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DOES PAPER-BASED CASE STUDY STILL MATTER IN AUDITING EDUCATION? EVIDENCE FROM INDONESIAN AUDITORS

Anda Dwiharyadi

anda.dwiharyadi@upnvj.ac.id, **Universitas Pembangunan Nasional Veteran Jakarta**

Abstract
Amid the accelerating digital transformation in accounting education, this study explores whether paper-based case studies (PBCS) continue to hold pedagogical value in auditing education. While digital tools such as AI, data analytics, and computer-assisted audit techniques are increasingly integrated into curricula, many institutions-particularly in emerging economies like Indonesia-retain traditional instructional methods due to infrastructural and cultural factors. This study investigates the perceptions of 127 Indonesian professional auditors regarding the relevance of PBCS in current audit education. Using a descriptive quantitative approach, data were collected via an online Likert-scale questionnaire and analyzed using measures of central tendency and dispersion. The findings reveal a generally favorable perception, with a mean score of 4.09 and a mode of 4 (Agree), suggesting that auditors still view PBCS as a relevant and effective tool. The study concludes that while digital integration is essential, retaining PBCS-particularly in blended formats-can support foundational audit competencies and ensure pedagogical inclusivity. These insights have practical implications for curriculum designers aiming to balance innovation with contextual realism in audit education.
Keywords: Auditing education, Curriculum relevance, Paper-based case study, Professional perceptions

INTRODUCTION

Audit education, like other professional learning domains, has undergone transformative shifts influenced by the rapid integration of digital technologies, data analytics, and automation into accounting and auditing practices (Berikol & Killi, 2020). Over the past decade, accounting educators have increasingly adopted advanced digital tools—such as virtual reality (VR), augmented reality (AR), artificial intelligence (AI), and big data analytics—to foster interactive learning environments and ensure students are equipped with industry-relevant technological competencies (Guo, 2019). These developments are part of a broader movement to modernize audit pedagogy, particularly in response to the evolving expectations of the profession.

Yet, despite the strong momentum toward digitalization, the paper-based case study (PBCS) remains a widely utilized instructional strategy in many auditing courses, particularly in emerging economies such as Indonesia. This raises a key pedagogical question: *Does the continued use of PBCS still hold relevance in the training of future auditors within an increasingly digital context?*

Paper has long been appreciated for its low cost, portability, and accessibility—features that remain critical in resource-limited educational settings (Li et al., 2012). Moreover, research suggests that paper-based learning materials support higher levels of comprehension and retention, especially when compared to digital alternatives. This may be attributed to the tactile and spatial experience associated with reading and writing on paper (Fortunati & Vincent, 2014; Isaias et al., 2015). In fact, preferences for using paper are often task-dependent, and students continue to favor traditional media for activities that require annotation, comparison, or long-form reasoning (Farinosi et al., 2016; Luff et al., 2007).

In the context of audit education, PBCS simulates real-world scenarios that require students to analyze financial data, assess audit risk, and develop evidence-based judgments using structured documentation. It fosters critical reflection, ethical reasoning, and narrative explanation—core skills aligned with the nature of audit work. As Kanli et al., (2019) assert, case-based instruction, including paper-based forms, offers rich pedagogical value through its capacity to represent realistic, complex, and context-driven decision environments.

However, the continued reliance on PBCS in the face of technological transformation has provoked debate among educators and curriculum developers. Audit programs are increasingly pressured to incorporate computer-assisted audit tools (CAATs), data analytics training, and real-time simulations to align with modern audit environments, which are dominated by software such as IDEA, ACL, and AI-enhanced platforms (Apostolou et al., 2018). Within this framework, traditional paper-based methods may appear outdated or insufficient to meet evolving market demands.

Nevertheless, educational effectiveness should not be reduced to technological conformity alone. In countries like Indonesia, many vocational and public institutions face persistent infrastructural barriers that limit the feasibility of fully digital pedagogy. Thus, PBCS remains not only a legacy tool but also a pragmatic and pedagogically sound alternative under such constraints.

Despite its wide application, the current literature lacks empirical evidence on how PBCS is perceived by professional auditors—the end-users of accounting graduates and key stakeholders in audit education. Prior studies have largely focused on student outcomes or educator perspectives (Dalal & Kaja, 2019; Dong et al., 2022), with minimal attention to how practicing auditors evaluate the relevance of PBCS in preparing students for real audit work. This gap is especially significant in Indonesia, where digital literacy disparities, traditional learning preferences, and institutional capacities vary widely across regions.

This study seeks to fill that gap by investigating how professional auditors in Indonesia perceive the continued use of PBCS in audit education. Rather than contrasting digital versus traditional methods, the research explores whether PBCS alone is still considered effective, relevant, and valuable by those in the profession. Their perspectives offer critical insight for curriculum designers and policymakers seeking to align pedagogical strategies with actual industry needs.

Accordingly, the study employed a structured Likert-scale questionnaire distributed to 127 auditors across various public accounting firms in Indonesia. It aims to measure the degree of agreement concerning the pedagogical relevance of PBCS and to position these findings within the broader discourse on audit education reform.

The central research question guiding this study is:

To what extent do Indonesian auditors perceive paper-based case study methods as still relevant in contemporary audit education?

In answering this question, the study makes three distinct contributions. First, it offers practitioner-informed empirical insights into the pedagogical relevance of traditional case study approaches. Second, it informs audit educators and curriculum developers of practitioner expectations, enhancing the alignment between academic training and professional practice. Third, it advocates for context-sensitive pedagogical design in audit education, especially in regions where the digital divide remains a significant barrier to reform.

In sum, while global audit education increasingly embraces digital transformation, the relevance and value of traditional methods such as PBCS merit renewed scholarly attention-particularly within the nuanced context of emerging economies like Indonesia. This study provides timely, grounded insights from the perspective of those directly involved in shaping and assessing new generations of auditors.

LITERATUR REVIEW

The Role of Case-Based Learning in Auditing Education

Case-based learning (CBL) plays a pivotal role in the cultivation of professional skills in auditing education (Kantar & Massouh, 2015). It is grounded in Jerome Bruner's theory of constructivism (Hartfield, 2010) and John Dewey's philosophy of experiential learning (Barnes et al., 1994), both of which emphasize the importance of engaging students actively in the

process of constructing knowledge through meaningful experience and discovery. According to Bruner (1961), discovery learning is essential for mastering complex problem-solving techniques and transferring knowledge to new contexts. In the context of auditing education, the dialogic and reflective elements of CBL introduce cognitive dissonance that compels learners to process information deeply and develop analytical thinking (Hmelo-Silver et al., 2007).

The case materials used in CBL are typically derived from real-life professional scenarios, constructed through in-depth interviews between educators and practitioners who have firsthand experience with the events depicted. Individual preparation is a crucial component of CBL, requiring students to thoroughly analyze case details, formulate arguments, and develop potential solutions. This is followed by collaborative, discussion-based classroom sessions where students engage with peers in debate and cooperative learning, while instructors facilitate rather than dominate the learning process.

In accounting and auditing education specifically, CBL has long served as a core instructional method. It immerses students in realistic audit settings that simulate the complexities of professional practice—ranging from evaluating audit evidence and assessing risk, to exercising judgment and communicating findings (Milne & McConnell, 2001). CBL's emphasis on active participation and contextual problem-solving aligns closely with adult learning principles, which advocate for relevant, learner-centered approaches to education (Knowles et al., 2014).

Moreover, the International Education Standards (IES) issued by the International Federation of Accountants (IFAC) explicitly endorse experiential learning, including the use of case studies, as a means to develop key professional competencies in auditing. This endorsement reflects a broader consensus within the profession that case-based pedagogies—regardless of whether they are paper-based or digitally delivered—remain vital in bridging the gap between academic theory and real-world audit practice.

Characteristics and Pedagogical Strengths of Paper-Based Case Study (PBCS)

Paper-Based Case Studies (PBCS) have long held a central role in professional education, particularly in fields that emphasize judgment, analysis, and structured problem-solving-such as auditing. Unlike screen-based instructional formats, PBCS relies on tangible, printed narratives that demand deliberate reading, sequential thinking, and manual annotation. These characteristics are believed to enhance conceptual retention and foster deeper understanding (Ackerman & Goldsmith, 2011). Students interacting with printed case materials can easily scan entire pages, flip between questions, and trace argument different sections of the case, which supports a holistic and flexible learning process (Emerson & MacKay, 2011).
In the auditing domain, the structured and narrative nature of PBCS supports the development of logical reasoning, professional skepticism, and documentation skills. Learners are typically required to simulate audit decision-making processes by identifying relevant audit evidence, performing risk assessments, and constructing arguments in written form. These tasks align well with the competencies required in real-world audit engagements.

Moreover, studies comparing paper-based and web-based learning platforms consistently highlight the enduring strengths of traditional formats. For example, Demirci (2007) in a comparative study on physics homework, reported that students who worked on grouped, paper-and-pencil tasks achieved higher average performance scores than their peers who engaged in web-based assignments. More than 70% of students expressed favorable perceptions of the pedagogical appropriateness of paper-based formats. These findings suggest that the collaborative and tactile nature of paper-based assignments enhances both engagement and comprehension-qualities that are also relevant in the cooperative setting of audit learning.

This is particularly important in auditing, where learners often operate in teams, engage in peer review, and must communicate their findings effectively. PBCS encourages such

collaboration. According to (Weil et al., 2001), the static and tangible design of paper cases affords more time for deliberation, peer argumentation, and reflective discussion-paralleling the dynamics of audit team interactions. In this way, PBCS helps learners develop not only analytical thinking but also interpersonal skills such as professional communication, negotiation, and ethical reasoning, all of which are crucial in auditing practice.

Although some studies show that computer-based assessments or online formats can yield comparable or even slightly better learning outcomes in certain contexts (Clariana & Wallace, 2002), the differences in student performance between traditional and digital environments are often statistically insignificant (Bonham et al., 2001; Rivera & Rice, 2002). This indicates that the effectiveness of learning does not solely depend on the mode of delivery, but rather on how the content is structured and how learners interact with it. In auditing education, where reasoning through documentation, evaluating evidence, and forming audit opinions remain core tasks, the reflective tempo and permanence offered by PBCS can provide a pedagogical advantage over transient digital screens.

Furthermore, the application of PBCS aligns with the broader movement in education that values formative, process-based approaches over merely summative outcomes. In writing pedagogy, for instance, portfolio-based assessments-which are often paper-based-are seen as better tools to capture writing development and support genre awareness (Hyland, 2004). Similarly, in auditing education, allowing students to annotate, revise, and discuss printed audit cases provides a learning arc that promotes both procedural fluency and conceptual clarity.

In summary, while digital transformation continues to influence accounting education, PBCS retains specific strengths-particularly in fostering critical thinking, teamwork, and communication in authentic, complex contexts. These qualities make it a relevant and valuable pedagogical instrument in audit education, especially in environments where technological infrastructure is limited or where reflective and deliberative learning is prioritized.

Professional Perceptions of the Continued Use of PBCS

Understanding practitioner perspectives on audit education is critical for maintaining curriculum relevance and ensuring that graduates are job-ready. Incorporating input from key stakeholders, including industry professionals, is essential for effective curriculum design. Engaging these stakeholders ensures that educational programs align with current industry needs and prepare students for real-world challenges.

Khot et al (2023) suggest that stakeholders provide insights into the skills and competencies required in the workforce, ensuring that curricula are relevant and up-to-date. Meanwhile Matkovic et al (2014) found that continuous dialogue with stakeholders allows for iterative improvements in curriculum design, addressing gaps and enhancing educational outcomes.

Several studies have investigated the alignment between educational tools and professional expectations. For instance, (Apostolou et al., 2018) found that while audit firms increasingly value digital proficiency, they continue to emphasize foundational competencies like analytical thinking, skepticism, and documentation—skills that PBCS can effectively support.

METHODS

Research Design

This study employs a quantitative descriptive research design aimed at exploring the perceptions of professional auditors in Indonesia regarding the relevance of *paper-based case study* (PBCS) in auditing education. Rather than testing a hypothesis or comparing between instructional modalities, the study seeks to provide empirical evidence based on current practitioner insights that can inform educational strategies, particularly in accounting and audit programs.

Descriptive analysis is appropriate for capturing and summarizing attitudes, opinions, and perceptions using structured data (Sekaran & Bougie, 2016). This method allows the researcher to identify general trends, measure central tendencies, and interpret the implications of auditors' aggregated views.

Population and Sample

The target population in this study consists of professional auditors working at public accounting firms across various regions in Indonesia. A total of 127 respondents participated in this study, selected through purposive sampling, focusing on those who have experience supervising interns or junior auditors. This selection criterion ensures that the opinions gathered are based on direct exposure to audit education outcomes and training needs.

Purposive sampling is commonly used in professional perception research where the researcher aims to access expert judgments relevant to the study's topic (Etikan et al., 2016).

Data Collection Technique

Instrument Validity and Reliability: Prior to full distribution, the questionnaire was pilot-tested with a small group of 10 professional auditors to ensure clarity and face validity of the single-item measure. While the main instrument contained only one key Likert-scale item to capture perception, this design choice was made deliberately to maintain focus and minimise respondent fatigue. The limitation of using a single-item measure is acknowledged in the Limitations and Future Research section.

The primary data were collected using a structured online questionnaire distributed via professional auditor networks, including alumni groups of accounting programs and auditor associations. The questionnaire consisted of a single key item:

"In your opinion, is the use of paper-based case study still relevant in today's auditing education?"

Participant responses were gathered using a structured five-point Likert-type format, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). This ordinal response method is widely recognized for capturing subjective perceptions, although it does not assume equal intervals between categories. As highlighted by Bishop & Herron (2015), while such scales are commonly used in social science research for quantifying attitudes and opinions, care must be taken in their interpretation, especially when applying statistical analyses. The instrument also collected basic demographic data (e.g., years of professional experience and job title); however, these variables were not analyzed in the current stage of the study.

Data Analysis Technique

The collected data were analyzed using descriptive statistical techniques to summarize the distribution and central tendency of auditor perceptions. Specifically, the analysis included:

1. Frequency distribution: to determine how many auditors selected each Likert score (1 to 5).
2. Measures of central tendency: such as mean, median, and mode, to assess the general agreement level.
3. Standard deviation: to measure the degree of consensus among the respondents.

This analysis provides a holistic view of whether auditors perceive PBCS as still relevant in audit education and how strong the consensus is among them. All statistical analyses were performed using Microsoft Excel and cross-checked using SPSS version 26, ensuring consistency and clarity in data presentation.

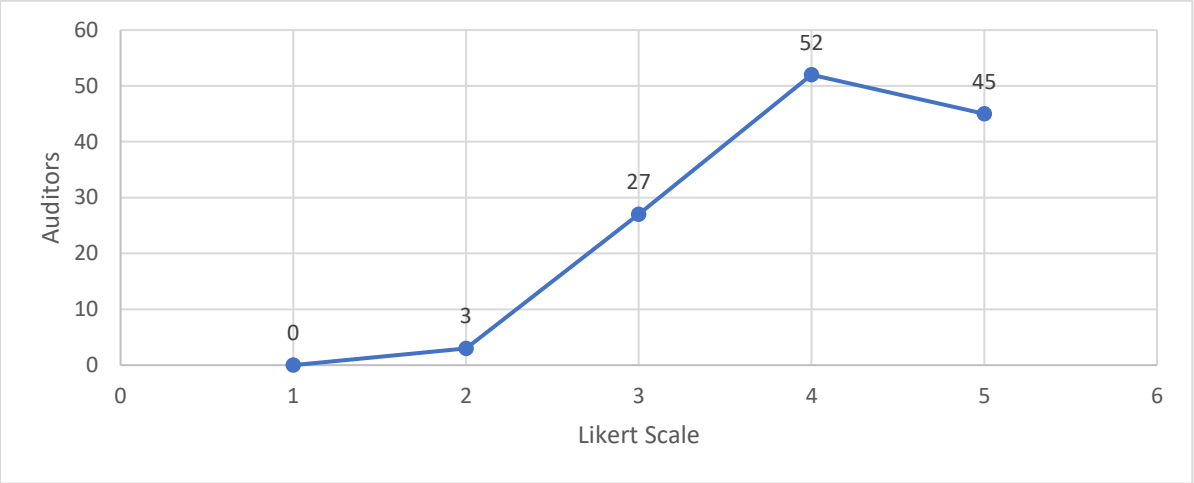
RESULTS AND DISCUSSION

Descriptive Statistics of Auditor Perceptions

Based on the responses of 127 professional auditors across various public accounting firms in Indonesia, the descriptive analysis reveals a generally favorable perception toward the continued use of paper-based case studies (PBCS) in auditing education.

The analysis of Likert-scale data yielded the following results: Mean = 4.09, Median = 4.00, Mode = 4, Standard Deviation = 0.81. These values suggest that, on average, auditors agree with the statement that PBCS is still relevant in today's audit learning context. The median and mode further confirm a central tendency toward agreement (Likert value of 4), while the relatively low standard deviation indicates a moderate level of consensus among respondents.

Picture 1. Distribution of Auditors' Perceptions on the Relevance of (PBCS) in Audit Education



Picture 1 shows that the majority of respondents selected scores of 4 (Agree) or 5 (Strongly Agree), reinforcing the conclusion that PBCS is still considered valuable by the professional community.

Interpretation and Alignment with Literature

The findings of this study are consistent with previous literature indicating that practitioners often place value on educational methods that mirror real audit practices, particularly in environments where documentation and structured thinking are critical (Farooq & De Villiers, 2017). The preference for PBCS among Indonesian auditors may reflect several factors:

1. Alignment with Audit File Review Practices: As discussed by (Apostolou et al., 2018) audit training emphasizes working with physical or structured digital documents that resemble paper-based cases. This makes PBCS a suitable tool for reinforcing audit documentation and working paper review skills.
2. Infrastructure Limitations: Despite growing awareness of cloud-based digital tools, many Indonesian higher education institutions remain in the early stages of technological adoption due to limitations in IT infrastructure and planning (Soni & Nugroho, 2018). As a result, pedagogical methods like paper-based case studies (PBCS) may still reflect the operational realities of several audit firms, especially in non-metropolitan regions where digital readiness remains low.

3. Cognitive and Reflective Depth: As demonstrated by (Ackerman & Goldsmith, 2011) reading and problem-solving on paper tend to support better metacognitive regulation and deeper understanding compared to digital interfaces, especially when distractions are minimized.

Practical Implications for Curriculum Developers

Practical

Example of Blended Integration: For instance, an auditing course could first present students with printed case files to perform manual risk assessment, documentation, and audit planning activities. In a subsequent session, the same case dataset could be analysed using computer-assisted audit tools such as ACL or IDEA in a lab environment. This sequential

approach retains the reflective depth of PBCS while introducing technological competencies required in modern audit practice.

The empirical evidence from this study suggests that eliminating paper-based methods entirely from auditing curricula may be premature, especially in regions where such approaches still offer pedagogical and practical advantages. While it is essential to integrate digital tools in alignment with technological developments, retaining PBCS-particularly in early stages of learning or in blended formats—can continue to support foundational audit competencies such as analytical reasoning, skepticism, and documentation skills.

Moreover, this finding underscores the importance of stakeholder-informed curriculum design, where the insights of practitioners help guide pedagogical strategies. As curriculum developers seek to modernize accounting education, incorporating practitioner perspectives ensures that education remains relevant, practical, and aligned with professional demands.

CONCLUSION

This study aimed to investigate the relevance of paper-based case studies (PBCS) in auditing education from the perspective of professional auditors in Indonesia. Using data from 127 auditors in public accounting firms, the study found a generally positive perception toward the continued use of PBCS, as reflected in a high mean Likert score (Mean = 4.09) and a modal response of 4 (Agree). These findings suggest that, despite the rapid development of digital learning technologies and audit software, PBCS remains a pedagogically valuable tool in developing essential auditing competencies.

The results underscore that PBCS continues to be relevant for several reasons. First, it aligns well with current professional practices, especially those involving structured audit documentation and narrative reasoning. Second, infrastructural limitations in many Indonesian institutions make paper-based methods a pragmatic choice. Third, cultural learning preferences among Indonesian students and professionals support the continued effectiveness of text-based and collaborative case approaches.

From a theoretical standpoint, the findings are consistent with experiential learning theory, which emphasizes the importance of contextual, problem-based engagement in professional training. The empirical evidence provided in this study supports earlier literature advocating for the retention of traditional case-based learning formats alongside modern tools. For curriculum designers and educators in auditing, the study offers three key implications:

1. Curriculum Relevance: Educational institutions should recognize the enduring relevance of PBCS and consider maintaining or integrating it within audit education modules, especially where infrastructure constraints exist.
2. Balanced Pedagogy: A blended approach that combines traditional PBCS with selective digital enhancements may offer the most robust learning experience by balancing reflective depth and technological readiness.
3. Stakeholder Feedback: Audit education should continue to incorporate practitioner feedback to ensure that learning strategies align with the evolving expectations of the profession.

Finally, while this study provides meaningful insights from the perspective of practitioners, it is not without limitations. The data was drawn from a single professional group within Indonesia, and future research may benefit from a comparative analysis involving educators and students, as well as longitudinal studies examining the performance outcomes of different instructional methods.

In sum, this study reaffirms that in the evolving landscape of audit education, paper-based case studies still matter-not as relics of the past, but as complementary tools that continue to shape competent, reflective, and profession-ready auditors.

Limitation and Future Research

This study has several limitations. First, the use of a single-item Likert-scale measure may limit the depth of insights into auditor perceptions. Second, the sample was limited to professional auditors in Indonesia, which may affect generalisability to other contexts. Third, the study employed a descriptive design without advanced inferential or causal analysis. Fourth, the research did not measure actual learning outcomes or performance differences associated with PBCS use. Future research could address these limitations by employing multi-item validated instruments, expanding to multi-country comparative studies, and applying experimental or longitudinal designs to assess long-term effects of blended pedagogical models.

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