

## Teaching transformation in the post-pandemic accounting classroom: A systematic review of hybrid, inclusive and technology-enhanced pedagogies



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### ABSTRACT

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The COVID-19 pandemic accelerated the transformation of higher education pedagogy, compelling institutions to rapidly adopt online, hybrid, and technology-enhanced teaching approaches. While these innovations were initially implemented as emergency responses, they have since evolved into potential long-term models for teaching and learning in accounting and business education. This systematic review synthesizes studies published between 2020 and 2025. Using the PRISMA methodology, 45 peer-reviewed articles were screened, of which 21 met the inclusion criteria. The findings reveal that hybrid and blended learning models (combined with synchronous and asynchronous delivery) enhance flexibility but require intentional design to maintain engagement and equity. Furthermore, inclusive pedagogies that incorporate responsive teaching, differentiated instruction, and accessibility tools are shown to reduce participation barriers, especially in developing economies. In addition, technology-enhanced strategies significantly improve formative assessment and real-time interaction. However, challenges persist, such as digital divide issues, faculty workload, and the need for ongoing pedagogical training. Also, contextual factors such as technological infrastructure, institutional preparedness, class size, and course level significantly influence the effectiveness of technology-enhanced pedagogy. The study also highlights critical gaps in the literature, including limited accounting-specific pedagogical research and an overreliance on perception-based measures rather than objective learning outcomes. This review proposes a synthesized conceptual framework that aligns hybrid delivery with inclusivity and technology application to foster resilient, student-centered accounting education.

**Contribution/ Originality:** This study synthesizes global post-pandemic SOTL evidence to sustainably map emerging hybrid, inclusive, and technology-enhanced pedagogies in accounting education. By integrating findings across diverse contexts, it presents key determinants of engagement, highlights equity and assessment challenges, and proposes a research agenda to develop sustainable, evidence-based teaching innovations in accounting classrooms.

## 1. INTRODUCTION

The COVID-19 pandemic created the most rapid and far-reaching shift in higher education pedagogy in recent years, with a greater impact on institutions in developing nations (Bitar & Davidovich, 2024; Kayyali, 2024; Strielkowski, Korneeva, Neshcheret, & Sundeeva, 2024). Notwithstanding, what began as an urgent solution framework (remote teaching) has evolved into a post-pandemic landscape in which hybrid delivery, inclusive pedagogy, and technology-enhanced teaching and learning have transformed from the basics to be the core of teaching

practice. For accounting education (a discipline originally founded on structured lectures, problem-based learning, structured assessment systems, and global professional standards) (Sonjaya, Noch, & Sutisna, 2024), the disruption revealed consistent dialogues and tenets on how students can learn complex, rule-governed knowledge and how academics can design a balanced and sustainable learning environment. Furthermore, COVID-19 also revealed practical tensions and dilemmas on keeping students engaged, preserving academic integrity without over-policing, diverse learning systems in resource-constrained contexts, and aligning new practices that uphold professional standards and accreditation requirements (Huang, Shao, Wu, & Yang, 2025). As institutions are moving from quick fixes and fill-the-gap frameworks to intentional redesign, there is a clear need to consolidate what has been learned and propose what should be done differently to ensure an inclusive, sustainable, and evidence-based scholarship of teaching and learning (SOTL) (Xu, 2025). Furthermore, while individual studies document innovation, blended tutorials, flipped lectures with analytics, authentic assessments using real-world datasets and metrics, universal learning design (UDL) adaptations (Gäng-Pacífico & Rusconi, 2024), and the adoption of generative AI as a solution partner (Reznikov, 2024), research evidence remains fragmented across settings, study designs, and outcome measures. Most of the literature supports technology adoption over pedagogy (Adtani, Neelam, Raut, Deshpande, & Mittal, 2025; Hamzah, Abdullah, & Ma, 2024; Radovan & Radovan, 2024; Tan, Voogt, & Tan, 2024). This focuses more on satisfaction than deep learning, limiting attention to inclusivity, workload ethics, and institutional capacity. With respect to the global South, specifically, where there are prevalent issues of digital inequities, accessibility issues, and resource constraints (Akpan, Offodile, Akpanobong, & Kobara, 2024; Das, 2025; Raihan et al., 2025), “what works” cannot be assumed to be embraced without adaptation.

This study addresses the gap through a systematic review of post-2020 scholarships in Business, Management, and Accounting pedagogy, asking what hybrid, inclusive, and technology-enhanced approaches have been adopted; how they affect engagement and learning; and where the most promising and under-examined directions lie for a more inclusive Scholarship of Teaching and Learning (SOTL). In achieving this, this review takes seriously the academic challenge to “teach anew” by investigating underutilized teaching methodologies. At the same time, there is heavy reliance on closed-book assessments, a high-stakes examination model, one-size-fits-all lecturing techniques, and poor framing of academic integrity. This study resolves these by foregrounding design choices that broaden participation rather than merely technology-based models.

This systematic review aims to evaluate and critically synthesize post-pandemic evidence on hybrid, inclusive, and technology-enhanced pedagogies in accounting education and to identify viable design principles and research priorities for an inclusive and sustainable scholarship on teaching and learning. Key research questions guiding this study are:

- i. What pedagogical designs have been implemented post-2020 in accounting classrooms under hybrid, inclusive, and technology-based learning?
- ii. What is the evidence for their effect on student engagement, learning outcomes, assessment integrity, and equity?
- iii. Under what contextual factors (course level, class size, resources, and region) do these frameworks appear to be most/least effective?
- iv. What are the critical gaps and future directions for SOTL that would enable “teaching anew” in accounting education?

By addressing these questions, the review aims to identify best practices and gaps in current knowledge and methodologies, thereby providing a sustainable foundation for the scholarship of teaching and learning. The remainder of this paper is organized as follows: a literature review section to capture the framework of the SOTL, a methodology section to capture the systematic review approach, including PRISMA guidelines for study identification and guidelines. This will be followed by sections 4 and 5, which will present the main findings from the reviewed literature and are structured around post-pandemic evidence on hybrid, inclusive, and technology-enhanced

pedagogies in accounting education. Finally, the conclusion summarizes the study's key insights and provides recommendations for leveraging a hybrid, inclusive, and technology-enhanced pedagogy to ensure a sustainable SOTL in accounting education.

## 2. MATERIALS AND METHODS

### 2.1. Systematic Review Approach

This study utilized a systematic literature review (SLR) approach, following the guidelines established by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) methodology. The PRISMA framework offers a structured process for identifying, screening, and selecting relevant literature, ensuring transparency and reproducibility in the review process. The methodology began with defining the scope and inclusion criteria for the review, focusing on empirical and conceptual studies published between 2020 and 2025 to capture pedagogical innovations that emerged post-pandemic. We specifically examined studies published in peer-reviewed journals indexed in SCOPUS, targeting research from reputable global sources.

### 2.2. Data Sources and Search Strategy

The SCOPUS database was utilized to gather comprehensive research outcomes to achieve the research objectives. The SCOPUS database was selected due to its comprehensive indexing of global journals and articles. The study employed a search query that combined keywords relating to accounting education, post-pandemic, hybrid learning, inclusive teaching, and technology-enhanced pedagogy. The study search string combined keywords (Figure 1) such as COVID-19, post-pandemic, hybrid learning, inclusive teaching, accounting education, online learning, digital technologies, student engagement, learning outcomes, active learning, and teaching methods. The search was restricted to publications in English and to 2020-2025 to capture post-pandemic pedagogical innovations.

At the initial search stage, hundreds of articles were found for broader terms on “pedagogy” and “inclusive teaching and learning”. These results were then refined by applying filters and inclusion criteria.

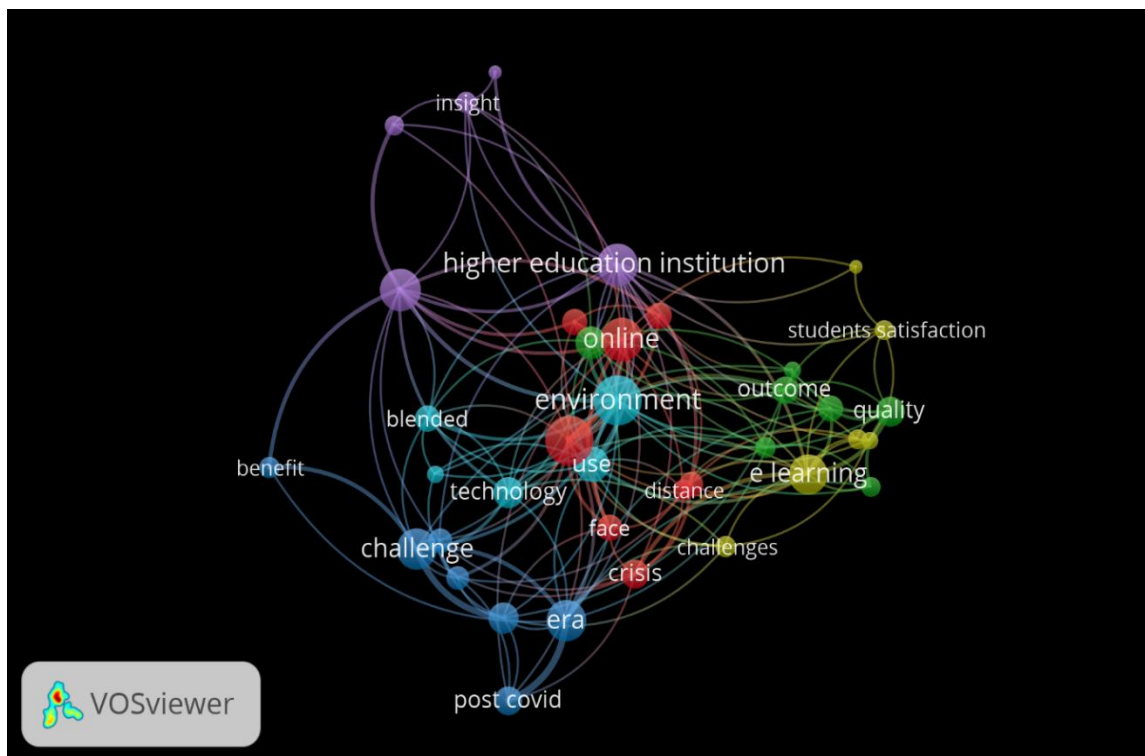


Figure 1. Analysis by Keywords.

### 2.3. Inclusion and Exclusion Criteria

The inclusion criteria were established to ensure that the studies reviewed were directly related to the research questions. The guidelines for inclusion and exclusion used in the study are outlined in Table 1.

**Table 1.** Inclusion and exclusion criteria.

Criteria	Inclusion	Exclusion
Focus	Studies exclusively address business, management, and accounting education or pedagogy in higher education.	Studies that focus on general education or non-accounting disciplines, and a lack of a clear business, management, and accounting education component
Link to teaching transformation	Research examining post-COVID-19 teaching practices, digital innovations, blended learning, student engagement, assessment, and curriculum design, or pedagogical adaptation in the accounting classroom	Research unrelated to post-pandemic contexts. Or those related to accounting education but unrelated to teaching transformation
Evidence	Peer-reviewed articles, book chapters, and high-quality conference papers that provide empirical evidence, case study scenarios, and systematic conceptual analysis	Non-academic reports, editorials, and non-peer-reviewed reports that do not have a clear methodological base
Geographical diversity	Studies covering any geographic setting with particular attention to comparative insights across emerging economies, to promote diversity of contexts	Studies that are overly localized and have limited generalizability
Screening process	Studies were identified through the SCOPUS database search and filtered using abstracts, keywords, and titles. A full-text review for final inclusion follows this.	Duplicates, Abstract-only studies, studies outside the defined timeframe, and those not meeting the methodological and relevance benchmark

### 2.4. Selection Process

Since the study adopted the PRISMA guidelines, the selection process is documented in a flow diagram (Figure 2). Approximately 45 records were populated through the SCOPUS database search during the identification stage. During the screening, the titles and abstracts of these 45 articles were reviewed against the inclusion and exclusion criteria; eight articles were excluded because they did not fall within the focus on business, management and accounting disciplines. This left 37 articles for retrieval; however, 14 could not be accessed for in-depth eligibility assessment. This left 23 articles eligible for retrieval. Also, out of the 23 articles, two were excluded due to the lack of full text, and the SCOPUS database retracted the other for ethical reasons. This reduced the total number of articles reviewed to 21.

For the 21 articles, relevant data and insights were retrieved, and key information was recorded, including study location, study setting, research design, sample size, population, research outcomes, key findings, theoretical framework, and relevance to research objectives. Furthermore, special attention was paid to recurring outcomes in the literature. The degree of evidence was also evaluated throughout the systematic review. The reviewed literature was revealed to be a mix of conceptual, review pieces, and empirical-based methodologies. In addition, global practices were also compared.

Following the identification and screening of eligible articles, a qualitative synthesis was conducted using thematic analysis, in which the texts were carefully reviewed to identify patterns, recurring themes, and concepts. These processes are presented systematically in the PRISMA diagram (Figure 2).

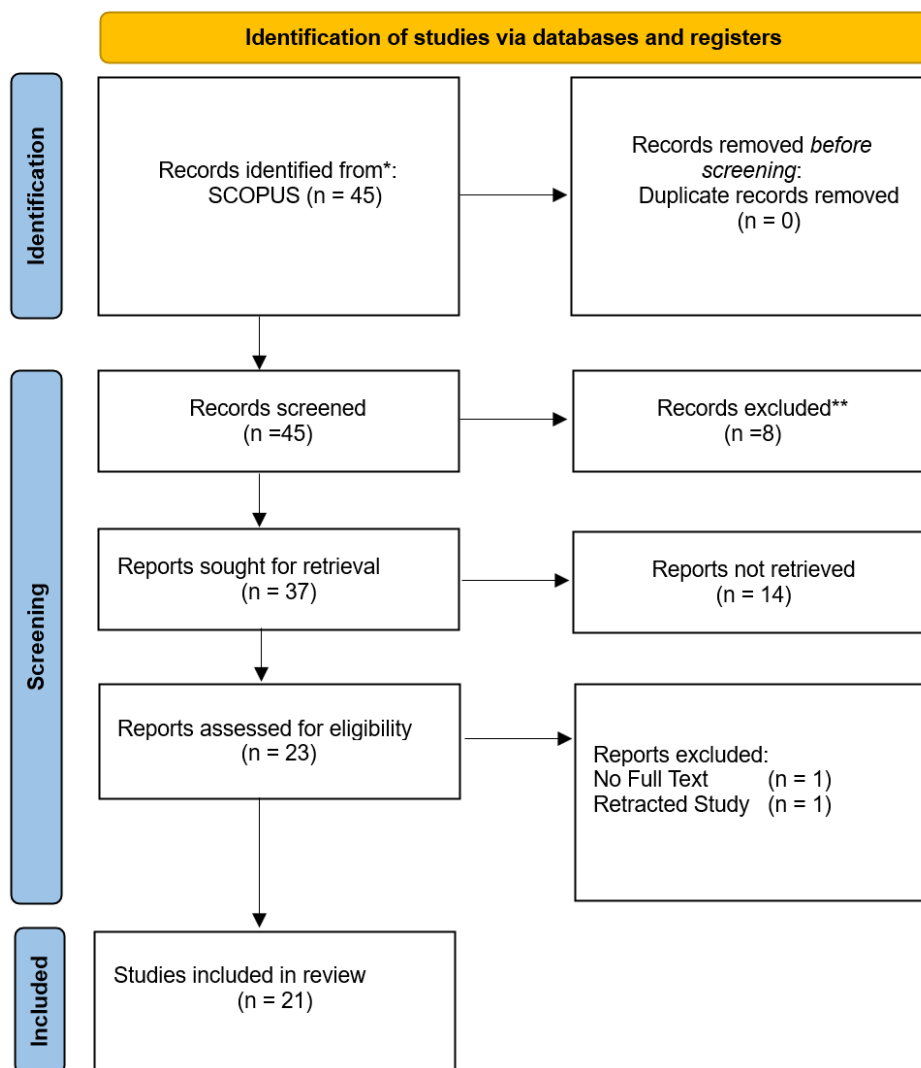


Figure 2. PRISMA flow chart.

Note: \* indicates studies included after Scopus identification; \*\* indicates studies excluded during first screening.

Table 2 presents a summary of pedagogical designs adopted by higher education institutions in different countries.

Table 2. Pedagogical designs implemented post-2020.

Study (ID)	Region	Pedagogical Design(s)	Key Notes
Al Maskari (2025)	Oman	Emergency remote teaching (LMS, MS Teams)	Engagement and technology access are key drivers
Nikou and Maslov (2023)	Finland	Online E-learning, digital communities	Digital communities + module design drive satisfaction
Fang, Lee, and Choi (2023)	Australia	Emergency remote learning + preference for blended model	Blended (face-to-face tutorial & online) learning
Alexander (2022)	Middle East	Virtual teaching	Highlighted digital literacy and support needs
Perrmann-Graham, De Lima, and Tournier (2025)	USA, IK, India, Australia	Hybrid model	Blended model and intentional community learning are key drivers
Xue, Wang, and Zhao (2023)	USA (Author affiliations)	Practical online engagement activities	Proposed quizzes, polls, peer assessment, DANMU
Fang et al. (2023)	Australia	Emergency remote teaching	Virtual meetings more productive than face-to-face

Study (ID)	Region	Pedagogical Design(s)	Key Notes
Machado, Almeida, and Costa (2024)	Portugal (3 HEIs)	Online learning	Online learning reduced motivation
Panjehfouladgaran, Stavropoulou, and Teimouri (2025)	USA	Online social presence	Social interaction + collaborative learning
Banihashem, Noroozi, den Brok, Biemans, and Kerman (2023)	Dutch	Blended learning	High workload, low well-being
Fynn and van der Walt (2023)	South Africa	ODEL online transition model	High burnout
Tessema and Nicola-Gavrilă (2023)	Ethiopia	Online learning via Moodle	Content mainly theoretical; LMS cost-effective
Canales-Ronda and Aragonés-Jericó (2022)	Spain	Agile methodologies in hybrid	Improves teamwork, motivation
Ahmad, Padlee, and Saadon (2022)	Saudi Arabia	E-learning preparedness study	Module design, a key driver
Gan and Sun (2022)	United States	Distance E-learning, digital barrier	Barriers = internet, device, skills
Al-Karaki, Ababneh, Hamid, and Gawanmeh (2021)	UAE	Online teaching and learning	Good model, concerns for exam integrity
Ali, Narayan, and Sharma (2021)	India	Emergency online learning (Zoom, WhatsApp)	Digital divide, poor pedagogy readiness
Svecova, Ostapenko, Veber, and Popov (2021)	Czech & Russia	Online survey	Blended learning preferred
Osman, Lee, and Tan (2021)	Malaysia	LMS, Teams	Usefulness, ease of use, effectiveness
Rembielak and Marciniak (2021)	Poland (Survey context)	E-learning	Accessibility issues
Nikou and Kim (2021)	Finland and South Korea	Comparative e-learning	Model design & teaching style are strong drivers

### 3. FINDINGS AND DISCUSSION

The systematic review outlines a plethora of pedagogical designs that emerged due to COVID-19 responses. The most significant shift across context was adopting hybrid and blended learning models, which combined a synchronized online lecture system and asynchronous digital resources and, in some cases, face-to-face tutorials or laboratory sessions. Studies from Australia (Fang et al., 2023), multi-country contexts (Permann-Graham et al., 2025), and Europe (Svecova et al., 2021) consistently revealed that students valued the flexibility of online lectures when integrated with opportunities for physical discussions and practical sessions. These designs sought to preserve the flexibility established by emergency distance learning while addressing the isolation and disengagement that students experience during a pandemic lockdown.

In addition to blending learning methodology, technology-enhanced pedagogies become central to post-pandemic practice. Across the reviewed literature, instructors applied learning management systems (LMS), short quizzes, breakout room collaboration, interactive polls, gamified elements, and, in some cases, automated feedback systems. For instance, Xue et al. (2023) outlined practical frameworks for enhancing engagement in synchronous environments through strategies such as “DANMU” (live streaming commentary), collaborative boards, and embedded formative assessments. These practices resonate with broader SOTL concerns about fostering active learning. However, they also reveal the degree to which technology has shifted from mere content delivery to the creation of engagement and learning opportunities.

Furthermore, evidence of inclusive pedagogical practices was less pronounced but still visible. Some studies acknowledge the necessity of designing offline-accessible content, captioned recorded lectures, and creating opportunities for learning for students with uneven preparation and limited access to technology (Al Maskari, 2025; Gan & Sun, 2022). While these efforts contribute towards equity, few studies systematically evaluated their impact on performance gaps. Nevertheless, they highlight the beginning of a shift towards more student-centred, flexible pedagogies that acknowledge the diversity of learners in business and accounting classrooms.

In essence, it can be deduced that hybrid/blended designs, combined with intentional community building and well-designed course materials, reliably improve students' outcomes and perceived teaching and learning engagement post-2020. However, students' satisfaction does not directly result in learning. This is captured from the review as the methodological predominance of cross-sectional surveys, micro-qualitative studies, and conceptual opinions makes it difficult to claim that these innovations lead to sustainable outcomes in accounting competencies.

Also, equity remains an issue. Digital barriers (slow internet, device shortages, and uneven digital competencies) consistently project negative experiences, especially among under-resourced institutions, which is the norm in developing nations. Many innovations risk creating an accessibility divide, privileging digitally resourced students over under-resourced cohorts unless inclusive design methodologies (offline access, flexible assessments) are consciously adopted. Furthermore, assessment poses a challenge; preserving integrity while favoring authentic, practice-oriented tasks critical to accounting education. The reviewed literature shows explanatory moves (projects, portfolios), but systematic evidence on validity, workload, and accreditation is lacking.

Practically, the evidence underscores that technology alone is insufficient to sustain the scholarship of teaching and learning. Pedagogical design, instructor readiness, and institutional frameworks are key drivers that determine whether technology amplifies learning or deepens inequity.

### *3.1. Evidence of Effects of Engagement, Learning Outcomes, Assessment, and Equity*

Across the reviewed literature, the most consistent outcome was student engagement. Studies conducted in Finland (Nikou & Maslov, 2023), Oman (Al Maskari, 2025), and Australia (Fang et al., 2023) demonstrated that students' sense of engagement was strongly influenced by module design, presence of digital acumen, and learning communities and opportunities for interaction with instructors and peers. Also, social presence (which is the ability of one to project oneself socially and academically in an online environment) emerged as a key driver of engagement (Panjehfouladgaran et al., 2025). Specifically, blended learning models that intentionally integrated synchronous and asynchronous modes consistently reported better engagement outcomes than exclusively online teaching methodologies.

Additionally, evidence regarding learning outcomes was more limited. Much of the existing research measures proxies such as satisfaction, motivation, or perceived effectiveness rather than objective performance outcomes. For instance, Osman et al. (2021) validated the Technology Acceptance Model (TAM) in the Malaysian context and found that perceived usefulness and ease of use predicted effectiveness, but did not report actual learning outcomes. Similarly, Machado et al. (2024) revealed declines in motivation associated with online learning, particularly among students who cohabit and have limited learning resources, but did not provide direct performance outcome data. Therefore, the reliance on perception-based research limits the authority of evidence on the long-term impact of these learning innovations on accounting competencies such as critical thinking, numerical fluency, or professional judgement.

Furthermore, assessment integrity remains a challenging discussion. From the review, educators in the UAE (Al-Karaki et al., 2021) and Australia (Fang et al., 2023) highlight concerns about the credibility of online examinations and assessment frameworks, despite the introduction of proctoring tools. While some institutions have shifted towards authentic assessments, portfolios, or oral defences, systematic analysis of these methodologies is

scarce. From the literature, it is seen that where assessment redesigns are reported, it is often as a result of necessity rather than deliberate pedagogical experimentation, highlighting a critical area for future SOTL inquiry.

Finally, debates on equity and inclusion were consistently raised but hardly measured extensively. Several studies highlighted the digital gap as a barrier to effective and sustainable participation, with students from lower socioeconomic classes reporting difficulties in accessing devices, the internet, and conducive learning environments (Gan & Sun, 2022). Notwithstanding, few studies scrutinise performance data to assess whether hybrid or technology-enhanced practices reduced or worsened these inequality outcomes. As a result, while inclusivity is often cited as a principle, the notion of equity impact remains under-researched.

### 3.2. Contextual Factors Influencing Effectiveness

This systematic review also underscores the role of context in shaping the effectiveness of pedagogical innovations. From the outcomes, resource availability was the most important factor, while access to reliable internet infrastructure, high-functioning LMS, and digital devices strongly mediated student satisfaction and learning engagement (Gan & Sun, 2022; Nikou & Maslov, 2023). The outcomes from students in Finland reported higher satisfaction than their counterparts in Russia, which may be due to differences in the institutional framework and readiness (Nikou & Kim, 2021). Furthermore, cross-country research on the SOTL highlighted how cultural expectations and institutional norms influence online learning adoption and successful integration (Permann-Graham et al., 2025).

Furthermore, faculty readiness and institutional support were also significant. For instance, universities in the Middle East (Alexander, 2022) and South Africa (Fynn & van der Walt, 2023) emphasized the challenges of workload burnout and academic digital literacy. They highlight that many educators risk burnout without professional development and workload recognition, thereby challenging the sustainability of post-pandemic teaching models. These findings indicate that pedagogical innovation cannot be removed from the broader ecosystem of staff wellbeing and institutional policy framework.

Finally, course level and class size further influence teaching and learning effectiveness. Evidence suggests that smaller postgraduate and MBA cohorts often adapted more positively to online and hybrid learning systems (Rembielak & Marciniak, 2021). Large undergraduate classes posed a challenge for sustaining engagement and monitoring academic integrity. In line with the SOTL, this reinforces the need for diverse pedagogical strategies tailored to specific contexts, such as cohort size and academic level. Table 3 presents the contextual moderators of teaching and learning effectiveness.

**Table 3.** Contextual moderators of effectiveness.

Moderator	Evidence	Implications
Course level	MBA (Poland)- more positive adaptation; undergraduates (Australia, Portugal)- more challenges	Tailor a hybrid design by levels; higher autonomy for postgraduate students
Class size	A Larger cohort is more complicated to manage in terms of engagement and integrity	Smaller classes adapt better to interactive hybrid tools
Resources	Digital infrastructure	Invest in IT support
Faculty readiness	Burnout (South Africa), digital literacy gap (Middle East), workload (Netherlands)	Must address staff wellbeing, sustainable pedagogy goals
Culture/Region	Different perspectives on online learning across regions	Context-specific pedagogical adaptations are needed

### 3.3. Gaps and Future Directions

Despite the extensiveness of the reviewed literature, several critical research gaps still exist. First, there is a persistent outcome measurement gap. Most studies limit their objectives to satisfaction, motivation, or perceived effectiveness, but very few align these metrics with objective performance indicators. This gap is critical in accounting

education, where the acquisition of technical, ethical, and professional skills needs to be critically assured. Second, an equity evidence gap exists as the digital divide and accessibility issues persist. Few empirical studies have investigated whether device loan programs, offline resources, or comprehensive design strategies succeed in reducing achievement gaps.

Third, there is an assessment innovation gap due to a lack of an integrity framework. Also, there is limited empirical investigation testing alternative assessments in accounting and business education. There is a need for research to affirm the validity, reliability, and workload implications of remote tasks, portfolios, and oral assessments. Fourth, despite the comprehensive research outcomes, there is a discipline-specificity gap. Much of the literature speaks comprehensively to business or management education. While these perspectives are relevant, this generality obscures the specific challenges of accounting pedagogy, such as software-based assessments and tasks, audit simulations, and case-based ethics training.

Finally, there is a theoretical gap as most studies rely on the TAM model, which explains technology adoption but not learning processes. SOTL in accounting requires theoretical integration: frameworks such as the Community of Inquiry (CoI), Universal Design for Learning (UDL), and constructive adoption could provide comprehensive frameworks of how specific pedagogical decisions impact student learning and equity.

### *3.4. Limitations of the Study*

Despite the coverage of this systematic review, there are some limitations. First, the evidence base remains heterogeneous, with many studies relying on small, single-institution samples or self-reported perspectives. Second, most of the literature captures immediate pandemic responses, thereby limiting insight into sustainable innovations for the SOTL. Third, although the systematic review tried to capture diverse geographic contexts, its focus was on the SCOPUS database, which may underrepresent practical and broader innovation methodologies. Finally, the variations in study designs and outcomes limit the possibility of carrying out a meta-analysis, meaning the research outcomes can be labeled as thematic rather than causal.

## **4. CONCLUSION**

Post-pandemic teaching and learning have been characterized by an acceleration of hybrid, inclusive, and technology-enhanced pedagogies. The reviewed studies affirm that these innovations improve students' satisfaction and perceived effectiveness, especially when integrated with reliable IT infrastructure and intentional module design. Nonetheless, robust evidence of their impact on teaching and learning outcomes, assessment integrity, and equity is still novel and emerging. For accounting education specifically, the focus is to move beyond emergency actions toward sustainable, evidence-based practices that equip students for professional realities while reducing structural inequalities.

Future SOTL in accounting must therefore prioritize extensive evaluation of blended learning frameworks, equity-focused solutions, and assessment redesign for sustainability. Also, theoretical development should advance beyond technology-based frameworks to integrate learning and inclusivity theories. Only by achieving this can the accounting field truly "teach anew," aligning pedagogy with the comprehensive demands of a post-pandemic world. From the research outcomes, the study recommends that:

- i. Institutions should design accounting curricula around face-to-face tutorials for interaction and online lectures for flexibility. For instance, at Swinburne University, Australian students preferred in-person tutorials combined with e-learning.
- ii. Governments and universities should subsidize internet access, provide loanable digital devices, and design low-bandwidth learning platforms. For instance, in Oman, student engagement in online learning was highest when they had reliable access to devices and LMS tools.

- iii. There should be a shift from traditional high-stakes exams to authentic, project-based assessments and continuous evaluation methods supported by AI or LMS analytics. For example, universities in Australia introduced flexible, redesigned assessments with virtual consultations, which improved integrity and student satisfaction.
- iv. Universities should embed interactive tools such as polls, peer assessments, and collaboration boards into LMS platforms to sustain student engagement.
- v. Institutions should invest in faculty development for digital pedagogy and proactively address staff burnout. This promotes digital literacy and institutional support.

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