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Accounting education from 1960 to 2023: a bibliometric review

Guojing Hu[1], Haslinah Muhamad[1], Hasri Mustafa[1], Mushtaq Yousif Alhasnawi[2]
[1]School of Business and Economics, Universiti Putra Malaysia, Selangor, Malaysia
[2]Faculty of Administration and Economics, University of Thi-Qar, Nasiriyah, Iraq

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ABSTRACT

Since 1960, publications in accounting education have demonstrated a high level of productivity and influence. However, few studies have attempted to use bibliometric methods to map and visualize accounting education research. This study aimed to identify global issues in accounting education through bibliometric analysis, covering the period from 1960 to 2023, by exploring publication trends, top topics, and major contributors in the field. Tools such as Microsoft Excel, VOSviewer, the bibliometric R-package, and WordSift were utilized to comprehensively analyze 717 Scopus-indexed documents. The findings underscore a continuous and recently accelerated historical evolution of accounting education publications, with primary research areas clustering around "business, management, and accounting." Noteworthy trends include a geographic concentration in the United States, the United Kingdom, and Australia, with RMIT University emerging as a key contributor. Hassell, from the United States, is recognized as the most influential author, and "accounting education" from Taylor & Francis stands out as the most productive journal. Works by Bui and Porter in 2020 emerge as the most frequently cited documents. The research results indicate that future research directions should focus on students, higher education, and the profession, emphasizing themes such as curriculum, learning, and skills.

Corresponding Author:

Guojing Hu
School of Business and Economics, Universiti Putra Malaysia
43400 Serdang, Selangor, Malaysia
Email: gs61681@student.upm.edu.my

1. INTRODUCTION

Accounting graduates hold diverse and essential roles in society, with accounting education serving as a crucial cornerstone encompassing academic knowledge, practical training, experiential learning, and business acumen. It not only furnishes students with an academic foundation but also fosters an environment conducive to the development of professional accountants through systematic learning and practical experience [1]. The COVID-19 pandemic has accentuated the potent capabilities of cloud computing as a robust tool for global knowledge sharing in teaching and learning endeavors [2]. Particularly noteworthy is its application in accounting education, where it stands to bolster the decision-making process of professionals [3]. Hence, accounting education aims to nurture graduates with the requisite skills and aptitudes demanded by the accounting industry. Through ongoing research, it facilitates the assessment of graduates' employability, enhances student services, and establishes robust teaching frameworks [4]. Recent studies have highlighted the digitization, diversification, and technological advancements in the field of accounting education. Research by Tettamanzi *et al.* [5] examined the extent of academic digitalization in accounting education and explored new teaching methods for the post-pandemic era. Adebiyi *et al.* [6] demonstrated that integrating principles from science, technology, engineering, and mathematics into accounting education enhanced inclusivity and attracted

a more diverse student body. Al-Hattami [7] investigated academics' views on technological advancements that guide policymaking on technology adoption and integration in accounting education. Despite these advancements, few studies have focused on mapping and visualizing accounting education. Therefore, bibliometric analysis methods are essential for ensuring comprehensive progress in this field.

Accounting education is becoming an increasingly important area within the accounting profession. This study provides a comprehensive historical overview from 1960 to 2023, revealing trends and patterns that advance research in this field. Unlike previous reviews with limited scope, this bibliometric analysis offers a systematic, comprehensive, and objective evaluation of accounting education publications based on the Scopus database. For instance, Apostolou *et al.* [8] present a summarizing and descriptive review of 109 papers from five accounting education journals published in 2022, providing insights into a narrow set of articles from a single year. Theuri *et al.* [9] focus on technology-related aspects of accounting education, analyzing 187 articles from seven journals between 2010 and 2020 to explore the relationship between technology and accounting education. Tandiono [10] uses a narrative literature review to examine articles from 2017 to 2020, highlighting the need for integrating technology and digital gamification into accounting education. Poje and Groff [11] concentrate their bibliometric analysis exclusively on research in accounting ethics. In comparison, Cao *et al.* [12] conduct a systematic review of 673 articles on accounting pedagogy, competencies, and ethics but limited their review to A- and A-ranked journals indexed in the Web of Science from 2005 to 2023, thereby excluding papers published in other databases such as Scopus.

Despite the substantial output and influence of accounting education research from the Scopus database over the past 64 years, there remains a lack of cohesive analysis of emerging trends and patterns as the field grows increasingly complex and dynamic. This bibliometric analysis aims to address this gap by thoroughly reviewing academic publications and providing valuable insights into the field's evolution, research landscape, collaboration, future directions, and overall influence. The study will focus on addressing the following research questions (RQs): i) examines current states and trends (RQ_1); ii) explores the covered topic areas (RQ_2); iii) identifies major contributors (RQ_3); iv) investigates influential citations in accounting education (RQ_4); and v) discusses future research directions (RQ_5).

2. METHOD

Bibliometric analysis is commonly used to statistically evaluate published journal articles and other scientific literature [13]. Indicators such as total publications, citations, citations per publication, and the h-index offer a comprehensive evaluation [14]. As a vital global bibliographic resource [15], the Scopus database provides a diverse array of scholarly sources for bibliometric analysis [16], [17]. In this study, we utilized the search query (TITLE ("accounting education")) to retrieve all types of documents available as of December 31st, 2023. This query retrieved a total of 750 documents related to accounting education literature from the Scopus database. Given the global nature of this search and the inclusion of publications in multiple languages, our focus was refined to encompass only English-language documents. Additionally, to ensure accuracy and eliminate redundancy, we excluded errata and retracted document types, leading to the removal of 33 documents during the screening process. This article follows the preferred reporting items for systematic reviews and meta-analyses (PRISMA) flow diagram to execute the search strategy as shown in Figure 1, confirming that all 717 documents in our dataset met the eligibility criteria for this bibliometric study.

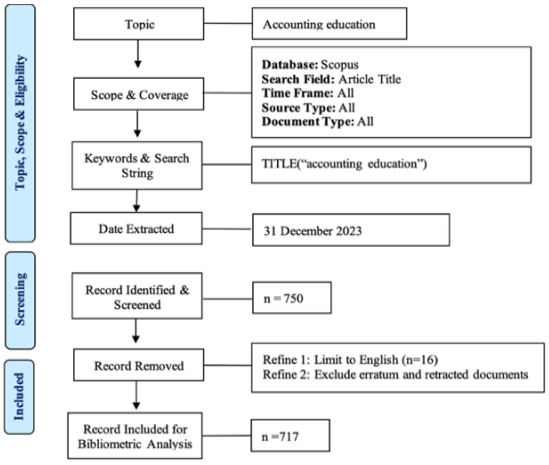


Figure 1. Flow diagram of the search strategy

3. RESULTS AND DISCUSSION

3.1. RQ_1: what are the current states and evolution trends of accounting education research?

3.1.1. Current states

As presented in Table 1, the majority of publications consist of original research articles (514, 71.69%). Following closely are book chapters (67, 9.34%), which significantly deviate in quantity from journal articles. Conference papers and notes contribute 5.58% and 5.30%, respectively, to the body of accounting education literature. Furthermore, other document types collectively constitute less than 10% of the total. The statistical data presented in Table 2 unmistakably highlights that journals stand out as the predominant source of document type publications, commanding the majority of source types (599, 83.54%). In contrast, the remaining three document types (books, conference proceedings, and book series) collectively contribute only 16.46% (118). Consequently, articles and journals are the primary documents and sources for documenting research in accounting education, offering scholars essential references and substantial research value.

Table 1. Document types for accounting education research

Document types	Total publications	Percentage (%)
Article	514	71.69
Book chapter	67	9.34
Conference paper	40	5.58
Note	38	5.30
Editorial	34	4.74
Review	22	3.07
Book	2	0.28
Total	717	100.00

Table 2. Source types for accounting education research

Source types	Total publications	Percentage (%)
Journal	599	83.54
Book	60	8.37
Conference proceeding	30	4.18
Book series	28	3.91
Total	717	100.00

3.1.2. Evolution trends of publications

The scarcity of early-stage publications is evident in Figure 2, where the number of publications before 1992 consistently remained below 5 each year. Notably, in 1960, 1977, 1980, 1981, and 1985, only one document was recorded each. It was not until 1992 that the number of publications first exceeded 20, marking the initial advancement in accounting research. Therefore, the period from 1960 to 1992 was defined as the "emerging period" of accounting education literature, characterized by slow growth and limited productivity in accounting education publications. However, the subsequent stage, labelled the "Rapid growth period", witnessed a significant surge in publications, totaling 664, accounting for over 90%. Notably, this surge included years such as 2013, with over 30 publications, 2014, with over 40 publications, 2020, with over 50 publications, and 2023, surpassing the 60 marks. Moreover, there has been a consistent exceeding of 40 annual publications since 2020. This indicates that recent years have seen remarkable productivity in the field of accounting education. It uncovers the longstanding history of accounting education literature and the trend of steady growth in the number of publications from 1960 to 2023, highlighting the extensive discussion and citation of the research topic among scholars.

3.2. RQ_2: what topic areas have been discussed in accounting education research?

3.2.1. Main subject area

In the contemporary academic landscape, research on accounting education encompasses diverse subject areas. Figure 3 categorizes documents based on their subject areas, revealing that accounting education documents are predominantly clustered in business, management, and accounting (597, 41.46%) and social sciences (455, 31.60%). Remarkably, these two research domains collectively contribute to over 70% of the total. Next is the field of economics, econometrics, and finance, which accounts for 13.13%. Subsequently, computer science, decision sciences, engineering, environmental science, agricultural and biological sciences each represent less than 5%, while the remaining subject areas contribute to less than 1%.

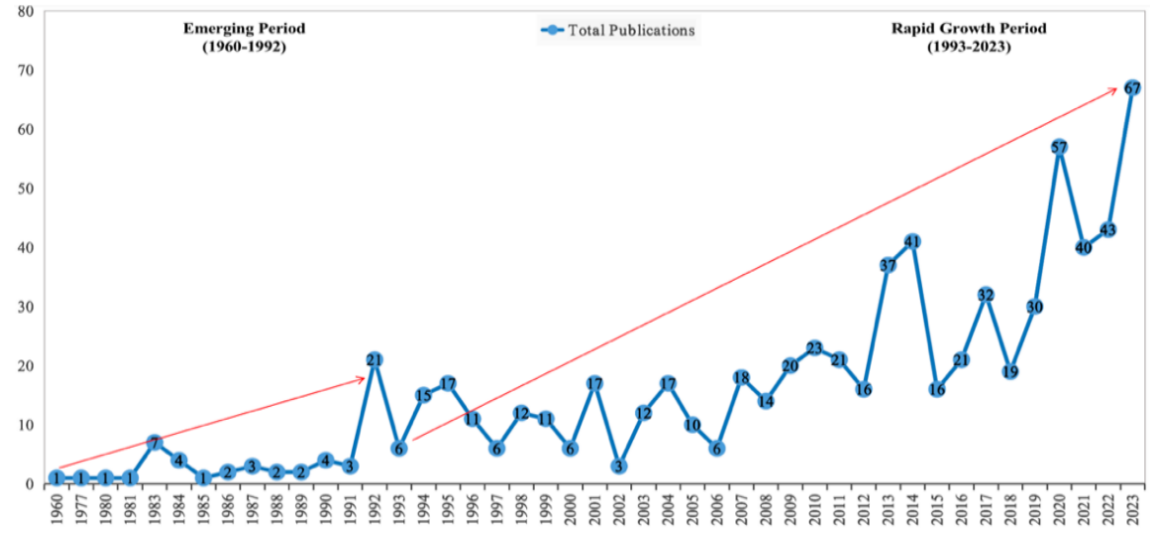


Figure 2. Trend of published documents from 1960 to 2023

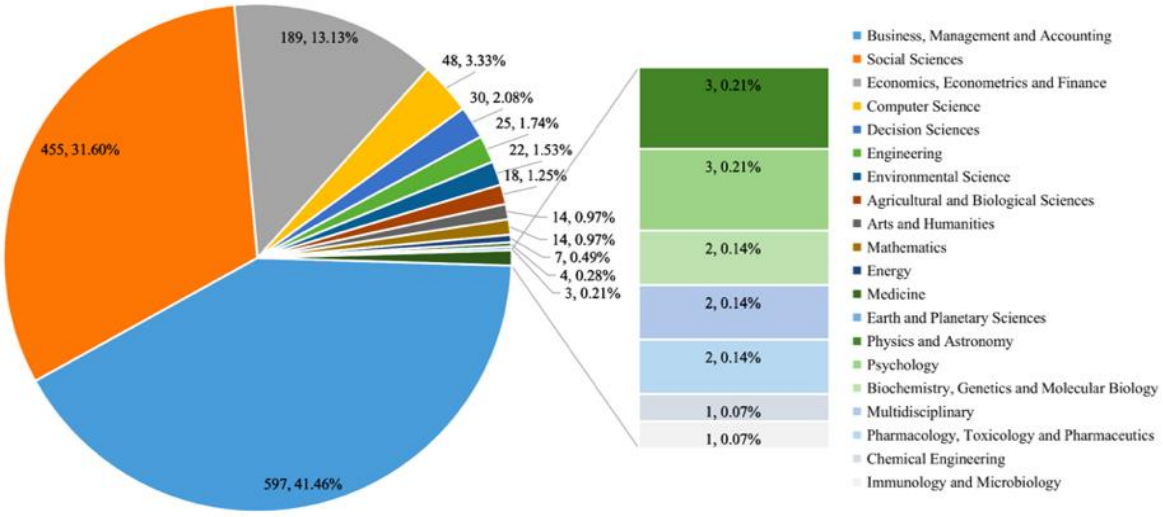


Figure 3. Subject area

3.2.2. Keywords analysis

In this section, the study employed VOSviewer to construct a bibliometric network and analyzed the network visualization of author keywords. Establishing an occurrence threshold of a minimum of 10 times, Figure 4 illustrates the resulting network visualization graph, which was further utilized to generate a co-word map categorizing author keywords into three clusters. To enhance clarity, these clusters were defined as “accounting education based on students,” “accounting education based on higher education and profession,” and “accounting education based on COVID-19.” The color of the connecting lines, circle size, font size, and line thickness represent the relationships between keywords [18]. Cluster 1, highlighted in red, centralizes on students, with faculty, curriculum, literature review, and assurance of learning also prominent. Cluster 2, distinguished by blue keywords, revolves around accounting education, covering higher education, the accounting profession, experimental learning, and pedagogy. Cluster 3, represented by green keywords, emphasizes accounting, education, and COVID-19. However, public attention to COVID-19 has diminished over time. Consequently, as research in accounting academia continues to evolve, accounting education studies related to COVID-19, though a prominent topic at a particular stage, may not receive sustained attention. In summary, the study indicates that future research directions in accounting education will focus on students and higher education.

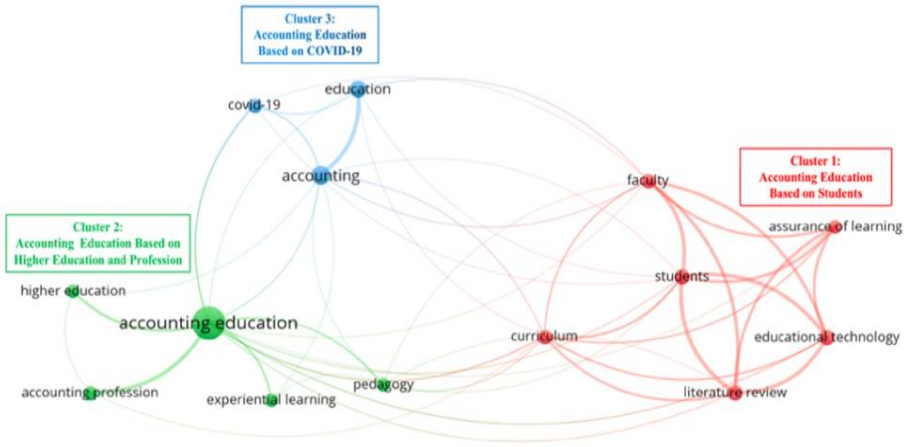


Figure 4. Network visualization map of author keywords (occurrences≥10)

3.2.3. Title and abstract analysis

This study comprehensively examined both titles and abstracts, as illustrated in Figure 5(a), and solely titles, as depicted in Figure 5(b), in the collected documents. It assessed the frequency and co-occurrence of terms through VOSviewer. The analysis employed a binary counting method, setting terms to appear a minimum of 15 times to construct the co-occurrence network for title and abstract fields. In this approach, all noun phrases were treated equally in terms of co-occurrence, irrespective of their frequency. Figure 5(a) visually represents the term co-occurrence network centered around "research" within the accounting education network. Notably, key nodes such as "skill," "educator," and "issue" emerge prominently, establishing their centrality in accounting education research. The color-coded network map underscores that terms of the same color frequently co-occur; for instance, "research," "issue," "curriculum," and "faculty" in blue terms demonstrate a close association. VOSviewer analyzed the items from publication titles and abstracts, revealing four distinct clusters with different colors. In contrast to the results of Figure 5(a), Figure 5(b) emphasizes that "accounting education" is the central term in the co-occurrence network for the study of title fields. It identified a total of 8 items and 3 clusters. Specifically, the green cluster signifies impact, the red cluster denotes changes, and the blue clusters focus on relevant literature and students. This discrepancy can be attributed to the exclusion of an abstract section in Figure 5(b), which focuses solely on the research title field.

3.3. RQ3: who are the major productive contributors to accounting education research?

3.3.1. Most productive countries

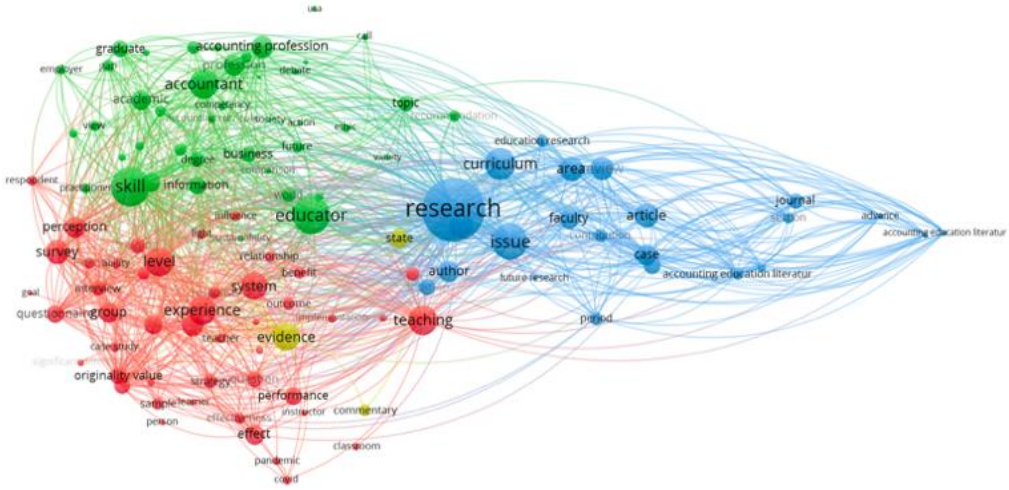
In this section, we conduct a comprehensive analysis emphasizing the 10 most productive and influential countries in the realm of accounting education research. As shown in Table 3, the United States (198 publications, 3,332 citations), the United Kingdom (124 publications, 2,156 citations), and Australia (118 publications, 2027 citations) emerge as the top three influential nations. Each of these countries has contributed over 100 publications and 2,000 citations, playing pivotal roles in shaping the landscape of accounting education research. In contrast, the remaining countries, including New Zealand, Canada, China, Indonesia, Italy, Malaysia, and Saudi Arabia, exhibit lower productivity, resulting in a comparatively smaller impact on the literature in accounting education research from a global perspective. The h-index reflects a researcher's academic output and contribution, while the g-index, as a comprehensive indicator, provides a better evaluation of a researcher's influence. In this section, both the h-index and g-index serve as supplementary indicators effectively measuring an author's influence in the field of accounting education research.

Figure 6 provides a geographical distribution map of accounting education publications, utilizing color coding to denote productivity levels across world regions. Dark blue areas, including the United States, the United Kingdom, and Australia, signify the highest productivity, while light-colored regions indicate lower productivity and gray areas represent no available data. The map integrates word clouds derived from publication titles in the top three productive countries. Notably, U.S. research in accounting education focuses on learning, literature review, and accounting education literature, while the UK emphasizes professionalism, learning, and skills. Australian research combines elements from the U.S. and the UK, with an additional emphasis on higher accounting education. Figure 7, generated using VOSviewer software, presents a network visualization map of authors' countries or regions, utilizing the fractional counting method and setting minimum thresholds for documents and citations. Authors from the U.S. play a pivotal role in

global collaborative research, particularly with authors from the United Kingdom, Australia, and New Zealand. Additionally, authors from the United Kingdom and Australia exhibit close cooperation, extending to other European and Asian countries.

3.3.2. Most influential institutions

In Table 4, RMIT University, in Australia, stands out as the most influential institution with 18 publications. It is notable that half of the top 10 influential institutions are based in the United States, including Indiana University-Purdue University Indianapolis (16), West Virginia University (15), Kelley School of Business at Indiana University (15), Northern Illinois University (10), and Robert Morris University (9). Furthermore, the University of Glasgow (15) and the University of Otago (11) represent the United Kingdom and New Zealand respectively. Based on this result, it aligns with the conclusion in previous section, which identifies the United States, the United Kingdom, Australia, and New Zealand as the primary contributors to accounting education literature.



(a)

(b)

Figure 5. VOSviewer visualization of term co-occurrence network for (a) title and abstract and (b) title

Table 3. Top 10 productive countries

Country	Total publications	Total citations	Citations/publications	h-index	g-index
United States	198	3332	16.83	35	48
United Kingdom	124	2156	17.39	28	41
Australia	118	2027	17.18	27	38
New Zealand	31	553	17.84	14	23
Canada	28	441	15.75	9	20
China	16	102	6.38	4	10
Indonesia	16	52	3.25	5	6
Italy	16	64	4.00	4	7
Malaysia	16	52	3.25	4	6
Saudi Arabia	13	29	2.23	3	5

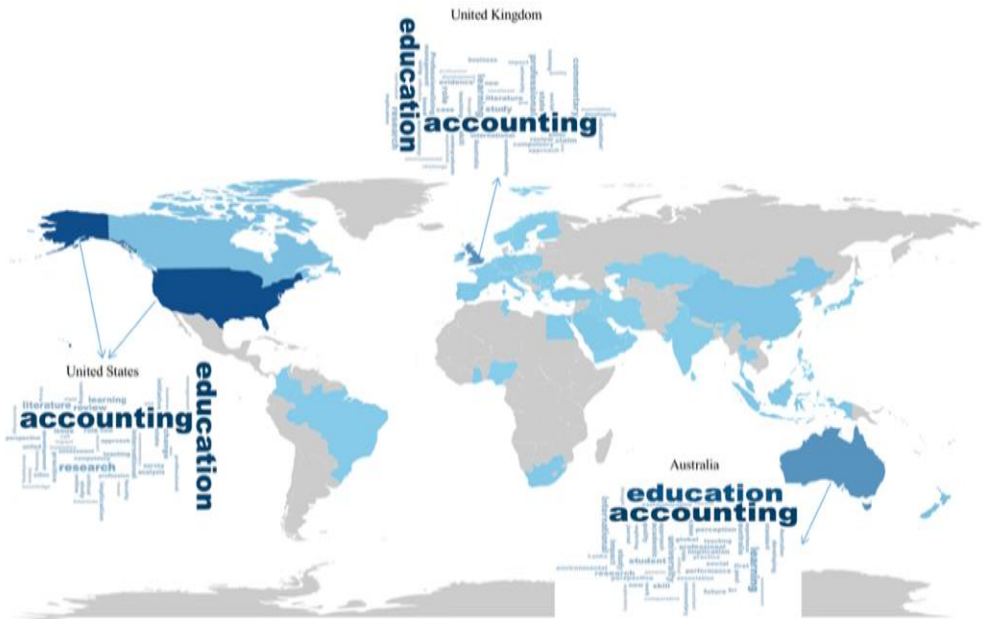


Figure 6. Geographical distribution of publications and major countries' word cloud (by title)

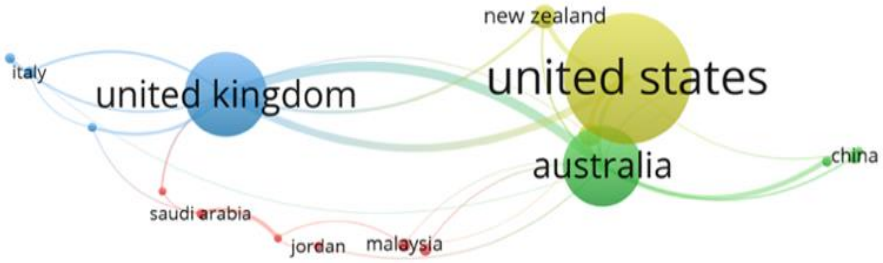


Figure 7. Network visualization map of co-authorship by country (fractional counting)

Table 4. Top 10 influential institutions

Institution	Country	Total publications
RMIT University	Australia	18
Indiana University-Purdue University Indianapolis	United States	16
University of Glasgow	United Kingdom	15
West Virginia University	United States	15
Kelley School of Business	United States	15
Macquarie University	Australia	12
University of Otago	New Zealand	11
Northern Illinois University	United States	10
Deakin University	Australia	10
Robert Morris University	United States	9

3.3.3. Most productive authors

Table 5 highlights the top 10 authors who have made significant contributions to accounting education research, using total publications and citations as key metrics. Hassell [8], [19]–[35], secures the highest position across all statistical indicators, with 18 publications and 842 citations, underscoring his dual distinction as the most productive and influential author in accounting education research, maintaining a consistent output of literature from 1991 to 2023. Following closely are Rebele [19]–[21], [25], [27]–[31], [36]–[42] and Apostolou [8], [22]–[35], [43] each boasting 16 publications. Remarkably, the top three authors are associated with institutions in the United States. It is evident that the most productive authors in accounting education research are predominantly from the United States, followed by the United Kingdom and Australia.

On the other hand, Table 6 offers insights into the authorship distribution across 717 publications. Among these, 261 publications (36.40%) feature a single author, while the majority involve collaborative efforts. Specifically, articles co-authored by two authors constitute 31.80%, and those co-authored by three authors make up 18.83%. Significantly, just a fraction of publications involves more than five authors collaborating. For instance, publications with up to 9 co-authors are represented by only one document.

Table 5. Top 10 most productive authors

Study	Author	Affiliation	Country	Publication years	Total publications	Total citations
[8], [19]–[35]	Hassell	Indiana University-Purdue University Indianapolis	US	1991-2023	18	842
[19]–[21], [25], [27]–[31], [36]–[42]	Rebele	Robert Morris University	US	1991-2019	16	685
[8], [22]–[35], [43]	Apostolou	E. J. Ourso College of Business	US	2001-2023	16	673
[44]–[54]	Watty	Deakin Business School	Australia	2005-2021	11	184
[26]–[35]	Dorminey	John Chambers College of Business and Economics	US	2013-2022	10	392
[37], [38], [40], [55]–[61]	Wilson	Loughborough University	UK	1992-2016	10	113
[62]–[70]	Sangster	University of Aberdeen Business School	UK	1992-2020	9	255
[19]–[21], [71]–[76]	Stout	Villanova University	US	1991-2018	9	414
[77]–[84]	Paisey	Adam Smith Business School	UK	2003-2018	8	133
[85]–[91]	Boyce	La Trobe Business School	Australia	2001-2019	7	244

Table 6. Number of author(s) per document

Author count≤5	Total publications	Percentage (%)	Author count>5	Total publications	Percentage (%)
1	261	36.40	6	5	0.70
2	228	31.80	7	5	0.70
3	135	18.83	8	4	0.56
4	62	8.65	9	1	0.14
5	12	1.67	0*	4	0.56

Note: In conference review documents marked with 0*, no author is listed

3.3.4. Most active source titles

This section unveils the top 10 most impactful source titles engaged in accounting education research, primarily published by three globally renowned publishing companies: Taylor & Francis, Emerald Publishing, and Elsevier. Table 7 reveals that “Accounting Education” leads the list with 170 publications, accounting for 23.71%, followed by “Journal of Accounting Education” (83, 11.58%) and “Issues in Accounting Education” (37, 5.16%), “Routledge Companion to Accounting Education” (19, 2.65%), “Critical Perspectives on Accounting” (18, 2.51%), “Asian Review of Accounting” (16, 2.23%), “International Journal of Phytoremediation” (14, 1.95%), “Journal of Education for Business” (12, 1.67%), “Advances in Accounting Education: Teaching and Curriculum Innovations” (9, 1.26%), and “British Accounting Review” (9, 1.26%). The Cite Score spans from 1.5 to 7.9. Based on the 2022 Scopus database's cite score rankings, half of the articles are classified as Q1, while the rest are categorized as Q2 and Q3, suggesting that prominent sources in the realm of accounting education maintain a high level of quality. Significantly, as a book publication, the “Routledge Companion to Accounting Education” is not assessed within the cite score rankings.

Table 7. Top 10 most active source titles

Source title	Publisher	TPs	Percentage (%)	CS	CS rank
Accounting Education	Taylor & Francis	170	23.71	6.0	Q1
Journal of Accounting Education	Elsevier	83	11.58	4.6	Q1
Issues in Accounting Education	American Accounting Association	37	5.16	1.7	Q3
Routledge Companion to Accounting Education	Taylor & Francis	19	2.65	N/A	N/A
Critical Perspectives on Accounting	Elsevier	18	2.51	7.9	Q1
Asian Review of Accounting	Emerald Publishing	16	2.23	2.9	Q2
International Journal of Phytoremediation	Taylor & Francis	14	1.95	6.9	Q1
Journal of Education for Business	Taylor & Francis	12	1.67	2.8	Q2
Advances in Accounting Education: Teaching and Curriculum Innovations	Emerald Publishing	9	1.26	1.5	Q3
British Accounting Review	Elsevier	9	1.26	7.2	Q1

Notes: TPs=total publications; CS=cite score; CS rank=highest cite score rank from Scopus in 2022

3.4. RQ_4: what are the influential citations in accounting education research?

The author retrieved 717 documents from the Scopus database in RIS format and imported them into Harzing's Publish or Perish to compile citation metrics for accounting education literature. This process yielded 9174 citations, averaging 143.34 citations per year and 12.79 citations per paper. Table 8 outlines the 10 most frequently cited documents in accounting education literature research, emphasizing the number of citations as the primary metric. Topping the list is the exploratory study on accounting education by Bui and Porter [92], garnering 175 citations. Following closely is Howieson [93] empirical study on accounting practice in the new millennium. Sangster *et al.* [62] secured the third spot with their research article on accounting education during the COVID-19 pandemic, published in the journal of accounting education. Notably, this article boasts the highest citations per year (39.25), reflecting the heightened interest and rapid dissemination of knowledge in the field amidst the COVID-19 crisis. Other articles also stand out as highly influential publications, each garnering more than 90 citations.

Table 8. Top 10 highly cited publications

Study	Title	Total citations	Citations/years
Bui and Porter [92]	The expectation-performance gap in accounting education: An exploratory study	175	12.5
Howieson [93]	Accounting practice in the new millennium: Is accounting education ready to meet the challenge?	164	7.81
Sangster *et al.* [62]	Insights into accounting education in a COVID-19 world	157	39.25
Lawson *et al.* [76]	Focusing accounting curricula on students' long-run careers: Recommendations for an integrated competency-based framework for accounting education	143	14.3
Armstrong [94]	Moral development and accounting education	138	3.73
Gray *et al.* [95]	Teaching ethics in accounting and the ethics of accounting teaching: Educating for immorality and a possible case for social and environmental accounting education	137	4.57
Armstrong [96]	Ethics and professionalism in accounting education: A sample course	116	3.74
Apostolou *et al.* [26]	Accounting education literature review (2010-2012)	104	9.45
Gray and Collison [97]	Can't see the wood for the trees, can't see the trees for the numbers? Accounting education, sustainability and the public interest	104	4.73
Boyce [86]	Critical accounting education: Teaching and learning outside the circle	90	4.5

3.5. RQ_5: what future research directions should be explored in the field of accounting education?

This bibliometric review paper proposes specific research directions based on existing literature research. According to the results of keyword analysis as presented in Figure 4, it clusters all author keywords into three focal areas: students, higher education, and the profession, with an additional cluster centered on COVID-19. However, as discussed in previous sections, the popularity of COVID-19-related topics extensively discussed across various research fields is transient. Therefore, the findings underscore the enduring significance of topics related to students, higher education, and the profession in future research. Additionally, network analysis identifies keywords such as accounting, education, learning, curriculum, skills, and the profession as pivotal and enduring areas for further exploration. In specific, future research directions in the field of accounting education should revolve around students, higher education, and the profession as primary research subjects, with a dedicated focus on critical areas such as accounting, education, learning, curriculum, skills, and the profession.

4. CONCLUSION

Departing from the traditional literature review method, this bibliometric analysis provides a comprehensive overview of accounting education studies, highlighting significant trends, key contributors, and noteworthy topics. Based on a dataset of 717 publications, our review demonstrates increasing scholarly interest in accounting education, particularly in recent years, indicating growing recognition of this field worldwide. The results also highlight main subjects in business, management, and three key clusters related to students, higher education, and COVID-19. Moreover, visual representations of term co-occurrence networks reveal keywords such as "skill" and "educator" within title and abstract sections, contrasting with "accounting education," which appears solely in title fields. The findings of this comprehensive bibliometric review have significant theoretical implications for the field of accounting education by analyzing research trends, key contributors, and citation patterns using scientometric analysis, addressing research gaps in the literature. Identifying frequently cited influential works, such as Bui and Porter, allows future research to build on this foundation and provides a theoretical basis for understanding the foundational texts and key contributions that have shaped the field. Furthermore, the study offers a historical overview of accounting education publications over 64 years, employing tools like Harzing's Publish or Perish and VOSviewer. It also has practical implications by identifying key contributors at both geographical (e.g., the United States,

the United Kingdom, and Australia) and institutional levels (e.g., RMIT University), leading to increased knowledge of pioneering areas and encouraging the adoption of best practices and innovative approaches demonstrated by these contributors.

Additionally, it identifies future research directions focusing on curriculum, learning, and skills, offering valuable insights for stakeholders in higher education to enhance the effectiveness of accounting education and better prepare students for professional demands. However, this study has some limitations related to data sources and analysis methods. The data were extracted from Scopus on January 31, 2024, reflecting publications as of December 31, 2023. While newer search results may emerge over time, these are expected to be minor and unlikely to impact the findings. In addition, Scopus provides only a partial sample of global publications, which may not fully represent the entire body of literature on accounting education. Moreover, focusing the search solely on the TITLE field for "accounting education" may unintentionally exclude relevant papers that lack these keywords in their titles. Lastly, although this study uses network visualization analysis, it does not fully explore other aspects of accounting education, like methodology and theoretical background, which future research should examine more deeply to improve understanding.

REFERENCES

[1] W. Weli and A. S. Marsudi, "The initial accountant competency of final year accounting students," *International Journal of Evaluation and Research in Education (IJERE)*, vol. 11, no. 3, p. 1534–1543, Sep. 2022, doi: 10.11591/ijere.v11i3.22575.

[2] S. Al-Hajri, A. Echchabi, A. M. Ayedh, and M. M. S. Omar, "The cloud computing systems' adoption in the higher education sector in Oman in light of the COVID-19 pandemic," *International Journal of Evaluation and Research in Education (IJERE)*, vol. 10, no. 3, pp. 930–937, Sep. 2021, doi: 10.11591/ijere.v10i3.21671.

[3] H. Han, R. K. Shiwakoti, R. Jarvis, C. Mordi, and D. Botchie, "Accounting and auditing with blockchain technology and artificial intelligence: a literature review," *International Journal of Accounting Information Systems*, vol. 48, p. 100598, Mar. 2023, doi: 10.1016/j.accinf.2022.100598.

[4] E. U. Cammayo and J. I. Gonzales, "Employability of accountancy graduates of a Philippine public university," *International Journal of Evaluation and Research in Education (IJERE)*, vol. 13, no. 1, pp. 91–99, Feb. 2024, doi: 10.11591/ijere.v13i1.26462.

[5] P. Tettamanzi, V. Minutiello, and M. Murgolo, "Accounting education and digitalization: a new perspective after the pandemic," *International Journal of Management Education*, vol. 21, no. 3, p. 100847, Nov. 2023, doi: 10.1016/j.ijme.2023.100847.

[6] O. O. Adebiyi, S. O. Olabanji, and O. O. Olaniyi, "Promoting inclusive accounting education through the integration of STEM principles for a diverse classroom," *Asian Journal of Education and Social Studies*, vol. 49, no. 4, pp. 152–171, Dec. 2023, doi: 10.9734/ajess/2023/v49i41196.

[7] H. M. Al-Hattami, "Understanding perceptions of academics toward technology acceptance in accounting education," *Heliyon*, vol. 9, no. 1, p. e13141, Jan. 2023, doi: 10.1016/j.heliyon.2023.e13141.

[8] B. Apostolou, N. T. Churyk, J. M. Hassell, and L. Matuszewski, "Accounting education literature review (2022)," *Journal of Accounting Education*, vol. 63, p. 100831, Jun. 2023, doi: 10.1016/j.jaccedu.2023.100831.

[9] P. Theuri, R. Campbell, and L. Owens-Jackson, "A literature review of technology-related research in accounting education: 2010–2020," *Accounting Perspectives*, vol. 23, no. 1, pp. 79–114, Mar. 2024, doi: 10.1111/1911-3838.12352.

[10] R. Tandiono, "The significance of technology and digital game-based learning in accounting education: a narrative literature review," in *2021 International Conference on Information Management and Technology (ICIMTech)*, IEEE, 2021, pp. 228–233, doi: 10.1109/ICIMTech53080.2021.9534920.

[11] T. Poje and M. Z. Groff, "Mapping ethics education in accounting research: a bibliometric analysis," *Journal of Business Ethics*, vol. 179, no. 2, pp. 451–472, Aug. 2022, doi: 10.1007/s10551-021-04846-9.

[12] J. Cao, A. B. Kristanto, and Z. Gu, "Evolution of research streams and future research directions in accounting education: quantitative systematic literature review," *Issues in Accounting Education*, pp. 1–35, May 2024, doi: 10.2308/ISSUES-2023-094.

[13] H. B. Tambunan, N. W. Priambodo, J. Hartono, I. A. Aditya, M. Triani, and Rasgianti, "Research trends on microgrid systems: a bibliometric network analysis," *International Journal of Electrical and Computer Engineering (IJECE)*, vol. 13, no. 3, pp. 2529–2545, Jun. 2023, doi: 10.11591/ijece.v13i3.pp2529-2545.

[14] Y. A. Garcés-Gómez and V. Henao-Céspedes, "International journal of electrical and computer engineering: a bibliometric analysis," *International Journal of Electrical and Computer Engineering (IJECE)*, vol. 12, no. 6, pp. 5667–5673, 2022, doi: 10.11591/ijece.v12i6.pp5667-5673.

[15] Y. N. Deda, H. Disnawati, R. Ekawati, and N. Suprapto, "Research trend on dyscalculia by bibliometric analysis during 2017-2022," *International Journal of Evaluation and Research in Education (IJERE)*, vol. 13, no. 1, pp. 69–79, Feb. 2024, doi: 10.11591/ijere.v13i1.25992.

[16] L. Andrade-Arenas and C. Yactayo-Arias, "A bibliometric analysis of the advance of artificial intelligence in medicine," *International Journal of Electrical and Computer Engineering (IJECE)*, vol. 14, no. 3, pp. 3350–3361, Jun. 2024, doi: 10.11591/ijece.v14i3.pp3350-3361.

[17] M. Y. Alhasnawi, S. M. Alshdaifat, N. H. A. Aziz, and M. F. Almasoodi, "Artificial intelligence and environmental, social and governance: a bibliometric analysis review," in *Lecture Notes in Networks and Systems*, vol. 1033, 2024, pp. 123–143, doi: 10.1007/978-3-031-63717-9_8.

[18] R. E. O. Roxas and R. N. C. Recario, "Scientific landscape on opportunities and challenges of large language models and natural language processing," *Indonesian Journal of Electrical Engineering and Computer Science (IJEECS)*, vol. 36, no. 1, pp. 252–263, Oct. 2024, doi: 10.11591/ijeecs.v36.i1.pp252-263.

[19] J. E. Rebele, D. E. Stout, and J. M. Hassell, "A review of empirical research in accounting education: 1985–1991," *Journal of Accounting Education*, vol. 9, no. 2, pp. 167–231, Sep. 1991, doi: 10.1016/0748-5751(91)90003-A.

[20] J. E. Rebele, B. A. Apostolou, F. A. Buckless, J. M. Hassell, L. R. Paquette, and D. E. Stout, "Accounting education literature review (1991–1997), part i: curriculum and instructional approaches," *Journal of Accounting Education*, vol. 16, no. 1, pp. 1–51, Dec. 1998, doi: 10.1016/S0748-5751(98)00001-3.

[21] J. E. Rebele, B. A. Apostolou, F. A. Buckless, J. M. Hassell, L. R. Paquette, and D. E. Stout, "Accounting education literature review (1991–1997), part ii: students, educational technology, assessment and faculty issues," *Journal of Accounting Education*, vol. 16, no. 2, pp. 179–245, Aug. 1998, doi: 10.1016/S0748-5751(98)00010-4.
[22] B. Apostolou, S. F. Watson, J. M. Hassell, and S. A. Webber, "Accounting education literature review (1997–1999)," *Journal of Accounting Education*, vol. 19, no. 1, pp. 1–61, Mar. 2001, doi: 10.1016/S0748-5751(01)00010-0.
[23] S. F. Watson, B. Apostolou, J. M. Hassell, and S. A. Webber, "Accounting education literature review (2000–2002)," *Journal of Accounting Education*, vol. 21, no. 4, pp. 267–325, Oct. 2003, doi: 10.1016/j.jaccedu.2003.09.003.
[24] S. F. Watson, B. Apostolou, J. M. Hassell, and S. A. Webber, "Accounting education literature review (2003–2005)," *Journal of Accounting Education*, vol. 25, no. 1–2, pp. 1–58, Jan. 2007, doi: 10.1016/j.jaccedu.2007.01.001.
[25] B. Apostolou, J. M. Hassell, J. E. Rebele, and S. F. Watson, "Accounting education literature review (2006–2009)," *Journal of Accounting Education*, vol. 28, no. 3–4, pp. 145–197, Sep. 2010, doi: 10.1016/j.jaccedu.2011.08.001.
[26] B. Apostolou, J. W. Dorminey, J. M. Hassell, and S. F. Watson, "Accounting education literature review (2010–2012)," *Journal of Accounting Education*, vol. 31, no. 2, pp. 107–161, Jun. 2013, doi: 10.1016/j.jaccedu.2013.03.001.
[27] B. Apostolou, J. W. Dorminey, J. M. Hassell, and J. E. Rebele, "Accounting education literature review (2013–2014)," *Journal of Accounting Education*, vol. 33, no. 2, pp. 69–127, Jun. 2015, doi: 10.1016/j.jaccedu.2015.04.001.
[28] B. Apostolou, J. W. Dorminey, J. M. Hassell, and J. E. Rebele, "Accounting education literature review (2015)," *Journal of Accounting Education*, vol. 35, pp. 20–55, Jun. 2016, doi: 10.1016/j.jaccedu.2016.03.002.
[29] B. Apostolou, J. W. Dorminey, J. M. Hassell, and J. E. Rebele, "Accounting education literature review (2016)," *Journal of Accounting Education*, vol. 39, pp. 1–31, Jun. 2017, doi: 10.1016/j.jaccedu.2017.03.001.
[30] B. Apostolou, J. W. Dorminey, J. M. Hassell, and J. E. Rebele, "Analysis of trends in the accounting education literature (1997–2016)," *Journal of Accounting Education*, vol. 41, pp. 1–14, Dec. 2017, doi: 10.1016/j.jaccedu.2017.09.003.
[31] B. Apostolou, J. W. Dorminey, J. M. Hassell, and J. E. Rebele, "Accounting education literature review (2017)," *Journal of Accounting Education*, vol. 43, pp. 1–23, Jun. 2018, doi: 10.1016/j.jaccedu.2018.02.001.
[32] B. Apostolou, J. W. Dorminey, J. M. Hassell, and A. Hickey, "Accounting education literature review (2018)," *Journal of Accounting Education*, vol. 47, pp. 1–27, Jun. 2019, doi: 10.1016/j.jaccedu.2019.02.001.
[33] B. Apostolou, J. W. Dorminey, and J. M. Hassell, "Accounting education literature review (2019)," *Journal of Accounting Education*, vol. 51, p. 100670, Jun. 2020, doi: 10.1016/j.jaccedu.2020.100670.
[34] B. Apostolou, J. W. Dorminey, and J. M. Hassell, "Accounting education literature review (2020)," *Journal of Accounting Education*, vol. 55, p. 100725, Jun. 2021, doi: 10.1016/j.jaccedu.2021.100725.
[35] B. Apostolou, J. W. Dorminey, and J. M. Hassell, "Accounting education literature review (2021)," *Journal of Accounting Education*, vol. 59, p. 100781, Jun. 2022, doi: 10.1016/j.jaccedu.2022.100781.
[36] J. E. Rebele, "Accounting education's uncertain environments: descriptions and implications for accounting programmes and accounting education research," *Accounting Education*, vol. 11, no. 1, pp. 3–25, Mar. 2002, doi: 10.1080/09639280210153245.
[37] K. St. Pierre, R. M. S. Wilson, S. P. Ravenscroft, and J. E. Rebele, "The role of accounting education research in our discipline—an editorial," *Issues in Accounting Education*, vol. 24, no. 2, pp. 123–130, May 2009, doi: 10.2308/iace.2009.24.2.123.
[38] R. M. S. Wilson, S. P. Ravenscroft, J. E. Rebele, and K. St. Pierre, "The case for accounting education research," *Accounting Education*, vol. 17, no. 2, pp. 103–111, Jun. 2008, doi: 10.1080/09639280802196202.
[39] E. K. St. Pierre and J. E. Rebele, "An agenda for improving accounting education," in *The Routledge Companion to Accounting Education*, 1st ed., Routledge, 2015, doi: 10.4324/9781315889801.ch5.
[40] S. P. Ravenscroft, J. E. Rebele, K. St. Pierre, and R. M. S. Wilson, "The importance of accounting education research," *Journal of Accounting Education*, vol. 26, no. 4, pp. 180–187, Dec. 2008, doi: 10.1016/j.jaccedu.2009.02.002.
[41] J. E. Rebele and E. K. St. Pierre, "A commentary on learning objectives for accounting education programs: the importance of soft skills and technical knowledge," *Journal of Accounting Education*, vol. 48, pp. 71–79, Sep. 2019, doi: 10.1016/j.jaccedu.2019.07.002.
[42] J. E. Rebele and E. K. St. Pierre, "Stagnation in accounting education research," *Journal of Accounting Education*, vol. 33, no. 2, pp. 128–137, Jun. 2015, doi: 10.1016/j.jaccedu.2015.04.003.
[43] B. Apostolou and E. Gammie, "The role of accreditation in accounting education and training," in *The Routledge Companion to Accounting Education*, 1st ed., Routledge, 2014, pp. 652–672, doi: 10.4324/9781315889801.
[44] K. Watty, M. Jackson, and X. Yu, "Students' approaches to assessment in accounting education: the unique student perspective," *Accounting Education*, vol. 19, no. 3, pp. 219–234, 2010, doi: 10.1080/09639280902836939.
[45] P. de Lange and K. Watty, "Accounting education at a crossroad in 2010 and challenges facing accounting education in Australia," *Accounting Education*, vol. 20, no. 6, pp. 625–630, 2011, doi: 10.1080/09639284.2011.637458.
[46] K. Watty, "Quality in accounting education and low English standards among overseas students: is there a link?" *People and Place*, vol. 15, no. 1, pp. 22–29, 2007.
[47] K. Watty, S. Sugahara, N. Abayadeera, and L. Perera, "Developing a global model of accounting education and examining IES compliance in Australia, Japan, and Sri Lanka," *Accounting Education*, vol. 22, no. 5, pp. 502–506, 2013, doi: 10.1080/09639284.2013.824199.
[48] N. Abayadeera and K. Watty, "Generic skills in accounting education in a developing country: exploratory evidence from Sri Lanka," *Asian Review of Accounting*, vol. 24, no. 2, pp. 149–170, 2016, doi: 10.1108/ARA-03-2014-0039.
[49] S. Sugahara and K. Watty, "Global convergence of accounting education: an exploratory study of the perceptions of accounting academics in Australia and Japan," *Asian Review of Accounting*, vol. 24, no. 3, pp. 254–273, 2016, doi: 10.1108/ARA-01-2014-0009.
[50] K. Watty, S. Sugahara, N. Abayadeera, L. Perera, and J. McKay, "Towards a global model of accounting education," *Accounting Research Journal*, vol. 27, no. 3, pp. 286–300, 2014, doi: 10.1108/ARJ-08-2013-0054.
[51] V. B. de Castro, B. Sridharan, K. Watty, and M. Safari, "The impact of learner engagement on performance outcomes: a longitudinal study in accounting education," *Accounting and Finance*, vol. 61, no. S1, pp. 1639–1664, 2021, doi: 10.1111/acfi.12640.
[52] K. Watty, "Quality in accounting education: what say the academics?" *Quality Assurance in Education*, vol. 13, no. 2, pp. 120–131, 2005, doi: 10.1108/09684880510594373.
[53] K. Watty, "Editorial policy statement for: postcards from the podium: section of accounting education: an international journal," *Accounting Education*, vol. 18, no. 1, pp. 103–103, Feb. 2009, doi: 10.1080/09639280802681286.
[54] K. Watty, "Editorial policy statement for the postcards from the podium: section of accounting education: an international journal," *Accounting Education*, vol. 18, no. 4–5, pp. 521–521, Dec. 2009, doi: 10.1080/09639280903416632.
[55] R. M. S. Wilson, "Accounting education: a statement of intent and a tentative agenda," *Accounting Education*, vol. 1, no. 1, pp. 3–11, Mar. 1992, doi: 10.1080/09639289200000002.
[56] R. M. S. Wilson, "Introduction: a discussion on journal quality rankings and their likely impact on accounting education scholarship in the UK," *Accounting Education*, vol. 20, no. 6, pp. 543–544, Dec. 2011, doi: 10.1080/09639284.2011.634260.

[57] R. M. S. Wilson, "Contemporary accounting education and society," *Accounting Education*, vol. 9, no. 2, pp. 175–175, Jun. 2000, doi: 10.1080/09639280010001074.
[58] R. M. S. Wilson, "Alignment in accounting education and training," *Accounting Education*, vol. 20, no. 1, pp. 3–16, Feb. 2011, doi: 10.1080/09639284.2011.555940.
[59] R. M. S. Wilson, "Introduction: a continuing discussion on journal quality rankings and their likely impact on accounting education scholarship in the UK," *Accounting Education*, vol. 21, no. 1, pp. 1–2, Feb. 2012, doi: 10.1080/09639284.2012.661168.
[60] R. M. S. Wilson, *The Routledge companion to accounting education*. Routledge, 2014, doi: 10.4324/9781315889801.
[61] F. E. Gray and L. Hamilton, "Communication in accounting education," *Accounting Education*, vol. 23, no. 2, pp. 115–118, Mar. 2014, doi: 10.1080/09639284.2013.847327.
[62] A. Sangster, G. Stoner, and B. Flood, "Insights into accounting education in a COVID-19 world," *Accounting Education*, vol. 29, no. 5, pp. 431–562, Sep. 2020, doi: 10.1080/09639284.2020.1808487.
[63] A. Sangster, "Computer-based instruction in accounting education," *Accounting Education*, vol. 1, no. 1, pp. 13–32, Mar. 1992, doi: 10.1080/09639289200000003.
[64] A. Sangster and G. Scataglinibelghitar, "Luca Pacioli: the father of accounting education," *Accounting Education*, vol. 19, no. 4, pp. 423–438, Aug. 2010, doi: 10.1080/09639284.2010.501955.
[65] N. Marriott, G. Stoner, T. Fogarty, and A. Sangster, "Publishing characteristics, geographic dispersion and research traditions of recent international accounting education research," *The British Accounting Review*, vol. 46, no. 3, pp. 264–280, Sep. 2014, doi: 10.1016/j.bar.2013.11.003.
[66] A. Sangster, T. Fogarty, G. Stoner, and N. Marriott, "The impact of accounting education research," *Accounting Education*, vol. 24, no. 5, pp. 423–444, Sep. 2015, doi: 10.1080/09639284.2015.1091740.
[67] A. Sangster, "Computer-based learning in UK accounting education: to support or to supplant?" *British Journal of Educational Technology*, vol. 23, no. 2, pp. 136–138, May 1992, doi: 10.1111/j.1467-8535.1992.tb00319.x.
[68] A. Sangster, "Making our students more 'fit for purpose': a commentary on 'a role for the compulsory study of literature in accounting education,'" *Accounting Education*, vol. 19, no. 4, pp. 373–376, Aug. 2010, doi: 10.1080/09639280903285847.
[69] L. M. Mari, F. Picciaia, and A. Sangster, "Manzoni's sixteenth-century 'quaderno doppio': the evolution of accounting education towards modern times," *Accounting History*, vol. 25, no. 4, pp. 580–601, Nov. 2020, doi: 10.1177/1032373220942330.
[70] A. Sangster, "Accounting education and ethics in the 15th century," in *Accounting Ethics Education*, New York: Routledge, 2021, pp. 3–30, doi: 10.4324/9780429321597-2.
[71] R. A. Lawson *et al.*, "Thoughts on competency integration in accounting education," *Issues in Accounting Education*, vol. 30, no. 3, pp. 149–171, Aug. 2015, doi: 10.2308/iace-51021.
[72] D. E. Stout, "Further things i have learned … selected reflections about publishing in accounting education," *Issues in Accounting Education*, vol. 33, no. 3, pp. 67–84, Aug. 2018, doi: 10.2308/iace-52048.
[73] D. E. Stout and T. L. Ruble, "A reassessment of the role of the learning style inventory (LSI-1985) in accounting education research," *Journal of Accounting Education*, vol. 12, no. 2, pp. 89–104, Mar. 1994, doi: 10.1016/0748-5751(94)90009-4.
[74] D. E. Stout, S. Lowensohn, and L. M. Parsons, "Special issue on governmental and not-for-profit accounting education vol. 31, issue 3 (2013)," *Journal of Accounting Education*, vol. 31, no. 3, pp. 213–214, Sep. 2013, doi: 10.1016/j.jaccedu.2013.06.003.
[75] D. E. Stout and T. L. Ruble, "Assessing the practical significance of empirical results in accounting education research: the use of effect size information," *Journal of Accounting Education*, vol. 13, no. 3, pp. 281–298, Jun. 1995, doi: 10.1016/0748-5751(95)00010-J.
[76] R. A. Lawson *et al.*, "Focusing accounting curricula on students' long-run careers: recommendations for an integrated competency-based framework for accounting education," *Issues in Accounting Education*, vol. 29, no. 2, pp. 295–317, May 2014, doi: 10.2308/iace-50673.
[77] C. Paisey and N. J. Paisey, "An analysis of accounting education research in accounting education: an international journal – 1992–2001," *Accounting Education*, vol. 13, no. 1, pp. 69–99, Mar. 2004, doi: 10.1080/0963928042000207396.
[78] C. Paisey and N. J. Paisey, "The research assessment exercise 2001—insights and implications for accounting education research in the UK," *Accounting Education*, vol. 14, no. 4, pp. 411–426, Dec. 2005, doi: 10.1080/06939280500347134.
[79] K. McPhail, C. Paisey, and N. J. Paisey, "Class, social deprivation and accounting education in Scottish schools: implications for the reproduction of the accounting profession and practice," *Critical Perspectives on Accounting*, vol. 21, no. 1, pp. 31–50, Jan. 2010, doi: 10.1016/j.cpa.2009.08.003.
[80] S. McChlery and C. Paisey, "Quality in professional accounting education provision in the UK – the Cima experience," *Accounting Education*, vol. 12, no. 2, pp. 197–225, Jun. 2003, doi: 10.1080/0963928032000091774.
[81] E. Evans and C. Paisey, "Histories of accounting education – an introduction," *Accounting History*, vol. 23, no. 1–2, pp. 3–13, Feb. 2018, doi: 10.1177/1032373217742427.
[82] C. Paisey and N. J. Paisey, "The state of professional accounting education and training," in *The Routledge Companion to Accounting Education*, 1st ed., Routledge, 2014, pp. 673–696, doi: 10.4324/9781315889801.
[83] C. Paisey and N. J. Paisey, "Improving accounting education through the use of action research," *Journal of Accounting Education*, vol. 23, no. 1, pp. 1–19, Jan. 2005, doi: 10.1016/j.jaccedu.2004.10.001.
[84] C. Paisey and N. J. Paisey, "Balancing the vocational and academic dimensions of accounting education: the case for a core curriculum," *Journal of Vocational Education & Training*, vol. 59, no. 1, pp. 89–105, Mar. 2007, doi: 10.1080/13636820601145705.
[85] G. Boyce, S. Greer, B. Blair, and C. Davids, "Expanding the horizons of accounting education: incorporating social and critical perspectives," *Accounting Education*, vol. 21, no. 1, pp. 47–74, Feb. 2012, doi: 10.1080/09639284.2011.586771.
[86] G. Boyce, "Critical accounting education: teaching and learning outside the circle," *Critical Perspectives on Accounting*, vol. 15, no. 4–5, pp. 565–586, May 2004, doi: 10.1016/S1045-2354(03)00047-9.
[87] G. Boyce, S. Williams, A. Kelly, and H. Yee, "Fostering deep and elaborative learning and generic (soft) skill development: the strategic use of case studies in accounting education," *Accounting Education*, vol. 10, no. 1, pp. 37–60, Mar. 2001, doi: 10.1080/09639280121889.
[88] G. Boyce, V. Narayanan, S. Greer, and B. Blair, "Taking the pulse of accounting education reform: liberal education, sociological perspectives, and exploring ways forward," *Accounting Education*, vol. 28, no. 3, pp. 274–303, May 2019, doi: 10.1080/09639284.2019.1586552.
[89] G. Zhang, G. Boyce, and K. Ahmed, "Institutional changes in university accounting education in post-revolutionary China: from political orientation to internationalization," *Critical Perspectives on Accounting*, vol. 25, no. 8, pp. 819–843, Dec. 2014, doi: 10.1016/j.cpa.2013.10.007.
[90] G. Boyce, "Ethics and accounting education," in *The Routledge Companion to Accounting Education*, Routledge, 2014, pp. 533–557.
[91] G. Boyce, "Accounting education," in *The Routledge Companion to Critical Accounting*, 1 Edition. New York: Routledge, 2017, pp. 376–393, doi: 10.4324/9781315775203-21.

[92] B. Bui and B. Porter, "The expectation-performance gap in accounting education: an exploratory study," *Accounting Education*, vol. 19, no. 1–2, pp. 23–50, Apr. 2010, doi: 10.1080/09639280902875556.
[93] B. Howieson, "Accounting practice in the new millennium: is accounting education ready to meet the challenge?" *The British Accounting Review*, vol. 35, no. 2, pp. 69–103, Jun. 2003, doi: 10.1016/S0890-8389(03)00004-0.
[94] M. B. Armstrong, "Moral development and accounting education," *Journal of Accounting Education*, vol. 5, no. 1, pp. 27–43, Mar. 1987, doi: 10.1016/0748-5751(87)90036-4.
[95] R. Gray, J. Bebbington, and K. McPhail, "Teaching ethics in accounting and the ethics of accounting teaching: educating for immorality and a possible case for social and environmental accounting education," *Accounting Education*, vol. 3, no. 1, pp. 51–75, Mar. 1994, doi: 10.1080/09639289400000005.
[96] M. B. Armstrong, "Ethics and professionalism in accounting education: a sample course," *Journal of Accounting Education*, vol. 11, no. 1, pp. 77–92, Mar. 1993, doi: 10.1016/0748-5751(93)90019-F.
[97] R. Gray and D. Collison, "Can't see the wood for the trees, can't see the trees for the numbers? accounting education, sustainability and the public interest," *Critical Perspectives on Accounting*, vol. 13, no. 5–6, pp. 797–836, Oct. 2002, doi: 10.1006/cpac.2002.0554.

BIOGRAPHIES OF AUTHORS

Guojing Hu is a Ph.D. Candidate at the School of Business and Economics, Universiti Putra Malaysia (UPM), located in Serdang, Malaysia. Her research interests include accounting education, management accounting, financial accounting, and accounting financial reporting. She can be contacted at email: gs61681@student.upm.edu.my or ghu39432@gmail.com.

Haslinah Muhamad received the Ph.D. degree in accounting from Universiti Putra Malaysia (UPM), Malaysia. Currently, she serves as a Senior Lecturer in the Department of Accounting and Finance at the School of Business and Economics, Universiti Putra Malaysia, Malaysia. Her research interests encompass accounting education, financial accounting, management accounting, and accounting for the public sector. She can be contacted at email: hasm@upm.edu.my.

Hasri Mustafa received the Ph.D. degree in Accounting from the University of Wollongong (UOW), located at Northfields Ave, Wollongong, Australia. With over 15 years of academic and research experience, he currently serves as an Associate Professor in the Department of Accounting and Finance at the School of Business and Economics, Universiti Putra Malaysia (UPM), Malaysia. His research primarily centers on accounting information systems. He can be contacted at email: hasyie@upm.edu.my.

Mushtaq Yousif Alhasnawi is a lecturer at the Department of Accounting, Faculty of Administration and Economics, University of Thi-Qar, Iraq. His current research interests encompass accounting, management accounting, budgeting budget, and participation. He can be contacted at email: alhasnawi78@utq.edu.iq.