Technology Integration in Taxation Education: A Qualitative Study on Student Perceptions and Digital Competencies

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ABSTRACT:
This study investigates the integration of tax computation software in taxation education and its influence on students' perceptions, technological competencies, and learning outcomes. Guided by the Technology Acceptance Model (TAM), the research adopts a qualitative design within the Advanced Taxation course at the Tunku Puteri Intan Safinaz School of Accountancy (TISSA-UUM). Superior TaxComp software was used as the primary intervention to provide hands-on experience in computing corporate tax liabilities. Data were collected through interviews, classroom observations, and rubric-based evaluations, and analysed using thematic analysis. Findings reveal two key dimensions: learner perceptions and learning outcomes. Students reported increased awareness of technology's role in accounting, perceived relevance of digital tools, and initial usability challenges that improved through peer collaboration. Observed outcomes include enhanced understanding of tax concepts, acquisition of technical and soft skills, and greater confidence in technology adoption. Interpreted through TAM, these results underscore the importance of perceived usefulness and ease of use in shaping positive attitudes toward technology. The study contributes to accounting education reform and supports Sustainable Development Goal 4 (Quality Education) by promoting inclusive, technology-driven learning that prepares graduates for the digital demands of the profession.

Keywords: Technology integration, Taxation education, Technology Acceptance, Digital Competencies, Sustainable Development Goal 4.

1. INTRODUCTION

The digitalisation of the global economy has significantly reshaped professional landscapes, particularly in fields such as accounting, where data-driven decision-making and technological proficiency are increasingly essential. Globally, the Fourth Industrial Revolution has accelerated the adoption of emerging technologies such as artificial intelligence (AI), blockchain, and automated financial systems, transforming both accounting

practice and pedagogy (McConville, 2023; Kasztelnik & Campbell, 2023). These developments necessitate a rethinking of accounting education to ensure graduates possess the digital competencies required for modern professional roles.

In Malaysia, this transformation is reflected in national initiatives such as the Malaysia Digital Economy Blueprint (MyDIGITAL), launched in 2021. The blueprint outlines strategic goals to position Malaysia as a digitally driven, high-income nation by 2030, including the development of 20,000 cybersecurity experts and 30,000 data professionals by 2025 (Malaysia Digital Economy Corporation, 2021). These targets underscore the urgent need for higher education institutions to produce graduates who are not only academically competent but also digitally capable. However, digital readiness among Malaysian professionals remains a concern. A study by PwC (2021) revealed that only 19% of employees felt adequately equipped with digital skills for their roles. Although improvements were noted in 2023 with 57% of respondents reporting moderate digital competency, only 46% experienced further development and just 11% acquired these skills through formal education. These findings highlight a critical gap in the integration of digital competencies within academic curricula, particularly in professional disciplines such as accounting.

Accounting as a discipline is built upon long-standing principles and regulatory frameworks that remain relatively stable over time. However, the profession itself is evolving rapidly, driven by technological advancements and the digitalisation of business processes. Scholars argue for curriculum frameworks that incorporate emerging technologies, emphasizing their transformative impact on accounting education (Jesus et al., 2024; Al-Hashimy et al., 2023). Technology-enhanced learning objectives significantly improve student engagement, retention, and critical thinking (Al-Hashimy et al., 2023). Despite these benefits, challenges such as resource limitations, infrastructure gaps, and faculty development persist, underscoring the need for institutional support and continuous professional development (Brunetti et al., 2020). Faculty members play a pivotal role in successful technology integration, as their readiness and capability to deliver technology-enhanced instruction directly influence student learning outcomes. While many educators recognize the importance of digital tools, they often lack training or resources to implement them effectively (Brunetti et al., 2020). Faculty development programs and access to updated software are essential to bridge this gap, particularly in specialized areas like taxation education where tools such as Superior TaxComp and Excel-based models are widely used.

Students' perceptions and self-assessed technological competencies are equally critical. Technology integration enhances learning flexibility and confidence in adapting to digital work environments (Hancock et al., 2025). Digital skills are strongly linked to employability, and strategies such as project-based learning and industry collaboration have been proposed to embed these skills into curricula (Daff, 2021; Andriani & Wahyudi, 2025). Future accountants must anticipate evolving roles and workplace expectations, including proficiency in data analytics and strategic decision-making (Obembe, 2025). Taxation, as a specialized area within accounting, is particularly affected by digitalisation. The use of tax software, e-filing systems, and automated computation tools has become standard practice. However, literature on technology integration in taxation education remains limited, creating a gap that this study seeks to address by examining faculty and student perspectives on technology use in taxation courses.

Technology integration in accounting education also aligns with Sustainable Development Goal 4 (SDG 4), which advocates for inclusive, equitable, and quality education. Embedding digital tools into curricula promotes lifelong learning and enhances employability, contributing to broader educational reforms aimed at reducing inequalities (United Nations, 2023). This study adopts the Technology Acceptance Model (TAM) as its theoretical foundation. TAM, developed by Davis (1989), explains technology adoption through perceived usefulness and ease of use, making it suitable for

analysing students' perceptions of digital tools in learning environments.

Despite proactive steps at institutions such as Tunku Puteri Intan Safinaz School of Accountancy (TISSA-UUM) where taxation courses incorporate tools like Superior TaxComp and Microsoft Excel but empirical evidence on the effectiveness of these initiatives remains scarce. This study aims to understand how students perceive the integration of technology into taxation courses and their self-assessed technological competencies and make recommendations on technology integration toward achieving education quality in alignment with SDG 4. Correspondingly, the research seeks to answer the following questions:

i. How do students perceive the integration of technology into taxation courses, and do they feel adequately prepared for the job market?
ii. How does technology integration in taxation courses contribute to achieving education quality as envisioned in SDG 4?

The significance of this research extends beyond academic inquiry. It addresses a pressing issue within Malaysian accounting education and offers transferable lessons for global contexts. By evaluating technology integration in taxation education, this study contributes to curriculum innovation, pedagogical effectiveness, and the broader discourse on quality education.

2. METHODOLOGY

This study employed a qualitative research design to explore the integration of Superior TaxComp software in taxation education and its impact on students' learning outcomes. The approach aimed to generate rich insights into digital readiness and pedagogical effectiveness within the context of higher education accounting programs.

2.1 Research Design and Theoretical Basis

This study adopted a classroom-based qualitative research design to examine the impact of technology integration on students' learning outcomes in taxation education. The study was guided by the Technology Acceptance Model (TAM) (Davis, 1989), which explains technology adoption through constructs such as perceived usefulness and perceived ease of use. TAM provided a theoretical lens for interpreting students' experiences with Superior TaxComp and their attitudes toward technology-enhanced learning.

The research was conducted during Semester 2 of the 2023/2024 academic session in the *Advanced Taxation* course at the Tunku Puteri Intan Safinaz School of Accountancy (TISSA-UUM). This course focuses on the principles and application of corporate tax computation in compliance with Malaysian tax regulations. The intervention centred on the use of Superior TaxComp software as a learning tool, aiming to enhance students' problem-solving and critical thinking skills while improving their digital literacy.

2.2 Participants and Learning Activities

The participants comprised undergraduate accounting students enrolled in the Advanced Taxation course. Three teaching groups participated, each consisting of approximately 40–45 students, resulting in a total sample of 130 students. Students were organized into smaller teams of five members, forming eight to nine groups per class.

Participant Profile:

- Program: Bachelor of Accounting
- Year of Study: Second year
- Age Range: 20–23 years
- Prior Exposure to Tax Software: Minimal (based on pre-intervention interviews)

Superior TaxComp was integrated into teaching activities to provide students with hands-on experience in computing corporate tax liabilities. Each team was assigned a simulated company profile and financial data and tasked with preparing Capital Allowance Schedules, Statutory Business Income, Chargeable Income, and Tax Liability using Superior TaxComp. This collaborative exercise simulated real-world tax computations, requiring students to input financial data, apply relevant tax laws, and generate accurate tax computations using the software.

2.3 Data Collection Procedures

Data collection was conducted in three stages to capture a comprehensive view of the learning experience:

1. Pre-intervention interviews with selected student group leaders assessed their preparedness, expectations, and prior experiences with technology integration.
   Sample question: "What is your preparation to start the Superior TaxComp project?"
2. Classroom observations during the implementation phase documented group interactions, problem-solving strategies, and engagement with the software. These observations provided contextual insights into collaborative learning and digital tool navigation.
3. Post-intervention interviews with the same student leaders gathered reflections on the learning process and perceived benefits of using Superior TaxComp.
   Sample question: "What are the skills that you gained by doing the TaxComp project?"

Additionally, students' presentations and group discussions were evaluated using critical thinking and problem-solving rubrics, providing structured criteria to assess depth of analysis, logical reasoning, and application of taxation knowledge.

2.4 Data Analysis

Qualitative data from interviews, observations, and rubric evaluations were analysed using thematic analysis, following the framework proposed by Braun and Clarke (2013). The process involved six phases:

1. Familiarization with data
2. Generating initial codes
3. Searching for themes
4. Reviewing themes
5. Defining and naming themes
6. Producing the report

Coding was iterative and conducted in multiple cycles to ensure depth and accuracy. Themes were mapped to TAM constructs where relevant, enabling interpretation of students' perceptions of technology integration in relation to perceived usefulness, ease of use, and attitude toward technology.

3. RESULTS AND DISCUSSION

Thematic analysis of interviews, classroom observations, and rubric-based evaluations surfaced two interrelated dimensions that explain how embedding Superior TaxComp shaped students' experiences in the Advanced Taxation course:

i. learner perceptions of technology integration and
ii. learning outcomes observed.

These dimensions reflect progression from initial awareness and relevance judgments to tangible competence and confidence gains. To provide clarity, each dimension is presented in a separate table, showing subthemes, their alignment with Technology Acceptance Model (TAM) constructs, and illustrative comments from participants.

3.1 Learner Perceptions of Technology Integration

Students consistently identified technology as integral to modern accounting work, emphasising its role in data analysis, statutory computations, and collaborative communication. Illustrative remarks point to enhanced analytical acuity and the practical application of tax rules, signalling that the classroom experience mirrored authentic professional contexts. This authenticity underpinned perceived relevance and value where students noted how hands-on tasks bridged theory and practice, clarified complex concepts, and strengthened retention.

However, learners also recognised skill gaps during first-time use, citing confusion in field mapping and the absence of beginner guidance. These early frictions initially challenged perceived ease of use (PEOU) but catalysed self-directed problem-solving and peer support as students progressed. **Table 1** summarizes these perceptions and their alignment with TAM constructs.

Table 1: Learner Perceptions of Technology Integration

Theme	Subtheme	TAM Construct	Illustrative Comments
Learner Perceptions of Technology Integration	Awareness of Technology's Role in Accounting	Perceived usefulness (PU)	"I have developed several key skills, including improved my ability to analyse financial data and apply tax law accurately... gain hands-on experience with tax computation software." [S19] "I have obtained valuable skills such as full awareness of tax rules and regulations... improved my communication and teamwork skills, as well as my understanding of ethical tax compliance norms." [S11] "Working with tax scenarios requires careful analysis of financial data... enhances my ability to think critically and solve problems." [S10]
	Perceived Relevance and Value	Perceived Usefulness (PU)	"Enhance my technical skills in accounting, taxation knowledge, critical thinking abilities, and familiarity with industry-standard software." [S13] "Provide hands-on experience, effectively bridging the gap between theoretical learning and practical implementation." [S17] "Enhances the learning experience... making it easier to understand complex tax concepts... improving overall

			comprehension and retention." [S5]
	Recognition of Skill Gaps	Perceived Ease of Use (PEOU)	"By using the Superior TaxComp, it is confusing where the item needs to put." [S14] "It does not provide any guideline to the first-time user like us... makes us more difficult to complete the task." [S20] "I took a period to navigate and use advanced tax software as a beginner." [S8] "I take a lot of time to understand how this application works... Working in teams also offered challenges in coordination and collaboration." [S3]

3.2 Learning Outcomes Observed

Observed outcomes further corroborate this trajectory. Students described improved content delivery which include simplified calculations, clearer visibility of statutory forms, and better understanding of Malaysian tax regulations. Beyond technical mastery, they reported growth in higher-order and transferable skills: analytical thinking, attention to detail, communication, teamwork, and time management. Learners also articulated confidence and self-improvement, noting that the project was 'challenging yet rewarding,' fostered critical thinking in team settings, and blended theory with real-life practice.

These outcomes align with attitude toward use (ATU) and behavioural intention (BI), as students expressed willingness to apply similar tools in future professional contexts. Table 2 presents these findings.

Table 2: Learning Outcomes Observed

Theme	Subtheme	TAM Construct	Illustrative Comments
Learning Outcomes Observed	Improved Content Delivery	Perceived Usefulness (PU)	"I can understand how the tax was calculated and how it was recorded. It will be easier for me to implement it in my workplace." [S11] "Superior TaxComp

			makes the calculation easier." [S6] "I've gained a better understanding of Malaysian tax laws and regulations." [S15]
	Skills Acquired and New Skills Developed	Attitude Toward Use (ATU)	"My analytical skills have improved, and I can now analyze and interpret complex financial and tax law data with ease... I also improved communication skills to present tax-related issues and solutions to the team clearly." [S15] "I have gained a comprehensive understanding of tax compliance, accounting standards, and financial regulations... I have developed a deeper insight into the complexities of tax systems." [S3]
	Learner Confidence and Self-Improvement	ATU/ Behavioral Intention (BI)	"Challenging yet rewarding... This project creates a sense of achievement and confidence in handling complex tax tasks." [S8] "The activities have significantly contributed to the development of essential skills... sharpened my critical thinking abilities... fostered my ability to work effectively in a team setting." [S21] "Superior TaxComp is really effective... gives a lot of hands-on, real-life

			experience that blends theoretical knowledge... the learning process is more wholesome and interesting." [S19]

3.3 Discussion

Interpreted through TAM, the patterns are mutually reinforced. Perceived usefulness was strengthened by authentic tasks that mirrored professional workflows, while perceived ease of use improved through repeated exposure and peer collaboration. These factors shaped positive attitudes toward technology and fostered intentions to apply similar tools in future professional contexts.

The integration of Superior TaxComp not only enhanced technical competence but also developed transferable skills such as teamwork and critical thinking, aligning with SDG 4 (Quality Education) by promoting inclusive, equitable, and relevant learning experiences. These outcomes underscore the importance of embedding digital tools in curricula to prepare graduates for technology-driven workplaces.

The combined results and discussion also point to actionable improvements. To amplify PU, course tasks should explicitly mirror end-to-end tax workflows (e.g., capital allowances → statutory business income → chargeable income → tax liability) and communicate employability benefits (accuracy, audit readiness, documentation standards). To sustain PEOU, faculty can provide onboarding artefacts quick-start guides, field-mapping sheets, short explainer videos and just-in-time support during early sessions. Finally, inclusive access (devices, software availability, peer-mentoring mechanisms) should be strengthened so all learners benefit equitably.

In summary, integrating Superior TaxComp enhanced students' awareness of technology's role, reinforced the perceived relevance of digital tools, and developed both technical and soft skills. While onboarding frictions were evident at the outset, the overall pattern shows that coherent design and targeted support convert initial challenges into confidence, preparedness, and lifelong learning dispositions; the outcomes that position graduates to meet the demands of a data-driven accounting profession.

4. CONCLUSION

The integration of Superior TaxComp aligns with Sustainable Development Goal 4 (Quality Education) by promoting inclusive and equitable learning opportunities and equipping students with digital competencies essential for employability. By bridging the gap between theoretical knowledge and practical application, this approach supports lifelong learning and strengthens the relevance of accounting education in the era of digital transformation.

Recommendations

To amplify the benefits of technology integration and address observed challenges, the following recommendations are proposed:

1. Structured Onboarding Support
   Develop quick-start guides, explainer videos, and field-mapping sheets to reduce initial friction and improve perceived ease of use.
2. Authentic Task Design
   Align classroom activities with end-to-end tax workflows (e.g., capital allowances → statutory business income → chargeable income → tax liability) to reinforce perceived usefulness and demonstrate real-world relevance.
3. Inclusive Access and Equity
   Ensure all students have access to devices and software, supported by peer mentoring and institutional resources to promote equitable learning experiences.
4. Faculty Development
   Provide training for instructors on

technology-enhanced pedagogy to sustain effective integration and maintain alignment with curriculum objectives.

5. Continuous Evaluation and Feedback
Incorporate student feedback loops and performance analytics to refine technology integration strategies and enhance learning outcomes.

By implementing these recommendations, higher education institutions can strengthen digital readiness, improve pedagogical effectiveness, and advance the broader agenda of quality education as envisioned in SDG 4.

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