

Curriculum innovation in internal auditing education: Embedding digital skills into learning outcomes and pedagogical design

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Abstract

The purpose of this study is to explore the integration of digital skills into the learning outcomes of internal auditing education and their corresponding pedagogical practices within South African universities. The study followed a mixed research approach, and participants of this study were purposively selected to meet the objectives of this study. This has resulted in 329 final-year auditing students and 35 internal auditing lecturers being selected. As a result of this study employing a mixed research approach, both quantitative and qualitative data collection instruments were used. Questionnaire and interview guide were used as data collection instruments. Both descriptive and thematic analyses were used to analyse data. The Findings revealed that there is no integration of digital skills into learning outcomes. The results also revealed inadequate digital skill expertise, resource constraints, for instance, software license or designated lab within the faculty, and insufficient support for curriculum innovation as one of the prominent barriers. The importance of this study lies in highlighting an urgent need to re-align the internal auditing curriculum to ensure it continues to meet industry demands. Lastly, this study recommends a revision of internal auditing learning outcomes to include blended and simulated pedagogies to equip academia to deliver digitally oriented internal auditing education.

Keywords: Curriculum innovation, Digital skills, Internal auditing education, Pedagogical design, South Africa.

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Contribution of this paper to the literature

The study contributes to an urgent need to re-align internal auditing curriculum to ensure it continues to meet industry demands. This study recommends a revision of internal auditing learning outcomes to include blended and simulated pedagogies to equip academia to deliver digitally oriented internal auditing education.

1. Introduction

1.1. Background

Digital technology advancements are radically transforming the internal auditing profession. Internal auditors are now expected to possess both theoretical and digital auditing skills and proficiency related to information systems, artificial intelligence (AI), cybersecurity assurances, and data analytics. This expectation requires universities to rethink internal auditing educational frameworks to enhance graduates' employability in technologically sophisticated environments. There is an urgent authority that exists in South Africa, which also requires internal auditing education to adapt, since the private and public sectors are gradually leveraging digital transformation.

There is an agreement in recent research studies that embedding digital auditing skills into internal auditing learning outcomes is another method that reshapes the profession's pathway. For instance, embedding simulative and practical pedagogies into learning outcomes to provide auditing students with an opportunity to solve real-world case studies enhances their audit efficacy. Such innovation equips students with the competencies and skills necessary to monitor real-time transactions, which improves assessment of risk and the ability to identify fraud (Nkemjika, Ojo, & Aruoriwo, 2025). Integrating these technologies into learning outcomes is also vital in ensuring that internal auditing education is aligned with industry expectations of strategic governance and risk management (Popel, 2025).

Therefore, aligning industry expectations with educational syllabi requires educational systems that respond and integrate emerging technologies into auditing learning outcomes. The systems also provide competencies that answer the industry demand. This makes the integration of auditing digital competencies into the learning outcomes critical for preparing students to thrive in organisations that are digitally sophisticated. The literature notes that the majority of South African universities are yet to integrate digital skills into auditing learning outcomes; their focus is mainly on theoretical auditing (Wazir, Iqbal, & Shafia, 2025). This creates the gap between what students are taught at university and the practical competencies they are expected to possess in practice (Sibiya & Ngulube, 2024).

Some of these universities are experiencing various hindrances ranging from historical structures that refuse change to resource constraints (Kazakova, 2024; Maimela & Mbonde, 2025). A study conducted by Sibiya and Ngulube (2024) proposed a framework to embed digital education into existing learning outcomes, emphasising an urgent need for educational reforms within institutions of higher learning. Moreover, integration of digital imperatives into learning outcomes should prioritize both application of digital tools and address ethical concerns around the implementation of digital tools, and demand for cybersecurity knowledge to safeguard sensitive data (Apriyanto, Mudawanah, Sutanto, Purnomo, & Murniawan, 2024; Plúas & Muñoz, 2025).

Despite the documented advancement in literature above and the growing body of literature advocating for the integration of digital technologies into accounting and auditing education, several critical gaps remain. Previous scholars focused more on isolated transformative curriculum elements, namely technology adoption or innovative pedagogies. The examination of the alignment of teaching practices, learning outcomes, and assessment strategies remains limited. Other similar studies largely focused on conceptual adoption and prescriptive approaches, with insufficient empirical evidence that assesses how digital competencies should be formally integrated into learning outcomes. This study sought to address these gaps by providing an empirical examination and a novel contribution of digital auditing skills integration using the lenses of constructive alignment theory. The study also combines quantitative and qualitative supportive evidence to demonstrate systemic misalignment in curriculum design. In so doing, this study is not only advocating but seek to offer a multi-dimensional and contextually supported analysis of the digital transformative internal auditing curriculum. This extensive investigation was directed by the following research questions to provide insights into integrating digital skills into learning Outcomes and their aligned pedagogies.

1. To what extent are digital skills incorporated into internal auditing learning outcomes?
2. What pedagogical strategies are used to teach digital skills in internal auditing?
3. How do students perceive their competence in digital skills relevant to internal auditing?
4. What challenges hinder the integration of digital competencies into the curriculum?

2. Literature Review

2.1. Curriculum Innovation in Higher Education

In response to evolving technological, economic, and societal needs, the institution of higher learning tends to use curriculum innovation as a strategy. This strategy seeks to align the knowledge demand and workforce competencies by redesigning the curriculum content and pedagogies to meet evolving industry needs. The strategy further ensures that the curriculum not only meets national qualification frameworks but also integrates ever-changing professional proficiency standards and global trends, thus attaining effective curriculum innovation (Koboli, Ngirwa, & Manyengo, 2024). This is consistent with the need for integrating digital skills into auditing learning outcomes to meet global needs. Previous scholars have overemphasised the importance of integrating digital auditing skills and proficiencies within academic programs. For instance, one of the suggested frameworks for embedding digital skills is the European Digital Competence Framework. It enables higher education institutions to develop curricula that reflect modern digital requirements (Ab Wahid & Tan, 2023; Kuntadi et al., 2022). The studies conducted by Abrantes et al. (2022) and Setyaningrum, Mita, and Rosdini (2022) corroborate this notion by emphasising the importance of embedding digital skills and develop innovating pedagogies, which encourage graduates' adaptability and proficiency.

2.2. Internal Auditing Competency Frameworks

The International professional practices framework that was established by the Institute of Internal Auditors (IIA) is known for its fundamental role in the establishment of internal auditing competencies. As well as other frameworks that played a critical role in enabling the embedding of digital skills and competencies into internal auditing learning outcomes. Current studies are stressing the importance of digital skills in business that are digitally sophisticated to improve audit effectiveness (Abubakari, Zakaria, Musa, & Kalinaki, 2023; Al Khateeb, Aldosemani, Abu-Dawood, & Algarni, 2024; Setyaningrum et al., 2022). Notably, inadequate integration of digital skills into internal auditing curricula by South African universities has necessitated a redefined curriculum that meets industry needs. In the form of reviewing current curriculum to infuse digital tools and revising educational pedagogy strategies to ensure that auditing education has learning outcomes that are integrated with technology (Aldredge, Rogers, & Smith, 2021). This revision of the auditing curriculum is necessary for preparing auditing students to meet the ever-changing auditing profession in a technologically sophisticated organization (Kuntadi et al., 2022; Setyaningrum et al., 2022).

2.3. Digital Skills in Higher Education

There is a need for a structured approach to integrating digital skills into the educational curriculum, noting that these skills are now classified into basic, intermediate, and advanced levels. Basic skills of IT application are of the fundamental skills, whereas data management and analytics management are classified as intermediate skills, and the use of AI and automation is at the advanced skills level. The curriculum should be redesigned to articulate the learning outcomes and assessment strategies that systematically address the skills to ensure a successful embedding of digital competencies (Galatro et al., 2022; Hani et al., 2024; Martinović, Golenko, & Badurina, 2025). For instance, recent research studies demonstrate that equipping students with digital competences contributes meaningfully to enhancing academic and professional outcomes, stressing the need for institutions of higher learning to prioritize integrating these skills in curriculum development (Al Khateeb et al., 2024; Elías et al., 2022). Hence, it is essential to align the auditing curriculum with evolving digital landscape competencies to better prepare future auditors for organizations that are technologically infused.

2.4. Pedagogical Approaches for Digital Skills

A relationship exists between improved students' digital competences and innovative educational methods. Innovative pedagogy methods play a fundamental role in significantly improving students' digital skills. Experiential education that is inclusive of active and blended learning in the form of simulation teaching and industry partnerships are examples of effective pedagogical approach. These methods forge an extensive engagement and practical use of digital tools (Abubakari et al., 2023; Muammar, Maheshwari, & Atalla, 2024). For instance, this approach allows students to work on simulated real-world case studies, using an anonymous real data set, which improves students' critical thinking and problem-solving skills (Ammouriova, Bertolini, Castaneda, Juan, & Neroni, 2022; Elías et al., 2022). Moreover, university-industry partnership is considered as another effective pedagogical approach that enriches students with practical learning experiences and aligns the skills they are taught with the industry needs (Frashëri & Teneqexhi, 2025). Therefore, a curriculum with learning outcomes that foster practical participation and hands-on learning experiences is important for equipping future auditors with the required digital skills that align with the audit practice expectations.

2.5. Constructive Alignment Theory

This study followed constructive alignment theory. The theory supports educational pedagogies that are aligned with learning outcomes, assessment criteria, and teaching activities. The theory further emphasises the importance of aligning these components to ensure an educational environment that fosters extensive learning experiences. In the same breath, Li (2024) states that teaching pedagogies are informed by the learning outcomes, which must be examined using corresponding assessment methods.

2.5.1. The Current Context: Digital Competencies

There is a crucial educational gap in auditing curriculum that is noted by recent research studies related to digital competences. As a result of the rapidly evolving digital pathway, it has become important for universities to embed digital skills into learning outcomes. The failure to integrate digital competencies into learning outcomes, as noted by recent studies, contributes to misalignment that reduces the preparedness of students for a digitalised environment (Li, 2024; Udeozor, Abegão, & Glassey, 2024).

The failure to integrate digital competencies into learning outcomes can be viewed as a teaching practice that overlooks digital competencies, contributing to inadequately prepared students for a technologically sophisticated environment (Li, 2024). Furthermore, the students are not examined on digital proficiencies, resulting in misalignment of what students are taught and examined on, thereby undermining constructive alignment (Cartner & Hallas, 2020; Skulmowski & Xu, 2022).

2.5.2. Argument for Integrating Digital Competencies

To prevent the above-mentioned failures, the auditing learning outcomes must include digital competencies that are aligned with lecturing pedagogies and corresponding assessment criteria. Deducted from the theoretical contribution of this study, the approach fosters an improved curriculum design discussion that strengthens educational transformation, which depends on the comprehensive integration of important digital skills.

1. Learning Outcomes: the learning outcomes must be clearly defined and reflect both academic proficiencies and digital skills that prepare students to succeed in a technologically sophisticated business environment (Hristov, Nakov, & Miočinović, 2024; Zhou, Wolstencroft, Schofield, & Fang, 2025). This is to inform all the stakeholders about the competencies that the students are going to possess.
2. Teaching Activities: Instructional pedagogies must assist with the acquisition of these important digital competencies. There should be a simulated teaching innovation practice that includes hands-on application

of digital tools to improve engagement and students' experiential understanding of the tools (Li, 2024; Skulmowski & Xu, 2022). For instance, recent research studies have affirmed that there is a meaningful impact on students' literacy when the teaching of digital skills is infused into a simulated learning experience (Braßler, 2024; Udeozor, Chan, Abegão, & Glassey, 2023).

3. Assessment Tasks: the students' proficiency in the application of digital tools should be assessed through practical application of the tools in a simulated environment using anonymised real data sets. Another relevant assessment strategy to examine students' competencies in the use of digital tools could be a game-based or project-based assessment (Udeozor et al., 2024). Using these innovative methods to examine students, the lecturers would be able to gauge the students' readiness to succeed in technologically sophisticated business environments (Zulu, Saad, & Gledson, 2023).

3. Methodology

3.1. Research Design

This research study has adopted a mixed research design. This approach was taken to provide a comprehensive understanding of integrating digital auditing skills into the curriculum, using qualitative interviews and quantitative surveys. This approach is advantageous in soliciting an extensive understanding of the phenomena under investigation. In answering the research question, this study is guided by three criteria: (1) participants' identity as internal auditing students and lecturers from a selected university, (2) currently studying internal auditing or teaching it, and (3) currently studying or teaching internal auditing that does not integrate digital skills into learning outcomes of a curriculum.

This study is theoretically intersected by three key elements of constructive alignment theory: learning outcomes (learning outcomes must integrate digital skills), teaching activities (alignment of lecturing approach learning outcomes), and Assessment Tasks (correspondence of assessment criteria with the learning outcomes). Both structured questionnaires and interview question design were guided by these theoretical elements. The thematic coding of lecturers' perceptions on the barriers to curriculum alignment and integration of digital skills also followed the same approach. Drawing on constructive alignment, the study fosters an improved curriculum design discussion that strengthens educational transformation which depends on the comprehensive integration of important digital skills.

3.2. Participants

The participants of this study consist of final-year internal auditing students and internal auditing lecturers at a selected university in South Africa. Thirty-five lecturers who teach internal auditing and are frequently involved in the development of internal auditing curriculum, and later review the internal auditing programme. These lecturers are familiar with the internal auditing curriculum and were involved in the implementation and discussion stage. The purposive sampling technique was used to select the participants that meets the study's objectives.

As a result of the purposive sampling strategy, 400 internal auditing students and 35 lecturers were sampled. These numbers equal the total number of auditing students and their lecturers within the selected university. Only 329 students completed the questionnaire, resulting in a response rate of 82%.

3.3. Data Collection Instruments

The study employed both questionnaire and interview guides as the data collection instruments. The questionnaire was used to collect data from students to understand their digital competence in the application of digital tools. Whereas interview guides were used to solicit insights and pedagogical design, barriers to curriculum alignment, and integration of digital skills from lecturers.

3.4. Data Analysis

Quantitative data analysis went through the following stages: Cronbach's Alpha reliability test, descriptive statistics and correlation analysis to confirm internal consistency of the measuring construct. The qualitative data were analysed through coding first and thematic analysis; thereafter, the themes related to curriculum design, teaching strategies, and digital integration barriers emerged.

4. Results

4.1. Quantitative Findings: Students' Digital Competence

4.1.1. Validity and Reliability of the Results

The survey items are guided by the IIA competency framework for internal Auditing to ensure content validity. To further ensure the questionnaire measures what is intended, to confirm and fix detected errors, and to ensure the questionnaire is clear, a pilot test was conducted. 50 students were piloted, and the questionnaire was amended in line with their recommendations. Lastly, the internal consistency was measured using Cronbach's alpha with a target > 0.7 for reliability. Table 1 presents the complete details of the Cronbach's alpha values.

Table 1. Results of Cronbach's Alpha reliability test.

Variable observation		Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
EDSL= embedding digital skills into learning outcomes and pedagogical design		Cronbach's Alpha =0.896	
EDSL 1	Our internal auditing curriculum includes digital skills	0.771	0.893
EDSL 2	Simulative data analytics should form part of internal auditing learning	0.780	0.868
EDSL 3	The learning outcomes include blockchain and its practical application in auditing practice	0.739	0.876
EDSL 4	The application of the machine learning tool is included as	0.773	0.877

Variable observation		Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
	part of internal auditing learning outcomes		
EDSL 5	Digital auditing competencies are clearly outlined in the curriculum's learning outcomes	0.827	0.855
EDSL 6	I am competent in application of digital skills relevant to internal auditing	0.776	0.869

According to Goh, Stewart, and Becker (2024) the reliability of the results is achieved when the survey instrument's Cronbach's alpha (α) coefficient is greater than or equal to 0.70. Based on the alpha values of this study, which are above 0.70, a conclusion was made that all the construct in the group “embedding digital skills into learning outcomes” illustrates a high internal consistency, with Cronbach’s Alpha values of 0.896, exceeding the recommended threshold of 0.7 by Goh et al. (2024). These results indicate that there is an internal correlation with each observed construct. The constructs capture the measured quality dimensions they are supposed to measure. Specifically, embedding digital skills into learning outcomes and pedagogical design = 0.896 demonstrates the absence of integrated digital skills. All adjusted item-total correlations surpassed 0.60, and no measurement items were omitted, validating that the constructed scales are appropriate for evaluating digital skills integration, curriculum innovations, and pedagogical design, and demonstrating adequate reliability.

4.1.2. Descriptive Statistics

The detailed results of the student’s response on the digital skills embedded into the learning outcomes are depicted in Table 2, illustrating the absence of integration. This study has collected data from six questionnaire items to determine the internal auditing digital skills that are integrated into learning outcomes. The questionnaire Likert-scale categories where: 1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly agree. The results demonstrate that most students responded ‘strongly disagree’ or ‘disagree’ to all statements. Among the 329 participants, statement one showed that 314 (95%) responded 'strongly disagree' and 1 (0.3%) 'disagree'. Similar results were also reported by the other five statements. Table 2 illustrates the results of digital skills embedded in the learning outcomes.

Table 2. Embedding digital skills into learning outcomes.

Constructs	N	1	2	3	4	5	Total Disagreement
Our internal auditing curriculum includes digital skills	329	95%	0%	2%	2%	1%	95%
Simulative data analytics should form part of internal auditing learning	329	92%	1%	3%	2%	2%	93%
The learning outcomes include blockchain and its practical application in auditing practice	329	94%	2%	0%	3%	1%	96%
The application of a machine learning tool is included as part of internal auditing learning outcomes	329	95%	0.3%	2%	0.7%	1%	95%
Digital auditing competencies are clearly outlined in the curriculum's learning outcomes	329	79%	17%	0%	1%	3%	96%
I am competent in application of digital skills relevant to internal auditing	329	51%	28%	4%	9%	8%	79%

The above results go beyond descriptive absence of digital skills; they illustrate an operational failure of curriculum alignment. The high agreement among students that digital tools are not integrated suggests that this is not an isolated issue but a systemic curriculum design limitation. Deducting from a constructive alignment perspective, the absence of digital competencies in learning outcomes results in reduced likelihood of digital pedagogy adoption, limited assessment of digital skills, and production of graduates that do not meet industry expectations. This indicates that curriculum transformation is not merely a content issue but a pedagogical and institutional ecosystem failure.

4.1.3. Correlation Analysis

A correlation analysis was used to assess the validity of the survey results. The Pearson correlation coefficient ("r") was used to examine the linear relationships within the data and to determine the statistical significance of the relationships between variables. The constructs analysed were the embedding of digital skills into learning outcomes, as presented in Table 3.

Table 3. Correlation matrix embedding digital skills into learning outcomes.

Correlations								
	Means	Standard dev.	A	B	C	D	E	F
A	4.86	0.636	1					
B	4.84	0.735	0.904**	1				
C	4.84	0.692	0.946**	0.966**	1			
D	4.91	0.518	0.784**	0.752**	0.798**	1		
E	4.88	0.640	0.746**	0.808**	0.802**	0.950**	1	
F	4.90	0.575	0.719**	0.789**	0.746**	0.898**	0.919**	1

Note: **. Correlation is significant at the 0.01 level (2-tailed).
A= Our internal auditing curriculum includes digital skills; B= Simulative data analytics should form part of internal auditing learning; C = The learning outcomes includes blockchain and its practical application auditing practice; D = The application of machine learning tool is included is part of internal auditing learning outcomes; E = Digital auditing competencies are clearly outlined in the curriculum's learning outcomes and F = I am competent in application of digital skills relevant to internal auditing.

The correlation results reveal strong, positive, and statistically significant relationships ($p < 0.01$) among all items measuring digital skills integration. The high inter-item correlations ($r = 0.719$ to 0.966) suggest that the construct is internally coherent and unidimensional, capturing a consistent perception of the absence of digital skills integration. However, the strength of these correlations also indicates conceptual overlap, reinforcing the conclusion that students perceive digital skills integration as a systemically missing component rather than fragmented elements within the curriculum.

4.2. Qualitative Findings: Lecturer Perspectives

Three major themes emerged from the qualitative interview guide.

4.2.1. Curriculum Gaps

It was acknowledged by lecturers that internal auditing learning outcomes do not include digital skills. The curriculum is predominantly focused on theoretical auditing concepts and frameworks.

“Our curriculum mainly focuses on auditing standards, principles, and theoretical concepts; we haven’t done much to integrate digital competencies into internal auditing learning outcomes. Despite this failure, we acknowledge the efficiency and reliability that come from AI tools such as data analytics.”

“There is a lack of adequate review of the curriculum, a lack of training of those responsible for reviewing, a lack of budget to capacitate the infrastructure, electricity outages, student protests, and a lack of venues.”

“I don’t recall a curriculum being done since 2022. The one done in 2022 did not bear any results.”

“Our syllabus has not been changed since I joined the institution in 2019.”

4.2.2. Pedagogical Practices

There is an agreement among the lecturers that their teaching strategies do not include real-world digitalized case studies, software, or simulated hands-on practices. These are also not integrated with the learning outcomes.

“There should be a combination of lecturers in terms of theory, case studies, practicals through simulations and collaborative efforts with business and government entities.”

4.2.3. Barriers to Integration

The lecturers have identified the following key challenges: Inadequate expertise for the application of digital tools within the faculty. Resource constraints were identified as one of the hindrances (For instance, limited budget to buy software licenses, limited lab facilities, and insufficient funds to build new ones), and lastly, curriculum innovations are halted by the lack of institutional support.

“Significant expenses and restricted resources, as well as uncertainties related to regulations and ethics.”

“The value of integrating digital tools into learning outcomes is misunderstood and unknown. Hence, there is no / limited management buy-in, budgets not approved or inadequate resources allocated, as well as lack of prioritization.”

5. Discussion

5.1. Integration of Digital Skills in Internal Auditing Education

The findings of this study confirm the lack of digital competency integration into learning outcomes, which has far-reaching consequences on the employability of auditing graduates. This also creates a misalignment between what the students are taught and what the industry expects students to possess. Even though lecturers and students acknowledged the importance of aligning internal auditing curriculum with digital competences, these competences are still yet to be systematically integrated into formal learning outcomes. Instead, the exposure to digital skills seems to be fragmented, informal, or dependent on individual lecturer initiative.

Given the developing competency required by the IIA, this persistent gap is worrying. The competency expectation expressed by the IIA promotes proficiency in data analytics, automated audit tools, cybersecurity awareness, and IT governance, all of which are in line with the concern of embedding digital skills into learning outcomes in an internal auditing curriculum. Moreover, these are also regarded as core auditing capabilities for modern internal auditors. There is a lack of embedded digital skills in learning outcomes in an internal auditing curriculum, which signals that the curriculum design has not yet kept pace with the auditing transformation.

The insufficient integration of digital skills can be interpreted through the lens of constructive alignment theory. Embedding digital skills into learning outcomes in an internal auditing curriculum is a necessity to align the auditing curriculum with industry expectations. The theory emphasises the importance of aligning these components to ensure an educational environment that fosters extensive learning experiences. The result of this study implies that while the students are fully prepared in auditing theory, embedding digital skills remains neglected. This neglect deteriorates the potential of a transformative auditing curriculum innovation.

5.2. Pedagogical Implications

The findings of this study have affirmed that embedding digital skills into auditing learning outcomes is more than just documenting in a curriculum, but it requires a transformation of pedagogical strategies as well. The existing pedagogy practices are only conducted by lecturers, covering theoretical discussions of auditing standards, principles, and governance frameworks. Even though the theoretical knowledge is important, this approach lacks sufficient application of digital skills.

Moreover, the findings demonstrated that digital skills are best acquired by students through experiential practice and applied learning contexts. Effective educational innovation to realise the acquisition of digital skills may consist of applying audit simulations, working on anonymised real-world datasets for analytics assignments, project-based learning with digital tools, and forging partnerships with auditing firms for students' experiential learning. These are consistent with the principles of constructive alignment theory, which advocate for consistency between learning outcomes, lecturing activities, and assessment criteria. The objective is to equip students with digital skills;

therefore, digital competencies must be outcomes, and the pedagogical strategies must simulate a real digital audit organization.

5.3. Policy and Institutional Change

The findings of this study revealed that institutional support plays a vital role in curriculum innovations. The resources, governance, and policies are required to effectively transform internal auditing to align with digital requirements.

The digital competencies must be included in a formally revised curriculum framework as clear graduate attributes. Universities must also align their curriculum outcomes with the professional competency standards expressed by bodies such as the IIA. This alignment must ensure that the integration of digital skills is mandatory.

The findings of the study revealed insufficient technology experts and time for curriculum redesign, and inadequate training opportunities as some of the few challenges experienced by lecturers. This calls for universities to invest more in the continual professional development of lecturers through collaborative partnerships, training workshops, and industry secondment to improve lecturers' preparedness to embed digital tools effectively.

At the national level, institutions of higher learning's quality assurance bodies may consider including digital competency benchmarks as one of the requirements for accrediting a programme. This is to create some level of external accountability, promoting a systematically modernised university curriculum.

6. Conclusions

The findings of this study recommend a curriculum redesign that includes innovations within internal auditing learning outcomes in South Africa. Embedding digital skills into learning outcomes and redesigned pedagogies remains limited even though digital imperatives are well recognised.

The study results revealed three central conclusions.

1. Curriculum Misalignment: The formal learning outcomes are not sufficiently articulated in the digital auditing tools competencies.
2. Pedagogical Limitations: The acquisition of digital auditing skills is halted by the traditional lecture-centred pedagogical methods.
3. Institutional Constraints: At the faculty level, integration of digital auditing skills into learning outcomes is prevented by inadequate academic training, shortage of computer lab facilities, and policy amendments. All these are fundamental for supporting sustainable innovations.

Integration of digital skills into internal auditing learning outcomes requires more than just documenting it in the curriculum. It requires a complete curriculum redesign, which is grounded in a constructive alignment theory. The graduates are more likely to succeed in an ever-changing industry requirement, especially where digital competencies are thoroughly integrated, supported by relevant pedagogical strategies and a resourced institution. To ensure that the internal auditing curriculum remains relevant and keeps up with technological developments, the universities must strengthen their partnerships with the IIA body, auditing firms' collaboration, and continue faculty professional development initiatives. The study concluded that curriculum innovation is more than just an academic activity, but it is rather a professional requirement. This is important to produce internal auditors that are digitally competent, graduates that are employable, and to enhance governance, assessment of risk, and accountability within digitally sophisticated business organizations.

7. Limitations and Future Research

The study sampled a few universities in South Africa; this limits the generalisation. Future research may consider widening the scope to get better generalisation of the impact of curriculum redesign on the employability of graduates and professional performance. The study only covered the final-year internal auditing students; further studies could consider including different cohorts and recent graduates to understand the challenges faced by recent graduates who lack digital auditing knowledge and skills.

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