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Factors Influencing the Use of Web-Based Learning in Accounting Education in the Capricorn District of Limpopo Province, South Africa

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Abstract. This study aimed to identify factors influencing the use of web-based learning (WBL) in teaching the Accounting curriculum in secondary schools of Capricorn District, Limpopo Province, South Africa. Using a mixed methods design, questionnaires collected quantitative data, while qualitative data was collected through interviews with ten purposively selected teachers. This broad study reports on the qualitative findings. The technology acceptance model (TAM) and the theory of reasoned action (TRA) underpinned the study. The results revealed that factors such as perceived usefulness, ease of use, subjective norms, attitudes towards computer use, and confidence played an important role in the adoption of this learning method. The teachers showed high interest in WBL, which can help them complete the curriculum effectively. These findings confirm the potential for the successful implementation of WBL in Accounting education in this context.

Keywords: accounting; implementation; technology acceptance model; theory of reasoned action; web-based learning

1. Introduction

The onset of the COVID-19 plague has drastically changed the education landscape. Due to strict social distancing regulations introduced by governments worldwide, the resultant closure of schools, and the disengagement of learners

from schooling, calls for adopting electronic learning (e-learning) gained momentum during the pandemic (Bubb & Jones, 2020). To this end, web-based learning (WBL) also became a critical platform in the education sector when the coronavirus spread worldwide (Azhar et al., 2022). However, the acceptance and use of the requisite technological tools for ensuring the continuation of effective teaching and learning has proven to be a severe challenge for schools, higher institutions of education and training providers. Of relevance to this study is the worsening of an already poor academic performance of learners in Accounting during and after COVID-19.

In the South African context, Motsoeneng et al. (2021) assert that, amid the COVID-19 era, the country had to respond to the pedagogical and technological demands of the 21st century. However, this was hampered by the fact that South African teachers frequently experienced challenges regarding creating a classroom environment conducive to and promoting collaborative (or cooperative) learning (Makunka, 2015). An extensive range of highly advanced gadgets is required to create such an environment and support effective and quality education. For this reason, Motsoeneng et al. (2021) reckon the South African teacher is

> "*duty-bound to adapt to the paradigm shift in education from a teacher-centred to a learner-centred approach. This paradigm shift emphasises student participation, which calls on accounting teachers to modify their methods following the Curriculum and Assessment Policy Statement (CAPS) and develop learners proficient in using technology.*" (p. 80)

As the custodian of CAPS, the Department of Basic Education has already played its part by encouraging and spearheading the adoption and usage of various technological gadgets, including web-based cooperative learning (Msiza et al., 2020).

Adopting WBL is inevitable, and accounting teachers need to adopt web-based teaching of the subject in South African schools. In addition, a feasibility study on using WBL in Accounting education is imperative (Khafit, et al., 2020). Interest in the research of teaching and learning Accounting stems from learners' perception of Accounting as a challenging subject coupled with their poor academic performance in the subject.

2. Research Aim and Research Questions

This study aimed to explore the factors affecting the use of WBL in the teaching of Accounting subject in the Capricorn District of the Limpopo Province in South Africa. This study sought to address the following research question:

- What factors influence WBL use in teaching Accounting in the Capricorn District of the Limpopo Province in South Africa?

3. Literature Review

According to Moges (2013), there is a significant need for educational institutions globally to utilise modern information and communication technologies (ICTs) to equip students with the knowledge and skills they will require in the twenty-first

century. In addition to emphasising the fundamental importance of ICT, the report also anticipates changes in the teaching and learning processes, as well as how teachers and learners could access knowledge and information. Similarly, Alemu (2017) contends that the necessity for evidence regarding the beneficial effects of ICT on learning has been recognised in earlier examples of computer-based schooling. Hennessy et al. (2005) confirmed that Accounting educators should be aware that ICT fosters new learning patterns and adopt appropriate teaching techniques to engage students' attention.

Additionally, Chua et al. (2012) posit that to engage learners in their classes, educators need to utilise the same intelligent gadgets that learners already use in their everyday lives, for example, smart mobile phones. Citing China, Korea, and Singapore as examples, Birt et al. (2017) argue that many countries have developed quickly with the help of ICT. Furthermore, several developing countries in Africa and Asia, such as Uganda, Ethiopia, Kenya, Bangladesh, and Cambodia, have also started to emphasise the importance and availability of ICT for education and other sectors (Birt et al., 2017).

Despite everything, educators in African nations like South Africa and Nigeria appear to be having difficulty establishing a classroom setting where students are actively engaged in learning, where collaborative teaching and peer teaching are practised, and where a variety of technological resources are utilised to facilitate high-quality and successful learning (Ezeanyanike, 2013). These teachers are reluctant to change their traditional ways of teaching due to a lack of technological knowledge and skills, which are teeming with academic performance challenges (Coman et al., 2020). Challenges associated with conventional teaching methods employed by accounting teachers include passive learning, in which learners sit and listen for the duration of the lesson. This process is typically followed by written exercises or assignment questions to evaluate the comprehension skills and competencies of the learners. Suffice it to say that this practice is devoid of critical thinking teaching, and it inevitably results in learners not developing their critical thinking skills (Rosli et al., 2017).

However, in the opinion of Silva et al. (2019), challenges relating to teaching Accounting subjects are deeply rooted in a need to acquire the subject knowledge, cultivate critical thinking skills among learners, and transfer Accounting concepts in natural business settings. Therefore, based on the challenges encountered when teaching and learning accounting, teachers might need help to adopt WBL. Other studies indicate that challenges faced when adopting WBL are more comprehensive than the subject of accounting. For instance, according to Gruszczynski (2020) and Torsello and Winkler (2020), instructors and students in Jordanian institutions had differing opinions about implementing an e-learning system. Some students struggled with using the WBL system because they were unaware of its advantages. As a result, the WBL system was only implemented for a few people. Numerous drawbacks of web-based learning systems have been highlighted, such as their expensive implementation (Alshurafat et al., 2021).

Past the COVID-19 pandemic in Malaysia, most learning institutions needed to adapt to an online learning system (Lazim et al., 2021). This adaptation was beset by a myriad of technical challenges that include, but are not limited to, Internet access, coverage, and speed for both students and lecturers. In this regard, Lazim et al. (2021) have suggested that the requisite technology infrastructure should first be developed to ease online learning. Nonetheless, teachers have rejected this suggestion and have become reluctant to use online teaching because they need more knowledge and skills to conduct online lessons and establish proper classroom practice (Gao & Zhang, 2020). Coman et al. (2020) have alluded to a lack of skills and knowledge as the central issue of concern regarding teachers' acceptance of online teaching and learning. Amongst a host of challenges mentioned by teachers concerning the adoption and integration of WBL in schools, Adegbenro et al. (2017) and Flanagan and Shoffner (2013) flag low levels of confidence, lack of training, time constraints, and lack of technical and infrastructure support as major contributing factors. Other difficulties associated with ICT integration in education that have been mentioned are inadequate school facilities, lack of information and knowledge, and lack of interest and motivation among teachers (Stošić, 2015).

Teachers in South Africa continue to teach accounting using conventional approaches and resources (Nwosu & Matashu, 2022). According to Saal et al. (2017), the teacher continues to be the dominant figure, assuming the traditional position of having all the knowledge that needs to be imparted to the students. In this sense, when teaching accounting, South African educators frequently rely on conventional teaching resources, including textbooks, notes, and chalkboards. Accounting teachers need to be equipped with innovative teaching and learning approaches to improve academic performance in Accounting (Ntshangase & Mabusela, 2023). In South African schools, web-based instruction is becoming a crucial component of the accounting curriculum (Skhepe & Matashu, 2021). However, challenges in implementing teaching methods using web-based tools are prevalent. Additional challenges include more web-based resources for conducting instruction in a classroom setting and a shortage of technologically savvy instructors for the accounting curriculum (Ferri et al., 2020).

Almaiah et al. (2020) believe that educators who face challenges such as limited access to hardware and software, a lack of professional development opportunities, and a lack of time, competence, confidence, and motivation tend to support the continued use of traditional teaching materials. On a positive note, Redmond et al. (2018) assert that much could be done to create online learning environments that enhance learning and teaching outcomes. These environments should allow learners to connect online and foster connections with teachers, educational institutions, and the industry while developing solid disciplinary knowledge and multidisciplinary skills.

According to research conducted in Kenya, improving secondary school efficiency requires the economical use of ICT and related technology and flexibility in teaching and administrative tasks (Oyier et al., 2015). Kenyan government representatives promote using ICT to transform school

administration to improve organisational structures, forge closer ties with the community, and equip students with the knowledge and skills they need to pursue autonomous learning. The Kenyan government established a policy framework for integrating ICT in education and training through the Ministry of Education, Science and Technology (MOEST). This will help students and institutional managers address the management challenges that arise from technological advancement and globalisation.

These challenges were no different from those being experienced by other African countries. Ethiopia depends on the growth of its education sector, just like other nations that aim to become knowledge economies (Alemu, 2017). Ethiopia's competitiveness and job creation are fuelled by higher education (Molla & Cuthbert, 2018). However, studies have revealed that the nation's higher education system could improve. The supply of skilled labour was severely constrained (Mehta & Kalra, 2006). People who want to pursue higher education face obstacles related to time, geography, culture, and socio-economic status (Ozdemir & Abrevaya, 2007). This issue might be resolved by creatively utilising ICT in WBL. However, Ozdemir and Abrevaya (2007) emphasise that teachers must be able to prepare lessons, select resources, and employ WBL technologies to guide and support learning activities. ICT alone cannot establish this kind of teaching and learning environment. Many teachers with traditional training need to be equipped to handle such responsibilities. WBL is beneficial in fostering a science identity among primary school learners, as shown by the study conducted by Huang and Pei (2024). This change is complex, especially in nations like Ethiopia, where the educational system is mainly teacher-centred.

During formal and informal teaching and learning activities, WBL enables more effective communication between academic and non-academic staff members and distance education students (Makunka, 2015). However, WBL helps educators make the most of technology's potential to raise the standard of instruction for students through distance learning. WBL is fundamental to accounting education because, as Sinyosi (2015) noted, accounting courses have remained constant while technology has advanced significantly. When teaching accounting, ignoring technology might be a mistake because it enhances student learning and satisfaction. Technologies have permitted the reimagining of Accounting courses and traditional learning models. Hence, research is required to build educational models that rely on modernised delivery methods, primarily concerning curricular innovation.

Research has already established that WBL or e-learning can be used to teach various subjects in secondary schools. However, learners' performance in accounting might escalate differences (Saadullah & Shawish, 2017). This would vary from person to person and from school to school. The difference would, in all probability, be due to different problems and experiences caused by each environment. The context in which this study was conducted is unique, and learners' poor performance in accounting played a massive role in selecting this research topic. There are few studies on using WBL in teaching accounting in secondary schools. Based on this background information, the current research

bridged the gap by exploring the feasibility of using WBL in teaching and learning Accounting subject in the Capricorn District of Limpopo Province in South Africa. Specifically, aspects that affect the use of WBL in the teaching and learning of Accounting subject were examined to provide guidelines on the relevant WBL model for use in the Capricorn District.

4. Theoretical Framework

The study's foundation was the technology acceptance model (TAM) and the theory of reasoned action (TRA). Technology adoption is frequently explained by the TAM (Khafit et al., 2020). TAM, a TRA offshoot, is a foundation for earlier studies on information systems (IS) that address the behavioural goals and usage connected to IS (Davis & Granic, 2024). Perceived usefulness (PU) and perceived ease of use (PEOU) are the two independent constructs that have become the cornerstone of TAM; they are used for predicting information technology (IT) user acceptance conduct (Davis, 1985, 1989; Khafit et al., 2020). PU can be defined as the "l*evel to which individuals believe that using a particular system can improve their job performance*" (Davis & Granic, 2024). On the other hand, PEOU is described as "*the level to which individuals believe that using a particular system will be free of effort*" (Malik & Annuar, 2021).

The TAM theoretical framework has been utilised in some research to forecast consumers' behaviour regarding their intention to use technology. According to Ho et al. (2020), for example, PEOU only directly impacts IT implementation when the main task for which the technology is implemented is directly related to the intrinsic IT features, like when the task is a crucial component of an IT interface. Furthermore, attitudes toward a system, PU, and PEOU can all be used to explain why users are motivated. Users' attitudes toward a system will influence whether or not they choose to use it. Two further constructs that impact this attitude are PU and PEOU. It is thought that PU is directly affected by PEOU. External variables directly influence these two constructs.

Fishbein and Ajzen (1975) proposed a theoretical model in which individuals may be analysed based solely on their prior purpose and belief regarding the behaviour in question. The authors defined behavioural intention as a person's measure of their intention to carry out an action and referred to it as the intention a person has before an actual behaviour (Banjarnahor, 2021). Kim et al. (2013) and Martin (2022) also suggested that behavioural intention may be ascertained by considering an individual's attitude toward the behaviour. According to Kim et al. (2013), the attitude surrounding a particular behaviour is a person's positive or negative feelings about performing actual behaviour. According to TRA, behavioural attitude and subjective norms influence behavioural intention. The TRA thus provides a valuable example that could explain and envisage the actual behaviour of Accounting teachers in this study. This study, therefore, postulates that behavioural attitudes toward WBL are indeed associated with use. In addition, the subjective norm is undoubtedly related to WBL.

5. Research Methodology

The study was a qualitative case study based on the interpretive paradigm. A non-probability sampling technique based on purposive sampling was used to select

ten Accounting teachers from seven secondary schools in the Capricorn District. Data were collected through semi-structured face-to-face interviews. The interview schedule comprised open-ended questions. Thematic analysis was used to analyse the data. After that, researchers perused interview scripts and notes from the Accounting teachers from the seven high schools participating in this research study. The transcribed data were organised, and codes and themes were assigned. As a result, the researchers better understood the data, contributing to its comprehensive analysis. Interviews were transcribed verbatim, and the participants' responses enhanced the credibility and reliability of the study. The study questions shed light on the participants' thoughts, feelings, perceptions, views, and experiences. Additional understanding was obtained by examining how each educator participant developed and interpreted their opinions and experiences about the variables influencing the Capricorn District's usage of WBL in accounting teaching. Code names were assigned to the participants to uphold the ethical standards for confidentiality and participants' anonymity. The participants were code-named as follows: Ms O (Teacher 1 T1 @ School A), Ms D (Teacher 2 @ School A), Ms K (Teacher 1 @ School D) Mrs R (Teacher 2 @ School B), Mr M (Teacher 1 @ School C), Mrs B (Teacher 1 @ School D) Mrs Z (Teacher 2 @ School D), Mr M (Teacher 1 @ School E), Mr V (Teacher 1 @ School F) and Mrs G (Teacher 1@ School G).

6. Research Findings

In answering the question "What factors affect the use of WBL in the teaching of Accounting subject in the Capricorn District of the Limpopo Province of South Africa?", themes such as the usefulness of WBL, WBL being easy to use, influence of others' opinions and beliefs on the use of WBL; confidence of the teachers to use WBL in the schools and attitude of teachers towards usage of computer were identified. The themes are discussed as follows:

6.1 Theme 1: Usefulness of Web-Based Learning

In the first theme that emerged from the interviews, participants believed that the usefulness of WBL influences teachers to adopt it in the teaching and learning of Accounting. Accounting teachers in schools A and B expressed positive views on the usefulness of WBL in Accounting education. Overall, the teachers expressed positive attitudes towards using technology in the classroom and believed that WBL could greatly benefit the learners. Ms O at School A drew attention to WBL, which allowed learners to access previous question papers and provide a broader explanation of specific topics. WBL provides learners access to a wide range of information and resources, and teachers mentioned that textbooks have limited content. On the following testimony of Ms O at School A, WBL allows learners to access more information beyond what is provided in the classroom:

> *"The use of WBL is beneficial to the learners, who can access previous question papers. It will help them to get a broad explanation on a specific topic."* (Ms O)

Mrs G, a teacher from School G, who believes that WBL allows learners to acquire more information and develop a deeper understanding of the subject, echoed similar sentiments.

Furthermore, WBL can prepare students for future educational and professional endeavours because many universities and workplaces rely heavily on technology for assignments, projects, and research. Participants highlighted that WBL would benefit learners, especially if they could start using it at the high-school level to be well-prepared when they enter the workplace and/or further their studies at institutions of higher learning. Overall, teachers viewed WBL as a tool that gives learners an advantage and puts them on par with the academic standards of tertiary institutions. This was summed up by Mr M (Teacher 1 at School E), who said:

> *"…going to be advantageous for them. For one, at the workplace, we use computers and nothing else. We focus well on the papers at school, but if we can start using the computers with them, these learners will excel in the workplace. In addition, they will not have any difficulties because they know their story. For example, those who are doing CAD Computer Aided Design are going to expect that. They will gain much experience. Yes, like now, those doing a BSc at the universities are seeing a computer for the first time. It is going to be difficult for you. However, if you studied in high school, you are used to it. It's just a continuation."*

In conclusion, the findings mentioned in the preceding paragraphs revealed that teachers generally have positive opinions and perceptions regarding the usefulness of WBL. They believe it can make lessons more interesting, practical, and accessible to learners. Overall, teachers recognise the importance of technology in education and its potential to enhance the learning experience for learners and will likely adopt it in their practice.

6.2 Theme 2: Web-Based Learning Being Easy to Use

Participants indicated that WBL, being easy to use, will influence them and learners to adopt it in their teaching. However, factors such as a lack of technological skills and infrastructure remain a stumbling block to the participants' adoption of technology. According to participants, most teachers are not computer literate, and using WBL might add pressure and burden on them since they already have high workload demands from the district. Additionally, WBL can instil fear and anxiety. For example, Mr M (Teacher 2 of School C) said:

> *"Lack of technological skills among teachers can make it difficult for them to use technology, and this can make them not to use web-based learning since it is not easy to use."*

Multiple teachers, including Ms R and Mr M, highlighted the absence of necessary infrastructure as a significant challenge. Ms R said, *"There is a lack of infrastructure, technologically advanced classroom***."** She further emphasises, *"We need Wi-Fi."* This is followed up by Mr M, who highlights the following: *"Rural areas are a challenge because learners cannot access the information easily. Because of a shortage of Wi-Fi and a lack of infrastructure."*

What was deduced from the above findings was that participants highlighted the need for more technological skills among teachers and the absence of necessary infrastructure as critical issues. This included the need for more technologically

advanced classrooms and Wi-Fi. Furthermore, teachers need more technological skills to integrate technology and WBL tools into their teaching methods effectively. Therefore, teachers who are not proficient in using computers and WBL tools may struggle to effectively incorporate them into their teaching practices. Additionally, the absence of necessary infrastructure, such as well-equipped classrooms and Wi-Fi connectivity, limits technology accessibility, making it challenging to implement WBL quickly.

6.3 Theme 3: Influence of Others' Opinions and Beliefs on the Use of Web-Based Learning

The theme above suggests that the opinions and beliefs of others can have a significant influence on the adoption of WBL. However, some participants also acknowledged that other additional factors need to be considered, such as the needs of learners and the availability of resources. This has led to the unearthing of other sub-themes. It was clear from the interviews' extracts that the participants' opinions and beliefs have multi-level influences on the adoption or usage of WBL. Moreover, due to this multi-levelled influence, sub-themes emerged, which revealed the existence of teacher-to-teacher influence, teacher-to-learner influence, learner-to-teacher influence, and the uninfluenced and the influence of experiences.

An analysis of the interviews revealed that the opinions and beliefs of others, especially of other teachers, had a bearing on their adoption or usage of WBL. This is captured in the responses of Ms K (Teacher 1 at School B) and Ms D (Teacher 2 at School A). Ms K (Teacher at School B) said:

> *"Yes, we do have teachers who support this because we're living in the times when technology has taken over in most cases, especially here in school. If you check in Grade 12, we are now using smart boards. I would say we have people who support and are behind e-learning."*

6.4 Theme 4: Confidence of the Teachers to Use Web-Based Learning in Schools

Teacher confidence plays a crucial role in successfully integrating technology, including adopting WBL in the classroom. When teachers feel confident using WBL tools and techniques, they are more likely to embrace and use them effectively. Any lack of confidence in the WBL may lead to resistance or limited use of such tools (Luong & Eunyom, 2021). Teachers' confidence in using WBL is another theme that emerged. Many teachers mentioned that confidence in their ability to use WBL to teach Accounting will influence them to adopt it. Some teachers mentioned that their confidence stemmed from their knowledge of and experience with computers and technology. However, others admitted to lacking expertise and confidence in using WBL, thus highlighting the need for training and support programs. These sentiments are captured in the following statement by Ms O (Teacher at School A):

> *"Yes, I have confidence. If the learners are interested and enjoy the lesson, it makes me happy and gives me confidence."*

Ms. O expressed confidence in the use of WBL in the Accounting classroom. Her confidence was related to the learners' interest and enjoyment of the lessons. When learners show interest and engage in WBL, it boosts the confidence of the

teacher. This suggests that Ms O's confidence was positively influenced by the learners' positive responses to the online learning approach. She believes that when learners actively participate and enjoy WBL, it contributes to a successful learning experience.

6.5 Theme 5: Attitude Towards the Usage of Computers

Accounting teachers' attitudes towards the use of computers influence their use of WBL in the teaching of Accounting. Overall, the teachers expressed positive attitudes towards using computers in the education of Accounting, which is likely to influence them to adopt WBL in the teaching of their subject. They acknowledged the benefits that accrue to learners, such as access to more information and the enhanced ability to engage in collaborative learning. In addition, some teachers recognised their potential to provide access to a wealth of information and make teaching and learning easier. Contrastingly, others expressed negative attitudes towards computers, citing concerns about learners being distracted or unable to control their use of computers. These contradictions may be due to the reluctance of these teachers to accept the use of technology in their pedagogical practices. Despite these negative attitudes, some teachers still believe that WBL could be effective in teaching and learning and have even suggested that attitudes can change over time.

Altogether, the Accounting teachers' attitudes toward adopting and using WBL in Accounting education ranged from ambivalence and negativity to positivity. While Ms O and Ms K expressed mixed sentiments, Ms D demonstrated a predominantly negative attitude toward incorporating WBL in Accounting. On the other hand, Mr. V takes a positive view of WBL in accountancy education by emphasising the benefits of technology integration. Mrs G's lack of confidence in computer usage is a typical indicator of a potential barrier to effective technology incorporation.

It is essential to address teachers' attitudes towards computer usage in Accounting education since these attitudes can significantly affect their willingness to adopt and effectively utilise WBL in the classroom. Adequate training, professional development, and support can play a crucial role in assisting teachers to develop the necessary knowledge and confidence to incorporate computers and WBL effectively. Additionally, understanding teachers' concerns and the attendant solutions can foster a positive attitude towards technology integration in Accounting education, thus enhancing learners' learning experience.

7. Discussion of Results

Before this investigation, lack of knowledge, skills and technological resources were identified as possible factors influencing teachers' use of technology in this context. An analysis of the qualitative data revealed that teachers acknowledge the practical advantages of technology in enhancing their teaching methods, which ultimately benefit students' learning experiences. The teachers were more likely to embrace WBL as a valuable component of their delivery of the Accounting curriculum. Since technology continues to play a significant role in the field of Accounting, teachers' positive perceptions and views will assist in

driving the integration of WBL to prepare students for a digitally advanced world. Based on the findings in this study, the Accounting teachers' perceptions and views regarding the usefulness of technology in influencing their adoption of WBL in their teaching were overwhelmingly positive.

Future classroom technology implementation will be influenced by teachers' attitudes about and responses to technology and how they employ education-oriented technology to accomplish their goals (Sang et al., 2010). Furthermore, Hanus and Fox (2015) contend that teachers must integrate new technology into their curricula to maximise the potential advantages of ICT and improve student performance. In the context of this study, PU of technology is a strong predictor of the acceptance of WBL in the teaching of Accounting in the Capricorn District.

The findings showed that the respondents paint a negative picture of WBL since they found it not easy to use due to the lack of technological skills and the requisite infrastructure. The findings indicate that most teachers are not computer-literate, and using WBL adds another burden of upskilling themselves over and above their teaching workload. Put differently, WBL instils fear and anxiety among the teachers. The lack of the requisite infrastructure, such as well-equipped classrooms and Wi-Fi connectivity, also limits the accessibility of technology, thus making it challenging to implement WBL.

These findings raised concerns regarding the feasibility of adopting and using WBL in the teaching and learning of Accounting in the Capricorn District. The findings also corroborate other studies undertaken by Pete and Soko (2020), which found a need for more technological knowledge, skills, and experience to be the predominant obstacle in African countries' acceptance of online learning. In the study by Pete and Soko (2020), some of the teachers mentioned that they needed more experience in using computers to the extent that the implementation of WBL was negatively affected. Onyema (2019) also confirmed that adopting and using WBL was not easy owing to a lack of computers and enough educational material. Similarly, Garba et al. (2015) confirmed infrastructure-related issues, such as lack of broadband access, as barriers to delivering the curriculum in European schools. The authors concluded that one-third of European schools still lack broadband Internet access. This shows that the shortage of infrastructure is the main barrier to the implementation of WBL, as found in the current study. Furthermore, Thornby et al. (2023) found that WBL could not be easily implemented owing to the high workload (in terms of the subject and curriculum) experienced by teachers.

The findings of this study demonstrated that the opinions and beliefs of others, especially other teachers, have a bearing on the adoption or usage of WBL by other teachers. Learners' opinions and beliefs also have a bearing on a teacher's decision to adopt or to use WBL. Teachers are more likely to adopt WBL if they see that their learners are interested in it and find it helpful. Related to this, if WBL were to be implemented in the subject of Accounting, positive buy-in from the learners is necessary for the WBL to be adopted by the teachers and be effective.

Based on the current study's findings, subjective norms or other people's opinions, as advocated by the TRA, is one factor that influences teachers in both urban and rural areas of the Capricorn district to use WBL in the teaching of Accounting. Similarly, the extant literature on teachers' beliefs about WBL has also established that other peoples' opinions and beliefs influence the teachers' use of WBL in teaching Accounting (Qaddumi et al., 2021). However, some researchers have examined the influence of academic teachers' beliefs about web technologies in a learning and teaching context (Englund et al., 2017). These researchers agree that if academic staff developers sought to assist teachers in improving their WBL practice, they would need to find ways to make explicit and influence teachers' beliefs.

The findings of this study indicate that the attitudes of Accounting teachers towards the use of computers influence their use of WBL in the teaching of Accounting subjects. Overall, the teachers expressed positive attitudes towards using computers in the learning of accounting, which is likely to influence such teachers to adopt WBL in teaching their subjects. These teachers recognise the benefits that are in store for learners, such as access to more information and the ability to engage in collaborative learning. The findings show that having a positive attitude towards WBL influences the intention to use and adopt this technology in teaching Accounting subjects. This indicates that attitude plays a significant role in the decision-making process of whether to use or not to use a specific tool or technology (Alhubaishy & Aljuhani, 2021).

These findings are supported by Kent and Giles (2017), who found that attitude towards computer usage affects teachers' decision to use WBL in teaching and learning accounting. Teachers' attitudes and beliefs are crucial factors in determining the role and effectiveness of technology in classrooms. Similarly, Hatzigianni and Kalaitzidis (2018) found that attitudes and beliefs about educational technology and pedagogy would ultimately influence how teachers apply the technology. Their study also revealed that variations in technology usage reflect essential differences in teachers' beliefs about the utility of technology in the educational process.

The findings indicated that self-confidence influences teachers to use WBL in teaching and learning accounting. Their confidence is based on their belief that WBL can be a fun, engaging, and helpful way of teaching Accounting. The teachers believe that learners show some interest in the lessons and engage in classrooms to boost their confidence. On the other hand, some respondents mentioned that their confidence stems from their knowledge of and experience with computers and technology. However, others admitted to lacking expertise and trust in using WBL, thus highlighting the need for additional training and support.

Teachers' self-confidence is a factor influencing teachers to use WBL in the Capricorn District. Given the abundance of available educational technology resources, it is essential that teachers feel comfortable and confident about their ability to use them effectively (Johnson et al., 2016). On the other hand, Hoirudin

(2021) indicated that if teachers feel they do not have the necessary competencies when using technology, they might feel less in control of the class, use less technology, and be unlikely to explore new possibilities that utilise technology when designing their courses. Relatedly, Luong and Kim (2021) highlighted two contributing factors to teachers' low self-confidence in using technology. The researchers found that limited computer instruction could lead to teachers' low confidence levels when they initiate computer activities, resulting in high anxiety about using computers. The second was poor motivation, resulting from insufficient knowledge when using instructional technology, even if computers were provided in the classroom for teaching and learning (Luong & Kim, 2021). In this study, self-confidence influenced accounting teachers to accept using WBL in teaching their subjects.

8. Conclusions and Implications

This study provided evidence to respond to the research question, which investigated factors affecting the use of WBL in the teaching and learning of Accounting in the Capricorn District of the Limpopo Province, South Africa. The findings of this research demonstrate that factors affecting the use of WBL in the teaching and learning of Accounting in the Capricorn District are PU, PEOU, subjective norm or social influence, attitudes toward computer usage, and self-confidence. The implication is that the likelihood of a practical implementation of WBL in the teaching and learning of Accounting is apparent. From these findings, recommendations were made for developing WBL strategies in teaching and learning Accounting. The solution lies in the domain of the Limpopo Department of Education in the Capricorn District, which needs to ensure that WBL in teaching Accounting becomes a reality in the district.

In addition, there is a need for improved learner performance in Accounting, and a good attitude and perception about the adoption and implementation of WBL would contribute positively to the effective teaching of Accounting at both teacher and learner levels. The findings of this study are aligned with good professional practice and, therefore, have the potential to benefit accounting teachers, heads of departments (HoDs) in the Accounting subject, and, most importantly, Accounting learners. The study could also prompt teachers and HoDs to review their practices and question assumptions. Teachers first need to ensure the integration of WBL in teaching the subject. Secondly, teachers must upskill themselves to work with new technologies, expand their abilities, and minimise their skill gaps to improve their learners' academic performance ultimately.

The study also developed a consistent theoretical framework, which expands existing knowledge in this research and takes a further step towards explaining the motivations behind increasing participation in the adoption of WBL. The study developed a theoretical framework to investigate the factors affecting the use of WBL by merging the components of TAM and TRA, leading to an understanding of the major factors that encourage the implementation of WBL.

The study was limited only to Accounting teachers and HoDs in one district of one province in South Africa. Essential stakeholders such as school governing

bodies and district managers who were informant-rich participants were excluded from the study. Future studies should consider implementing the present study's findings in a different context, on a different sample population, and a distinct unit of analysis using a different research method. Improving the framework applied in this study with technological factors, especial**ly** the ease of use, accessibility, flexibility, and other design characteristics, would also be helpful to WBL education.

9. References

Adegbenro, J. B., Gumbo, M. T., & Olakanmi, E. E. (2017). In-service secondary school teachers' technology integration needs in an ICT-enhanced classroom. *Turkish Online Journal of Educational Technology-TOJET*, *16*(3), 79–87. https://files.eric.ed.gov/fulltext/EJ1152645.pdf

Alemu, B. M. (2017). Integrating ICT into teaching-learning practices: Promise, challenges and future directions of higher educational institutes. *Universal Journal of Educational Research*, *3*(3), 170–189. https://files.eric.ed.gov/fulltext/EJ1056082.pdf

Alhubaishy, A., & Aljuhani, A. (2021). The challenges of instructors and students' attitudes in digital transformation: A case study of Saudi universities. *Education and Information Technologies*, *26*, 4647–4662. https://doi.org/10.1007/s10639-021-10491-6

Almaiah, M. A., Al-Khasawneh, A., & Althunibat, A. (2020). Exploring the critical challenges and factors influencing the e-learning system usage during COVID-19 pandemic. *Education and Information Technologies*, *25*, 5261–5280. https://doi.org/10.1007/s10639-020-10219-y

Alshurafat, H., Al Shbail, M., Masadeh, W., Dahmash, F., & Al-Msiedeen, J. (2021). Factors affecting online accounting education during the COVID-19 pandemic: An integrated perspective of social capital theory, the theory of reasoned action and the technology acceptance model. *Education and Information Technologies*, *26*(6), 6995–7013. https://doi.org/10.1007/s10639-021-10550-y

Banjarnahor, A. R. (2021). Technology acceptance model and theory of planned behaviour: Mapping literature review. *Golden Ratio of Mapping Idea and Literature Format, 1*(2), 134–168. https://doi.org/10.52970/grmilf.v1i2.91

Birt, J., Wells, P., Kavanagh, M., Robb, A., & Bir, P. (2018). *ICT* skills development: Issues for the accounting profession. *IEASB*. *https://www.researchgate.net/publication/327979449_Accounting_Education_Insights_-_ICT_Skills_Development_Education_IAESB*

Bubb, S., & Jones, M. (2020). Learning from the COVID-19 home-schooling experience: Listening to pupils, parents/carers and teachers. *Improving Schools, 23*(3), 209–222. https://doi.org/10.1177/1365480220958797

Chua, Y. L., Cheong, C. S., & Gould, G. (2012). The impact of mandatory IFRS adoption on accounting quality: Evidence from Australia. *Journal of International Accounting Research*, *11*(1), 119–146. https://doi.org/10.2308/jiar-10212

Coman, C., Ţîru, L. G., Meseşan-Schmitz, L., Stanciu, C., & Bularca, M. C. (2020). Online teaching and learning in higher education during the coronavirus pandemic: Students' perspective. *Sustainability*, *12*(24), Article 10367. https://doi.org/10.3390/su122410367

Davis, FD. (1985). A Technology Acceptance Model for Empirical Testing New End-User Information Systems: Theory and Results. Massachusetts Institute of Technology. http://handle.net/1721.1/15192

Davis, F. (1989). Perceived Usefulness. Perceived Ease of Use and User Acceptance of Information Technology. MIS Quarterly, 13, 319-340.

Davis, F. D., & Granić, A. (2024). *The technology acceptance model: 30 years of TAM.* Springer. https://doi.org/10.1007/978-3-030-45274-2

Englund, C., Olofsson, A. D., & Price, L. (2017). Teaching with technology in higher education: Understanding conceptual change and development in practice. *Higher Education Research & Development*, *36*(1), 73–87. https://doi.org/10.1080/07294360.2016.1171300

Ezeanyanike, P. A. (2013). Assessing benefits of collaborative learning environment for quality higher education in Nigeria. *Journal of Educational and Social Research*, *3*(6), 85–94. https://www.richtmann.org/journal/index.php/jesr/article/view/1723

Ferri, F., Grifoni, P., & Guzzo, T. (2020). Online learning and emergency remote teaching: Opportunities and challenges in emergencies. *Societies, 10*(4), Article 86. https://doi.org/10.3390/soc10040086

Fishbein, M. & Ajzen, I. (1975). Belief, Attitude, Intention and Behaviour. An introduction to theory and research. Reading, Addison-Wesley.

Flanagan, S., & Shoffner, M. (2013). Teaching with(out) technology: Secondary English teachers and classroom technology use. *Contemporary Issues in Technology and Teacher Education, 13*(3), 242–261. https://www.learntechlib.org/primary//p/42121/

Gao, L. X., & Zhang, L. J. (2020). Teacher learning in difficult times: Examining foreign language teachers' cognitions about online teaching to tide over COVID-19. *Frontiers in Psychology*, *11*, Article 549653. https://doi.org/10.3389/fpsyg.2020.549653

Garba, S. A., Byabazaire, Y., & Busthami, A. H. (2015). Toward the use of 21st century teaching-learning approaches: The trend of development in Malaysian schools within the context of Asia Pacific. *International Journal of Emerging Technologies in Learning*, *10*(4), 72–79. https://doi.org/10.3991/ijet.v10i4.4717

Gruszczynski, L. (2020). The COVID-19 pandemic and international trade: Temporary turbulence or paradigm shift. *European Journal of Risk Regulation*, *11*(2), 337–342. https://doi.org/10.1017/err.2020.29

Hanus, M. D., & Fox, J. (2015). Assessing the effects of gamification in the classroom: A longitudinal study on intrinsic motivation, social comparison, satisfaction, effort, and academic performance. *Computers & Education*, *80*, 152–161. https://doi.org/10.1016/j.compedu.2014.08.019

Hatzigianni, M., & Kalaitzidis, I. (2018). Early childhood educators' attitudes and beliefs around the use of touchscreen technologies by children under three years of age. *British Journal of Educational Technology*, *49*(5), 883–895. https://doi.org/10.1111/bjet.12649

Hennessy, S., Ruthven, K., & Brindley, S. (2005). Teacher perspectives on integrating ICT into subject teaching: Commitment, constraints, caution, and change. *Journal of Curriculum Studies*, *37*(2), 155–192. https://eric.ed.gov/?id=EJ695105#

Ho, C. S., Chee, C. Y., & Ho, R. C. (2020). Mental health strategies to combat the psychological impact of COVID-19 beyond paranoia and panic. *Annals of the Academy of Medicine, Singapore*, *49*(3), 155–160. https://pubmed.ncbi.nlm.nih.gov/32200399/

Hoirudin, H. (2021). *The correlation between computer literacy skills and reading comprehension of English education study program students at Tridinanti University Palembang [*Doctoral dissertation]. Universitas Tridinanti.

Huang, L., & Pei, X. (2024). Exploring the impact of web-based inquiry on elementary school students' science identity development in a STEM learning unit. *Humanities and Social Sciences Communications, 11*, Article 885. https://doi.org/10.1057/s41599-024-03299-5

Johari, N., Azhar, A., Jailani, N., Jefri, S., & Raizal, S. (2022). The effects of information and communication technology (ICT) on the academic performance of Accounting

students. *Global Business and Management Research: An International Journal*, *12*(4), 51–60. http://gbmrjournal.com/pdf/v12n4/V12N4-6.pdf

Johnson, A. M., Jacovina, M. E., Russell, D. G., & Soto, C. M. (2016). Challenges and solutions when using technologies in the classroom. In S. A. Crossley, & D. S. McNamara (Eds.), *Adaptive educational technologies for literacy instruction* (pp. 13–29). Taylor & Francis. https://doi.org/10.4324/9781315647500-2

Kent, A. M., & Giles, R. M. (2017). Preservice teachers' technology self-efficacy. *SRATE Journal*, *26*(1), 9–20. https://files.eric.ed.gov/fulltext/EJ1134392.pdf

Khafit, A., Sulastri, & Fauzan, S. (2020). Technology acceptance model (TAM): Measurement of e-learning use by Accounting students at Malang State University. *Asia Pacific Journal of Management and Education*, *3*(3), 64–72. https://doi.org/10.2991/aebmr.k.210416.025

Kim, E., Ham, S., Yang, I. S., & Choi, J. G. (2013). The roles of attitude, subjective norm, and perceived behavioural control in the formation of consumers' behavioural intentions to read menu labels in the restaurant industry. *International Journal of Hospitality Management*, *35*, 203–213. https://doi.org/10.1016/j.ijhm.2013.06.008

Lazim, C. S. L., Ismail, N. D. B., & Tazilah, M. D. A. H. (2021). Application of technology acceptance model (TAM) towards online learning during COVID-19 pandemic: Accounting students' perspective. *International Journal of Business, Economics and Law*, *24*(1), 13–20. https://www.researchgate.net/publication/349214593

Luong, N. C., & Kim, D. I. (2021). Adaptive task offloading in coded edge computing: A deep reinforcement learning approach. *IEEE Communications Letters*, *25*(12), 3878−3882. https://doi.org/10.1109/LCOMM.2021.3116036

Makunka, H. (2015). *The utilisation of information and communication technologies by distance education students and lecturers at the University of Zambia* [Master's dissertation]. University of Zambia.

Malik, A. N., & Annuar, S. N. S. (2021). The effect of perceived usefulness, perceived ease of use, reward and perceived risk toward e-wallet usage intention. In H. B. Mehmet, D. Hakan, & D. Hender (Eds.), *Eurasian business and economics perspectives* (pp. 115–130). Springer.

Martin, T. (2022). A literature review on teaching Accounting. *International Journal of Academic Research in Business and Social Sciences, 12*(11), 2859–2884. https://doi.org/10.6007/IJARBSS/v12-i11/14115

Mehta, S., & Kalra, M. (2006). Information and communication technologies: A bridge for social equity and sustainable development in India. *The International Information & Library Review*, *38*(3), 147–160. https://doi.org/10.1016/j.iilr.2006.06.008

Moges, B. (2013). The role of information and communication technology (ICT) in enhancing the quality education of Ethiopian universities: A review of literature. *Journal of Education Research and Behavioral Sciences*, *3*(8), 246–258. https://apexjournal.org/jerbs/archive/2014/Oct/fulltext/Moges.pdf

Molla, T., & Cuthbert, D. (2018). Re-imagining Africa as a knowledge economy: Premises and promises of recent higher education development initiatives. *Journal of Asian and African Studies*, *53*(2), 250–267. https://doi.org/10.1177/0021909616677370

Motsoeneng, T. J., Nichols, H. J., & Makhasane, S. D. (2021). Challenges faced by rural Accounting teachers in implementing web-based collaborative learning. *Perspectives in Education*, *39*(3), 79–93. https://doi.org/10.38140/pie.v39i3.5080

Msiza, G. M., Malatji, K. S., & Mphahlele, L. K. (2021). Implementation of an e-learning project in Tshwane South district: Towards a paperless classroom in South African secondary schools. *The Electronic Journal of e-Learning, 18*(4), 300–310. https://doi.org/10.34190/EJEL.20.18.4.003

Ntshangase, T. C., & Mabusela, M. S. (2023). Repositioning the teaching approaches towards Accounting curriculum implementation in selected South African rural

secondary schools. *International Journal of Learning, Teaching and Educational Research, 22*(3), 430–447. https://doi.org/10.26803/ijlter.22.3.26

Nwosu, L., & Matashu, M. (2022). Exploring perceived human resources factors influencing the performance of Grade 12 Accounting learners in North West secondary schools in South Africa. *Research in Social Sciences and Technology, 7*(1), 20–41. https://doi.org/10.46303/ressat.2022.3

Onyema, E. M. (2019). Integration of emerging technologies in teaching and learning process in Nigeria: The challenges. *Central Asian Journal of Mathematical Theory and Computer Sciences*, *1*(1), 35–39. https://www.researchgate.net/publication/336278814

Oyier, C. R., Odundo, P. A., Lilian, G. K., & Wangui, K. R. (2015). Effects of ICT integration in management of private secondary schools in Nairobi County, Kenya: Policy options and practices. *World Journal of Education*, *5*(6), 14–22. https://doi.org/10.5430/wje.v5n6p14

Ozdemir, Z. D., & Abrevaya, J. (2007). Adoption of technology-mediated distance education: A longitudinal analysis. *Information & Management*, *44*(5), 467–479. https://doi.org/10.1016/j.im.2007.04.006

Pete, J., & Soko, J. (2020). Preparedness for online learning in the context of Covid-19 in selected sub-Saharan African countries. *Asian Journal of Distance Education*, *15*(2), 37–47. https://files.eric.ed.gov/fulltext/EJ1285320.pdf

Qaddumi, H., Bartram, B., & Qashmar, A. L. (2021). Evaluating the impact of ICT on teaching and learning: A study of Palestinian students and teachers' perceptions. *Education and Information Technologies*, *26*(2), 1865–1876. https://doi.org/10.1007/s10639-020-10339-5

Redmond, P., Heffernan, A., Abawi, L., Brown, A., & Henderson, R. (2018). An online engagement framework for higher education. *Online Learning*, *22*(1), 1–22. https://doi.org/10.24059/olj.v22i1.1175

Rosli, K., Saat, R. M., & Khairudin, N. (2017). Simulating teaching and learning of Accounting subject through a gamification approach [Conference session]. *International Conference on Accounting Studies (ICAS),* September 18–20, 2017, Putrajaya, Malaysia (pp. 18–20). ISSAD. https://www.researchgate.net/publication/326835357

Saadullah, S. M., & Shawish, Z. K. A. (2017). Personality types and accounting subfields. *Academy of Accounting and Financial Studies Journal*, *21*(1), 1–4. https://www.abacademies.org/articles/Personality-types-and-accounting-subfields-1528-2635-21-1-105.pdf

Saal, H. P., Delhaya, B. P., Rayhaun, B. C., & Bensmaia, S. J. (2017). Stimulating tactile signals from the whole hand with millisecond precision. *Proceedings of the National Academy of Sciences, 114*(28), E5693–E5702. https://doi.org/10.1073/pnas.1704856114

Sang, G., Valcke, M., van Braak, J., & Tondeur, J. (2010). Student teachers' thinking processes and ICT integration: Predictors of prospective teaching behaviours with educational technology. *Computers & Education*, *54*(1), 103–112. https://doi.org/10.1016/j.compedu.2009.07.010

Silva, R., Rodrigues, R., & Leal, C. (2019). Play it again: How game-based learning improves flow in Accounting and Marketing education. *Accounting Education*, *28*(5), 484–507. https://doi.org/10.1080/09639284.2019.1647859

Sinyosi, L. B. (2015). *Factors affecting Grade 12 learners' performance in mathematics at Nzhelele East circuit: Vhembe District in Limpopo* [Doctoral dissertation]. University of South Africa, Pretoria.

Skhepe, M., & Matashu, M. (2021). The use of technology in Accounting classrooms during COVID-19: What do Accounting teachers in the Eastern Cape, South Africa, have

to say? *Research in Social Sciences and Technology, 6*(2), 267–278. https://doi.org/10.46303/ressat.2021.30

Stošić, L. (2015). The importance of educational technology in teaching. *International Journal of Cognitive Research in Science, Engineering and Education*, *3*(1), 111–114. https://doi.org/10.23947/2334-8496-2015-3-1-111-114

Thornby, K. A., Brazeau, G. A., & Chen, A. M. (2023). Reducing student workload through curricular efficiency. *American Journal of Pharmaceutical Education, 87*(8), Article 100015. https://doi.org/10.1016/j.ajpe.2022.12.002

Torsello, M., & Winkler, M. M. (2020). Coronavirus-infected international business transactions: A preliminary diagnosis. *European Journal of Risk Regulation*, *11*(2), 396–401. https://doi.org/10.1017/err.2020.30