

THE EMERGING OF ECCOUNTING EDUCATION INNOVATION: A BIBLIOMETRIC ANALYSIS

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Abstract

This study aims to conduct a comprehensive review of accounting education innovations development study from time to time. The sample consists of 142 documents published from 1983 until 2023 period using the Scopus database with keywords: accounting education innovation. The method in this research was a systematic literature review with a bibliometric approach utilizing VOSviewer software to provide a graphical analysis of bibliometric data and visualization of research results. From the visualization, two main groups (colors) are generated. The red area consists of topics related to accounting, accounting education, innovation, and teaching innovation. The green cluster area included educational technology, curriculum and instruction, faculty, and students. From the network analysis result, it can be concluded that these keywords lie in the context of accounting education within higher education institutions for the red area and interconnected in the educational ecosystems for the green cluster. The education system, including higher education, plays a role in accounting education and can adopt innovative approaches to teaching. Surprisingly, we found that the fields of accounting education specialized areas like management accounting and cost accounting. Lastly, education technology can enhance curriculum and instruction, literature review inform curriculum development, faculty members are responsible for curriculum development and instruction, and students are the ultimate beneficiaries of these efforts. By mapping education topics, the bibliometric analytic could systematically review multiple studies to provide a less biased perspective. It also helps future research by clustered studies based on the connectivity among keywords to understand better what next innovations are needed.

Keywords: Accounting Education Innovation, Scopus, Higher Education, Systematic Literature Review, VOSviewer

1 INTRODUCTION

An in-depth understanding of basic accounting concepts is essential for assisting students in completely comprehending the discipline. Accounting students, on the other hand, frequently struggled with grasping accounting topics, did not meet with lecturer's expectations (Lucas & Mladenovic, 2009), and tended to use surface learning tactics linked with rote memorization and a lack of conceptual comprehension, according to research (Biggs & Tang, 2011). Several studies have found that accounting students with surface learning methodologies have low conceptual knowledge.

We examined articles published in the Scopus database with accounting education keywords over the past four decades. It recommended the development of a knowledge base in accounting, and our analysis documents trends in the literature and the current state of knowledge base development in accounting education. Since the *Journal of Accounting Education* was first published in 1983, the number of venues for publishing accounting education manuscripts has increased dramatically, resulting in a vast increase in the number of published accounting education articles.

Accounting education research aims to advance accounting education theory and practice. Accounting education journals serve as a forum for disseminating valuable information and experiences regarding, for instance, innovative teaching strategies, the use of instructional resources, and the findings of empirical studies that enhance curriculum and pedagogy. Stout & Rebele (1996), two seasoned editors, stated that accounting education periodicals report on changes made by individual faculty and educational institutions.

Academics, including former editors of the leading accounting education journals, have designated (1) addressing significant issues and (2) enhancing educational quality as the primary objectives of accounting education scholarship. Wilson (2002) and Rebele (2002), for instance, argued that accounting education research should be conducted to increase our understanding of how to enhance student and educational outcomes. As editors and authors, (St. Pierre et al., 2009) noted concepts emerging from accounting education research should enhance teaching, learning, and research. Publishing articles on topics that can aid in enhancing the quality of education has, therefore, been acknowledged as a central objective of the accounting education literature for a very long time.

According to Stout & Rebele (1996), it is important for changes in accounting education to be informed by a knowledge base that is derived from research findings that can be generalized. The authors of this study noted that during that period, the existing literature on accounting education primarily comprised of individual studies that did not contribute to the establishment of a comprehensive knowledge base. In response, the authors provided recommendations and suggestions for researchers and editors in this field. One of the ideas put forth was that accounting education journals should include the publication of studies that yield unexpected results or fail to discover statistical significance, in addition to those that corroborate and validate the conclusions of previous research.

The growing number of articles published in accounting education journals by scholars from around the world, along with the inclusion of a wider range of topics over the past twenty years, suggests that accounting education journals are successfully achieving their objective of facilitating the sharing of information. However, it remains uncertain if the articles published in accounting education journals have effectively addressed significant themes or topics and have made substantial contributions towards the development of a knowledge base that may provide guidance for the advancement of accounting education.

2 METHODOLOGY

A literature review is a method for systematically identifying, evaluating and synthesizing the extant body of completed and recorded work produced by researchers, scholars, and practitioners. Unless a thorough literature review is conducted, a researcher will be unable to comprehend the work that has already been done, how it has been done, and the primary challenges in relation to the study area. To comprehend prior work on a topic, it is essential to comprehensively comprehend the major theories, how they have been applied and developed, and the major criticisms leveled against them. It enables the researcher to justify why new findings are being contributed. Thus, it ensures that a topic can be researched before actual research begins. A researcher must be able to access the vast resources available online and in libraries worldwide, develop a procedure for managing the material obtained, maintain records, and apply procedures for interpreting the literature, ultimately leading to developing a new idea.

This study presents a bibliometric analysis used in prior academic research to establish the foundation of accounting education innovation research and to offer insights and critiques that evaluate, identify, and address future research agendas adopted from Pinto et al. (2020) and Kalantari et al. (2017). The bibliometric method was utilized to address the problem concerning the authors' accounting education innovation research literature development and collaboration network trends. We used an organized procedure for sifting through resources, structuring the mind map for developing the theoretical framework, composing the study, and compiling the bibliography that was implemented by Pinto et al. (2020). Consequently, we employ a three-step methodology to collect data and evaluate the research conducted in the field of dividend policy: identifying the most significant literature, identifying the current areas of research interest, and establishing guidelines for future research on the topic.

2.1 Identification of suitable search terms

To conduct a systematic literature review in the field of accounting education innovations, we used the Scopus database to compile a list of articles published in this area of research over the past 40 years. Scopus is the world's largest abstract and citation database of peer-reviewed research literature, with over 22,000 titles from more than 5,000 international publishers. It provides a comprehensive overview of the world's research output in the disciplines of science, technology, medicine, social sciences, and the arts and humanities; therefore, it has been utilized for this study. It includes 142 scholarly journals. Prior to conducting a systematic literature review, it emphasizes the need to identify and define relevant terms (Bouzon et al., 2014). As this study aims to determine the general trends and potential for future innovations in accounting education research, the keywords "accounting education innovation" were utilized.

2.2 Initial search results Subsection

The literature search was conducted in 2023. Articles containing the keywords identified in We were retrieved from the Scopus database using the "keywords" search. Tsay & Shu (2011) used citation analysis to investigate the journal bibliometrics of the Journal of Documentation and discovered that journal articles are the most cited document, followed by books and book chapters, electronic resources, and conference proceedings, in that order. As a result, to refine the search, we have restricted the source type to "Journal" publications only. This resulted in 142 articles being published. These results were saved in CSV format and included all pertinent data, including the article's title, authors' names and affiliations, abstract, keywords, and citations. This serves as the primary data source for the systematic literature review.

2.3 Data Analysis

For data analysis, bibliometric and network analysis tools are utilized to identify accounting education innovation trends to assist researchers in identifying emerging areas for future research. Before the actual data analysis, the descriptive literature review is conducted. Bibliometric analysis examines a variety of statistics, including keyword statistics, author statistics, and journal statistics. The CSV file is used to generate a network diagram for network analysis, and for improved visualization, the spatializing networks were obtained using this basic network diagram created with VOSviewer.

3 FINDINGS AND DISCUSSION

3.1 Publication growth analysis

From 1983 onward, 142 articles published on accounting education innovation were published. Disregarding the annual fluctuations in the number of articles, overall, the number of publications increased, but in the year 2021, a year after the COVID-19 pandemic first occurred, the number of published articles decreased. The line graph in Figure 1 displays the number of articles published in the field of accounting education innovation from 1983 to early 2023. The number of publications has increased from one in 1983 to eleven in early 2023.

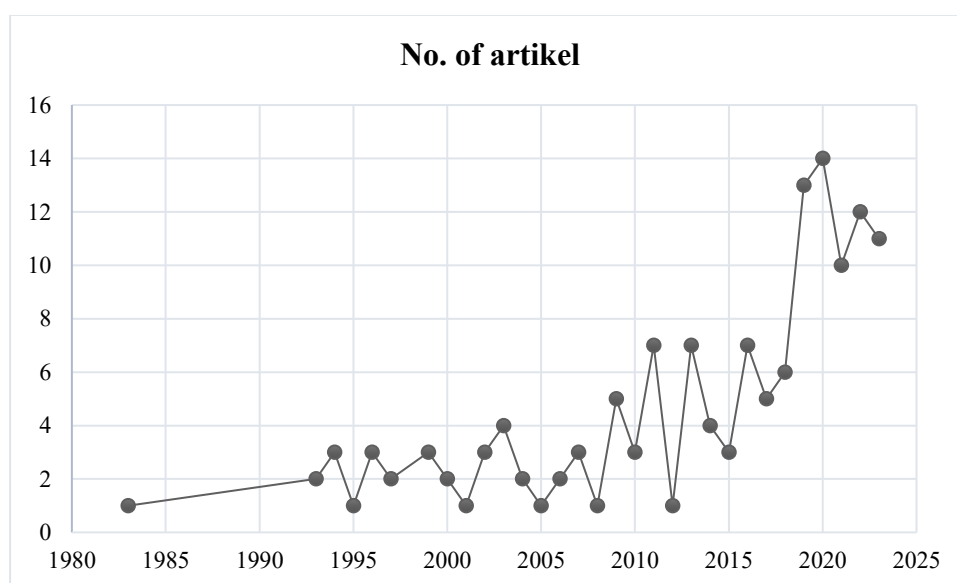


Figure 1. Year publication in the field of accounting education innovation

3.2 Location statistics

Table 1 shows the details of the geographical location of papers published on accounting education innovation, with more than 5 articles per country. The analysis of the geographical statistics shows that the highest number of publications also the highest number of citations is from the United States, with 40 articles and 601 citations, followed by the United Kingdom, with 21 articles and 529 citations. Surprisingly, Canada has more citations of 221 citations in 7 articles than Australia, with 110 citations in 10 articles.

Table 1. Top contributing country

Country	No. of articles	Citations
United States	40	601
United Kingdom	21	529
Australia	10	110
Canada	7	221
Spain	6	63
South Africa	6	41
Malaysia	5	91
Others (less than 5 articles per country)	47	-

3.3 Authors and citation analysis

Citations are a metric used to assess the importance of a publication. By counting the number of times a publication is cited by other publications, citation analysis, according to Ding & Cronin (2011), seeks to gauge the "popularity" of a publication. A number of studies have looked at the variables that affect citation count. For instance, it has been demonstrated in numerous studies that the citation power of the papers published in a journal is influenced by the journal's reputation on a certain subject (Tahamtan et al., 2016).

In certain studies, researchers have looked at the phrases and sentences surrounding citations to assess the characteristics of the referenced work, the motivations behind the citation, and the citing authors' deciding factors (Halevi & Moed, 2013). Table 2 shows details of the top productive and impactful 17 authors according to the number of documents and citations they received. These findings aid scholars in locating the most pertinent and trustworthy journals in the field, seminar papers, citation motives, and citation criteria. The most productive author in this research field is Barbara Apostolou from the Department of Accounting at West Virginia University.

Table 3 details the top 10 impactful articles by number of citations. The most popular articles were examined by Gosling & Mintzberg (2003) with 191 citations, Kaplan (1994), with 96 citations, followed by Khatib et al. (2021) with 83 citations.

Table 2. The most productive authors

Author	No. of documents	No. of time cited
Apostolou, B	6	102
Hassell, J.M.	6	102
Dorminey, J. W.	5	101
Calabor, M.S.	2	47
Mora, A.	2	47
Moya, S.	2	47
Broad, M.	2	8
Gomes, O.	2	0
Martins, H.F.	2	0
Senik, R.	2	8
Cook, K.A.	2	6
Dopson, L.R.	2	2
Edwards, J.R.	2	43
Gammie, E.	2	39
Hiebl, M.R.W.	2	25
Nassar, M.	2	3
Reinsten, A.	2	42

Table 3 Top papers using citation measure

Author	Year	Document Title	Journal	No. of times cited
(Gosling & Mintzberg, 2003)	2003	The Five Minds of a Manager	Harvard Business Review	191
(Kaplan, 1994)	1994	Management accounting (1984-1994): Development of new practice and theory	Management Accounting Research	96
(Khatib et al., 2021)	2021	Nudging toward diversity in the boardroom: A systematic literature review of board diversity of financial institutions	Business Strategy and the Environment	83
(von Geibler et al., 2006)	2006	Accounting for the social dimension of sustainability: Experiences from the biotechnology industry	Business Strategy and the Environment	73
(Burnett, 2003)	2003	The Future of Accounting Education: A Regional Perspective	Journal of Education for Business	56
(Jack, 2005)	2005	Stocks of knowledge, simplification and unintended consequences: The persistence of post-war accounting practices in UK agriculture	Management Accounting Research	47

(Holtzblatt & Tschakert, 2011)	2011	Expanding your accounting classroom with digital video technology	Journal of Accounting Education	42
(Edwards et al., 1999)	1999	Connecting accounting and education in the uk: discourses and rationalities of education reform	Critical Perspectives on Accounting	40
(Apostolou et al., 2018)	2018	Accounting education literature review (2017)	Journal of Accounting Education	38
Sargent C.S., Faye Borthick A., Lederberg A.R.	2011	Improving retention for principles of accounting students: Ultra-short online tutorials for motivating effort and improving performance	Issues in Accounting Education	38

3.4 Author keywords analysis

Table 3 shows that the top 10 keywords studied to discuss accounting education innovation are accounting education, innovation, education, students, literature review, higher education, accounting, curriculum and instruction, educational technology, faculty, cost accounting, teaching, management accounting, and teaching innovation. Observing Table 3, we can conclude that, of these top ten keywords, accounting education and innovation have been examined the most, along with accounting education innovation. Table 3 reveals that teaching innovation has only been examined in 5 studies. This analysis helps to identify the studied main determinants as well as those that have received less attention. It also reveals that many new keywords have only been used to investigate accounting education innovation since 1983.

Table 3. Author keyword statistics

Author	Occurences
Accounting education	21
Innovation	17
Education	11
Students	9
Literature review	7
Higher education	7
Accounting	7
Curriculum and instruction	6
Educational technology	6
Faculty	6
Cost accounting	6
Teaching	5
Management accounting	5
Teaching innovation	5

3.5 Network analysis

Based on Figure 2, two main groups (colors) are generated by network analysis from VOSviewer. The red section encompasses subject matters pertaining to accounting, accounting education, innovation, and the pedagogy of innovation. The green cluster area encompassed several components, such as educational technology, curriculum and instruction, faculty, and students. Based on the findings of the network analysis, it can be inferred that the identified keywords pertain to the domain of accounting education within higher education institutions for the red region, while they are interconnected within the educational ecosystems for the green cluster. The function of the education system, encompassing higher education, is significant in the realm of accounting education and has the potential to embrace innovative pedagogical methods.

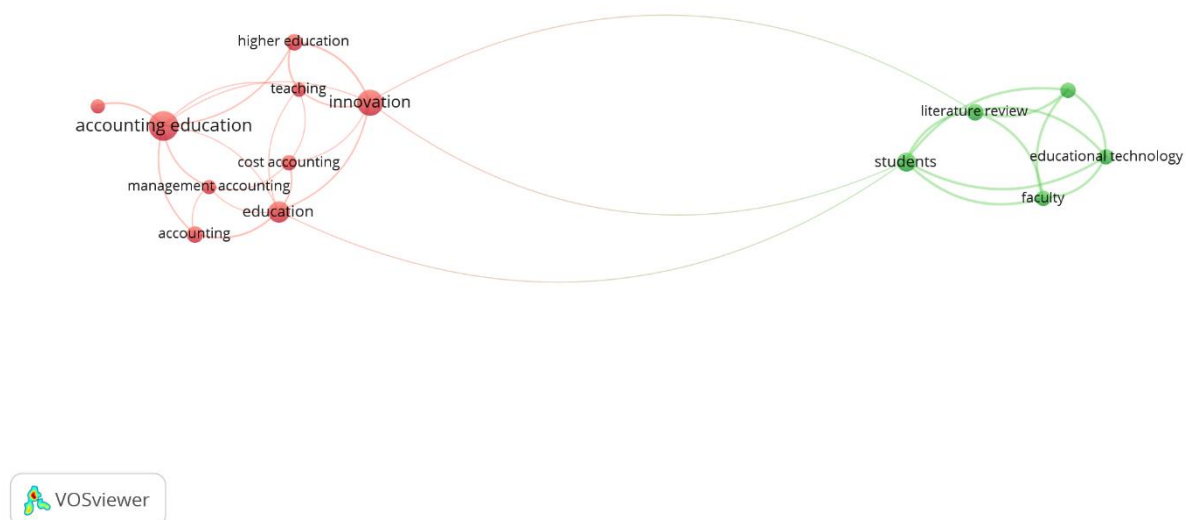


Figure 2. Network of the article topics

4 CONCLUSION

From 1983 until early 2023, 142 articles published on accounting education innovation were published in Scopus Database journal. In general, there was an upward trend in the number of publications; however, in the year 2021, which followed the initial outbreak of the COVID-19 pandemic, there was a decline in the number of published articles. The analysis of the geographical statistics shows that the highest number of publications also the highest number of citations is from the United States, followed by the United Kingdom. The most productive author in this research field is Barbara Apostolou from the Department of Accounting at West Virginia University. The top 10 keywords studied to discuss accounting education innovation

are accounting education, innovation, education, students, literature review, higher education, accounting, curriculum and instruction, educational technology, faculty, cost accounting, teaching, management accounting, and teaching innovation

Based on network analysis, two main groups (colors) are generated by network analysis from VOSviewer. The red area consists of topics related to accounting, accounting education, innovation, and teaching innovation. The green cluster area included educational technology, curriculum and instruction, faculty, and students. From the network analysis result, it can be concluded that these keywords lie in the context of accounting education within higher education institutions for the red area and interconnected in the educational ecosystems for the green cluster. The education system, including higher education, plays a role in accounting education and can adopt innovative approaches to teaching.

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