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Bridging Cognitive Biases and Pedagogical Strategies: A Systematic Literature Review of Behavioral Accounting Education Research

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ABSTRAK (Dalam Bahasa Indonesia)

Bias kognitif menimbulkan berbagai permasalahan bagi para akuntan, salah satu kasus akibat kegagalan dalam penilaian profesional dalam bias yaitu runtuhnya Enron Corporation dan firma auditnya. Tujuan utama dari artikel ini adalah untuk mensintesis dan memetakan lanskap penelitian terkini mengenai strategi pedagogis yang digunakan dalam pengajaran akuntansi keperilakuan dan bias kognitif. Metode yang digunakan adalah Systematic Literatur Review (SLR) dengan menganalisis sebanyak 30 artikel dari 118 artikel yang didapatkan. Hasil penelitian ini adalah adanya bias kognitif yang sering muncul dalam dunia pendidikan akuntansi serta upaya berbagai pihak baik praktisi, universitas, dan lain-lain dalam memitigasi bias kognitif bagi mahasiswa akuntansi yang merupakan tahap yang tepat untuk mencegah adanya bias kognitif di masa yang akan datang. Adapun upaya yang terbukti tepat dalam mengatasi hal tersebut yaitu dengan strategi Problem-Based Learning (PBL) dan Case-Based Learning.

Kata Kunci :
Tinjauan Literatur Sistematis, Bias Kognitif, Akuntansi Keperilakuan, Strategi Pedagogik, Pendidikan Akuntansi

ABSTRACT (In English)

Cognitive bias creates various problems for accountants, and one of the most well-known cases resulting from failure in professional judgment due to bias was the collapse of Enron Corporation and its audit firm. The main objective of this article is to synthesize and map the current research landscape regarding pedagogical strategies used in teaching behavioral accounting and cognitive bias. The method employed is a Systematic Literature Review (SLR) by analyzing 30 articles out of the 118 articles identified. The findings indicate the existence of cognitive biases that frequently arise in accounting education, as well as efforts from various parties including practitioners, universities, and others to mitigate cognitive bias among accounting students, which is considered an appropriate stage to prevent such bias in the future. The strategies proven to be effective in addressing this issue are Problem-Based Learning (PBL) and Case-Based Learning.

Keywords :
Systematic Literature Review, Cognitive Bias, Behavioral Accounting, Pedagogical Strategies, Accounting Education

INTRODUCTION

In the era of modern accounting, the function of accountants is no longer limited to recording and bookkeeping activities. Beyond that, accountants have evolved into a strategic role encompassing the interpretation of data to generate value drivers, measure risks, and evaluate investment feasibility. This role aligns with the global management accounting framework, which emphasizes the importance of value creation through analysis that supports the decision-making process (CIMA, 2014). The ability to contribute strategically is grounded in the quality of professional judgment namely, an accountant's capability to apply knowledge, skills, and experience appropriately to produce sound decisions, particularly in situations filled with uncertainty. Thus, the reliability of professional judgment becomes an essential component in supporting the effectiveness of accountants' strategic roles amid the complexity of today's business environment.

The quality of professional judgment serves as a fundamental pillar that upholds the reliability and integrity of financial information. Errors in judgment within crucial areas may produce inaccurate and

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misleading representations of a company's performance and financial position. Distorted reports then become the basis for decision-making by stakeholders (investors, creditors, and regulators), who mistakenly perceive the information as a fair representation of the company's underlying economic reality (Financial Accounting Standards Board [FASB], SFAC 8). Consequently, decisions based on flawed information become the first step in a chain of significant losses.

One of the most tragic cases of failed professional judgment driven by cognitive bias is the collapse of Enron Corporation and its audit firm, Arthur Andersen, in 2001. In this case, several cognitive biases are believed to have played a substantial role. The auditors of Arthur Andersen were criticized for failing to identify aggressive and manipulative accounting practices. It was suspected that they placed excessive trust in management's explanations and ignored red flags that were inconsistent with their initial expectations (Healy and Palepu, 2003). The resulting losses were catastrophic: Enron went bankrupt, investors lost more than $70 billion, thousands of employees lost their jobs and pensions, and Arthur Andersen then one of the world's Big Five accounting firms collapsed. This case vividly illustrates that cognitive bias can carry profoundly serious economic consequences.

Cognitive bias refers to systematic tendencies in thinking that disrupt rational decision-making. To minimize its impact, education plays a critical role by equipping students with critical and reflective thinking skills early on. One applicable approach is metacognitive instruction the ability to recognize and control one's own thought processes. Flavell (1979) stated that by increasing metacognitive awareness, individuals become more capable of identifying when they think in a biased manner and consciously correcting those cognitive patterns.

Recent studies highlight the effectiveness of experiential learning approaches in teaching behavioral accounting and cognitive bias. This model enables students to directly experience complex decision-making situations, such as in audit simulations, role-playing activities, or case studies based on real-world scenarios. According to Levant et al. (2016), the use of business simulations has been shown to enhance students' understanding of how biases such as confirmation bias and overconfidence affect the judgments of auditors and managers. Such interventions also stimulate deeper critical reflection, helping students develop awareness of their own thinking processes.

Other literature emphasizes the importance of integrating critical thinking and metacognition into accounting curricula to equip students with the ability to detect and manage cognitive bias. Bucaro (2019) found that training based on argumentative tasks and reflective questioning in the context of complex audit estimates significantly improves auditors (including accounting students) ability to evaluate deductive logic, assumptions, and supporting evidence. This approach is relevant not only in auditing and decision-making contexts but also in understanding financial reporting behavior and professional ethics.

Alongside technological advancements, research also explores the use of adaptive learning platforms and data-driven instructional systems in teaching behavioral accounting. These systems can adjust learning content and feedback in real-time based on student responses, enabling more personalized and in-depth learning related to bias and decision-making. For example, a study by Apostolou et al. (2013) found that computer-assisted instruction incorporating decision-making scenarios and risk simulations helps students understand the psychological dynamics involved in financial reporting and auditing more effectively.

Research on pedagogical strategies in teaching behavioral accounting and cognitive bias has expanded in various directions, reflecting the complexity and interdisciplinary nature of this topic. To date, however, there has been no comprehensive and systematic synthesis that maps the research landscape of these pedagogical strategies as a whole. This gap in the literature creates a critical issue since, without a holistic mapping, it becomes difficult for educators and researchers to identify best practices, limitations of current approaches, and opportunities for the development of more effective pedagogical innovations.

Given the urgency of this issue in the context of professional education and curriculum reform, a systematic review is needed to map the diversity of pedagogical strategies, evaluate their effectiveness, and identify unexplored research gaps. As suggested by Pargmann (2023), approaches such as systematic literature review can make a significant contribution by providing a conceptual map useful for educational policymakers, instructors, and subsequent researchers.

The primary objective of this article is to synthesize and map the current research landscape regarding pedagogical strategies used in teaching behavioral accounting and cognitive bias. Considering the gaps in prior research and the objectives to be achieved, the research question is formulated as follows: How can pedagogical strategies in behavioral accounting education address and reduce cognitive bias among accounting students and educators?

Through a systematic approach to the dispersed literature, this article seeks to identify effective pedagogical approaches, highlight unaddressed research gaps, and provide direction for future pedagogical

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research and practice. As emphasized by Kitchenham (2004), systematic synthesis in education is crucial to ensure that decision-making is based on scientific evidence rather than merely on assumptions or common practice.

In line with these objectives, the synthesis presented in this article is expected to provide meaningful contributions to various stakeholders in accounting education. For academics and researchers, this article can serve as a comprehensive reference for curriculum development and future study design. For lecturers and curriculum developers, the findings can be used as a basis for selecting and implementing learning strategies that enhance students' understanding of behavioral dynamics in accounting, such as biases in auditor or financial manager decision-making. Furthermore, the implications of this article are also relevant for educational institutions and regulators (such as professional accounting associations) in formulating learning and accreditation standards that are more contextual and evidence-based.

THEORITICAL FRAMEWORK

Cognitive Psychology Theory

Cognitive psychology shifted from a focus on observable behavior to the exploration of internal mental processes. It emerged as a response to the limitations of behaviorism, which overlooked the complexity of the human mind. Cognitive psychology views humans as active information processors, as reflected in their ability to receive, process, store, and use information in decision-making and problem-solving. It considers humans as beings capable of interacting with their environment through thinking (Ramadanti, Sary, & Suarni, 2022). The scope of cognitive psychology is extensive, covering observation, memory, attention, pattern recognition, problem-solving, language psychology, and cognitive development (Ramadanti et al., 2022). This theory is rooted in twelve fields of research, including cognitive neuroscience, perception, pattern recognition, attention, consciousness, memory, knowledge representation, imagery, language, developmental psychology, thinking and concept formation, as well as human and artificial intelligence (Ramadanti et al., 2022).

There are several reasons why studying cognitive psychology is important cognition is the central focus of human psychological study, it has broad influence on various psychological fields through cognitive approaches, and it carries personal significance for individuals who choose to study it (Matlin, 2016). Cognitive psychology serves as a scientific foundation that is useful for research in behavioral accounting education. This theory helps in understanding the mental mechanisms underlying financial data processing, accounting decision-making, and the comprehension of complex accounting concepts.

Cognitive Bias Theory

Systematic and predictable deviations from rationality in judgment or decision-making are known as cognitive biases (Blanco, 2017). The human inability to process and interpret complex data leads to cognitive biases (Putri & Buana, 2024). According to Blanco (2017), the causes of cognitive bias include limited cognitive resources, which include limited memory and processing capacity, the influence of emotions and motivations that can influence decision-making, social influences that tend to follow the majority, and heuristics and mental shortcuts. Heuristics can be defined as problem-solving or decision-making methods that use quick and efficient methods based on experience and rules of thumb, resulting in suboptimal decisions. Three main heuristics are representativeness, availability, and anchoring and adjustment.

Accounting education is closely linked to cognitive biases, due to the way information is processed by students and practitioners, leading to informed decisions. Integrating an understanding of cognitive biases into pedagogical strategies will improve the quality of accounting education and prepare students to become more competent and ethical professionals in the face of real-world complexities.

RESEARCH METHOD

To examine the relationship between cognitive bias and pedagogical strategies in behavioral accounting education comprehensively and systematically, this study employs a Systematic Literature Review (SLR) approach. The SLR aims to identify relevant primary publications, extract necessary data, analyze, and synthesize the findings to obtain a deeper and more comprehensive understanding of the topic under investigation (van Dinter, Tekinerdogan, & Catal, 2021). This method is structured based on the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines to ensure traceability, objectivity in selection, and procedural rigor.

The implementation of the SLR in this study follows systematic and integrated stages to guarantee methodological validity. These stages include: (1) formulating specific research questions that are focused on the issue being investigated; (2) establishing clear inclusion and exclusion criteria to precisely delimit the scope of the study; (3) developing a comprehensive literature search strategy using reputable academic databases;

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(4) applying a rigorous screening procedure to select publications that meet the criteria; (5) systematically extracting data related to essential variables from each selected study; and (6) synthesizing the findings through a narrative approach to generate a holistic and evidence-based understanding of the phenomenon under review.

Research Question

As the primary conceptual foundation in conducting the Systematic Literature Review (SLR), the formulation of the research question in this study refers to the SPIDER framework (Sample, Phenomenon of Interest, Design, Evaluation, Research type). This approach enables the identification of a broader and more relevant range of primary studies within the context of behavioral accounting education. Specifically, the focus of this research lies in examining how pedagogical strategies implemented in accounting education are capable of addressing and/or mitigating the influence of cognitive biases commonly found among students and educators. Considering the components of the SPIDER framework, the research question in this study is formulated as follows:

"How do pedagogical strategies in behavioral accounting education address and mitigate cognitive biases among accounting students and educators?"

This research question serves as the basis for the development of the search strategy, literature selection, as well as the processes of data extraction and synthesis.

Study Selection Criteria

The establishment of inclusion and exclusion criteria in this Systematic Literature Review aims to ensure that only credible and relevant scholarly works are analyzed in the data synthesis, so that the resulting conclusions are not only scientifically defensible but also provide substantial contributions to the development of evidence-based pedagogy in accounting education.

The inclusion criteria in this study consist of: (1) empirical studies employing quantitative, qualitative, or mixed methods that investigate phenomena in accounting education; (2) studies that discuss cognitive bias explicitly or implicitly, such as overconfidence, anchoring, or confirmation bias; (3) studies that propose, implement, or evaluate pedagogical strategies related to bias mitigation; (4) articles published in accredited and peer-reviewed scientific journals; (5) written in English or Indonesian; and (6) published between the years 2000 and 2025.

The exclusion criteria were applied to eliminate publications that are irrelevant or do not meet the established scientific quality standards. A study is excluded if: (1) it is not conducted within an educational context or has no linkage to pedagogical aspects; (2) it falls outside the field of accounting; (3) it discusses cognitive bias without relating it to instructional strategies or the context of accounting education; (4) it is conceptual or theoretical in nature without empirical data support; and (5) it constitutes non-scientific publications, such as opinion pieces, editorials, book reviews, or gray literature that has not undergone peer review.

Literature Search Strategy

The literature search was conducted systematically through the Publish or Perish database, which was selected due to its capability to integrate searches across reputable academic sources such as Google Scholar, Web of Science, CrossRef, and Scopus. This advantage allows for the identification of a wider and more inclusive body of literature, particularly in capturing multidisciplinary studies relevant to the theme under investigation.

Based on the formulated research question, the search strategy was developed using a Boolean approach to logically and comprehensively combine the key concepts. The query employed was: ("behavioral accounting" OR "accounting education") AND ("cognitive bias*" OR "heuristic bias" OR "decision bias" OR "overconfidence" OR "anchoring") AND ("pedagog*" OR "teaching strateg*" OR "instructional method*" OR "curriculum design").

This combination of keywords was designed to capture articles that explicitly or implicitly explore the relationship between cognitive bias and pedagogical strategies in the context of behavioral accounting education. The strategy enables the identification of relevant empirical studies encompassing a variety of methodological designs and pedagogical approaches utilized to respond to cognitive bias in accounting learning environments.

Study Selection Process

The stages of literature selection in this study were carried out based on the PRISMA guidelines, encompassing the processes of identification, screening, and assessment of eligibility and inclusion. To ensure

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methodological transparency and accountability, the entire procedure is visualized through a PRISMA flow diagram.

Data Extraction

The data extraction process was carried out systematically for all studies that met the inclusion criteria in the final selection stage. Each selected article was analyzed using a standardized extraction form designed to capture key elements relevant to the focus of the review. The information collected included study identification (authors, year, and journal), research methodology, and the pedagogical design applied within the context of behavioral accounting education. In addition, detailed documentation was made regarding the types of cognitive biases that were identified or targeted in each study. The main findings of each research article were recorded to evaluate the extent to which the applied pedagogical strategies contributed to mitigating cognitive bias or enhancing learning quality. Additional information collected included theoretical and practical implications, as well as recommendations provided by each study regarding future instructional design. The extracted results were then organized into a comparative table to facilitate thematic synthesis and conceptual analysis, which will be presented in the subsequent section.

Data Synthesis

The data synthesis was conducted using a narrative approach to identify patterns, relationships, and variations across the included studies. The extracted data were organized into major themes based on the types of pedagogical strategies, the categories of cognitive biases addressed, and their relative effectiveness within the context of behavioral accounting education. The analysis process was carried out iteratively to ensure consistency and integration between pedagogical and psychological dimensions in each study. Figure 1 presents the flow diagram illustrating the article selection process in this review.

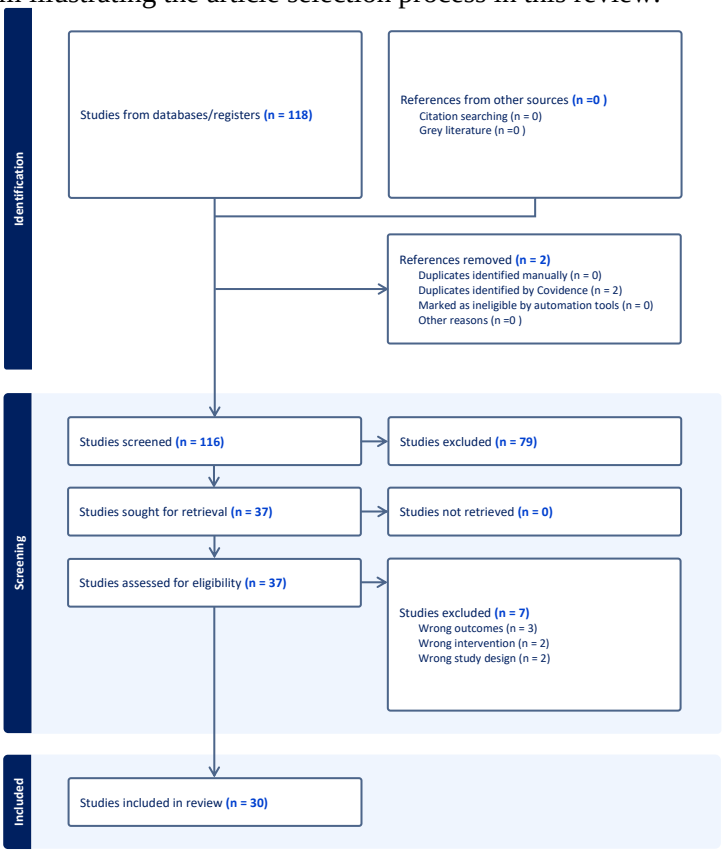

Figure 1. PRISMA Diagram

RESULT AND DISCUSSION

Result

Trends in Article Publications by Year

A bibliometric analysis over the past three decades indicates that the explicit linkage between cognitive biases and pedagogical strategies in behavioral accounting education has gained significant momentum since

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2015. Although early publications emerged around the year 2000, a consistent and intensive research trend has only become evident within the last decade. In the most recent five-year period, the relevance of this topic remains strong, as reflected in the dominance of publications between 2021 and 2025. These findings underscore a paradigmatic shift toward a more reflective, humanistic, and behavior-based model of accounting education, creating opportunities for pedagogical designs that systematically intervene in cognitive biases during learning and decision-making processes.

Distribution of Reviewed Articles by Publication Journal

The analysis of journal distribution reveals that publications on cognitive biases and pedagogical strategies within accounting education are dispersed across various scholarly outlets, with a primary concentration in accounting and business education journals. Issues in Accounting Education, Accounting Education: An International Journal, and the Journal of Accounting Education emerge as the most consistent contributors, each publishing two relevant articles. This consistency reflects the central role of these journals in advancing and disseminating behavior-based pedagogical discourse in the context of accounting education. Furthermore, the presence of relevant studies in interdisciplinary journals such as Educational Technology & Society and Business and Professional Ethics Journal demonstrates that the themes of cognitive bias and reflective learning transcend the boundaries of accounting as a discipline.

Distribution of Articles Based on Country Context

The geographical distribution of studies demonstrates a strong dominance of Anglo-Saxon countries, particularly the United States (10 studies) and Australia (7 studies), which together account for more than half of the total publications reviewed. This reflects the maturity and institutional attention devoted to the integration of behavioral and pedagogical approaches in accounting education within these countries. Such dominance can also be attributed to curriculum policies that are more adaptive to pedagogical innovation and to a long-standing tradition of experimental research in their higher education systems. Meanwhile, contributions from other countries including Malaysia (3 studies), the United Kingdom and Canada (2 studies each), as well as India, Germany, Portugal, Thailand, and Zimbabwe (1 study each) indicate a growing global interest in the topic. The presence of one internationally collaborative study further highlights cross-country efforts in advancing this area of inquiry. This variation suggests that although research remains concentrated in developed nations, the relevance of cognitive bias and pedagogical strategies has begun to gain broader adoption across global accounting education contexts.

Distribution of Articles Based on the Main Theory Used

The distribution of core theories within behavioral accounting education research reveals a significant diversity of conceptual approaches. Analysis of the 30 articles identified in this SLR indicates that no single theory dominates the field; instead, there is a tendency toward integrating cognitive, learning, and behavioral psychology theories in the design of pedagogical strategies aimed at mitigating cognitive biases. Dual-Process Theory (Kahneman & Tversky) and Prospect Theory emerge as the primary foundations for understanding the mechanisms of cognitive bias in accounting decision-making. These theories are used to explain the tendency of accounting students and professionals to rely on heuristics and fall into biases such as anchoring, overconfidence, and confirmation bias. In addition, Cognitive Load Theory (Sweller) and the Reflective Judgment Model (King & Kitchener) are commonly adopted to design pedagogical interventions intended to reduce cognitive burden and enhance students' critical thinking skills.

Meanwhile, learning theories such as Experiential Learning (Kolb), Problem-Based Learning (PBL), and Flow Theory (Csikszentmihalyi) are widely employed to build active, collaborative, and reflective learning environments. These approaches have been shown to be effective in encouraging students to recognize and overcome perceptual biases as well as to enhance learning motivation. Equally important, social and educational theories such as Hidden Curriculum, Attribution Theory, and Connectionism Theory are applied to examine institutional, social, and affective factors that influence the emergence of cognitive biases and the effectiveness of mitigation strategies. The integration of competence theory, emotional intelligence, and psychological literacy has also become increasingly common in recent studies to prepare accounting graduates who are adaptive to the complexities and uncertainties of the professional environment.

Overall, the distribution of theoretical foundations in this SLR reinforces the importance of a multidisciplinary and integrative approach in designing accounting education strategies that are responsive to cognitive biases. This also reflects a paradigm shift from content-based technical teaching toward holistic and contextual learning that promotes cognitive, affective, and social development.

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Distribution of Articles Based on the Research Object

Based on the 30 articles analyzed, the majority of research objects were accounting students, totaling 23 studies. This indicates that the selected subjects are aligned with researchers' objectives regarding cognitive biases among future accountants. This dominance reflects a strategic orientation of the research toward shaping prospective accounting professionals who are more aware of cognitive biases. Such a focus is expected to contribute to the development of a higher-quality accounting profession.

Distribution of Articles Based on the Methodological Approaches Used

Quantitative methods dominate research in the field of cognitive bias, accounting, and education, with 19 studies employing this approach. This indicates a tendency to objectively measure the extent to which pedagogical strategies are effective. In addition, the preference for quantitative methods reflects the intention to produce generalizable data, allowing the findings to be applied to broader situations, populations, or contexts beyond the original research sample. Moreover, methodological diversity is present, with several studies adopting quasi-experimental designs, true experimental approaches, and mixed-methods frameworks.

Distribution of Articles Based on the Pedagogical Design

The paradigm of learning in contemporary accounting education has undergone a significant transformation. The data presented indicate a major shift from conventional teacher-centered approaches toward more interactive and student-centered learning. This transformation represents a response to the challenges that accountants are expected to face in the modern era. Among all reviewed studies, the most widely implemented pedagogical design is Problem-Based Learning (PBL) (Apostolou, Dorminey, Hassell, & Rebele, 2015; Cullen, Richardson, & O'Brien, 2004; Md Daud, Tuan Mat, Mohamad Kamal, & Nurhanifah, 2025; Sebele-Mpofu, 2024; Wolcott & Sargent, 2021; Zhou, Javed, & Iveson, 2025). This instructional model is regarded as a bridge that connects abstract accounting theory with the complex realities of professional practice. In addition, the integration of technology in learning enables students to interact with accounting concepts in digital environments, such as computer-based simulations in which they make decisions and experience the consequences (C. O'Leary, 2009). Collaborative learning designs are also widely adopted in the selected articles, followed by case-based learning. In collaborative learning settings, cooperation among students in solving accounting problems generates multiple perspectives and creates a cognitive "immune system" against individual biases. This effect becomes balanced, for example, when optimistic students work alongside more conservative peers (Md Daud et al., 2025). Finally, case-based learning is employed to present realistic scenarios that mirror the types of challenges students are likely to encounter in their future professional practice.

Distribution of Articles Based on the Types of Cognitive Biases Analyzed

Most studies adopt an educational and learning perspective, particularly in the context of ethical judgment, decision-making, and the accounting learning process. For example, O'Leary & Stewart (2013) highlight the gap between ethical attitudes and actual behavior, while (Zhou et al., 2025) emphasize conceptual misunderstandings that hinder students' comprehension. In addition, biases rooted in social constructions such as social desirability bias and pattern effect (C. O'Leary, 2009) indicate a tendency to provide socially acceptable responses rather than those that reflect personal judgment. Other biases, including under-determination, inductive reasoning errors, and resistance to paradigm change (McKinney, Yoos, & Snead, 2017; O`Brien, 2017), further obstruct innovation and cognitive flexibility in accounting education, despite the fact that both are critically needed to cope with technological developments and the dynamic nature of today's accounting profession.

Furthermore, perceptual and information-evaluation biases such as availability bias, confirmation bias, and overconfidence (Athota et al., 2023; Fay & Montague, 2014) may lead individuals to premature or inaccurate conclusions. On the other hand, emotional and motivational biases, including loss aversion, belief perseverance, and cognitive overload (Marshall & Bolt-Lee, 2022; Tucker, 2017), illustrate how psychological conditions can constrain cognitive capacity in rational decision-making. Taken together, the presence of various types of bias indicates the need for strong awareness and deep understanding of cognitive biases embedded within learning and professional thinking processes in order to improve the quality of accounting education.

Discussion

This study systematically reviewed 30 articles exploring the relationship between pedagogical strategies and cognitive bias mitigation in the context of behavioral accounting education. The findings indicate

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that cognitive bias remains a significant barrier to learning and decision-making for both students and educators. However, innovative pedagogical strategies have consistently been shown to effectively mitigate the impact of these biases and contribute to improving the quality of professional reflection and decision-making.

The Dominance of Cognitive Bias in Accounting Education

Based on the analysis of 30 articles, cognitive biases in accounting education exhibit considerable diversity, ranging from heuristic biases such as anchoring (Athota et al., 2023; Boylan, 2008; Fay & Montague, 2014; Kleefeld & Pohler, 2019), availability (Fay & Montague, 2014), and overconfidence (Athota et al., 2023; Fay & Montague, 2014; Yunos, Hashim, Ahmad, Nabihah, & Taha, 2023), to perceptual and subjective biases in materiality judgments (Cullen et al., 2004; De Villiers, 2010; Marzuki, Subramaniam, Cooper, & Dellaportas, 2017; Mladenovic, 2000). In addition, institutional bias (De Villiers, 2010) and algorithmic bias (Sebele-Mpofu, 2024) have emerged in the digital learning context. These biases affect not only students but also educators and even digital learning systems, as identified by (Sebele-Mpofu, 2024) in relation to algorithmic bias in the use of artificial intelligence and machine learning.

Effective Pedagogical Strategies in Mitigating Cognitive Bias

Based on the analysis, several pedagogical strategies have been identified as the most effective in mitigating cognitive biases within behavioral accounting education. Problem-Based Learning (PBL) and Case-Based Learning demonstrate particularly strong effects in fostering critical and analytical thinking skills among students. Empirical and narrative case studies especially those that are complex and unstructured (messy cases) encourage students to probe deeply, challenge assumptions, and avoid superficial learning that is vulnerable to heuristic and confirmation bias (Agrawal, Birt, Bayne, & Schonfeldt, 2022; Cullen et al., 2004). Through the PBL model, students learn to cope with uncertainty, evaluate multiple solution alternatives, and develop reflective capacity that is essential for mitigating cognitive bias in accounting judgment and decision-making.

Experiential learning and simulation-based instruction also make substantial contributions to behavioral accounting education by providing real-world practice that reflects the nuanced complexity of professional environments. Business simulations and spreadsheet applications, as described by (Marriott, 2004), not only strengthen students' technical competencies but also enhance reflective awareness of the potential emergence of bias during decision-making processes. In addition, interactive classroom experiments developed by (Fay & Montague, 2014) enable students to directly identify and confront their own cognitive biases, thereby reinforcing debiasing skills and developing more accurate and ethical professional judgment. This approach is significantly more effective than passive learning because it demands active engagement and deep reflection.

Game-Based Learning (GBL) and the incorporation of digital tools are becoming increasingly relevant in the digital era. Interactive games and digital applications promote student engagement, concentration, and learning motivation (Silva, Rodrigues, & Leal, 2019). With an optimal flow experience, students tend to remain more focused and motivated, reducing susceptibility to biases associated with disengagement or misinterpretation of learning objectives. The digitalization of accounting education and the use of AI present opportunities to reduce cognitive biases through objective data analysis and algorithm-driven recommendations. However, risks of algorithmic bias and inequality of technological access remain a concern, requiring transparency, capacity-building among educators, and industry partnerships to ensure fair and effective application of technology (Athota et al., 2023; Sebele-Mpofu, 2024).

Collaborative learning and group-based learning also significantly broaden students' perspectives through cross-background interactions in group discussions and teamwork. These strategies effectively reduce individualistic biases while facilitating critical reflection across diverse viewpoints (Cullen et al., 2004; De Villiers, 2010). Through collaborative dynamics, students are encouraged to test assumptions collectively, identify blind spots in their reasoning, and build a more comprehensive interdisciplinary understanding competencies that are highly essential for navigating the complexity and ambiguity of contemporary accounting practice.

Structured guidance frameworks such as the STEP Framework play a central role in reducing cognitive overload and guiding students' thinking processes systematically (Md Daud et al., 2025). With clear scaffolding, students can avoid excessive reliance on intuitive, bias-prone decisions and are better able to identify and manage biases throughout each stage of problem-solving. Such frameworks also help instructors provide more targeted and constructive feedback.

The integration of soft skills and emotional intelligence into accounting curricula is becoming increasingly vital amid the dynamic and uncertain nature of the accounting profession. (Imjai, Meesook,

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Kanchanamukda, Usman, & Aujirapongpan, 2024), highlight emotional intelligence as a key predictor for enhancing forensic accounting skills and reducing bias in decision-making. Strengthening psychological literacy and self-discipline also helps students recognize, regulate, and overcome biases in complex and ethically charged situations. A curriculum that balances technical skills with soft skills will produce more adaptive, reflective graduates who are prepared to meet the challenges of the future accounting profession (De Villiers, 2010).

Overall, the most effective pedagogical strategies for mitigating cognitive bias are those that emphasize real-world experience, critical reflection, collaboration, structured guidance, and the integration of psychological and technological dimensions. Adaptive and innovative behavioral accounting education not only identifies and reduces cognitive bias but also equips both students and educators with professional judgment and ethical competencies aligned with modern workplace demands.

Importantly, (Conor O'Leary & Stewart, 2013) show that the effectiveness of debiasing strategies is significantly influenced by the alignment between teaching methods and students' learning styles. Active learners respond better to group tasks and case studies, whereas passive learners benefit from more structured and guided approaches. Such alignment is crucial for optimizing learning outcomes and reducing the intention–behavior gap in ethical decision-making.

CONCLUSION AND ACKNOWLEDGEMENT

Pedagogical strategies in behavioral accounting education have been empirically proven to identify, reduce, and mitigate cognitive biases in both students and educators. An experiential, collaborative, structured, and integrative approach that combines cognitive, affective, and technological dimensions is the most effective in building metacognitive awareness, reflective skills, and bias-free professional decision-making capacity. Therefore, the development and implementation of innovative pedagogical strategies are key elements in bridging the gap between cognitive bias and pedagogical effectiveness in behavioral accounting education.

The primary implication of the findings of this systematic literature review emphasizes the urgency of developing an adaptive, reflective, and authentic experience-based curriculum. Lecturers are required to holistically identify student learning style characteristics and systematically integrate problem-based learning, contextual simulations, and soft skills training. The critical and strategic use of digital technology must be implemented to enhance learning effectiveness. Furthermore, institutional collaboration with industry and strengthening the hidden curriculum are recommended as complementary approaches to enrich the learning experience and strengthen efforts to mitigate cognitive bias in the context of accounting education.

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