PONTE

Vol. 82 No. 2, 2026 Florence, Italy
ISSN: 0032-423X *E-ISSN:*0032-6356 International Journal of Sciences and Research

DOI: https://doi.org/10.5281/zenodo.20033198

STUDENTS' PERCEPTIONS OF ACCOUNTING SOFTWARE PACKAGES (ASPS) INTEGRATION IN THE HIGHER EDUCATION ACCOUNTING CURRICULUM: EVIDENCE FROM A SOUTH AFRICAN INSTITUTION

Siphiwe Cele, Department of Accountancy, Vaal University of Technology (VUT), Gauteng, South Africa, Email: siphiwec@vut.ac.za

Anrusha Bhana, Wits Business School (WBS), University of Witwatersrand, Johannesburg, South Africa, Email: anrusha.bhana2@wits.ac.za (Corresponding Author)

Logan Rangasamy, Wits Business School (WBS), University of Witwatersrand, Johannesburg, South Africa, Email: logan.rangasamy@wits.ac.za

ABSTRACT

The integration of Accounting Software Packages (ASPs) in higher education is crucial for ensuring that graduates are well-prepared for the demands of the modern accounting profession. This study explores undergraduate students' perceptions of the importance of accounting software packages (ASPs) in the teaching and learning of the accounting curriculum at a higher education institution (HEI) in South Africa. A census approach was utilized to target 257 students enrolled in the Financial Accounting III course on the Diploma in Accounting programme. The resulting sample size was 172 of 257, yielding a response rate of 66.9%. Data was gathered through a quantitative survey administered via Microsoft Forms, using descriptive and inferential statistics in the analysis. The findings revealed that while students have some awareness of accounting software packages, their level of knowledge, practical competence, and skills remain limited. Despite this lack of familiarity with software packages, 91.9% indicated that training in ASP would be beneficial, reflecting a strong need for the integration of ASP training into the accounting curriculum. These results highlighted the need to bridge the gap between academic HE learning, the job market, and industry requirements. This study contributes to the limited South African literature on ASPs in the accounting curriculum and programmes and provides valuable insights for curriculum reform aimed at enhancing alignment of HE outcomes with professional standards and increasing graduate employability. The findings provide valuable insights into the development of HE policies to close the digital accounting competency gap and promote closer alignment with industry requirements.

Keywords: Students, Accounting software packages (ASP), Teaching and Learning, Higher Education Institutions (HEIs), curriculum.

INTRODUCTION

The transition to digital systems, coupled with increasingly complex regulatory requirements, has made modern AIS more intricate (Lacy et al., 2019). This complexity extends to higher education, where teaching is evolving towards technology-mediated learning (Erasmus & Fourie, 2018; Szyszka et al., 2022). This paper contributes to the body of literature on the role of Accounting Software Packages (ASPs) in accounting education within the South African context, where empirical studies remain limited. Most existing scholarships have focused on

international settings, postgraduate programs, and not undergraduate accounting qualifications. By addressing this gap, the paper emphasizes the importance of equipping undergraduates who represent a significant portion of the entry-level accounting workforce with ASP competencies and skills. The increasing prominence of technology has highlighted a global digital skills gap that impedes organizational innovation and growth (Kolding et al., 2018). A key contributing factor is that many graduates lack sufficient exposure to practical tools and technologies, further widening the existing competency gap (Graham et al., 2019; Petersen, 2020). Consequently, there is a need to update accounting curricula to integrate and align evolving digital competencies and skills. Empirical analysis highlights the need for incorporating tools like Big Data and other Information and Communication Technology (ICT) into the accounting curriculum and programmes (Sledgianowski et al., 2017). Furthermore, there is a need for a stronger emphasis on technical and analytical tools, alongside meta-competence like creative thinking (Pargmann et al., 2023).

In the South African context, incorporating ICT into the undergraduate curriculum is seen as crucial for enhancing graduates' academic and soft skills, thereby improving their employability (Ohei et al., 2019). Early research (Maher, 1993) established the effectiveness of using commercial accounting software to promote active learning, underscoring the need to align curriculum with technology. Currently, there are technical and practical skills shortages when undergraduates enter the job market, which will be further impacted by 4IR, 5IR, and Artificial Intelligence (AI). Petersen (2020) & Cele (2022) highlighted that the skills shortage among graduates poses a global issue. The best way to equip young graduates for the accounting sector is to ensure that they possess the skills needed to effectively and efficiently utilize the relevant technological tools.

The Fourth and Fifth Industrial Revolutions have redefined the industrial and professional landscape. Tasks that were once routine for accountants are increasingly being substituted with artificial intelligence and automation (Rîndașu, 2017). Integrating accounting technologies like ASPs in higher education is crucial for preparing graduates for the evolving workplace, given the modern accounting profession's reliance on digital tools (Jackson & Meek, 2021). This paper's findings will inform the reform of the accounting curriculum, aiming to enhance graduate employability and align educational outcomes with accounting professional and industry standards in South Africa. It also highlights the importance of ASPs in undergraduate studies, which have been largely overlooked in existing research that focused purely on degree programmes. It proposes to fill this gap by providing context-specific evidence on technology-enabled teaching and learning in diploma programmes in South Africa.

The paper employs the Technology Acceptance Model (TAM), introduced by Davis (1986) to analyze how students effectively adopt these crucial tools. From a theoretical and methodological perspective, this paper contributes to the Technology Acceptance Model (TAM) by applying its constructs to examine the acceptance and use of ASPs in the teaching and learning environment. Consequently, the findings are significant and may directly inform the development of effective educational policies aimed at closing the digital literacy competency gap. These constructs are crucial for understanding how students evaluate ASPs and how these assessments influence software adoption in both academic and professional contexts. TAM is the most suitable framework because the successful integration of digital

tools relies heavily on students' acceptance and perception of the software's usefulness (Valencia-Arias et al., 2019). Therefore, TAM directly addresses the psychological factors, particularly perceived usefulness, that influence undergraduate students' perceptions of Accounting Software Packages (ASPs), forming the foundation of this paper's analytical approach.

The paper highlights a significant knowledge gap in students' exposure to and competence in accounting software packages (ASPs). Many organizations have transitioned from manual accounting systems to technology-driven solutions, but the lack of structured ASP training in the curriculum limits graduates' preparedness for the labour market in South Africa. Incorporating ASPs into the accounting curriculum would not only enhance students' practical competencies but also align higher education outcomes with industry and real-world expectations. Given the documented skills gap and the need for transformation in curricula, this study aims to investigate students' perceptions of ASPs at a higher education institution in the KwaZulu-Natal province. The relevance of this paper relates to the insights it provides into curriculum development, ensuring that academic training aligns with industry expectations and effectively addresses the digital competency gap faced by modern accounting graduates.

LITERATURE REVIEW

Accounting Software Packages (ASP)

Accounting software refers to a collection of programs and procedures that form part of an overall system (Lim, 2013). It is commonly utilized in organizations and encompasses various tools such as electronic information interchange, auditing software, word processing, and graphics software (Lim, 2013). An accounting software package is a computer program designed to record and process accounting transactions through different functional modules, including payroll, accounts payable, and accounts receivable (Jim et al., 2024). These packages aim to enhance the accuracy, efficiency, and reporting of financial transactions, making them essential for contemporary accounting practices (Rahahle et al., 2024).

Popular software packages like Sage, QuickBooks, SAP, and Xero play a crucial role in streamlining operations across organizations (Mandava, 2024; Shamsudin et al., 2025). Employers increasingly expect that graduates possess strong proficiency in a range of accounting software (Daff, 2021). Consequently, accounting graduates need to be comfortable with ASPs and able to adapt quickly to new software as it is introduced (Daff, 2021). Modern accountants utilize integrated hardware and software solutions for rapid data processing and reporting, enhancing operational efficiency and ensuring the reliability of financial information for stakeholders. This support enables more timely decision-making (Imene & Imhanzenobe, 2020).

Integrating accounting software packages into Teaching and Learning (T&L)

The accounting profession emphasizes the importance of integrating and aligning ASP into educational curricula to improve student learning outcomes and enhance employability (Lusher et al., 2012). However, the inclusion of IT-related modules in accounting programs is often limited due to a lack of qualified staff and insufficient infrastructure (Senik & Broad,

2011). Even when integration occurs, challenges such as technical inconsistencies, limited access, and inadequate support structures can hinder effective implementation (Senik & Broad, 2011). In today's digital era, employers expect graduates to demonstrate proficiency and confidence in using technology as part of their professional skill set (Lusher et al., 2012). Active learning approaches that utilize ASP can address issues related to passive classroom participation and achieve multiple learning objectives simultaneously (Che Ku Kassim et al., 2019). The incorporation of applications like QuickBooks into university accounting programmes is recommended to familiarize students with tools commonly used in practice (Habashi, 2021).

Technological innovations have transformed pedagogical methods by promoting greater interaction, collaboration, and immediate feedback between educators and students (Bozalek et al., 2013). Shifting from teacher-centered to learner-centered environments can reduce the need for intensive direct instruction and foster learner autonomy (Ali, 2020). Educational tools such as computer simulations and spreadsheet models can enhance experiential learning, particularly for students with conceptual and theoretical learning styles (Che Ku Kassim et al., 2019).

Integrating ASP into coursework allows students to engage in realistic professional tasks, including transaction processing, financial reporting, and budget analysis, in collaborative and time-sensitive settings that simulate real workplace environments (O'shea et al., 2022). Simulated learning environments created with ASP can reinforce technical skills and bridge the gap between academic theory and practical workplace application (Marriott, 2004). Despite the implementation of innovative teaching methods, evidence indicates that many accounting programs fail to authentically replicate workplace demands. This potential shortfall may leave graduates inadequately prepared for evolving industry expectations (Herbert et al., 2021). Feedback from employers consistently highlights deficiencies in graduates' software competencies, underscoring the need for curricula to incorporate practice-oriented and authentic learning experiences that reflect the realities of the accounting profession (Daff, 2021).

Benefits of integrating ASP into the accounting curriculum

Accounting software provides students with valuable, hands-on experience by enabling them to perform essential tasks, such as recording transactions and generating financial reports (Salem, 2025). Utilizing this software enables students to visualize the entire accounting cycle, from source documents to financial statements (Marshall et al., 2010; Rhodes & Taylor, 2024; Sahin & Celikkan, 2020). Boulianne (2014) noted that accounting students are increasingly exposed to the benefits and versatility of computers, which empowers them to effectively integrate technology into their studies. In an experimental study, Boulianne (2014) examined the impact of ASP on students' understanding of the accounting cycle, aiming to explore its role in knowledge development and curriculum design. The results indicated that a blended approach, combining manual methods with software, produced the highest level of understanding of the bookkeeping cycle (Boulianne, 2014). Cloud-based and online accounting packages offer students flexibility to practice both on and off campus (Papageorgiou et al., 2024). This flexibility is particularly crucial in South African HEIs, where disparities in access to physical resources can hinder learning (Makhathini & Isabirye,

2025). Reliable digital infrastructure and technical support are essential for students to fully benefit from using ASP (Rhodes & Taylor, 2024). Work-Integrated Learning (WIL) activities that incorporate ASP allow students to participate in authentic, industry-oriented simulations (Twyford & Dean, 2024). These activities enable students to apply their knowledge in realistic scenarios and receive feedback that reflects professional accounting environments (Mostert et al., 2025). Participation in software-based WIL projects fosters critical thinking, teamwork, and problem-solving skills (Mostert et al., 2025). Integrating ASP into curricula can also enhance students' perceived employability (van den Berg & Rothmann, 2025). Students who feel their education is preparing them for technology-driven roles report higher levels of psychological and social well-being (van den Berg & Rothmann, 2025). This underscores the importance of aligning software use in the classroom with employer expectations for digital competency (Rhodes & Taylor, 2024). To ensure that exposure to ASP leads to measurable competencies, purposeful curriculum design and educator upskilling are necessary (Papageorgiou et al., 2024). Without structured learning design and assessment, software use risks becoming a supplementary activity rather than a core component of skill development (Makhathini & Isabirye, 2025). Moreover, collaboration with industry enhances the effectiveness of software integration by ensuring that tools and processes align with current professional practices (Twyford & Dean, 2024).

Financial accounting is evolving to focus on value-added activities such as planning, system improvement, and profitability analysis. With the rise of Industry 4.0, it is expected that computerization will replace many human tasks (Asonitou, 2015). The integration of technology has the potential to enhance motivation by enriching education with digital resources (Hermawan et al., 2022). However, students report a lack of training from their instructors and need guidance to apply technology effectively in their studies (Ahmed & Opoku, 2022).

Information and Communication Technology (ICT) and multimedia tools can simulate real-world accounting environments and significantly enhance learning experiences (Che Ku Kassim et al., 2019). The affordability of digital tools has led to an increased adoption of Learning Management Systems (LMSs) (Sharifov et al., 2021). Blended learning has been shown to improve knowledge retention compared to traditional lectures (Kottara et al., 2025). Additionally, experiential learning fosters enthusiasm, connects theory with practice, and supports career development (Passarelli & Kolb, 2023). Computer-assisted learning packages have also demonstrated significant positive effects on student performance (Talan, 2021). The integration of ASP enhances efficiency, accuracy, and exposure to industry standards (Murrar et al., 2022). Employers often expect proficiency in Excel functions such as sorting, referencing, and formatting (Daff, 2021). Using software also helps develop transferable skills in problem-solving, data interpretation, and decision-making (O'shea et al., 2022), as well as essential soft skills like communication and collaboration (O'shea et al., 2022). These competencies build confidence in using digital platforms and strengthen adaptability to growing professional demands (Murrar et al., 2022).

Challenges of ASP in the Accounting Curriculum

Traditional professions, including accounting, face significant challenges due to the increasing use of technology. Scholars are engaged in ongoing debates about how much technology should be integrated into teaching and learning (Daff, 2021). In some instances, the reliance on computers could hinder students' grasp of fundamental accounting theories (Boulianne, 2014). Further, the complexity of ASP, with its numerous features and functions, can create a steep learning curve for beginners, potentially obstructing their understanding of foundational concepts (Shamsudin et al., 2025). HEI software may not be aligned with enterprise systems, which are industry standards, and could possibly be discrepancies between the software used in HEIs and that employed in the industry have been identified as barriers impacting graduates' readiness for the workforce (Murrar et al., 2022). Employers have expressed mixed opinions about the ICT competencies of graduates, with some highlighting deficiencies in essential tools like Excel and enterprise resource planning (ERP) systems (O'shea et al., 2022). Other reported constraints include financial costs, licensing limitations, and the necessity for frequent curriculum updates to keep pace with technological advancements (Jim et al., 2024). Additionally, faculty-related issues such as limited familiarity with ASP, inadequate instructional time, and resistance to changes in teaching methods pose challenges (Cele, 2022). Insufficient ICT infrastructure and a shortage of trained instructors also limit the effective teaching of ASP in higher education institutions (Yidana et al., 2023). In some cases, the lack of ASP in the curriculum has been linked to increased unemployment or underemployment among graduates (Daff, 2021).

Employers, in certain contexts, have had to allocate extra resources to train graduates in practical ASP, indicating a skills gap between academic preparation and workplace requirements (Jim et al., 2024). The accuracy of outputs produced by ASP relies heavily on the quality of the input data, underscoring the continued importance of professional judgment in accounting processes (Imene & Imhanzenobe, 2020). Then there is also the issue of cybersecurity risks associated with the adoption of information technology in accounting (Shamsudin et al., 2025).

Given the rapid pace of technological advancements, accountants must remain adaptable and open to emerging tools to avoid skill obsolescence (Mujiono, 2021). Moreover, technologies such as virtual and augmented reality may lead to expectations for more interactive and immersive reporting formats that go beyond traditional numeric outputs (Imene & Imhanzenobe, 2020). Lastly, developing countries may experience slower adoption of accounting technologies due to regulatory compliance requirements, financial constraints, and inadequate infrastructure (Shamsudin et al., 2025).

Students' Perceptions of ASP

Higher Education Institutions (HEIs) need to consider ASP from the students' perspective and acknowledge the crucial role of user-driven initiatives and cloud-based educational opportunities in facilitating technology-enhanced learning (Bozalek et al., 2013). Prospective employers are looking for graduates who are proficient in ASP and possess strong interpersonal skills (Gioiosa & Kinkela, 2019). This indicates that students should view themselves as gaining essential competencies related to the Fourth Industrial Revolution (4IR) during their time at HEIs (Gioiosa & Kinkela, 2019). Students' perceptions of learning significantly influence their learning styles, which in turn affect the quality of their learning

outcomes (Richardson & Shan, 2019). Technological advancements have transitioned learning strategies from desktop-based systems to laptops, and more recently to mobile devices such as smartphones and tablets (Marzuki et al., 2019). The expansion of virtual learning environments and the shift away from traditional classroom settings have led to widespread support for mobile and cloud-based technologies within HEIs (Eljak et al., 2023). Students' perceptions of the online learning environment, along with their self-assessed competencies, directly influence their satisfaction with their programs and curricula (Herrador-Alcaide et al., 2019). They view ASP use as an expected and integral part of the learning process, identifying key benefits such as the accessibility of study materials and a centralized platform for accessing module-related resources (Bhat, 2023).

Many students believe that ASP will support the successful completion of qualifications (Elaine Gioiosa & Kinkela, 2019). Research by Stepp-Greany (2002), as cited in Elaine Gioiosa and Kinkela (2019), found that 41% of students agreed that they learned effectively through technology-based activities. Participants in a focus group at Botho University indicated that a computerized accounting curriculum enhances students' employability and self-reliance (Machera & Machera, 2017). They also reported that students lacking computerized accounting skills faced difficulties during internships, and employers tended to prefer candidates with such skills (Machera & Machera, 2017).

Although many HEIs express intentions to integrate ASP into accounting curriculum, these initiatives often fall short in practice (Dingus, 2021). Students in the United Arab Emirates do not fully understand the employability skills needed in the 4IR, resulting in a gap between their perceptions and employers' expectations (Pauceanu et al., 2020). Students' perceptions of ASP are influenced by their awareness of its relevance in the workplace and their confidence in using it (O'shea et al., 2022). Additionally, some students underestimate the importance of technical skills, assuming that technical accounting knowledge alone will guarantee their employability (O'shea et al., 2022). They show greater engagement with ICT-based learning when they are aware of employer expectations (Daff, 2021). Daff (2021) noted that 87% of employers consider skills in Excel and ASP essential for career success. Students who understand the connection between software skills and employability are better positioned to compete for graduate roles, especially in competitive job markets (Murrar et al., 2022).

O'shea et al. (2022) highlighted a disconnect between students' priorities, often focused on technical knowledge and grades, and employers' emphasis on applied competencies and soft skills. A better understanding of employer requirements increases students' willingness to engage with ICT learning (Daff, 2021). Positive perceptions of ASP are reinforced when students experience interactive and hands-on learning that illustrates its role in executing accounting tasks, supporting decision-making, and facilitating professional communication (Murrar et al., 2022). TAM offers a solid theoretical basis for understanding user adoption, explaining technology acceptance through constructs such as perceived usefulness, perceived ease of use, attitudes, and behavioral intention (Mugo, 2017).

PONTE
Vol. 82 No. 2, 2026 Florence, Italy
ISSN: 0032-423X *E-ISSN:*0032-6356 International Journal of Sciences and Research

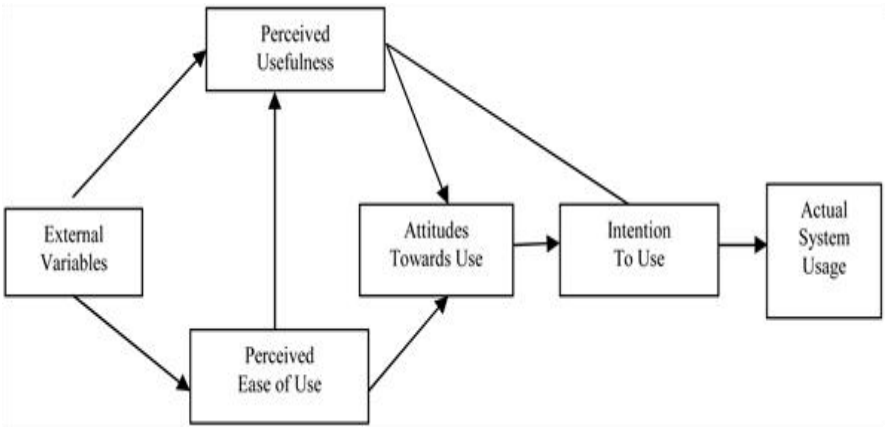

Fig.1 Technology Acceptance Model (TAM)
Source: Davis (1989)

Davis introduced the Technology Acceptance Model (TAM) in 1986. According to Davis, TAM provides a strong framework for understanding user acceptance and behavior regarding information technology. It is important to note that TAM was developed based on the Theory of Reasoned Action (TRA) (Lee, Kozar, and Larsen, 2003). The TAM model was designed to predict technology acceptance by focusing on constructs such as perceived usefulness, perceived ease of use, attitudes, and behavioral intention. Numerous theories can be applied while researching IT adoption (Dlamini & Schutte, 2025). However, the Technology Acceptance Model (TAM) is widely used across fields, including education, to understand technology adoption, particularly in e-learning and multimedia tools. According to Davis (1989), as referenced by Azli et al. (2018), two key beliefs drive a person's intention to adopt a system: perceived usefulness, which refers to the extent to which individuals believe the system will enhance their performance, and perceived ease of use, which is the belief that the system will be easy to use.

METHODOLOGY

This study employed a quantitative, census-based approach to examine the perceptions of undergraduate accounting students regarding ASP at a Higher Education Institution (HEI) in Durban, KwaZulu-Natal. The study's population comprised all 257 third-year students registered for the Financial Accounting 3 course, which in effect meant that these students represented the exit-level group in the Diploma in Accounting programme. This group was specifically selected due to their extensive experience with the curriculum and programme, which made their insights especially valuable. According to Chawla and Sodhi (2011), a census method is suitable for collecting data from a small, defined population. A closed-ended questionnaire was created using Microsoft Forms, which was distributed via a direct link through the module's online notification system. To ensure data integrity, the survey settings were configured to allow access to third-year students only with a valid HEI email address, whereby each student was permitted and limited to one attempt at the 5-likert scale quantitative survey questionnaire. Data collection took place from 10 May 2022 to 5 June 2022; 172 out of 257 students in the population completed the survey, which resulted in a

PONTE
Vol. 82 No. 2, 2026 Florence, Italy
ISSN: 0032-423X *E-ISSN:*0032-6356 International Journal of Sciences and Research

66.9% response rate. Student participation was entirely voluntary, confidential, and their anonymity was maintained throughout the process to ensure adherence to ethical standards. Ethical clearance was obtained from the university's Faculty Research Ethics Committee (FREC), and a clearance letter, along with gatekeepers' (clearance) letter of permission from the HEI, was included during the data administration process. In addition, prior to the collection of primary data, a pilot study was conducted to ensure the questionnaire's clarity and comprehensibility, thereby establishing its face, construct, and content validity. The reliability of the questionnaire was confirmed with a Cronbach's alpha of 0.831, which exceeds the recommended threshold of 0.7, indicating an acceptable and consistent level of scoring. A qualified quantitative statistician was consulted prior to data administration to further support the study's validity and reliability. The survey data were analyzed using SPSS version 25.0.

RESULTS

Awareness and Knowledge of Accounting Software Packages

Descriptive Analysis

A descriptive analysis was conducted to assess students' awareness and knowledge of various ASP packages. As shown in Figure 1 below, the respondents rated their awareness and knowledge of the listed accounting software packages. A five-point Likert scale, with options ranging from '*I have never heard of it'* to *'I have heard of it and know a lot about it'*, was used.

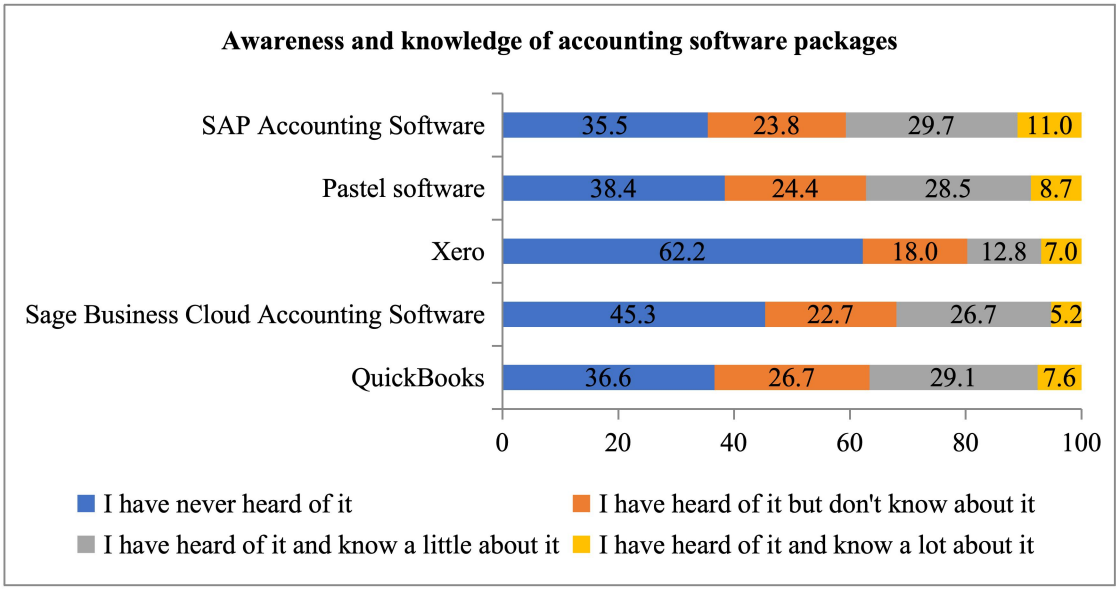

Fig 2. Awareness and knowledge of accounting software

The findings in Figure 2 revealed that the highest percentage of students (62.2%) indicated they had never heard of Xero. Sage Business Cloud Accounting Software came in second, with 45.3% of respondents indicating they had never heard of it. Over 35% of respondents reported never having heard of Pastel software (38.4%), QuickBooks (36.6%), or SAP (35.5%). The results indicate that students are not significantly knowledgeable about accounting software packages.

PONTE
Vol. 82 No. 2, 2026 Florence, Italy
ISSN: 0032-423X *E-ISSN:*0032-6356 International Journal of Sciences and Research

Inferential Analysis

Table 1 below summarises the respondents' responses when asked to indicate their awareness and knowledge of the five accounting software packages listed in the questionnaire. A five-point Likert scale, with statements ranging from 'I have never heard of it' to 'I have heard of it and know a lot about it', was used.

Table 1: Awareness and knowledge of accounting software packages

Item	Responses as Frequency (%)				X^2	Df	P-value
	I have never heard of it	I have heard of it, but don't know about	I have heard of it and know a little about it	I have heard of it and know a lot about it			
QuickBooks	63 (36.6)	46 (26.7)	50 (29.1)	13 (7.6)	31.581	3	<.001*
Sage Business Cloud Accounting Software	78 (45.3)	39 (22.7)	46 (26.7)	9 (5.2)	55.953	3	<.001*
Xero	107 (62.2)	31 (18.0)	22 (12.8)	12 (7.0)	131.209	3	<.001*
Pastel Software	66 (38.4)	42 (24.4)	49 (28.5)	15 (8.7)	31.395	3	<.001*
SAP Accounting Software	61 (35.5)	41 (23.8)	51 (29.7)	19 (11.0)	22.512	3	<.001*

** Indicates significance at the 95% level*

The results in Table 1 indicated that:

- A significant number of the respondents either have not heard of QuickBooks (36.6%) or they have heard of it but know either nothing (26.6%) or only a little (29.1%) about it: x^2 =31.581, Df = 3; p <.001.
- A significant number of the respondents have either never heard of Sage (45.3%), or they have heard of it but only know a little about it (26.7%): x^2 =55.953, Df = 3; p <.001.
- A significant 62.2% of the respondents have never heard of Xero: x^2 = 131.209, Df = 3; p <.001.
- A significant number of the respondents either have not heard of Pastel Accounting (38.4%), or they have heard of it but either know nothing (24.4%) or only a little (29%) about it: x^2 = 31.395, Df = 3; p <.001.

PONTE
Vol. 82 No. 2, 2026 Florence, Italy
ISSN: 0032-423X *E-ISSN:*0032-6356 International Journal of Sciences and Research

- A significant number of the respondents either have not heard of SAP Accounting Software (35.5%), or they have heard of it but know either nothing (23.8%) or only a little (29.7%) about it: $x^2 = 22.512$, Df = 3; p <.001.

Perceptions of Accounting Software Packages
Descriptive Analysis

Students' perceptions of ASP were measured using a five-point Likert scale, as presented in Figure 3. Two composite variables were identified: IMP (Importance of Technology in Learning Accounting) and ADEQ (Adequacy of Teaching and Training). Respondents rated their perceptions of ASP on a five-point Likert scale with statements ranging from *'Strongly disagree'* to '*Strongly agree'*.

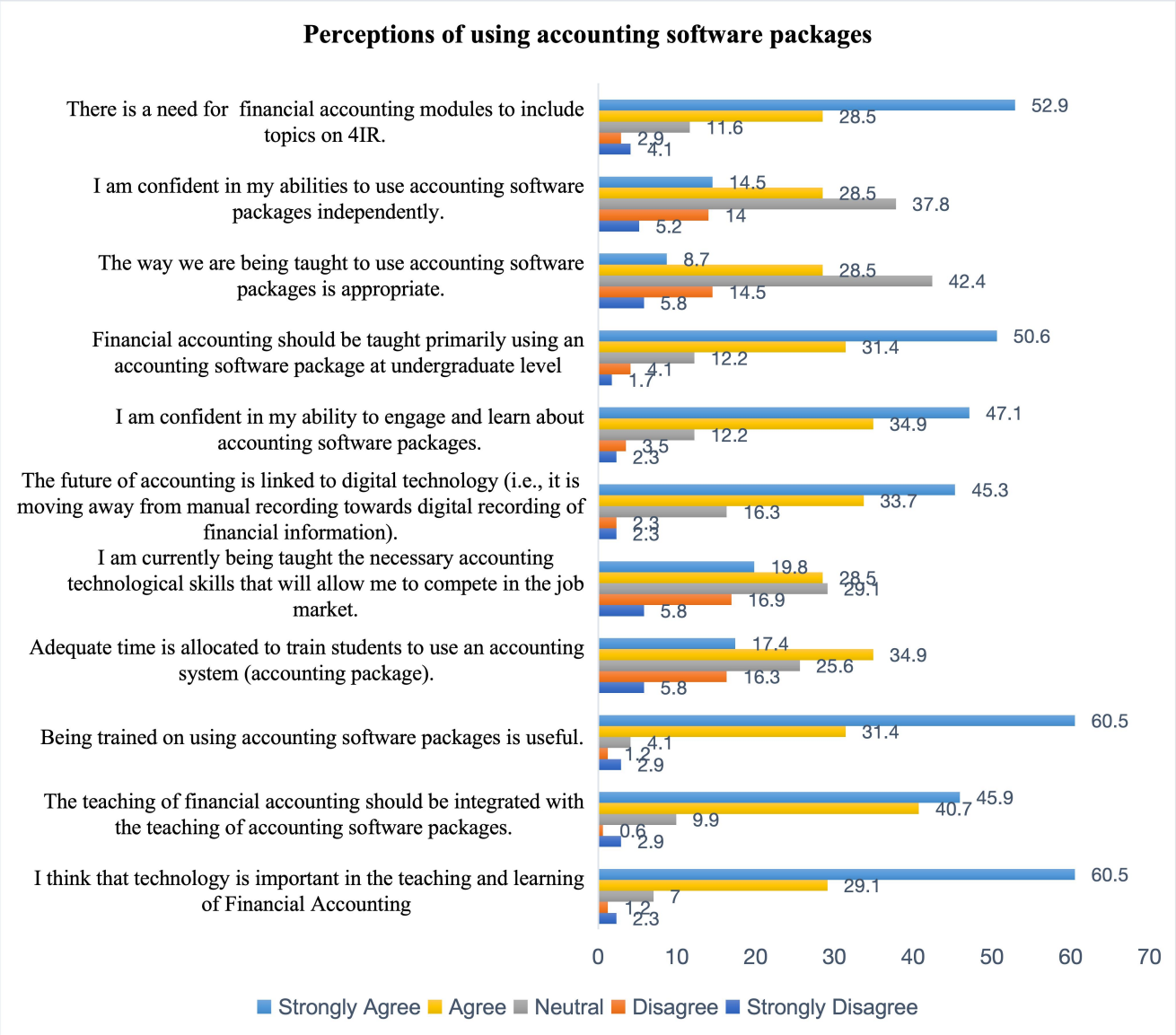

Fig 3. Perception of Accounting Software Packages (ASPs)

As indicated, two composite variables, IMP and ADEQ, were identified; therefore, the findings will be presented in terms of these two composite variables.

Importance of using ASP in learning accounting (IMP)

The importance of using accounting software packages for learning financial accounting was assessed among respondents.

Figure 3 showed that:

- 91.9% (60.5% 'strongly agree' + 31.4% 'agree') of students agreed that being trained on using accounting software packages is useful.
- 89.6% (60.5% 'strongly agree' + 29.1% 'agree') of students agreed that ASP is important in the teaching and learning of financial accounting.
- 86.6% (45.9% 'strongly agree' + 40.7% 'agree') of students agreed that the teaching of financial accounting should be integrated with the teaching of accounting software packages.
- 82% (50.6% 'strongly agree' + 31.4% 'agree') of students agreed that financial accounting should be taught primarily using an accounting software package at the undergraduate level.
- 82% of students (47.1 % 'strongly agree' + 34.9 % 'agree') are confident in their abilities to engage with and learn about accounting software packages.
- 81.4% (52.9% 'strongly agree' + 28.5% 'agree') of students agreed that financial accounting modules should include topics on 4IR.
- 79% (45.3% 'strongly agree' + 33.7% 'agree') of students agreed that the future of accounting is linked to digital technology (i.e., it is moving away from manual recording towards digital recording of financial information).

The results indicated strong endorsement of ASP in the accounting curriculum. A total of 91.9% of students perceived that training in ASP is useful, and 89.6% agreed that ASP is important in the T&L of accounting. Support for integrating software training into accounting modules was also high, at 86.6%. In addition, 82% of respondents indicated that financial accounting should be taught primarily through accounting software at the undergraduate level. Confidence levels were notable, with 82% reporting that they feel capable of engaging with accounting software. Further, 81.4% supported the inclusion of 4IR topics, and 79% agreed that the future of accounting is shifting toward digital processes rather than manual ones. These figures collectively show a strong and consistent preference for technology-driven approaches in accounting education.

Adequacy using accounting software packages (ADEQ)

Respondents were asked to evaluate the adequacy of using accounting software packages in learning financial accounting.

Figure 2 revealed that:

- 64.9% (30% 'strongly agree' + 34.9% 'agree') of students agreed that adequate time is allocated to train students to use an accounting system (accounting package).
- 48.3% (19.8% 'strongly agree'+28.5% 'agree') of students agreed with the statement that students are currently being taught the necessary accounting technological skills that will allow them to compete in the job market.

- 43% (14.5% 'strongly agree' + 28.5% 'agree') of students are confident in their abilities to engage and learn about accounting software packages independently.
- 37.2% (8.7% 'strongly agree' + 28.5% 'agree') of students agreed that accounting software packages are being taught in an appropriate way.

The findings suggested that although students value ASP, many students believe that current teaching practices do not fully meet the requirements necessary for the job market. A majority of 64.9% believed that sufficient time is allocated for training on accounting systems. However, only 48.3% indicated that they were being taught the technological skills needed to compete in the job market. Confidence in independent learning was also limited, with just 43% indicating that they can comfortably engage with accounting software packages (ASPs) on their own. Furthermore, only 37.2% agreed that accounting software is being taught in an appropriate manner. These results show noticeable gaps between students' expectations/perceptions and their practical experiences with technology-related accounting instruction.

Inferential analysis on students' perceptions of accounting software packages and technology

Table 2 below summarises the participants' responses when asked to indicate their perceptions about using accounting software packages.

Table 2. Perceptions of using accounting software packages

Item	Responses as Frequency (%)					N	Mean (SD)	t #	Df	P - value
	Strongly disagree	Disagree	Neutral	Agree	Strongly agree					
1. I think that ASP is important in the teaching and learning of financial accounting.	4 (2.3)	2 (1.2)	12 (7.0)	50 (29.1)	104 (60.5)	172	4.44 (0.860)	21.993	171	<.001*
2. The teaching of financial accounting should be integrated with the teaching of accounting software packages.	5 (2.9)	1 (0.6)	17 (9.9)	70 (40.7)	79 (45.9)	172	4.26 (0.883)	18.746	171	<.001*
3. Being trained on using accounting software packages is useful.	5 (2.9)	2 (1.2)	7 (4.1)	54 (31.4)	104 (60.5)	172	4.45 (0.867)	21.979	171	<.001*
4. Adequate time is allocated to train students to use ASP.	10 (5.8)	28 (16.3)	44 (25.6)	60 (34.9)	30 (17.4)	172	3.42 (1.129)	4.864	171	<.001*

5. I am currently being taught the necessary ASP skills that will allow me to compete in the job market.	10 (5.8)	29 (16.9)	50 (29.1)	49 (28.5)	34 (19.8)	172	3.40 (1.152)	4.499	171	<.001*
6. The future of accounting is linked to digital technology (i.e., it is moving away from manual recording towards digital recording of financial information).	4 (2.3)	4 (2.3)	28 (16.3)	58 (33.7)	78 (45.3)	172	4.17 (0.945)	16.296	171	<.001*
7. I am confident in my ability to engage and learn about accounting software packages.	4 (2.3)	6 (3.5)	21 (12.2)	60 34.9	81 (47.1)	172	4.21 (0.950)	16.687	171	<.001*
8. Financial accounting should be taught primarily using an accounting software package at the undergraduate level.	3 (1.7)	7 (4.1)	21 (12.2)	54 (31.4)	87 (50.6)	172	4.25 (0.944)	17.374	171	<.001*
9. The way we are being taught to use accounting software packages is appropriate.	10 (5.8)	25 (14.5)	73 (42.4)	49 (28.5)	15 (8.7)	172	3.20 (0.989)	2.621	171	.010*
10. I am confident in my abilities to use accounting software packages independently.	9 (5.2)	24 (14.0)	65 (37.8	49 (28.5)	25 (14.5)	172	3.33 (1.054)	4.122	171	<.001*
11. There is a need for financial accounting modules to include topics on 4IR.	7 (4.1)	5 (2.9)	20 (11.6)	49 (28.5)	91 (52.9)	172	4.23 (1.039)	15.554	171	<.001*

 # One-sample t-test: mean compared to '3.'
** Significant at 95% level*

Table 2 results indicated that:

- The mean values and standard deviations ranged from $M = 4.45$, $SD = 1.152$ (the highest), to $M = 3.20$, $SD = 0.883$ (the lowest).

- I think that ASP is important in the teaching and learning of financial accounting: *M* = 4.44, *SD* = 0.860; t (171) = 21.993; p<.001.
- The teaching of financial accounting should be integrated with the teaching of accounting software packages: *M* = 4.26, *SD* = 0.883; t (171) = 18.746; p<.001.
- Being trained on using accounting software packages is useful: *M* = 4.45, *SD* = 0.867; t (171) = 21.979; p<.001.

Inferential data analysis was performed to determine whether there was significant agreement or disagreement about the benefits of using ASP.

Importance of using technology in learning accounting

Table 3, below, shows the construct (IMP) ranking of the information sources based on their mean values. This analysis was conducted to determine whether there was significant agreement or disagreement with the statements regarding the perceived importance of accounting software packages in learning financial accounting.

Table 3. Importance of inclusion (IMP)

Order of agreement	Statement	Mean
1.	Being trained in using accounting software packages is useful.	4.45
2.	I think that technology is important in the teaching and learning of financial accounting.	4.44
3.	The teaching of financial accounting should be integrated with the teaching of accounting software packages	4.26
4.	Financial accounting should be taught primarily using an accounting software package at the undergraduate level.	4.25
5.	There is a need for financial accounting modules to include topics on 4IR.	4.23
6.	I am confident in my ability to engage and learn about accounting software packages.	4.21
7.	The future of accounting is linked to digital technology (i.e., it is moving away from manual recording towards digital recording of financial information).	4.17

Significant agreement with all the statements, as the mean values for all items are above 4.

Table 3 results indicate that:

- Being trained on using accounting software packages is useful: This item had the highest mean value *(M* = 4.45).
- I think that ASP is important in the teaching and learning of financial accounting, which had the second-highest mean value (*M*=4.44).
- The teaching of financial accounting should be integrated with the teaching of accounting software packages, which had the third highest mean value (*M* = 4.26).

PONTE
Vol. 82 No. 2, 2026 Florence, Italy
ISSN: 0032-423X E-ISSN:0032-6356 International Journal of Sciences and Research

The inferential data analysis revealed that students significantly agree that ASP is important in the learning of financial accounting, as all statements had high mean values above '4'. The statement, 'Being trained on using accounting software packages is useful,' had the highest mean value *(M* = 4.45). 'I think that ASP is important in the teaching and learning of financial accounting' had the second-highest mean value (*M* =4.44). 'The teaching of financial accounting should be integrated with the teaching of accounting software packages' had the third highest mean value (*M*= 4.26).

Adequacy of teaching using accounting software packages (ADEQ)

Table 4, below, shows the construct (ADEQ) ranking of the information sources based on their mean values. This analysis was performed to determine whether there was significant agreement or disagreement with the statements regarding the perceived adequacy of using accounting software packages in learning financial accounting.

Table 4. Adequacy of ADEQ is ranked in descending order by mean value

Order of agreement	Statement	Mean
1.	Adequate time is allocated to train students to use an ASP.	3.42
2.	I am currently being taught the necessary accounting technological skills that will allow me to compete in the job market.	3.40
3.	I am confident in my abilities to use accounting software packages independently.	3.33
4.	The way we are being taught to use accounting software packages is appropriate.	3.20

All mean values are above '3', indicating significant agreement.

Table 4 results indicated that:

- Respondents indicated that adequate time is allocated for training students to use accounting software packages, as this item had the highest mean (*M*= 3.42).
- Respondents significantly agreed that they are being taught the necessary accounting technological skills, which would allow them to compete in the job market, as this statement had the second-highest mean value (*M*= 3.40).
- The respondents' confidence in their abilities to use accounting software packages independently ranked second lowest, with a mean value of 3.33.
- Respondents ranked the way they are being taught to use accounting software packages slightly low, as this item had the lowest mean *(M*= 3.20) of all items.

Inferential data analysis revealed that students strongly agree that the use of technology, specifically accounting software packages, is adequate for teaching and learning financial accounting, as all mean values exceed three. They are, however, low when compared to the mean values relating to the importance of using accounting software packages in the teaching and learning of financial accounting, which were above 4.

PONTE
Vol. 82 No. 2, 2026 Florence, Italy
ISSN: 0032-423X *E-ISSN:*0032-6356 International Journal of Sciences and Research

DISCUSSION

The analysis of the survey data reveals a significant disparity between students' positive perception of Accounting Software Packages (ASPs) and their limited practical knowledge regarding specific ASPs. This fundamental contradiction aligns with the argument made by (Mahambo, 2020) that traditional, outdated accounting curricula fail to adequately prepare graduates for the modern professional environment. The study utilised the Technology Acceptance Model (TAM) as its theoretical framework, selecting the perceived usefulness construct as its core foundation. The robust findings in Figure 2 confirm the model's relevance, showing that students overwhelmingly have positive perceptions of ASP, with 91.9% indicating that training with the software is useful. This high theoretical acceptance aligns with the literature; students recognise technology's importance for learning financial accounting, a finding consistent with Che Ku Kassim et al. (2019), who highlighted how ICT and computer technologies enhance learning by simulating real-world scenarios. Furthermore, Boulianne (2014) provided evidence that a hybrid approach, combining traditional methods with software use, yields the best results for understanding the accounting cycle.

Despite this strong theoretical foundation and recognition of utility, a significant practical knowledge gap persists. Figure 1 indicates that a large proportion of students lack familiarity with key industry software: substantial percentages reported little to no knowledge of QuickBooks (36.6%), Sage (45.3%), Pastel Accounting, and SAP Accounting Software, while a majority (62.2 %) had never heard of Xero. This absence of in-depth knowledge is underscored by the fact that no single ASP received a significant score for the statement, *"I have heard of it and know a lot about it".* This situation highlights a significant disparity between student perception and educational reality.

While students acknowledge the value of technology, the data suggests the curriculum is insufficient. Although 64.9 % of students agreed that adequate time is allocated for system training, this is contradicted by lower scores for confidence and curriculum quality: only 48.3% of students agreed they are being taught necessary technological skills for the job market, and a mere 37.2% agreed that the way ASP is taught is appropriate. The finding that only 43% of students feel confident learning about ASP independently further highlights this deficiency. This lack of effective training resonates with the conclusion reached by Dingus (2021) that HEIs are not effectively teaching graduates to utilise ASP.

Although students are generally comfortable as "digital natives" who interact with mobile devices daily Staples et al., 2018), Kinash et al. (2012) found they do not consider themselves technologically skilled for academic purposes and still require focused technical training. Consequently, while the TAM framework confirms the high perceived usefulness of ASP among students, the current educational experience is failing to provide the specific, practical instruction required to bridge the gap between theoretical understanding and professional competence. In line with the findings of Dingus (2021) and Mahambo (2020), this study underscores that HEIs are not effectively preparing graduates to use essential accounting software. Nonetheless, there are limitations, as these findings may not apply to all higher education institutions (HEIs).

CONCLUSIONS

The paper effectively examined undergraduate students' perceptions at a South African HEI regarding ASP and its impact on their financial accounting learning, utilizing both descriptive and inferential analysis. The findings reveal a significant paradox: while students overwhelmingly recognize the importance of technology, particularly accounting software, for their future careers, their actual knowledge and practical skills in this area are notably limited. This disconnect highlights a critical gap between student expectations and the current academic curriculum. The analysis confirmed a high level of student agreement on the importance of ASP in teaching and learning financial accounting, with a large majority expressing the belief that training in accounting software is beneficial. However, students reported that the time allocated for training on ASP is insufficient, and they are not being taught the necessary ASP skills to be competitive in the job market. They also expressed low confidence in their ability to use accounting software independently. In addition, incorporating business simulations is a valuable teaching method for accounting education. By implementing these changes, the HEIs can bridge the gap between theoretical knowledge and practical application, thereby enhancing graduates' employability and ensuring they are well-prepared for the evolving demands of the accounting profession.

REFERENCES

Ahmed, V., & Opoku, A. (2022). Technology supported learning and pedagogy in times of crisis: the case of the COVID-19 pandemic. *Education and information technologies*, *27*(1), 365-405.

Ali, W. (2020). Online and remote learning in higher education institutes: A necessity in light of COVID-19 pandemic. *Higher education studies*, *10*(3), 16-25.

Asonitou, S. (2015, 17 September 2015). *The evolution of accounting education and the development of skills* 11th Interdisciplinary Workshop On Intangibles, Intellectual Capital And Extra-Financial Information. Conference Paper, Athens, Greece.

Azli, W., Shah, P. M., & Mohamad, M. (2018). Perception on the usage of mobile assisted language learning (MALL) in English as a second language (ESL) learning among vocational college students. *Creative Education*, *9*(01), 84-98.

Bhat, R. A. (2023). The Impact of Technology Integration on Student Learning Outcomes: A Comparative Study. *International Journal of Social Science, Educational, Economics, Agriculture Research and Technology (IJSET)*, *2*, 592-596.

Boulianne, E. (2014). Impact of accounting software utilization on students' knowledge acquisition. *Journal of Accounting & Organizational Change*, *10*(1), 22-48.

Bozalek, V., Ng'ambi, D., & Gachago, D. (2013). Transforming teaching with emerging technologies: Implications for higher education institutions. *South African Journal of Higher Education*, *27*(2), 419-436.

Cele, W.S. (2022). *The applicability of accounting information systems for the Financial Accounting curriculum in the Fourth Industrial Revolution era: A case study at the Durban University of Technology (DUT)* [Dissertation, Durban University of Technology]. Durban.

Chawla, D., & Sodhi, N. (2011). *Research methodology: Concepts and cases*. Vikas Publishing House.

Che Ku Kassim, C. K. H., Ahmad, S., Mohd Nasir, N. E., Wan Mohd Nori, W. M. N., & Mod Arifin, N. N. (2019). Environmental reporting by the Malaysian local

governments. *Meditari Accountancy Research*, *27*(4), 633-651. https://doi.org/10.1108/medar-02-2019-0444

Daff, L. (2021). Employers' perspectives of accounting graduates and their world of work: Software use and ICT competencies. *Accounting Education*, *30*(5), 495-524.

Dingus, A. (2021). *Technology in Accounting: A qualitative study of undergraduate preparedness* [Undergraduate Honors Theses, East Tennessee State University]. Tennessee https://dc.etsu.edu/honors/634

Dlamini, B., & Schutte, D. P. (2025). An evaluation of the adoption of cloud accounting by SMEs in Zimbabwe. *International Journal of Economics and Financial Issues*, *15*(1), 288.

Elaine Gioiosa, M., & Kinkela, K. (2019). Active learning in accounting classes with technology and communication skills: A two-semester study of student perceptions. *Journal of Education for Business*, *94*(8), 561-568.

Eljak, H., Ibrahim, A. O., Saeed, F., Hashem, I. A. T., Abdelmaboud, A., Syed, H. J., Abulfaraj, A. W., Ismail, M. A. B., & Elsafi, A. (2023). E-learning-based cloud computing environment: A systematic review, challenges, and opportunities. *IEEE Access*, *12*, 7329-7355.

Erasmus, L. J., & Fourie, H. (2018). Inclusive accountancy programmes in South African higher education: A revised teaching approach. *Accounting Education*, *27*(5), 495-512.

Gioiosa, M. E., & Kinkela, K. (2019). Classroom exercises with technology and communication skills: Students' perceptions. *Journal of International Education in Business*, *12*(1), 2-13.

Graham, L., Williams, L., & Chisoro, C. (2019). Barriers to the labour market for unemployed graduates in South Africa. *Journal of Education and Work*, *32*(4), 360-376.

Habashi, J. I. (2021). Developing the education for the students in the Business Schools Implementing of Teaching Computerized Accounting Software in business courses at the Universities.

Herbert, I. P., Rothwell, A. T., Glover, J. L., & Lambert, S. A. (2021). Does the changing world of professional work need a new approach to accounting education? *Accounting Education*, *30*(2), 188-212. https://doi.org/10.1080/09639284.2020.1827446

Hermawan, A., Achmad, W., & Yulianah, Y. (2022). The role of information and communication technology in accounting education in the digital age. *Research and Development Journal of Education*, *8*(2), 926-933.

Herrador-Alcaide, T., Montserrat, H.-S., & Sanguino, R. (2019). Feelings of satisfaction in mature students of financial accounting in a virtual learning environment: an experience of measurement in higher education. *International Journal of Educational Technology in Higher Education*, *16*. https://doi.org/10.1186/s41239-019-0148-z

Imene, F., & Imhanzenobe, J. (2020). Information technology and the accountant today: What has really changed? *Journal of Accounting and Taxation*, *12*(1), 48-60.

Jackson, D., & Meek, S. (2021). Embedding work-integrated learning into accounting education: The state of play and pathways to future implementation. *Accounting Education*, *30*(1), 63-85.

Jim, E. U., Chinwe, O. N., & Olali, C. F. (2024). Utilization of Accounting Software Packages and Employability of Accounting Education Graduates. *ESCAE Journal of Management and Security Studies (EJMSS) 4*(2), 200-210.

Joshi, M., & Chugh, R. (2009). New paradigms in the teaching and learning of accounting: Use of educational blogs for reflective thinking. *International Journal of education and development using ICT*, *5*(3), 6-18.

Kinash, S., Brand, J., & Mathew, T. (2012). Challenging mobile learning discourse through research: Student perceptions of Blackboard Mobile Learn and iPads. *Australasian journal of educational technology*, *28*(4).

Kolding, M., Sundblad, M., Alexa, J., Stone, M., Aravopoulou, E., & Evans, G. (2018). Information management–a skills gap? *The Bottom Line*, *31*(3/4), 170-190.

Kottara, C., Asonitou, S., & Kavalieraki-Foka, D. (2025). A Conceptual Framework for Student Retention in an Advanced Financial Accounting Course: Traditional vs. Blended Learning Environments. *Trends in Higher Education*, *4*(3), 30.

Lacy, S., Gills, C., Walker, F., Reedy, C., Runnels, T., Mala, T., Upton, H., Brieno, C., Rodriguez, S., & Perez, E. (2019). Accounting System Features: Usage for Different Types of Businesses. *International Journal of Recent Research Aspects*, *6*(3).

Lim, F. P. C. (2013). Impact of information technology on accounting systems. *Asia-pacific Journal of Multimedia Services Convergent with Art, Humanities, and Sociology*, *3*(2), 93-106.

Lusher, A., Huber, M. M., & Valencia, J. M. (2012). Empirical evidence regarding the relationship between the computerized classroom and student performance in introductory accounting. *The Accounting educators' journal*, *22*(1), 1-23.

Machera, R. P., & Machera, P. C. (2017). Computerised Accounting Software; A Curriculum That Enhances an Accounting Programme. *Universal journal of educational research*, *5*(3), 372-385.

Mahambo, C. T. (2020). Accounting curriculum in the digital era: Suggestions for preparing Botswana's tertiary accounting graduates. *Research Journal of Finance and Accounting*, *11*(16), 15-21.

Makhathini, L., & Isabirye, A. (2025). Systemic Factors Influencing Student Performance in Accounting Education: A South African Perspective. *Journal of Ecohumanism*, *4*(4), 1254-1268.

Mandava, H. (2024). Streamlining enterprise resource planning through digital technologies. *World Journal of Advanced Engineering Technology and Sciences*, *12*(2), 719–725

Marriott, N. (2004). Using computerized business simulations and spreadsheet models in accounting education: a case study. *Accounting Education*, *13*(sup1), 55-70.

Marshall, B., Mortenson, K., Bourne, A., & Price, K. (2010). Visualizing basic accounting flows: Does XBRL+ model+ animation = understanding? *The International Journal of Digital Accounting Research*, *10*(1), 27-54.

Mhlanga, D., & Moloi, T. (2020). COVID-19 and the digital transformation of education: What are we learning on 4IR in South Africa? *Education sciences*, *10*(7), 180.

Mostert, S., van Wyk, M., & Wessels, R. (2025). South African accounting students' perceptions on soft skills development in an interdisciplinary case study. Frontiers in Education,

Mujiono, M. N. (2021). The shifting role of accountants in the era of digital disruption. *International Journal of Multidisciplinary: Applied Business and Education Research*, *2*(11), 1259-1274.

Murrar, A., Batra, M., Paz, V., Asfour, B., & Balmakhtar, M. (2022). Employability of job applicants in skilful jobs: commonality in employer and employee perspectives. *International Journal of Manpower*, *43*(6), 1285-1300.

O'shea, M. A., Bowyer, D., & Ghalayini, G. (2022). Future proofing tomorrow's accounting graduates: skills, knowledge and employability. *Australasian Accounting, Business and Finance Journal*, *16*(3).

Ohei, K. N., Brink, R., & Abiodun, A. (2019). Information and Communication Technology (ICT) graduates and challenges of employability: A conceptual framework for enhancing employment opportunities in South Africa. *Gender and Behaviour*, *17*(3), 13500-13521.

Papageorgiou, E., Van der Merwe, N., Terblanche, W., & Lubbe, I. (2024). Perceptions of using e-learning applications in accounting at residential universities in South Africa: a social justice lens. *South African Journal of Higher Education*, *38*(6), 203-225.

Pargmann, J., Riebenbauer, E., Flick-Holtsch, D., & Berding, F. (2023). Digitalisation in accounting: a systematic literature review of activities and implications for competences. *Empirical Research in Vocational Education and Training*, *15*. https://doi.org/10.1186/s40461-023-00141-1

Passarelli, A. M., & Kolb, D. A. (2023). Using experiential learning theory to promote student learning and development in programs of education abroad. In *Student learning abroad* (pp. 137-161). Routledge.

Pauceanu, A. M., Rabie, N., & Moustafa, A. (2020). Employability under the fourth industrial revolution. *Economics & Sociology*, *13*(3), 269.

Petersen, F. (2020). Preparing graduates for the workplace. *Mail & Guardian*. https://mg.co.za/article/2020-03-06-preparing-graduates-for-the-workplace/

Rahahle, M. Y., Haija, A. A. A., Azzam, M., Anagreh, S., Maabreh, H. M. A., Saatchi, S. G., Sarram, M., Dawood, D. A., Al-Hawary, S. I. S., & Al-Momani, A. a. (2024). Evaluating the impact of e-accounting systems on firm performance: a structural equation modeling approach. In *Artificial Intelligence and Economic Sustainability in the Era of Industrial Revolution 5.0* (pp. 1193-1209). Springer.

Rhodes, N., & Taylor, A. (2024). *Navigating the integration of IT in accounting education: A South African University case study* (P. Firenze, Ed. 14th ed.). Filodiritto Editore. https://doi.org/https://doi.org/10.26352/I620_2384-9509

Richardson, V. J., & Shan, Y. (2019). Data Analytics in the Accounting Curriculum. In T. G. Calderon (Ed.), *Advances in Accounting Education: Teaching and Curriculum Innovations* (Vol. 23, pp. 0). Emerald Publishing Limited. https://doi.org/10.1108/s1085-462220190000023004

Rîndaşu, S.-M. (2017). Emerging information technologies in accounting and related security risks–what is the impact on the Romanian accounting profession. *Journal of Accounting and Management Information Systems*, *16*(4), 581-609.

Sahin, Y. G., & Celikkan, U. (2020). Information technology asymmetry and gaps between higher education institutions and industry. *Journal of Information Technology Education. Research*, *19*, 339.

Salem, S. (2025). The Empowering Future Accountants: A Hands-On Approach to Digital Transformation in Accounting Education Through Cloud-Based Tools. *Engagement: Jurnal Pengabdian Kepada Masyarakat*, *9*(1), 63-78.

Senik, R., & Broad, M. (2011). Information technology skills development for accounting graduates: Intervening conditions. *International Education Studies*, *4*(2), 105-110.

Shamsudin, A., Khan, M. N. A. A., & Jusoh, A. (2025). Emerging Technologies Revolutionizing the Accounting Profession–Practical Applications. *Information Management and Business Review*, *17*(1), 126-136.

Sharifov, M., Safikhanova, S., & Mustafa, A. (2021). Review of prevailing trends, barriers, and future perspectives of learning management systems (LMSs) in higher education institutions. *International Journal of Education and Development using Information and Communication Technology*, *17*(3), 207-216.

Sledgianowski, D., Gomaa, M., & Tan, C. (2017). Toward integration of Big Data, technology, and information systems competencies into the accounting curriculum. *Journal of Accounting Education*, *38*, 81-93.

Staples, J., Chandler, C. W., & Lowe, S. K. (2018). Accounting student perceptions of tablet technology for academic success. *Journal of Business and Accounting*, *11*(1), 127-139.

Szyszka, M., Tomczyk, Ł., & Kochanowicz, A. M. (2022). Digitalisation of schools from the perspective of teachers' opinions and experiences: The frequency of ICT use in education, attitudes towards new media, and support from management. *Sustainability*, *14*(14), 8339.

Talan, T. (2021). The Effect of Computer-Supported Collaborative Learning on Academic Achievement: A Meta-Analysis Study. *International Journal of Education in Mathematics, Science and Technology*, *9*(3), 426-448.

Twyford, E., & Dean, B. A. (2024). Inviting students to talk the talk: developing employability skills in accounting education through industry-led experiences. *Accounting Education*, *33*(3), 296-318. https://doi.org/10.1080/09639284.2023.2191288

Valencia-Arias, A., Chalela-Naffah, S., & Bermúdez-Hernández, J. (2019). A proposed model of e-learning tools acceptance among university students in developing countries. *Education and information technologies*, *24*(2), 1057-1071.

van den Berg, E., & Rothmann, S. (2025). Self-perceived employability, well-being and institutional embeddedness of accounting students. *South African Journal of Business Management*, *56*(1), 1-11.

Venkatesh, V. (2000). Determinants of perceived ease of use: Integrating control, intrinsic motivation, and emotion into the technology acceptance model. *Information systems research*, *11*(4), 342-365.

Venkatesh, V., & Bala, H. (2008). Technology acceptance model 3 and a research agenda on interventions. *Decision sciences*, *39*(2), 273-315.

Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management science*, *46*(2), 186-204.

Yidana, P., Asapeo, A., & Laar, S. K. (2023). Challenges facing online teaching and learning in African higher education institutions: Empirical review. *European Journal of Open Education and E-learning Studies*, *8*(2).