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Five Decades of Innovative Teaching in Business and Economics Education: A Bibliometric Review

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Abstract: *This study presents a bibliometric review of innovative teaching and learning in business and economics education over the past five decades (1970–2024). The research addresses the need for a comprehensive synthesis of trends and knowledge structures in this field. Data were retrieved from the Web of Science Core Collection using a comprehensive set of title-based queries on 5 September 2024, with no restrictions on language, publication year, or document type. The analysis was conducted in three phases: descriptive statistics, citation analysis, and keyword co-occurrence mapping, using Microsoft Excel and VOSviewer. The findings indicate growing academic engagement with digital pedagogies, blended learning, and technology acceptance models such as the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT). Keywords including e-learning, hybrid teaching, and digital classroom dominate the research landscape, reflecting theoretical advancement and responsiveness to global disruptions such as the COVID-19 pandemic. The study offers a strategic overview of research trajectories, aligning with Sustainable Development Goal 4 on quality education. The insights generated provide evidence-based guidance for policy formulation, curriculum innovation, and educator professional development, fostering institutional resilience and post-pandemic pedagogical reform.*

Keywords: Blended learning, E-learning, Pedagogical innovation, Bibliometric analysis

1. Introduction

In recent decades, higher education has undergone a profound transformation, marked by a growing shift towards technology-enhanced and learner-centred pedagogies. This evolution has been notably accelerated by global crises such as the COVID-19 pandemic, which compelled institutions to adopt digital teaching solutions at an unprecedented scale (Dhawan, 2020; Abbasi et al., 2020; Zalat et al., 2021). In response, educators have increasingly employed innovative approaches, including elearning, flipped classrooms, gamification, and blended learning, to engage diverse learner populations and ensure instructional continuity.

This pedagogical shift is grounded in robust theoretical models such as the Technology Acceptance Model (TAM), the Unified Theory of Acceptance and Use of Technology (UTAUT), and Self-Determination Theory. These frameworks explain user behaviours in digital learning environments and have guided the design of numerous empirical studies

(Venkatesh et al., 2003; Deci & Ryan, 1985). More recently, research has broadened to encompass factors such as student motivation, engagement, satisfaction, and institutional readiness, offering a multidimensional view of pedagogical innovation.

However, despite the growing body of literature, there remains a lack of longitudinal synthesis that connects publication trends, influential scholars, and evolving research themes over time. Bibliometric analysis serves as a valuable tool to address this gap, allowing for systematic mapping of the intellectual structure and thematic evolution of a research field. Recent studies have underscored the relevance of bibliometric tools in identifying knowledge gaps and shaping future research priorities in educational technology (Che Mohd Nasir et al., 2022; Rajendran et al., 2023).

This study aims to visualise the intellectual structure and growth trajectory of research on innovative teaching and learning from 1970 to 2024, specifically within the context of business and economics education. The analysis contributes to strategic curriculum planning, institutional benchmarking, and evidence-based pedagogical reform, while aligning with Sustainable Development Goal (SDG) 4 on quality and inclusive education.

2. Method

This study adopts a bibliometric approach to systematically examine the structure, trends, and thematic evolution of scholarly research on innovative teaching and learning. Bibliometric analysis enables the mapping of large-scale scientific knowledge structures through quantitative evaluation of publication metadata, thus offering a macro-level perspective of how research has developed over time.

The bibliometric dataset was retrieved from the Web of Science Core Collection (WOSCC), a widely recognised and high-quality multidisciplinary citation database. This source was selected due to its rigorous indexing standards and comprehensive coverage of peer-reviewed academic literature. A literature search was conducted on 5 September 2024, using title-based Boolean queries that combined multiple keyword permutations such as “innovative teaching,” “blended learning,” “e-learning,” “smart education,” and “digital classroom.” The search was limited to the “Business Economics” research area to maintain thematic focus within the domain of business and management education, while still capturing pedagogical developments applicable to higher education more broadly.

No restrictions were applied on publication year, language, or document type, thereby ensuring the inclusion of a diverse and historically rich dataset. The initial search yielded 1,326 records. After removing duplicates and incomplete entries, a total of 1,129 documents were retained for final analysis.

The resulting bibliographic records were exported in plain text format and analysed using two tools: Microsoft Excel and VOSviewer (version 1.6.16). Excel was used to compute descriptive statistics such as annual publication output, document types, and language distribution. VOSviewer facilitated visualisation of bibliometric networks, including co-authorship patterns, institutional collaborations, citation frequencies, and keyword co-occurrence clusters.

The analytical process was organised into three main phases. First, Descriptive Analysis involved profiling the dataset by year of publication, document type, and language to trace longitudinal patterns and overall research growth. Second, Citation Analysis focused on

identifying the most influential authors, countries, and institutions based on citation volume, co-citation frequency, and bibliographic coupling. Third, Keyword Co-occurrence Analysis examined conceptual structures and thematic clusters to uncover dominant and emerging research topics in the field.

To minimise bias, no manual filtering of author affiliations or journal sources was conducted. However, the exclusive use of the "Business Economics" category may under-represent relevant works from interdisciplinary education journals. Additionally, reliance on title-based keyword searches could omit studies that focus on innovative pedagogy but frame them using different terminologies. These limitations were acknowledged to ensure transparency and reproducibility.

By integrating statistical summaries with bibliometric visualisation, this methodology offers a robust and multifaceted understanding of the intellectual, geographical, and thematic landscape of innovative teaching and learning. It also reflects how the academic community has responded to technological advancements, policy shifts, and global disruptions such as the COVID-19 pandemic.

3. Results and Discussion

3.1 Publication Trends and Characteristics

The data reveal a pronounced and accelerating growth in scholarly attention to innovative teaching and learning over the five-decade period from 1970 to 2024. Prior to the year 2000, the volume of publications in this domain was minimal, with fewer than 20 studies recorded indicating limited engagement with the concept at that time. However, interest began to rise steadily from 2005 onward, with a significant surge occurring between 2015 and 2019. This period coincided with global shifts toward digitalisation in education and increased advocacy for learner-centered pedagogical models.

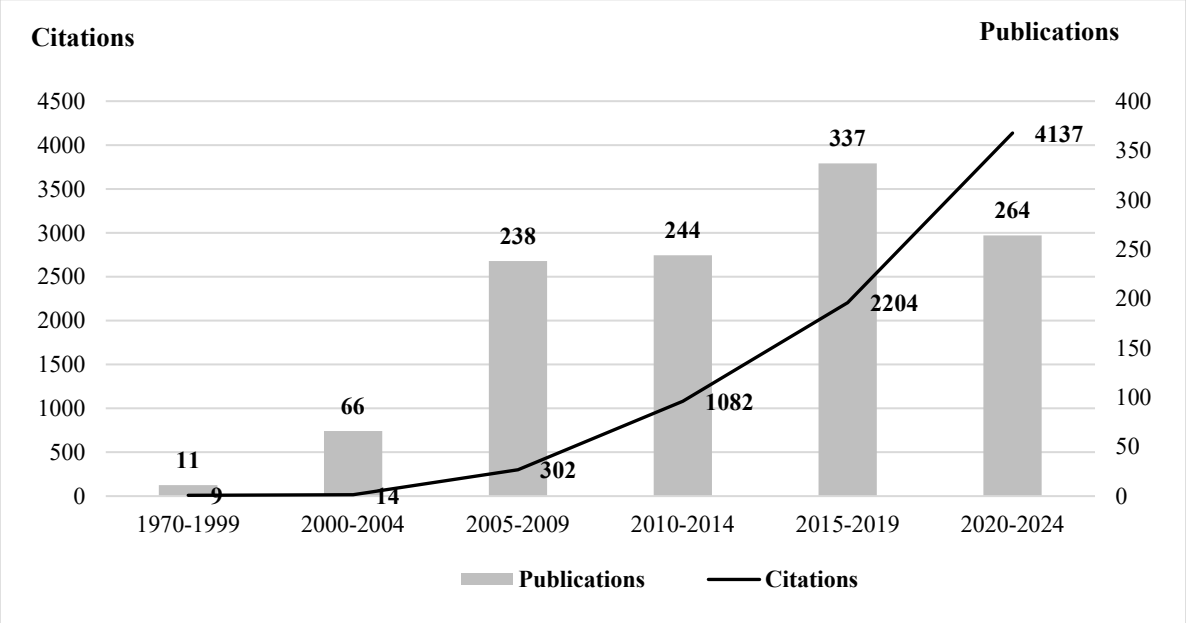

Figure 1: Publication Trends 1970 2024

The highest citation volume was observed during 2020 2024, which correlates with the widespread pivot to online, remote, and hybrid teaching in response to the COVID-19 pandemic. This trend suggests not only increased research output but also elevated scholarly impact, as global disruptions in traditional teaching modalities catalysed urgent exploration and innovation in pedagogy.

In terms of document types, the dataset was dominated by proceeding papers, with 558 records, and journal articles, with 520 records. This distribution reflects the dual nature of academic discourse in this field, driven both by the rapid dissemination of findings in conference settings and by rigorous, peer-reviewed journal publication.

English overwhelmingly emerged as the dominant language of publication, comprising more than 1,100 documents. Minor contributions in Chinese, Portuguese, Spanish, French, and other languages signal some degree of global participation, but the field remains primarily shaped by English-speaking academic ecosystems. This linguistic trend reinforces the global visibility and accessibility of pedagogical research while also suggesting opportunities for more inclusive multilingual scholarship moving forward.

3.2 Citation Analysis

Citation metrics highlight the influential scholarly contributions that have shaped discourse in innovative teaching and learning over the past five decades. The most cited publication in the dataset is a seminal paper by Zhang et al. (2006), which examined the effectiveness of instructional video in e-learning environments. With more than 580 citations, this study provided foundational insights into media design, cognitive load, and learner engagement in digital contexts. Other highly cited studies explored asynchronous learning models, the adoption of educational technologies such as the TAM and the UTAUT, as well as the use of e-learning platforms in low-resource or emergency settings, indicating both theoretical significance and practical relevance.

Table 1: Top 10 Most Cited Authors, Countries, and Institutions

Document Type	Record	Language	Record
Proceeding Paper	558	English	1118
Article	520	Chinese	11
Book Chapters	63	Portuguese	9
Editorial Material	28	Spanish	8
Review Article	20	Czech	3
Early Access	19	French	3
Book Review	15	German	3
Letter	7	Russian	3
News Item	5	Croatian	1
Correction	4	Slovak	1
Meeting Abstract	4		
Retracted Publication	4		
Book	2		

Table 1 presents the top 10 most cited authors, countries, and institutions, alongside the distribution of document types and languages. Articles and proceeding papers dominate the literature, underscoring the fast-evolving nature of the field and its connection to academic conferences. The vast majority of publications are in English, with minor contributions in

Chinese, Portuguese, Spanish, and other languages, reflecting a predominantly global North academic discourse.

At the author level, Meseguer-Artola and Rodriguez-Ardura emerged as the most cited, each with 121 citations. Their research covers technology acceptance, digital motivation, and self-regulated learning, which are key themes in the transition to learner-centered education. At the national level, the United States, the Netherlands, and Taiwan recorded the highest citation impact, reflecting both strong research capacity and institutional prioritisation of pedagogical innovation in these regions. At the institutional level, the National Changhua University of Education and George Washington University ranked highest, indicating centres of excellence with consistent publication output and citation visibility. These citation patterns not only highlight geographic and thematic concentrations in the literature but also provide insight into the epistemic communities driving innovation in teaching and learning worldwide.

3.3 Keyword Co-Occurrence Analysis

Using VOSviewer, seven distinct keyword clusters were identified, offering a comprehensive view of how scholarly focus in the field has evolved. Cluster 1 was anchored around core constructs such as *e-learning, satisfaction, Technology Acceptance Model (TAM),* and *acceptance* highlighting early research interest in user perception and technology adoption in digital education. Cluster 2 centred on *blended learning, online instruction,* and *higher education*, reflecting pedagogical strategies tailored to tertiary education settings. Cluster 3 introduced forward-looking themes including *adaptive learning, sustainability,* and *virtual reality (VR),* indicating a growing interest in personalization and immersive learning environments.

Notably, newer keywords such as *"COVID-19", "digital learning", "hybrid teaching"* and *"remote instruction"* emerged prominently in clusters formed after 2020. This demonstrates a clear evolution in research priorities shaped by global disruption, where the urgency for resilient and inclusive education led to exploration of emergency remote teaching, learner engagement during crisis, and the scalability of virtual tools.

This shift from foundational concepts such as digital infrastructure and basic e-learning systems to more advanced and nuanced themes reflect the intellectual maturation of the field. Increasing attention is given to concepts such as learner engagement, student motivation, pedagogical effectiveness, and institutional resilience.

The continued presence of theoretical models such as the TAM and the UTAUT, as well as constructs like self-efficacy and motivational theory, demonstrates their enduring explanatory power. These models have consistently guided the design and evaluation of technology-enhanced learning interventions across diverse contexts.

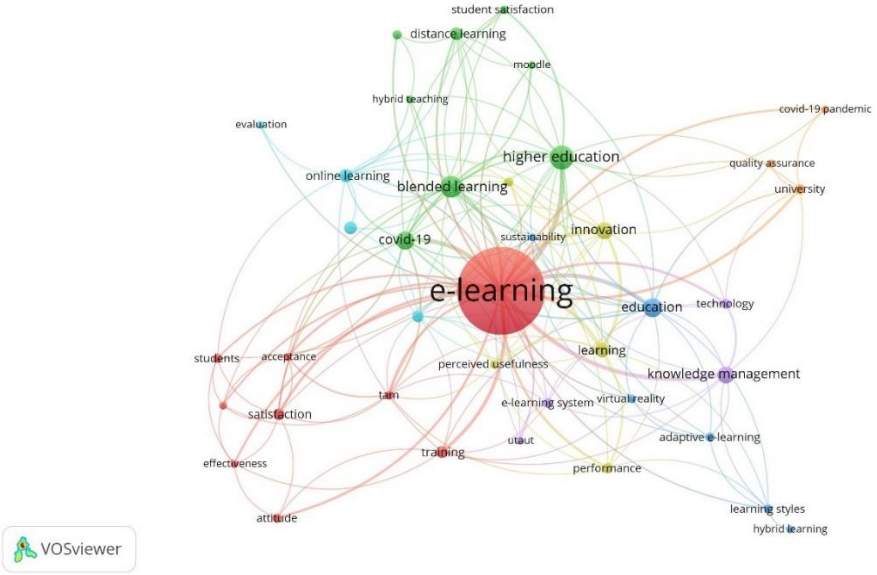

Figure 2: Keyword Co-occurrence Network

3.4 Alignment with Sustainable Development Goals (SDGs)

The literature strongly aligns with SDG 4 (Quality Education), accounting for more than 600 publications that explore strategies to improve access, inclusivity, and learning outcomes through pedagogical innovation. This dominant focus reflects a global scholarly commitment to enhancing the quality and equity of education, particularly through digital transformation, active learning models, and inclusive curriculum designs.

Table 2: Top 10 SDG-Linked Themes in Innovative Teaching Research

Sustainable Development Goals	Record
04 Quality Education	603
09 Industry Innovation and Infrastructure	74
03 Good Health and Well Being	54
01 No Poverty	22
08 Decent Work and Economic Growth	10
12 Responsible Consumption and Production	8
11 Sustainable Cities and Communities	6
13 Climate Action	6
10 Reduced Inequality	4
02 Zero Hunger	3

Smaller but significant associations with SDG 9, which relates to industry, innovation and infrastructure, and with SDG 3, which focuses on good health and well-being, suggest an emerging interdisciplinary convergence. For example, the integration of digital tools and infrastructure to support learning environments reflects the aims of SDG 9, while the growing emphasis on student mental health, overall well-being, and adaptive teaching during crises, particularly the COVID-19 pandemic, demonstrates alignment with SDG 3.

These findings collectively underscore the global urgency and relevance of pedagogical innovation, especially in times of systemic disruption. The evolution in keyword usage and increasing citation intensity indicate that the research agenda in education is progressively

driven by principles of resilience, equity, and responsiveness. This shift affirms the critical role of evidence-based, technology-enabled pedagogy in shaping future-ready education systems.

4. Conclusion

This bibliometric study highlights the robust and evolving landscape of research on innovative teaching and learning, with a specific focus on business and economics education. The findings illustrate a consistent growth in scholarly interest toward digital pedagogies, hybrid learning models, and technology acceptance frameworks, trends significantly accelerated by the educational disruptions brought about by the COVID-19 pandemic. The surge in research output and citation activity during the 2020–2024 period underscores the urgency and relevance of this field during times of crisis. While bibliometric analysis offers macro-level insights, it may not fully capture the pedagogical nuances and contextual realities of implementation.

By mapping publication trends, citation patterns, and keyword co-occurrence networks, this study provides a strategic and data-driven overview of the direction of educational innovation. The continued prominence of constructs such as e-learning, blended learning, the TAM and the UTAUT shows that the field is anchored in both technological adaptation and learner-centred instructional design. This combination highlights the importance of creating pedagogical environments that are technologically equipped while remaining responsive to diverse learner needs and contexts.

The implications for practice are extensive. Educators, curriculum designers, and academic leaders can use these insights to inform evidence-based teaching strategies, develop flexible academic programmes, and implement institutional policies that support sustainable innovation. The clear alignment with SDG 4 further reinforces the essential role of pedagogical transformation in advancing inclusive, equitable, and high-quality education at the global level. Looking ahead, future research could build on this analysis by integrating bibliometric findings with empirical data from classroom practice. Mixed-methods approaches may reveal how key research themes such as gamification, digital literacy, and smart learning environments are applied in real-world educational contexts. There is also considerable potential to examine the use of emerging technologies such as artificial intelligence, virtual and augmented reality, block chain-based credentialing, and learning analytics. These technologies offer opportunities to personalise learning, automate assessment, and promote greater equity in education.

Overall, this study provides a foundational understanding of the intellectual structure and thematic evolution of research on innovative teaching and learning. It encourages educators and researchers to engage with the rapidly expanding evidence base and to explore new directions in the pursuit of transformative, future-ready education.

5. Suggestions

Future research may explore several promising directions to deepen both the theoretical understanding and practical application of innovative teaching strategies in higher education. First, it is recommended to broaden the scope of investigation beyond the “Business and Economic” education domain to include interdisciplinary fields such as STEM, Arts, TESL, and Health Education. This broader inclusion will allow for a more holistic and representative picture of pedagogical innovation across diverse academic disciplines and cultural contexts, capturing the nuances of learner engagement and institutional adaptability.

Second, future studies may adopt new objectives that focus on examining the real-world application of innovative practices. This includes evaluating how specific interventions such as hybrid teaching models, the integration of virtual and augmented reality, gamification, and adaptive learning systems are implemented in classroom environments. It is also important to assess the long-term impact of adopting pedagogical technologies on student academic performance, learner engagement, and educator satisfaction. In addition, future research should address the structural and policy dimensions by examining institutional readiness, resource allocation, and regulatory frameworks that either support or limit educational innovation.

Third, methodological advancement is essential. Researchers are encouraged to combine bibliometric techniques with qualitative content analysis, case studies, or meta-synthesis in order to gain deeper insights into pedagogical philosophies, barriers to implementation, and contextual effectiveness. The application of machine learning–assisted bibliometric, including topic modelling, cluster analysis, and sentiment analysis, opens new opportunities to uncover hidden patterns and predictive trends in large-scale educational datasets.

In addition, triangulating multiple data sources such as Web of Science, Scopus, and Google Scholar can strengthen the robustness of bibliometric findings. Involving a wider range of stakeholders, including educators, learners, administrators, and policymakers, will ensure that future research remains contextually grounded and produces actionable recommendations. Such comprehensive and interdisciplinary approaches are vital to advancing the global agenda for education systems that are inclusive, resilient, and future-ready.

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Conflict of Interest Statement
The authors declare that there is no conflict of interest regarding the publication of this study.

References

Abbasi, S., Ayoob, T., Malik, A., & Memon, S. I. (2020). Perceptions of students regarding Elearning during COVID-19 at a private medical college. Pakistan Journal of Medical Sciences, 36(COVID19-S4), S57 S61. https://doi.org/10.12669/pjms.36.COVID19-S4.2766

Che Mohd Nasir, N., Idris, F., & Zabidi, N. H. (2022). Bibliometric analysis on innovative teaching in higher education: Insights from Scopus. Asian Journal of University Education, 18(4), 123 139. https://doi.org/10.24191/ajue.v18i4.2022

Cheng, Y.-M. (2012). Effects of quality antecedents on e-learning acceptance. Internet Research, 22(3), 361 390. https://doi.org/10.1108/10662241211235699

Dhawan, S. (2020). Online learning: A panacea in the time of COVID-19 crisis. Journal of Educational Technology Systems, 49(1), 5 22. https://doi.org/10.1177/0047239520934018

Dereli, T., Baykasoglu, A., Altun, K., Durmusoglu, A., & Türksen, I. B. (2011). Industrial applications of type-2 fuzzy sets and systems: A concise review. Computers in Industry, 62(2), 125 137. https://doi.org/10.1016/j.compind.2010.10.006

Frehywot, S., Vovides, Y., Talib, Z., Mikhail, N., Ross, H., Wohltjen, H., Bedada, S., Korhumel, K., Koumare, A. K., & Scott, J. (2013). E-learning in medical education in

resource constrained low- and middle-income countries. Human Resources for Health, 11(1), 4. https://doi.org/10.1186/1478-4491-11-4

Liu, W., Wang, J., Li, C., Chen, B., & Sun, Y. (2019). Using bibliometric analysis to understand the recent progress in agroecosystem services research. Ecological Economics, 156, 293 305. https://doi.org/10.1016/j.ecolecon.2018.09.001

Marinova, D., de Ruyter, K., Huang, M.-H., Meuter, M. L., & Challagalla, G. (2017). Getting smart: Learning from technology-empowered frontline interactions. Journal of Service Research, 20(1), 29 49. https://doi.org/10.1177/1094670516679273

Rajendran, L. P., Yusoff, M. A., & Hamzah, N. (2023). Trends in digital pedagogy research: A bibliometric mapping analysis. International Journal of Learning, Teaching and Educational Research, 22(1), 1 17. https://doi.org/10.26803/ijlter.22.1.1

Rejeb, A., Rejeb, K., Abdollahi, A., Al-Turjman, F., & Treiblmaier, H. (2022). The interplay between the Internet of Things and agriculture: A bibliometric analysis and research agenda. Internet of Things, 19, 100580. https://doi.org/10.1016/j.iot.2022.100580

Rodriguez-Ardura, I., & Meseguer-Artola, A. (2016). E-learning continuance: The impact of interactivity and the mediating role of imagery, presence and flow. Information & Management, 53(4), 504 516. https://doi.org/10.1016/j.im.2015.11.005

Van Eck, N. J., & Waltman, L. (2020). VOSviewer manual: Manual for VOSviewer version 1.6.16. Centre for Science and Technology Studies, Leiden University.

Wan, Z., Wang, Y., & Haggerty, N. (2008). Why people benefit from e-learning differently: The effects of psychological processes on e-learning outcomes. Information & Management, 45(8), 513 521. https://doi.org/10.1016/j.im.2008.08.003

Zalat, M. M., Hamed, M. S., & Bolbol, S. A. (2021). The experiences, challenges, and acceptance of e-learning as a tool for teaching during the COVID-19 pandemic among university medical staff. PLoS ONE, 16(3), e0248758. https://doi.org/10.1371/journal.pone.0248758

Zhang, D., Zhou, L., Briggs, R. O., & Nunamaker Jr., J. F. (2006). Instructional video in e-learning: Assessing the impact of interactive video on learning effectiveness. Information & Management, 43(1), 15 27. https://doi.org/10.1016/j.im.2005.01.004.