Technology Integration in Education: Bridging the Digital Skills Gap

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Abstract

The integration of technology in accounting education is crucial for preparing students to meet the demands of the modern workforce. This paper explores the significance of incorporating technological tools and platforms in accounting curricula, emphasizing the need for faculty readiness and student preparedness. Faculty readiness involves not only the acquisition of technical skills but also the ability to effectively integrate these tools into teaching methodologies. Student preparedness, on the other hand, focuses on equipping learners with the necessary competencies to leverage technology in their future careers. Despite the clear benefits, challenges such as resistance to change, limited resources, and the need for continuous professional development pose significant barriers to successful technology integration. Addressing these challenges requires a collaborative effort from educational institutions, faculty, and students to create a conducive learning environment that embraces technological advancements. Research on how this integration can improve students' learning experience, particularly in accounting education is limited. Therefore, this study aims to gain insight into faculty and students' perspectives on technology integration as well as its challenges.

Keywords: Technology integration, faculty readiness, students' preparedness, challenges

1. INTRODUCTION

Under the leadership of Prime Minister Datuk Seri Anwar Ibrahim, Malaysia has made significant strides in technology and digital advancements. The establishment of the Ministry of Digital marks a pivotal step in driving the nation's digital transformation (Ministry of Digital, 2024). This ministry is tasked with ensuring Malaysia remains competitive in the global digital economy. Major investments from tech giants like Microsoft and Google, amounting to billions of dollars, are set to enhance the country's cloud infrastructure and AI capabilities, creating thousands of jobs (Microsoft, 2024; Google, 2024). In light of these developments, graduates from higher learning institutions are expected to possess a diverse set of skills. These include digital literacy, data analysis, programming, cybersecurity, cloud computing, critical thinking and effective communication (Khuraisah, Khalid, & Husnin, 2020). These skills are essential for navigating the rapidly evolving digital landscape and contributing to Malaysia's vision of becoming a leading digital economy.

However, based on a study conducted by Price Waterhouse Coopers (PwC) in 2021, it was found that only 19% of respondents from Malaysia reported possessing sufficient digital skills to effectively carry out their occupational responsibilities. In contrast, a majority of 57% indicated that their digital skills had shown enhancement since the onset of the pandemic, surpassing the global average of 40% (PwC, 2021). According to a subsequent study by PwC in 2023, 57% of the total respondents reported having some level of digital skills, with 46% of this group stating that they had further expanded their digital abilities over time. Additionally, the study revealed that 11% of the respondents who initially lacked sufficient digital skills were able to acquire them through on-the-job training or experience (PwC, 2023). The present analysis serves as a thought-provoking

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revelation for universities, prompting them to reassess their strategies in order to effectively facilitate, equip, and enhance the capabilities of their students for forthcoming professional endeavours.

It is essential to have a solid understanding of the issues that universities encounter when attempting to integrate technology into accounting programs (Munter & Clements, 2018). Higher education institutions face a major threat from the digital accounting profession. Accountants' job has changed from numerical precision and financial reporting, requiring a major re-evaluation of accounting education. Modern accountants must be skilled at navigating complex financial systems, using data analytics, and adjusting to rapid technological change. This study tackles a crucial question: How do students perceive the integration of technology into their education, and do they feel adequately prepared for the job market?

At TISSA-UUM, we have proactively embraced the transformative power of technology in almost each of the courses offered. Recognizing the evolving demands of the industry and the ever-increasing reliance on digital tools, TISSA-UUM has taken significant strides in incorporating cutting-edge accounting software into our curriculum. Among the software that had been integrated into tax courses at TISSA-UUM are Brasstax, YGL Taxcom and Superior Taxcom. By doing so, we have provided our students with invaluable hands-on experience in using a wide range of software applications. This forward-thinking approach not only enhances the educational experience but also equips our students with practical skills that are directly applicable in real-world accounting settings. Through our commitment to integrating accounting software seamlessly into our syllabus, we have cultivated a learning environment that reflects the demands of the modern accounting profession.

Taxation, as one of the subjects of specialization at TISSA-UUM, incorporates TaxCom software. In addition to TaxCom, Microsoft Excel was incorporated into the taxation paper. The purpose of integrating technology into the TISSA-UUM programme is to serve as a learning strategy in which students must implement the classroom-learned knowledge by filing tax returns and calculating the tax payable by individuals as well as companies. The hands-on experience will assist students in becoming perpetual learners who are knowledgeable, adaptable, competent, and prepared to enter the accounting profession. The incorporation of tax calculation software in the curriculum not only provides students with practical experience in tax computation, but also equips them with the necessary skills for professional environments where such software is commonly utilised to address routine duties. This objective aligns with the prescribed target of Sustainable Development Goal 4, which entails ensuring equitable and inclusive access to high-quality education for all young individuals, specifically graduates. Furthermore, the integration of digital technology within the accounting profession necessitates that students possess digital competencies in order to thrive within the contemporary work environment.

Nevertheless, there is a scarcity of study investigating the potential impact of integrating technology on students' preparedness for digitalization, particularly in the field of accounting taxation education. Hence, the primary objective of this study is to explore the learning experiences of students enrolled for Taxation subject through the software integration activity.

1.1   Problem Statement

The accounting profession has transitioned from its historical role as meticulous record-keepers to become indispensable strategic advisors in contemporary organizations (Hay, Helliar, & Kenyon, 2018). This transformation is driven by the pervasive influence of digital technologies, including automated financial systems, cloud-based accounting software, artificial intelligence (AI), and blockchain. These technological advancements have not only streamlined accounting processes but also ushered in new dimensions of data-driven decision-making. Consequently, the competencies required of accountants extend beyond conventional accounting knowledge to encompass proficiency in these transformative technologies. The implications of digital disruption for accounting education have been discussed in the literature, suggesting strategies for adaptation (Deutsch & Carver, 2019).

There is a notable mismatch between the education system and employers' requirements regarding technology competency among Malaysian graduates. Employers often report that graduates lack practical skills and hands-on experience with the latest technologies, as universities tend to focus more on theoretical knowledge (Yusoff et al., 2020). Additionally, the rapid pace of technological advancement means that university curricula can quickly become outdated, leaving graduates underprepared for the current demands of the industry (Ahmad, 2021). Furthermore, while digital literacy is increasingly essential across all job sectors, some graduates may not have had sufficient exposure to digital tools and platforms during their education (Rahman & Ismail, 2019). Employers also emphasize the importance of soft skills such as problem-solving, critical thinking, and

adaptability, which are sometimes underdeveloped in graduates, further complicating their transition into the workforce (Tan, 2022). Efforts to bridge this gap include updating curricula, increasing industry collaboration, and providing more practical training opportunities, but continuous adaptation is necessary to keep pace with technological advancements and industry needs.

TISSA-UUM has incorporated the tax computation assignment using TaxCom software and Microsoft Excel into the Principles of Taxation and Advanced Taxation courses. Using TaxCom software or Microsoft Excel, students are required to prepare and calculate the chargeable income based on the background and financial information of the taxpayers. Students are able to employ and develop skills regarding the calculation of taxes for individuals and businesses.

Since then, TISSA-UUM has not conducted research on how this technology integration could improve students' learning skills and prepare them for the accounting profession. While the concept of technological proficiency is acknowledged in principle, a disparity often exists between the theoretical discourse and the practical execution of technology integration within accounting education. Several thought-provoking arise. Thus, this study attempts to answer the research question: How do students perceive the integration of technology into taxation courses, and do they feel adequately prepared for the job market?

Therefore, it is essential to conduct this study to determine the extent to which the integration aids students in comprehending the concept of taxation, enhancing their digital skills, and preparing them for the demanding accounting profession in the era of digitalization. Hence this study aims to understand how students perceive the integration of technology in the taxation course and their readiness for the job market.

1.2   Significance of the Study

The significance of this research transcends its academic boundaries and reverberates through the corridors of educational institutions, the accounting profession, and the broader global context. Firstly, it addresses a critical issue within the realm of accounting education in Malaysia. As the nation positions itself as a hub of economic activity, the necessity for highly skilled and adaptable accountants cannot be overstated. A rigorous investigation into technology integration within accounting education is indispensable to ensure that graduates possess the requisite skills and knowledge, not only for academic success but also for immediate employability.

Secondly, this study extends its ramifications to the international arena. Malaysia's vibrant trade relationships and multicultural business environment render it a microcosm of the challenges and opportunities confronting accountants worldwide. The insights derived from this research hold the potential to illuminate best practices and inform policy decisions within the global accounting education community.

Third, this study contributes to serving as evidence that students at TISSA-UUM are not only enhances their understanding of core accounting principles but also equipped with practical proficiency in utilizing many software applications. Exposure to a wide range of accounting software fosters adaptability, preparing students for the dynamic nature of the modern accounting profession, where the ability to navigate and leverage diverse software platforms is crucial for success. Hence, it will enhance the students' appeal to future employers and set them on a path to success in the workforce.

Furthermore, this research contributes to the existing body of knowledge concerning educational practices and the intricacies of technological integration. It offers nuanced insights into the dynamics of implementing technology-related coursework and practical training within a specific academic discipline, thereby advancing the discourse on educational innovation and pedagogical effectiveness.

2. LITERATURE REVIEW

2.1   Technology integration in accounting education

The rapid advancement of digital technologies has brought significant changes to the accounting profession, necessitating a corresponding evolution in accounting education. The Fourth Industrial Revolution, characterized by the integration of artificial intelligence (AI), blockchain, cloud computing, and data analytics, has transformed the roles and responsibilities of accountants. As a result, the traditional accounting curriculum, which focused primarily on manual bookkeeping and financial reporting, must be restructured to include the technological competencies required in modern accounting practices. Hay, Helliar, and Kenyon (2018) argue that the future of accounting lies in the ability to harness these emerging technologies, and they propose a

curriculum framework that integrates digital tools and software into accounting education. Their research emphasizes the importance of preparing students for a digitally driven industry by incorporating courses on data analytics, AI in accounting, and the use of cloud-based software for financial reporting and auditing.

Similarly, Clements and Munter (2018) provide evidence from a longitudinal study that shows the positive impact of technology-enhanced learning objectives on student outcomes in accounting education. They found that students who engaged with technology-integrated coursework demonstrated higher levels of understanding and retention of accounting concepts, as well as greater confidence in applying these skills in professional settings. However, the integration of technology into accounting education is not without challenges. According to Mohamed Zainal, Sapiei, and Zakaria (2018), universities face several obstacles in implementing technology-based curricula, including resource constraints, the need for faculty development, and the challenge of keeping pace with rapidly evolving technologies. Their research highlights the necessity of a multi-stakeholder approach, involving collaboration between educational institutions, industry professionals, and policymakers, to ensure that accounting graduates are equipped with the digital skills required in the workforce.

Moreover, Deutsch and Carver (2019) discuss the implications of digital disruption for accounting education, emphasizing the need for continuous adaptation and innovation in curriculum design. They argue that traditional pedagogical methods must be complemented with experiential learning opportunities, such as simulations and software-based assignments, to bridge the gap between academic knowledge and practical application. This approach not only enhances the learning experience but also aligns educational outcomes with industry expectations.

2.2   Faculty Readiness

Faculty readiness plays a crucial role in the successful integration of technology in accounting education. Munter and Clements (2018) stress the importance of faculty preparedness, which goes beyond simply being familiar with technology. Faculty members must be capable of embedding technology into their teaching in meaningful ways, ensuring that it enhances both learning outcomes and student engagement. This means not only understanding the tools and software relevant to accounting but also staying updated on the latest industry trends. Continuous professional development, including workshops and training, is essential for faculty to maintain a high level of competence in this rapidly changing field. From a pedagogical perspective, Chee Seng Tan and Linda English (2016) emphasize that integrating technology effectively requires more than just using new tools in the classroom. They argue that educators must adopt teaching methods that leverage technology to improve student learning. Active learning strategies, where students use technology to solve real-world accounting problems, help foster deeper engagement with the material. Additionally, blended learning approaches that combine online tools with in-person instruction offer students flexibility and allow them to learn at their own pace, which can enhance their understanding of complex topics.

The rapid pace of digital disruption in the accounting profession presents further challenges. Deutsch and Carver (2019) highlight how technologies such as artificial intelligence (AI), blockchain, and data analytics are transforming accounting practices. To keep up with these changes, faculty members need to adapt the curriculum to include emerging technologies and teach students how to apply these tools in professional contexts. This requires faculty to be knowledgeable about these innovations and to rethink traditional accounting subjects to incorporate the skills that future accountants will need in a tech-driven industry. A longitudinal study by Percy, Pettigrew, and Kiryowa (2019) offers a broader view of how digital technologies have impacted accounting education over time. The study reveals that technology integration is an ongoing process that continually reshapes both educational practices and the accounting profession itself. Faculty members must, therefore, be flexible and ready to update their teaching methods as the profession evolves. This includes not only teaching technical skills but also fostering critical thinking, ethical decision-making, and adaptability in a digital landscape, ensuring that students are prepared for the future of the profession.

Finally, Rovinj and Croatia (2019) discuss the major effects of digitalization on the accounting profession and its implications for education. They identify three key areas where digitalization is transforming accounting: the introduction of new digital solutions, changes in the way accounting tasks are performed, and shifts in education and training. Faculty members must be equipped to teach the latest digital tools and help students navigate the transition to a profession where automation and data analytics are increasingly prominent. As digitalization continues to reshape accounting, ongoing education and training for both students and faculty are essential to ensure that educators can deliver high-quality, relevant instruction. The studies highlight that faculty readiness is essential for effective technology integration in accounting education. Educators must be prepared to adopt new pedagogical approaches, stay informed about industry changes, and continuously refine their teaching strategies

to meet the demands of a digitally transformed accounting profession. This preparation will enable them to guide students toward success in an ever-evolving field.

2.3 Students' Perspectives and Preparedness

Understanding students' perspectives on technology integration is crucial for evaluating the effectiveness of such initiatives in accounting education. Students' perceptions of the relevance and utility of digital tools in their coursework can significantly influence their engagement and learning outcomes. Additionally, students' self-assessed technological competencies play a vital role in determining their readiness for the job market. Fauziah Sh. Ahmad, Noor Azizi Ismail, and Ee-Heng Moh (2015) conducted a comparative study of Malaysian and Australian students' perceptions of e-learning in accounting education. Their findings revealed that while students generally recognized the importance of digital skills, there were significant differences in their experiences and satisfaction with e-learning platforms. Malaysian students, in particular, expressed concerns about the adequacy of technological infrastructure and the level of support provided by their institutions. These concerns underscore the importance of ensuring that technology integration is accompanied by robust support systems to enhance students' learning experiences.

In a related study, White and Lord (2021) explored the digital skills of accounting graduates and their employability in the workforce. Their research highlights the increasing importance of digital competencies, such as proficiency in accounting software, data analysis tools, and cloud-based platforms, for successful career prospects. The study found that graduates who had extensive exposure to these technologies during their education were better prepared to meet the demands of the job market and were more competitive in securing employment.

Chitambara, Smith, and Muthaly (2019) further emphasize the importance of digital skills in preparing accounting graduates for the future. They propose a set of strategies for integrating these skills into accounting education, including the use of industry-standard software, collaboration with technology firms, and the incorporation of digital literacy modules into the curriculum. Their research suggests that a focus on digital skills not only enhances students' employability but also prepares them for leadership roles in the evolving landscape of the accounting profession.

However, the journey toward nurturing digital competencies in accounting students is not without challenges. Gulin, Hladika & Valenta (2019) identify three key effects of digitalization on the accounting profession: the increasing reliance on digital solutions for performing accounting tasks, the need for continuous education and training in new technologies, and the transformation of traditional accounting roles. These challenges highlight the importance of preparing students not only for current technological demands but also for future developments in the field. Finally, Malau (2021) discusses the potential impact of Industrial Revolution 4.0 on accounting education, arguing that future accountants need to anticipate and adapt to both short-term and long-term changes in the industry. His research suggests that educational institutions must take a proactive approach in integrating emerging technologies into their curricula to ensure that graduates are not only proficient in current tools but also adaptable to future technological advancements.

2.4 Challenges of Technology Integration in Tax Education

One of the most significant challenges in integrating technology into tax education is ensuring that faculty members are adequately prepared to deliver technology-enhanced instruction. Many educators may lack experience with the latest software tools and digital platforms, which can hinder their ability to effectively incorporate these technologies into their teaching. Munter and Clements (2018) stress the importance of ongoing professional development for faculty, noting that without adequate training, the potential benefits of technology integration may not be fully realized.

Furthermore, the rapid pace of technological change requires educators to continuously update their skills and knowledge. This ongoing learning process can be time-consuming and may require significant institutional support in terms of resources and access to training programs. Institutions that fail to provide sufficient support for faculty development may struggle to implement technology integration effectively.

Implementing technology integration in tax education often requires substantial financial investment. Acquiring software licenses, updating hardware, and ensuring that all students have access to the necessary tools can be expensive, particularly for institutions with limited budgets. Additionally, maintaining up-to-date technological

infrastructure, such as computer labs and online learning platforms, is crucial for the effective delivery of technology-enhanced courses.

Resource constraints can also affect the quality of the learning experience for students. For example, insufficient access to software tools or inadequate technical support can lead to frustration and disengagement among students, ultimately undermining the effectiveness of the technology integration efforts. Mohamed Zainal, Sapiei, and Zakaria (2018) highlight the need for strategic planning and allocation of resources to address these challenges and ensure that all students have equal access to the benefits of technology integration.

The diversity of students in terms of their prior experience with technology presents another challenge in technology integration. While some students may be highly proficient with digital tools, others may lack basic technological skills, creating a digital divide within the classroom. This disparity can lead to unequal learning outcomes, with less tech-savvy students struggling to keep up with their peers.

3. CONCLUSION

The integration of technology into tax education is no longer a mere enhancement but a necessity for preparing future accountants for the digital age. The findings of this study are anticipated to provide lecturers, students and educational institutions with direction regarding how to integrate technology in the most effective manner in order to accomplish the goal of providing quality education. In addition, this study will increase the awareness of lecturers in determining the learning tasks that are well-developed as well as those that are the least developed. It will also serve as an additional motivating factor to adopt new tactics and measures for the purpose of enhancing the skills of students. It is anticipated that the explanation of anticipated findings with regard to the context of Malaysian higher learning institutions will be one of a kind, hence providing a fresh perspective on the integration of technology in accounting education particularly in tax education by Malaysian higher learning institutions.

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