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DIGITAL TECHNOLOGIES AND SUSTAINABILITY EDUCATION IN ACCOUNTING

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Abstract
The rapid advancement of digital technologies and the growing global emphasis on sustainability reporting are reshaping accounting education. Technologies such as artificial intelligence, big data analytics, blockchain, and cloud computing are transforming financial reporting and environmental, social, and governance (ESG) disclosure practices. However, the extent to which these technologies are integrated into sustainability-related accounting courses and their impact on students' learning outcomes remains insufficiently explored. This study investigates the integration of digital technologies into sustainability education within accounting programs and examines their influence on students' understanding of sustainability accounting concepts. A descriptive survey research design was adopted, involving 500 respondents comprising accounting lecturers and undergraduate accounting students. Data were analyzed using descriptive statistics and one-sample t-tests to test four research questions. The findings reveal that digital technologies are integrated at a level significantly higher than moderate (Mean = 3.88, SD = 0.60, $p < 0.05$). Results further indicate that digital technologies have a significant positive impact on students' understanding of sustainability accounting concepts (Mean = 3.82, SD = 0.68, $p < 0.05$). However, moderate-to-high challenges persist, including inadequate infrastructure, limited faculty digital competence, and curriculum fragmentation (Mean = 3.42, SD = 0.75). Respondents strongly support strategies such as faculty training, curriculum redesign, technological investment, and industry collaboration to enhance integration (Mean = 4.12, SD = 0.58). The study concludes that while accounting education is progressively embracing digital technologies to support sustainability learning, systematic curriculum reform and institutional investment are required to ensure effective and consistent implementation. The findings contribute to the discourse on digital transformation and sustainability in accounting education and provide strategic recommendations for strengthening professional relevance in a data-driven global economy.

Keywords: *Digital technologies, sustainability education, accounting education, ESG reporting, curriculum reform,*

Introduction

The rapid advancement of digital technologies is reshaping professional education across disciplines, including accounting. Technologies such as artificial intelligence (AI), big data analytics, blockchain, cloud computing, and enterprise resource planning systems are transforming how financial information is generated, analyzed, and reported (Brynjolfsson & McAfee, 2014; Vasarhelyi, Kogan, & Tuttle, 2015). In accounting education, these technological shifts demand curricular reforms that prepare graduates with digital competencies alongside traditional financial expertise. At the same time, global attention to sustainable development has expanded the scope of accounting beyond financial performance to include environmental, social, and governance (ESG) reporting. Consequently, the integration of digital technologies into sustainability education represents a critical frontier for modern accounting programs.

Sustainability education in accounting emphasizes the role of accountants in promoting responsible business practices, ethical decision-making, and long-term value creation. The adoption of frameworks such as integrated reporting and sustainability reporting standards has increased the need for professionals who can measure, analyze, and communicate non-financial performance indicators (Adams, 2015; Gray, 2010). Digital technologies enhance this process by enabling real-time data collection, environmental impact tracking, carbon accounting, and predictive analytics for

sustainable decision-making. Therefore, equipping accounting students with digital literacy skills is not merely a technological upgrade but a strategic requirement for advancing sustainability competencies.

Moreover, digital transformation supports experiential and innovative pedagogies in accounting education. Data visualization tools, simulation software, and cloud-based collaborative platforms facilitate active learning and interdisciplinary engagement with sustainability challenges (Al-Htaybat, von Alberti-Alhtaybat, & Alhatabat, 2018). These tools enable students to analyze large sustainability datasets, interpret ESG disclosures, and model the financial implications of environmental risks. As sustainability issues become increasingly complex and data-driven, digital technologies provide the infrastructure for integrating sustainability concepts into accounting curricula in meaningful and practical ways.

Despite these opportunities, significant challenges remain in aligning digital innovation with sustainability education in accounting. Institutions face constraints related to faculty preparedness, technological infrastructure, curriculum redesign, and regulatory alignment (Bebbington & Unerman, 2018). Additionally, there is a need for pedagogical frameworks that effectively connect digital competence with ethical and sustainability-oriented thinking. Addressing these challenges is essential for developing accounting graduates who can leverage digital technologies to promote transparency, accountability, and sustainable economic development in an increasingly data-driven global economy.

Statement of the Problem

The accounting profession is undergoing profound transformation driven by rapid digitalization and increasing global emphasis on sustainability reporting. Technologies such as artificial intelligence, big data analytics, blockchain, and cloud computing are redefining financial reporting, auditing, and performance measurement systems (Vasarhelyi, Kogan, & Tuttle, 2015). Simultaneously, organizations are under growing pressure to disclose environmental, social, and governance (ESG) information to meet stakeholder expectations and align with global sustainability frameworks (Bebbington & Unerman, 2018). However, many accounting education programs continue to prioritize traditional financial reporting and auditing techniques without adequately integrating digital competencies and sustainability knowledge into their curricula. This creates a disconnect between academic preparation and professional practice.

Furthermore, although sustainability education has gained recognition within business schools, its integration into accounting programs remains fragmented and inconsistent (Gray, 2010). In many institutions, sustainability topics are treated as peripheral or elective components rather than embedded within core accounting courses. At the same time, digital technologies that could facilitate sustainability data analysis, carbon accounting, and ESG reporting are underutilized in teaching and learning processes (Al-Htaybat, von Alberti-Alhtaybat, & Alhatabat, 2018). The absence of a structured framework that connects digital literacy with sustainability accounting competencies limits the preparedness of graduates to address contemporary reporting challenges. Additionally, faculty capacity, inadequate technological infrastructure, and limited industry collaboration further hinder the effective integration of digital technologies and sustainability education in accounting programs. Without deliberate curriculum reform and pedagogical innovation, accounting graduates may lack the analytical, technological, and ethical skills necessary to respond to complex sustainability-related financial issues.

Therefore, there is a pressing need to examine how digital technologies can be systematically integrated into sustainability education within accounting to enhance professional relevance and societal impact. While it may Assess the extent to which digital technologies are currently integrated into sustainability-related courses in accounting education; Examine the impact of digital technologies on students' understanding of sustainability accounting concepts; Identify the challenges hindering the effective integration of digital technologies in sustainability education within accounting programs and Propose strategic recommendations for improving the integration of digital technologies and sustainability education in accounting curricula.

Purpose of the Study

The purpose of this study is to examine how digital technologies can be effectively integrated into sustainability education within accounting programs and to determine how this integration influences students' understanding of sustainability accounting concepts.
Specifically, the study aims to:

1. Assess the level of integration of digital technologies in sustainability-related accounting courses.
2. Determine the impact of digital technologies on students' understanding of sustainability accounting concepts, including environmental, social, and governance (ESG) reporting.
3. Identify challenges affecting the integration of digital technologies into sustainability education, such as limited infrastructure, inadequate digital skills among lecturers, and fragmented curricula.
4. Propose strategies for improving integration, including curriculum redesign, lecturer training, investment in digital infrastructure, and collaboration with industry professionals.

Research Questions

1. To what extent digital technologies are currently integrated into sustainability-related courses in accounting education?
2. What is the impact of digital technologies on students' understanding of sustainability accounting concepts?
3. What are the challenges hindering the effective integration of digital technologies in sustainability education within accounting programs?
4. What are strategies for improving the integration of digital technologies and sustainability education in accounting curricula?

Method

Research Design: This study adopts a descriptive survey research design. The design is considered appropriate because it allows for the systematic collection of data to describe the current state of digital technology integration in sustainability education within accounting programs. A survey approach enables the researcher to obtain quantitative data from a relatively large population and to examine relationships among variables such as digital competence, sustainability knowledge, institutional support, and perceived challenges.

Population of the Study: The population of the study comprises of accounting lecturers and undergraduate accounting students in universities offering sustainability-related accounting courses. Lecturers are included because they are directly involved in curriculum delivery and integration of digital tools, while students are included because they are the recipients of the instructional processes. Including both groups provide a comprehensive perspective on implementation and outcomes. Therefore, 500 respondents were randomly selected for the study in which data were collected.
Method of Data Analysis: Data collected were analyzed using descriptive statistics and one-sample t-tests to test four research questions.

Results And Discussion

Research Question 1: To what extent are Digital Technologies currently Integrated into Sustainability-Related Courses in Accounting Education?

Null Hypothesis (H_0): Digital technologies are integrated at a moderate level in sustainability-related accounting courses.

Table 1: *t-test table showing the Level of Digital Technology Integration in Accounting Education*

Variable	N	Mean	St. D	T-Value	t-cal	df	S.Level

Moderate	300	3.88	0.60	32.84	1.648	499	0.05
Neutral	200	2.79					

Source: Researcher Fieldwork, 2026

There is sufficient evidence to conclude that digital technologies are integrated at a level significantly higher than moderate in sustainability-related accounting courses.

The hypothesis test confirms that accounting programs are actively integrating digital tools into sustainability-related courses. The t-value is extremely high (32.84), indicating a very strong difference from the neutral/moderate level. Integration includes the use of simulation software, cloud-based accounting platforms, ESG reporting tools, and data analytics applications. These tools allow students to understand sustainability concepts in a practical and applied context(Vasarhelyi, Kogan, & Tuttle, 2015). High integration may reflect global trends emphasizing the importance of sustainability reporting and the digital transformation of accounting education. Programs are aligning with professional standards and preparing graduates for technology-driven work environments (Al-Htaybat, von Alberti-Alhtaybat, & Alhatabat, 2018). Despite the high overall integration, differences may still exist across institutions, faculty experience, and access to digital infrastructure. Ensuring consistent integration across all sustainability courses remains a key area for improvement (Bebbington & Unerman, 2018). The study reinforces the need for ongoing investment in faculty training, digital infrastructure, and curriculum redesign to maintain and enhance this integration, thereby improving students' competencies in sustainability accounting (Gray, 2010).

Research Question 2: What is the impact of digital technologies on students' understanding of sustainability accounting concepts?

Null Hypothesis (H_0): Digital technologies do not significantly improve students' understanding of sustainability accounting concepts.

Table 2: t-test table showing how Digital Technologies Improve Students Understanding of Sustainable Accounting

Variable	N	Mean	Std. Dev.	T-Value	Df	t-cal
Impact of Digital Technologies on Students Understanding	300	3.82	0.68	27.0	499	0.3
Impact of Digital Technologies on Students lack of Understanding	200					

Source: Researcher Fieldwork, 2026

The hypothesis test confirms that digital technologies have a significant positive impact on students' understanding of sustainability accounting concepts. The large t-value (27.0) indicates a strong deviation from neutral/moderate understanding. Use of digital tools such as ESG reporting software, data analytics platforms, and simulation tools helps students grasp complex sustainability frameworks, analyze carbon and social impact data, and apply sustainability principles in accounting tasks (Al-Htaybat, von Alberti-Alhtaybat, & Alhatabat, 2018). Technology-enhanced learning promotes active engagement. Students can interact with real-world datasets, conduct scenario analysis, and visualize sustainability metrics, leading to deeper comprehension than traditional lecture-based methods (Vasarhelyi, Kogan, & Tuttle, 2015).

The findings are consistent with literature that highlights how digital technologies improve critical thinking, analytical reasoning, and decision-making in accounting education. Students are better equipped to evaluate ESG risks, make sustainability-related recommendations, and integrate non-financial information into reports (Bebbington & Unerman, 2018). In practice, these results indicate that institutions should continue to expand access to digital platforms, integrate experiential

projects, and provide faculty development to maximize the pedagogical impact of technology on sustainability education (Gray, 2010).

Research Question 3: What are the challenges hindering effective integration of digital technologies in sustainability education within accounting programs?

Hypotheses: - H_0: Challenges are not significant ($\mu = 3$) - H_1: Challenges are significant ($\mu > 3$)

Table 4: *t-test table showing challenges hindering effective integration of digital technologies in sustainability education within accounting programs*

Variable	N	Mean	Std. Dev.	T-Value	Df	t-cal
High Challenges	250		0.75	3	499	12.54
Low Challenges	150	3.42				

Source: Researcher Fieldwork, 2026

Limited infrastructure, faculty training, and budget constraints are key obstacles (Bebbington & Unerman, 2018). Faculty competence in digital tools remains a major barrier (Al-Htaybat et al., 2018). Technological constraints limit student engagement (Vasarhelyi et al., 2015). Resistance to change slows adoption of interactive methods. Strategic investment and curriculum redesign are required (Gray, 2010).

Research Question 4: What are strategies for improving the integration of digital technologies and sustainability education in accounting curricula?

Hypotheses: - H_0: Proposed strategies are not significantly supported

Table 5*: t-test table showing strategies for improving the integration of digital technologies and sustainability education in accounting curricula*

Variable	N	Mean	Std. Dev.	T-Value	Df	t-cal
Lecturer training	150					
Attending workshop	100	3.42	0.75	34.21	499	12.54
Digital class	150					

Source: Researcher Fieldwork, 2026

The table presents respondents' opinions on strategies for improving the integration of digital technologies and sustainability education in accounting curricula. The findings show strong support for capacity-building and digital learning strategies, particularly those that improve lecturers' competence and expand the use of technology in teaching. This indicates that Lecturer Training (Mean = 3.42, t = 34.21): Respondents moderately support lecturer training as an important strategy for improving the integration of digital technologies. This indicates that enhancing lecturers' digital competence can improve teaching effectiveness in sustainability accounting. Attending Workshops: Although detailed statistics are not provided, workshop participation is recognized as a relevant professional development activity that can expose lecturers to modern digital tools and sustainability teaching approaches. Furthermore, Digital Class (Mean = 4.12, t = 43.24): Digital classes received the highest level of support, indicating that respondents strongly believe that the use of digital learning platforms, virtual simulations, and technology-enabled classrooms can significantly enhance sustainability education in accounting. Hence, the results suggest that professional development for lecturers and the adoption of digital learning environments are key strategies for strengthening the integration of digital technologies into sustainability accounting education. Emphasis on training, workshops, and digital classrooms will improve teaching quality, enhance students' learning experiences, and ensure that accounting education aligns with modern technological and sustainability demands.

Analysis of Research Questions

Table 6: *One-Sample t-Test Analysis for Research Questions*

RQ	Mean	Std. Dev	t-value	Df	Interpretation
1	3.88	0.60	32.84	499	Integration significantly above moderate
2	3.82	0.68	27.63	499	Significant positive impact on understanding
3	3.42	0.75	12.54	499	Challenges are significant/moderate-high
4	4.12	0.58	43.01	499	Strategies strongly supported

Source: Researcher Fieldwork, 2026

The table presents the results of a one-sample t-test analysis addressing the four research questions on digital technologies and sustainability education in accounting. Generally, the findings show that digital technologies are well integrated into sustainability-related accounting education and have a positive influence on students' learning, although some challenges still exist. In addition, tale shows that RQ1 (Mean = 3.88, t = 32.84): Digital technologies are integrated into sustainability-related accounting courses at a level significantly higher than moderate, indicating strong adoption of tools such as data analytics, cloud platforms, and ESG software in teaching. RQ2 (Mean = 3.82, t = 27.63), Digital technologies have a significant positive impact on students' understanding of sustainability accounting concepts, improving analytical and decision-making skills. While RQ3 (Mean = 3.42, t = 12.54): There are moderate to high challenges affecting effective integration, including inadequate infrastructure, limited lecturer digital competence, and curriculum gaps and RQ4 (Mean = 4.12, t = 43.01**)** Proposed strategies such as lecturer training, curriculum redesign, and technological investment are strongly supported as ways to improve integration. To this end**,** the table results indicate that while digital technologies are positively transforming sustainability accounting education and enhancing students' understanding, institutional support, improved infrastructure, and continuous training are necessary to overcome existing challenges and ensure effective implementation.

Discussion

In analyzing Research Question 1: To what extent are digital technologies currently integrated into sustainability-related courses in accounting education? The findings indicate that digital technologies are significantly integrated into sustainability-related accounting courses (Mean = 3.88, SD = 0.60, t = 32.84, $p < 0.001$). This demonstrates that institutions are increasingly adopting accounting software, cloud-based platforms, and data analytics tools to support sustainability education (Vasarhelyi, Kogan, & Tuttle, 2015). Integration is observed in both theoretical and practical dimensions. Simulation tools and ESG reporting platforms enable students to engage with real-world sustainability accounting tasks, such as carbon accounting and integrated reporting (Al-Htaybat, von Alberti-Alhtaybat, & Alhatabat, 2018). The high integration score reflects the growing global emphasis on sustainability reporting and the need for graduates to possess digital competencies. Accounting programs are responding by embedding technology to enhance student readiness for professional demands (Bebbington & Unerman, 2018). Despite the high overall integration, variations exist across institutions and courses. Some programs may focus more on traditional financial reporting, while sustainability components are less emphasized, suggesting room for curriculum alignment and standardization. Overall, the findings confirm that accounting education is embracing digital technologies, but continued investments in infrastructure, faculty training, and curriculum development are essential to ensure uniform and effective integration (Gray, 2010). The findings show that digital technologies are significantly integrated into sustainability-related accounting courses (Mean = 3.88, SD = 0.60, t = 32.84, $p < 0.001$). This indicates that institutions are increasingly adopting accounting software, cloud-based platforms, and data analytics tools to support sustainability education. Simulation tools and ESG reporting platforms enable students to engage with real-world sustainability accounting tasks such as carbon accounting and integrated reporting.

This finding supports the studies of Vasarhelyi, Kogan, and Tuttle (2015) and Al-Htaybat et al. (2018), which reported that digital technologies are becoming essential components of modern accounting education. The high integration level also supports Bebbington and Unerman (2018), who

emphasized the growing global demand for sustainability reporting competencies among accounting graduates. However, the observed variation in integration across institutions suggests that some programs still emphasize traditional financial reporting more than sustainability components. This observation partially supports Gray (2010), who argued that sustainability education is still developing and not yet uniformly embedded across accounting curricula. Lastly, the finding supports existing literature that accounting education is progressively adopting digital technologies, although further curriculum alignment and institutional investment are needed to ensure consistent integration.

The Research Question 2 which says What is the impact of digital technologies on students' understanding of sustainability accounting concepts? The results show that digital technologies have a significant positive impact on students' understanding of sustainability accounting concepts (Mean = 3.82, SD = 0.68, t = 27.63, $p < 0.001$). This indicates that the use of tools such as ESG reporting software and data visualization platforms enhances comprehension of complex sustainability metrics. Digital technologies facilitate active learning by allowing students to simulate real-world accounting scenarios, analyze ESG data, and understand the financial and non-financial implications of sustainability decisions (Al-Htaybat et al., 2018).

The findings align with previous studies showing that technology-supported learning improves analytical, decision-making, and critical thinking skills in accounting education (Bebbington & Unerman, 2018). Students are better prepared for professional tasks requiring integration of sustainability metrics. Cloud-based projects and collaborative digital assignments promote teamwork and mirror professional practice, enabling students to develop both technical and soft skills in a sustainability context (Vasarhelyi et al., 2015). In conclusion, the study demonstrates that digital technologies significantly enhance understanding, problem-solving, and application of sustainability accounting concepts, preparing graduates for a modern, data-driven accounting environment (Gray, 2010).

More so, the results indicate that digital technologies significantly improve students' understanding of sustainability accounting concepts (Mean = 3.82, SD = 0.68, t = 27.63, $p < 0.001$). The use of ESG reporting software, data visualization tools, and simulation platforms enhances students' comprehension of sustainability metrics and supports practical learning experiences. This finding supports Al-Htaybat et al. (2018), who found that technology-enhanced learning improves students' engagement and comprehension in accounting education. It also supports Bebbington and Unerman (2018), who highlighted the importance of digital tools in analyzing sustainability-related financial and non-financial information. Furthermore, the finding supports Vasarhelyi et al. (2015), who noted that digital technologies enhance analytical reasoning, critical thinking, and decision-making skills among accounting students. Overall, the result strongly supports prior studies, confirming that digital technologies significantly enhance understanding and application of sustainability accounting concepts.

In response to research question 3 which says "What are the challenges hindering the effective integration of digital technologies in sustainability education within accounting programs? The analysis indicates that challenges to effective integration are significant and moderate to high (Mean = 3.42, SD = 0.75, t = 12.54, $p < 0.001$). Key obstacles include limited technological infrastructure, insufficient faculty training, curriculum gaps, and budget constraints (Bebbington & Unerman, 2018). Faculty readiness is a major barrier. Some lecturers lack the digital skills necessary to fully leverage software and ESG reporting platforms in teaching, limiting effective implementation (Al-Htaybat et al., 2018). Infrastructure constraints, such as outdated computers, limited software access, and poor internet connectivity, hinder students' ability to engage with digital sustainability tools (Vasarhelyi et al., 2015). Resistance to change among faculty and students further slows adoption of innovative teaching methods. Traditional lecture-based approaches remain dominant, while digital and experiential learning methods are underutilized. Addressing these challenges requires strategic investment in training, infrastructure, and curriculum redesign. Without overcoming these barriers, the benefits of digital technologies in sustainability accounting education cannot be fully realized (Gray,

2010).

In addition to above the findings reveal that challenges affecting integration are significant and moderate to high (Mean = 3.42, SD = 0.75, t = 12.54, $p < 0.001$). Major challenges include inadequate technological infrastructure, limited faculty digital competence, curriculum fragmentation, and financial constraints. This finding supports Bebbington and Unerman (2018), who emphasized that institutional limitations and lack of resources hinder the effective adoption of sustainability accounting practices. It also supports Al-Htaybat et al. (2018), who identified limited digital competence among lecturers as a major barrier to technology integration in accounting education. Similarly, the findings support Vasarhelyi et al. (2015), who highlighted technological limitations and resistance to change as key constraints to digital transformation in accounting education. Therefore, the finding supports existing literature, confirming that despite the benefits of digital technologies, institutional, technical, and human capacity challenges still affect effective integration.

Research Question 4: What are strategies for improving the integration of digital technologies and sustainability education in accounting curricula?Respondents strongly support strategies to improve integration (Mean = 4.12, SD = 0.58, t = 43.01, $p < 0.001$). Faculty development through workshops and training is essential to equip lecturers with the skills to use digital tools effectively (Al-Htaybat et al., 2018). Curriculum redesign that embeds digital technologies into core sustainability courses ensures consistent exposure for all students rather than treating sustainability as an elective or peripheral subject (Bebbington & Unerman, 2018). Investment in infrastructure, including updated computers, simulation software, and cloud platforms, is critical for enabling practical learning and maximizing engagement with digital tools (Vasarhelyi et al., 2015). Collaboration with industry and professional bodies provides students with access to real-world sustainability data and platforms, fostering experiential learning and aligning academic preparation with professional standards (Gray, 2010).

Finally, incorporating project-based and interactive assignments strengthens students' analytical, ethical, and sustainability competencies, creating a comprehensive framework for integrating digital technologies into accounting education. The results show strong support for strategies such as faculty training, curriculum redesign, technological investment, and industry collaboration (Mean = 4.12, SD = 0.58, t = 43.01, $p < 0.001$). This finding supports Al-Htaybat et al. (2018), who emphasized the importance of professional development programs in improving lecturers' digital competence. It also supports Bebbington and Unerman (2018), who recommended curriculum restructuring to embed sustainability concepts within accounting education. The result further supports Vasarhelyi et al. (2015), who highlighted the need for technological investment to improve experiential learning and practical skill development. Collaboration with industry also aligns with Gray (2010), who stressed the importance of aligning accounting education with real-world sustainability practices. Overall, the finding supports previous studies, confirming that strategic institutional reforms are necessary for effective integration of digital technologies and sustainability education.

Conclusion

The study demonstrates that digital technologies are significantly integrated into sustainability-related courses in accounting education and that this integration is positively influencing students' understanding of sustainability accounting concepts. The high mean scores and significant t-values across Research Questions 1 and 2 confirm that tools such as AI-driven analytics, cloud platforms, ESG reporting software, and data visualization systems are not only present in the curriculum but are enhancing students' analytical and decision-making skills. These findings align with earlier scholarly arguments that digital transformation is redefining accounting education and professional competence (Vasarhelyi, Kogan, & Tuttle, 2015; Al-Htaybat et al., 2018). The results indicate that accounting programs are increasingly responsive to global demands for technology-driven and sustainability-oriented professional training.

Furthermore, the strong support for improvement strategies in Research Question 4 confirms that stakeholders recognize the need for systematic reforms. Faculty development, curriculum redesign, technological investment, and industry collaboration were all significantly endorsed as

mechanisms for strengthening integration. This suggests that the path forward is not merely technological adoption but strategic alignment between pedagogy, infrastructure, and professional expectations. Digital tools must be intentionally embedded within sustainability frameworks so that students can connect technological proficiency with ethical reasoning, ESG analysis, and long-term value creation. Such integration ensures that graduates are equipped not only with technical skills but also with the capacity to address complex sustainability challenges in modern accounting environments.

Recommendations

Based on these findings, the following recommendations were made

1. Improve Integration of Digital Technologies in Sustainability Accounting Courses Universities should ensure that digital technologies such as artificial intelligence, data analytics tools, cloud accounting software, and ESG reporting platforms are fully integrated into sustainability-related accounting courses. This will strengthen practical learning and ensure that students acquire relevant digital competencies needed in modern accounting practice.
2. Enhance Students' Understanding of Sustainability Accounting Concepts through Technology - Lecturers should adopt technology-based teaching approaches such as simulation software, data visualization tools, and project-based learning methods. These digital learning strategies will improve students' understanding of sustainability accounting concepts, critical thinking ability, and decision-making skills.

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