especially in certain areas of Africa, hinder the implementation of EdTech such as Nearpod. The digital divide further exacerbates this problem, with low-budget schools struggling to provide resources for technology integration [11]. While Nearpod has the potential to improve educational outcomes, its effectiveness depends on the readiness of infrastructure and curriculum. Some educators also highlighted the need for balance in educational innovation so that technology does not replace essential teaching methods.

Several solutions have been proposed to address these challenges, such as more intensive teacher training and the development of policies that support technology integration in education. To address the challenges in education, particularly regarding technology integration, several solutions have been proposed, including enhanced teacher training and supportive policies. These strategies aim to create more effective educational environments that leverage technology to improve learning outcomes. Effective teacher training programs should focus on technology integration in pedagogy to enhance the use of digital tools [12]. Continuous training with critical reflection is also needed so that teachers can adapt to educational changes [13]. Case studies show that successful technology implementation is often supported by structured training programs that empower educators [14]. Education policies should prioritize infrastructure investments to ensure adequate access to technology [13]. In addition, frameworks such as TPACK need to be implemented to guide teachers in integrating technology effectively. Strategies should also address access gaps, especially in under-resourced areas [15]. While these steps support better educational practices, challenges such as technological limitations and lack of training still require continued attention [14], [16].

Researchers try to collect research data related to Nearpod Interactive Learning using a bibliometric approach based on data obtained from Scholar. In this context, this article aims to present a

comprehensive bibliometric analysis of Nearpod Interactive Learning research in education, which includes trends in the number of publications, trends in research collaboration between countries, and research focus. By analyzing journals, conferences, and other related scientific publications, we will try to identify key trends and the most dominant research topics in this scientific literature. Thus, the results of this study are expected to provide a more systematic picture of related research trends and provide recommendations for future research agendas.

Data and Methodology:

This study uses a descriptive bibliometric analysis method consisting of four important stages, namely identification, screening, eligibility and inclusion [17]. At the identification stage, the researcher conducted a search using keywords that were in accordance with the research theme, namely "Nearpod Interactive Learning" in the scholar database. Through this step, relevant articles were successfully identified. The next stage is screening, the researcher filters the articles that have been obtained in the previous stage using the keyword criteria "Nearpod Interactive Learning" must be included in the title of the article. Based on these criteria, articles that do not meet these criteria will not be processed further. Meanwhile, there are articles that meet the criteria and will be continued to the next stage, namely eligibility, at this stage the researcher evaluates whether the articles that have passed the previous stage are worthy of being included in the final stage of the research. The researcher decided to only include publications published in the last 10 years so that the remaining articles meet these criteria. A total of 18 articles that meet these criteria can be continued to the inclusion stage.

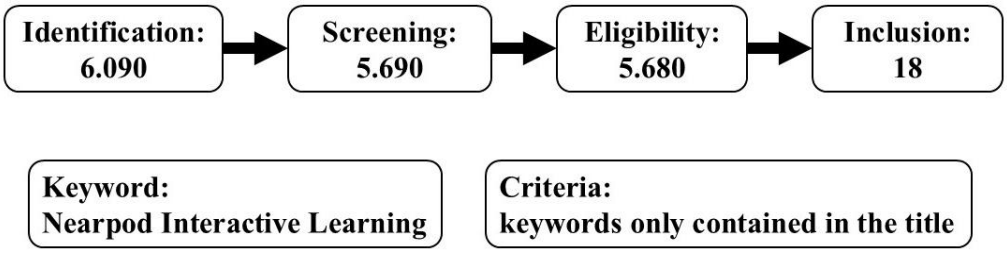

Figure 1. Stages in Data Refinement

Result Discussion:

This section will discuss several key trends related to nearpod interactive learning in education, namely publication trends, citation trends, and research focus. The publication trend reflects the development of the number of studies published in this field from 2013 to 2025, providing an overview of the increasing interest of academics in studying nearpod. Meanwhile, the citation trend shows the extent to which these studies contribute to the development of science and become references for other researchers. The increasing number of citations indicates that research on this topic is gaining recognition and is widely accepted in the academic community. In addition, international collaboration plays a role in improving the quality and impact of research by bringing together various perspectives and expertise from researchers across countries. Finally, the research focus trend describes the areas of primary concern in studies on nearpod in education throughout the period 2013 to 2025. To be more up to date on nearpod, the data used is the last 10 years, namely from 2015 to 2025.

Publication trends are presented by classifying the number of publications based on the data taken, namely the last 10 years of data. Where the development of publications regarding the use of nearpod interactive learning in education from 2015 to 2025 can be observed in Figure 1.

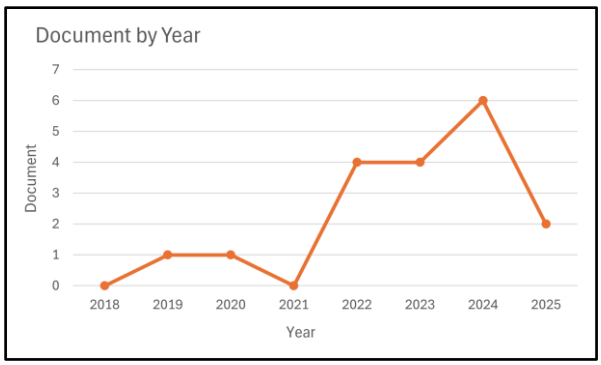

Figure 2. Publication Trends

The publication trend on nearpod interactive learning in education shows interesting developments from year to year. Based on the graph shown, the number of publications began to appear in 2019 with a low number, then fluctuated before finally increasing sharply in 2022 and reaching its peak in 2024. This spike indicates that in recent years, research related to nearpod interactive learning has received increasing attention among academics and education practitioners. This may be influenced by the increasing adoption of interactive technology in learning and the push to improve the effectiveness of digital teaching methods.

The significant increase in the number of publications from 2022 to 2024 reflects the high interest of researchers in the use of nearpods to support the learning process. The stable number of publications in 2023 before reaching its peak in 2024 shows that research in this field has developed into a fairly strong trend. However, in 2025, the graph shows a fairly sharp decline, which could be caused by data that has not been fully collected or a shift in research focus to other, more innovative methods. Even so, the growth pattern seen in recent years shows that nearpod interactive learning has become one of the quite important topics in the development of technology-based learning strategies.

From this data, it can be concluded that nearpod interactive learning is increasingly gaining ground in the world of education, especially in research oriented towards interactive technology. The growth in the number of publications in recent years shows that research in this field continues to grow, driven by the need for more engaging and effective learning methods. Analysis of this trend can help academics and education practitioners understand how nearpod interactive learning contributes to innovation in teaching and provide insight into its potential for future development.

Tabel 1. Citation Trends

Year	TP	TC
2025	2	-
2024	6	4
2023	4	17
2022	4	36
2021	-	-
2020	1	10
2019	1	70
2018	-	-

TP: Total Publication; TC: Total Citation

Table 1 shows the citation trend of publications related to nearpod interactive learning based on the year of publication. There are two main columns in this table, namely TP (Total Publication) which shows the number of publications published each year, and TC (Total Citation) which describes the number of

citations received by the publication. From the data displayed, the number of publications began to appear since 2019 with one publication receiving 70 citations, indicating that the research had a significant impact on the academic community. Meanwhile, publications in 2020 also received quite high citations, namely 10 citations for one document.

In the following years, although the number of publications increased, the number of citations fluctuated. The year 2022 recorded 4 publications with 36 citations, indicating that the research in that year was quite widely referenced by other researchers. However, in 2024, although the number of publications increased to 6 documents, only 4 citations were received, indicating that the latest research has not been widely used as a reference because it takes time to be recognized in the scientific community. The year 2025 does not yet show the number of citations because the publications from that year are still relatively new. This table can be used in articles to analyze how publication and citation trends have developed over the years, as well as how the relevance of research on nearpod interactive learning is recognized in the academic world.

Table 2. Publications with the Most Citations

Author	Title	Journal	Citation
(M. Sanmugam, A. Selvarajoo, B. Ramayah, K.W. Lee, 2019)	Use of Nearpod as Interactive Learning Method	*INTED2019 Proceedings*	70
(Messina, D. M., Mikhail, S. S., Messina, M. J., & Novopoltseva, I. A., 2022)	Assessment of learning outcomes of first year dental students using an interactive Nearpod educational platform	*Journal of Dental Education*	19
(Abdullah, A., Yahaya, M. F., & Mat Isa, N, 2020)	The Impact of Nearpod Interactive Learning Platform in Quality Accounting Education for Sustainable Development	*Charting a Sustainable Future of ASEAN in Business and Social Sciences*	10

From this table, it can be seen that the publication with the highest number of citations is the study by [18], which has been cited 70 times in the INTED2019 Proceedings. This high number of citations indicates that the study has a great influence in the academic community and is an important reference for further research on Nearpod Interactive Learning. The second publication with the highest number of citations is the study by [19], which has received 19 citations in the Journal of Dental Education. This study focuses on the effectiveness of Nearpod in improving the learning outcomes of first-year dental students, showing how interactive technology can be used in professional-based learning. In addition, the third study in this table is the work of [20], which was published in the journal Charting a Sustainable Future of ASEAN in Business and Social Sciences and has received 10 citations. This study discusses the role of Nearpod in improving the quality of accounting learning by emphasizing sustainability in education. Although the number of citations is lower than other publications, this study still shows an important contribution in the application of Nearpod in the field of business and social education. With this table, the article can analyze the most influential research trends in the use of Nearpod Interactive Learning and how they are applied in various disciplines.

The focus of research related to Nearpod Interactive Learning in Education can be seen in Figure 3. The novelty of the research can be seen in Figure 4. The images displayed use the help of the VosViewer application.

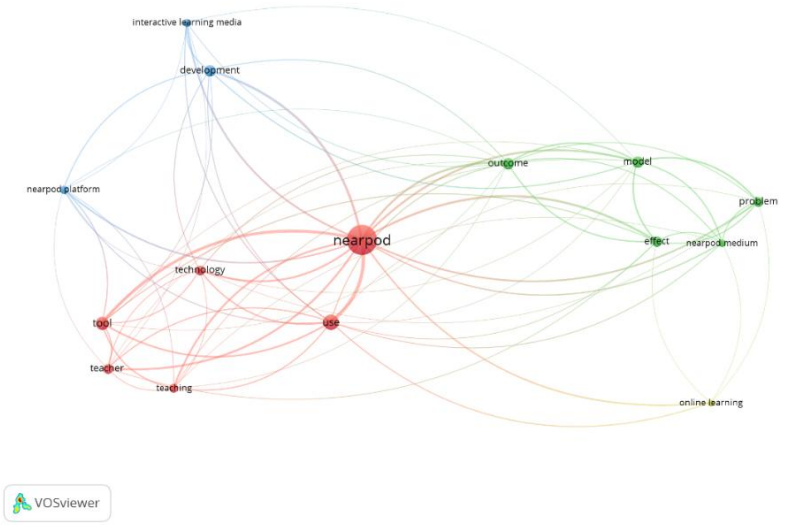

Figure 3. Focus of Research

In the context of scientific articles, this visualization can be used to identify key trends in research related to Nearpod Interactive Learning. Different colored clusters indicate dominant research aspects. For example, the red cluster indicates that many studies discuss Nearpod in relation to the use of technology in teaching, the role of teachers, and digital platform-based learning strategies. Meanwhile, the green cluster highlights the evaluation of Nearpod's effectiveness, learning outcomes, and its implementation models in education. The relationships between concepts shown through connecting lines can also be used to understand how Nearpod is integrated into various learning methods, such as online learning and the use of interactive media. Thus, articles can discuss how Nearpod is not only used as a learning aid, but also plays a role in the development of more interactive and innovative teaching models. In addition, this analysis can also reveal potential for further research, such as how Nearpod can be further developed in various disciplines or how its effectiveness compares to other learning methods.

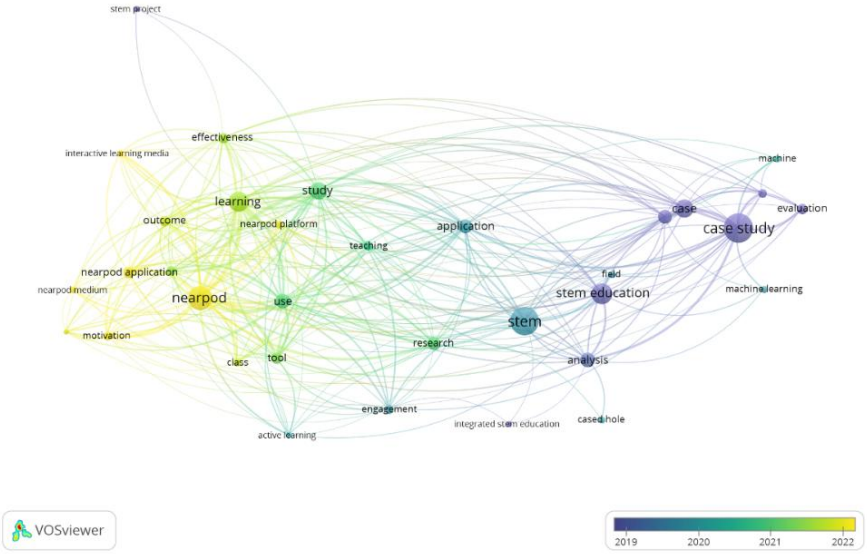

Figure 4. Novelty of Research

From the aspect of research novelty, this keyword relationship map provides insight into how the topic of Nearpod is developing in the educational context. Keywords that are closely related to Nearpod indicate that early research focuses more on the use of the platform and its effectiveness in interactive

learning. This can be seen from the relationship between Nearpod, learning, research, and application, indicating early exploration of how Nearpod can be applied in educational settings.

However, recent studies seem to be moving towards more specific approaches, such as the use of Nearpod in STEM-based learning, case studies, and evaluation of its effectiveness. This can be seen from the emergence of keywords such as STEM, case study, assessment, and evaluation, which indicate that recent studies do not only focus on the use of Nearpod in general but also examine how this platform can be integrated into specific learning models. In addition, the connection with online learning and motivation indicates a new trend in Nearpod research that adapts to the growing needs of digital learning. Thus, the direction of novelty in Nearpod research leads to the evaluation of its impact in technology-based learning and its effectiveness in various pedagogical approaches [21].

CONCLUSION:

Based on the results of the bibliometric analysis of Nearpod Interactive Learning, this study found that the publication and citation trends related to Nearpod in education have experienced significant development since 2019, with a spike in the number of publications especially in 2022 to 2024. This indicates an increase in academic attention to the effectiveness of Nearpod in interactive learning. However, the publication trend in 2025 shows a decline, which is likely due to changes in research focus or data that has not been fully collected. The results of the analysis show that Nearpod has a positive impact on learning outcomes at various levels of education, with increased student understanding and engagement. However, its implementation still faces challenges such as curriculum adaptation, infrastructure readiness, and teacher training needs. In addition, the research focus analysis indicates that recent research tends to be directed at the application of Nearpod in STEM-based learning, evaluating its effectiveness, and student learning motivation in online learning.

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