American Journal of Education and Information Technology
2023; 7(2): 59-70
http://www.sciencepublishinggroup.com/j/ajeit
doi: 10.11648/j.ajeit.20230702.12

Investigating Teachers' Acceptance of Techno-Pedagogy in a Competency-Based Curriculum: A UTAUT Model Analysis

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To cite this article:
Tibakanya Joseph. Investigating Teachers' Acceptance of Techno-Pedagogy in a Competency-Based Curriculum: A UTAUT Model Analysis. *American Journal of Education and Information Technology*. Vol. 7, No. 2, 2023, pp. 59-70. doi: 10.11648/j.ajeit.20230702.12

Received: June 16, 2023; **Accepted**: June 30, 2023; **Published**: July 8, 2023

Abstract: Technology has become an increasingly essential component of education in recent years, and many nations have embraced pedagogical techniques that incorporate technology in a variety of educational contexts. However, instructors in Uganda have shown reluctance to accept such practices, posing a danger to their relevance in technology-oriented classrooms. We used the Unified Theory of Acceptance and Use of Technology (UTAUT) model to evaluate the acceptance and use of techno-pedagogy in a competency-based teaching and learning environment to examine the variables that impact Ugandan teachers' acceptance and use of techno-pedagogy. We also utilized the Technological Pedagogical Content Knowledge (TPACK) paradigm to create the techno-pedagogical competence construct, which was used to assess teachers' grasp of how to successfully incorporate technology into their teaching practice. We investigated five hypotheses about these determinants and gathered data from 245 instructors who were putting the redesigned lower secondary curriculum into practice. To evaluate the data and investigate the correlations between the variables, structural equation modelling was utilized. Our results imply that Behavioral Intention is highly influenced by Performance Expectancy and Facilitating Conditions, which in turn is a key contributor to the use of technology for teaching. Effort Expectancy and Social impact, on the other hand, had no substantial impact on Behavioral Intention. These findings emphasize the necessity of providing enough technical tools, training, and support to teachers to improve the acceptance and application of techno-pedagogy in Ugandan classrooms. Our work adds to the literature on techno-pedagogy acceptability and has substantial policy and practice implications in Uganda and in comparable situations.

Keywords: Techno-Pedagogy, CBC Curriculum, Competency-Based Learning, UTAUT Model

1. Introduction and Motivation

Education has been significantly transformed in recent years due to the increasing digitalization of learning [1]. Technology-based pedagogical approaches have become ubiquitous [2] in many educational contexts as today's learners are increasingly becoming techno-centric [3]. The use of technology in the classroom enables self-learning, individualized learning, and active student participation, allowing teachers to shift from the conventional "Sage on the Stage" to a "Guide on the Side" role, while students become more active partners in classroom activities [4]. The modern classroom is being transformed into a smart learning environment with ICT, virtual reality, simulation, and 3D activities [5]. Teachers with elevated levels of techno-pedagogical competency are more likely to implement competency-based learning effectively and prepare students for the demands of the twenty-first century [6]. As a result, techno pedagogy is increasingly recognized as a critical component of competency-based learning, producing lifelong learners with a range of skills [7].

In Uganda, the Ministry of Education and Sports, through the National Curriculum Development Centre (NCDC), rolled out a new Competency-Based Curriculum (CBC) at the lower secondary level in 2020. The CBC is seen as an approach to education that focuses on demonstrable learner competencies rather than credit hours or clock hours [8]. It emphasizes deep understanding, performance-based assessment, constructivism, and the development of higher order thinking skills, promoting a learner-centered approach to education, and recognizing the importance of individualized support for learners [9]. The CBC aims to produce graduates with employable skills and a lifelong love

of learning [10]. The curriculum roll-out emphasized the adoption of techno-pedagogy as a crucial approach to teaching and learning processes. However, the implementation of the curriculum has been disadvantaged, with many teachers remaining reluctant to adopt techno-pedagogical approaches to instruction [2].

Despite the significant potential benefits of integrating technology into education, it is crucial to recognize that technology alone is not a panacea for educational challenges [7]. Teachers play a critical role in determining the effectiveness of technology-based pedagogical approaches, and their attitudes towards technology are a crucial enabling or disabling factor in its adoption [1]. Therefore, it is essential to investigate teachers' perceptions of techno-pedagogy in a competency-based curriculum to develop effective interventions that promote its adoption.

The main objective of this study is to apply the Unified Theory of Acceptance and Use of Technology (UTAUT) model to investigate the factors that influence Ugandan teachers' acceptance and usage of techno-pedagogy in a competency-based teaching and learning environment, and to identify potential barriers and enablers to the successful implementation of techno-pedagogy in this context. Specifically, the study seeks to identify the effects of performance expectancy, effort expectancy, social influence, and facilitating conditions on teachers' behavioral intentions and actual use of techno-pedagogy in their instructional practices. The findings of this study are expected to contribute to the existing body of knowledge on the acceptance and usage of educational technologies in developing countries, and to provide guidance for policymakers, educators, and other stakeholders seeking to integrate techno-pedagogy into their instructional practices.

1.1. Problem Investigated

The growing prevalence of digital technology in educational settings has resulted in the widespread adoption of various forms of technology-based instruction, within competency-based curriculums. Although instructors are required to integrate information and communication technologies (ICT) into education, many educators continue to be resistant to adopting such practices, even though they run the danger of becoming irrelevant in the face of modern classrooms that are driven by technology. Previous research has shown that the attitudes of teachers towards technology are a critical enabling or disabling element in the adoption of technology, particularly in developing countries like Uganda [1, 11–13]. This is especially true in countries like Uganda, where the education system is still evolving. However, there is a lack of understanding of the factors that impact teachers' adoption and employment of technology-based pedagogy in a competency-based curriculum. This lack of understanding has led to interventions that have been either partially effective or completely unsuccessful. Using the Unified Theory of Acceptance and Use of Technology (UTAUT) paradigm, the purpose of this research is to explore the variables impacting teachers' views of techno-pedagogy in a competency-based curriculum in Uganda. This will allow us to address the knowledge gap. More specifically, the research will investigate how instructors feel about using technology in their teaching tactics and the effect that this has on students' overall learning results. The outcomes of this research will contribute, in the form of successful interventions, to the establishment of a more widespread acceptance of techno-pedagogical approaches in competency-based learning.

1.2. Research Objective

The overarching purpose of this study was to apply the Unified Theory of Acceptance and Use of Technology (UTAUT) model to investigate the factors that influence Ugandan teachers' acceptance and usage of techno-pedagogy in a competency-based teaching and learning environment, and to identify potential barriers and enablers to the successful implementation of techno-pedagogy in this context.

1.3. Research Framework and Hypotheses

The UTAUT model, which is regarded as one of the most established and strong technology acceptance theories [14], served as the foundation for this research. Performance Expectancy, Social Influence, Effort Expectancy, and Facilitating Conditions were investigated as drivers of acceptance and use behaviour.

Performance Expectancy (PE): Performance Expectancy (PE) refers to users' beliefs that employing technology would increase their work performance [15]. Several studies have indicated that PE influences BIs to adopt technology-based learning mediums because of the advantages achieved [14]. In this context, the researcher postulated the first hypothesis:

Hypothesis 1: The Performance Expectancy (PE) has a noteworthy influence on the teacher’s behavioural intention (BI) to integrate technology in CBC learning.

Expected Effort (EE): According to Venkatesh et al. [15], the degree of usability of a technological medium is denoted as Effort Expectancy (EE). The notion tracks individuals' expectations about how simple the technology is to use. Based on this background, the second hypothesis was framed:

Hypothesis 2: The Expected Effort (EE) has a considerable influence on the teacher’s behavioural intention (BI) to integrate technology in CBC learning.

Social Influence (SI): Social Influence (SI) is the level to which users perceive others’ beliefs that they should utilise certain technology [15]. This notion denotes how the views and perceptions of others in the immediate social group impact the use of technology [16]. Previous studies have shown a substantial direct relationship between behavioural intention and social influence [17]. Thus, the researcher framed the subsequent hypothesis:

Hypothesis 3: The Social Influence (SI) has a major influence on the teacher’s behavioural intention (BI) to integrate technology in CBC learning.

Facilitating Conditions (FC): Venkatesh et al [15]

established that facilitating conditions (FC) are "the accessibility of well-functioning technical inevitabilities to permit the user's handling of the system." The facilitating conditions span from procedural to human assistance, technical assistance, and organisational assistance [16]. Lack of system support, technical assistance, and knowledge impedes technology adoption. Yet, with support, technical efficiency, and enough information raise the FC, favourably influencing behavioural intention [18]. In this research, it is the availability of proper ICTs, associated infrastructure, and support inside a school that might encourage secondary school teachers to utilise ICT. As a result, the researcher formulated the other hypothesis:

Hypothesis 4: The facilitating conditions (FC) have a noteworthy influence on the teacher's Use Behaviour (UB) to integrate technology in CBC learning.

Behavioural Intention (BI): The intention of a person to accept and utilise technology in the future is known as a behavioural intention (BI) [15]. This notion describes the principal element impacting technology use behaviour [16]. The objective model in this work follows the original UTAUT paradigm, with all PE, EE, and SI components impacting BI and just FC affecting UB. As a result, the factors that interfere with BI's favorably impacting UB were investigated in this research. Thus, the researcher framed the fifth hypothesis:

Hypothesis 5: The Behavioural Intention (BI) has a considerable influence on the teacher's Use Behaviour (UB) to integrate technology in CBC learning.

The following study model was developed based on the hypotheses and was designed in accordance with the UTAUT model for ICT use and acceptability among Ugandan teachers of the competency-based curriculum.

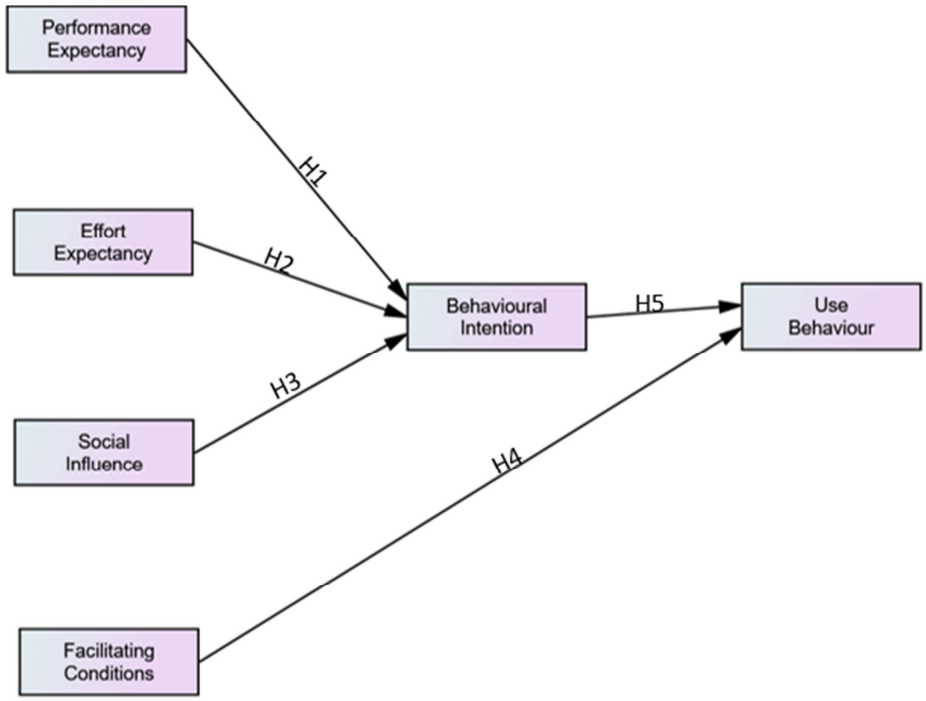

Figure 1. *The proposed conceptual framework model.*

2. Literature Review

Competency-based learning has emerged as a potential strategy for increasing learning outcomes and better satisfying students' unique needs. The integration of information and communication technology (ICT) in education, also known as "techno-pedagogy," has improved the possibility of successful competency-based learning. This literature review focuses on the UTAUT variables, which describe the factors that impact the adoption and use of ICT in education, to acquire a clearer knowledge of this method. We hope that by doing this evaluation, we will be able to define the context of our study and guide our research aims, hypotheses, and methods. The sections that follow give a complete summary of the current state of knowledge on competency-based learning, techno-pedagogy, and UTAUT variables by synthesising the reviewed literature on these issues.

2.1. Competency-Based Curriculum (CBC)

The Competency-Based Curriculum (CBC) is an innovative approach to education and training that emphasizes learner competencies over credit hours or clock hours [8]. It was introduced in the United States after the Soviet Union launched Sputnik I [19–21] and later adopted by many European and African countries [22], such as Malawi, Ethiopia, Ghana, Tanzania, Kenya, and Uganda [19]. CBC emphasizes what learners can do [23] at the end of the learning cycle rather than what they are expected to know

and recognizes learners as human beings with built-in mental content [20]. The CBC approach promotes learner-cantered learning [10], where the instructor changes from being the owner of knowledge to a guide, facilitator of learning, and cognitive coach [24]. It combines various learning experiences and underscores deep understanding that is contextualized and interconnected [25]. Assessment in CBC shifts from content to learning outcomes and emphasizes performance-based assessment where learners demonstrate mastery [9]. The approach pursues the development of Bloom's higher order thinking levels, including application, analysis, synthesis, and evaluation [21]. The instructor can assess learning through various products such as projects, assignments, written reports, research, portfolios, feedback during discussions, presentations, debates, map work, fieldwork, and experiments [26]. In short, CBC emphasizes outcomes [27], excellent pedagogy, interdisciplinary resources, and competency assessment throughout the curriculum [28]. The approach is underpinned by constructivism, which stresses that learners should be given an opportunity to collaborate, play, observe, and converse with the teacher or others [21]. In short, the CBC approach promotes a dynamic, lifelong learning that transcends the mere recall of information and empowers citizens with knowledge, understanding, skills, values, and attitudes (KUSVA).

2.2. Techno-Pedagogy

Techno-pedagogy is an instructional method that integrates technology, including artificial intelligence and online resources, into traditional teaching methods to create a personalised learning environment for students [1]. As contemporary learners become increasingly techno-centric, techno-pedagogical techniques have become ubiquitous [2]. The 21st century is characterised by data and innovation, which call for the integration of technology into most sectors of life, including education. The major forms of integration include smart classrooms, electronic books, smart handheld devices, social media, videoconferencing, and artificial intelligence, which transform and reinforce teaching and learning [29].

Contemporary learning is increasingly digital, personalised, pleasurable, blended, visual, and game-based, making it necessary to enhance instructional approaches with information and communication technology (ICT) [5]. Appropriate technologies assist instructors in attending to the needs of individuals in classes [7] and widen the abilities of learners, making them competitive in the global arena [1].

According to [3], modern techno-centric learners are different in terms of their ability to pay attention, multitask, and remember what they have learned. The use of technology for instruction can ensure quality learning for all [30]. Technology creates avenues for curiosity and makes the overall process interactive, easy to adapt to, eye-catching, learner-cantered, and integrative, ensuring that the learner progresses at their pace [1].

Proper integration of technology and pedagogy can increase teaching efficacy [6]. Although technology cannot replace instructors, individuals with great technical and pedagogical ability may substitute for teachers who are lacking in these areas. Therefore, it is crucial that teachers in the 21st century know how to use technology in the classroom [31]. They must have content, pedagogical, and technological competences [32]. Inspired by Shulman's works [33], the Technological Pedagogical Content Knowledge (TPACK) model was developed, which underlines the importance of the integration of technology and pedagogy in education [34]. The TPACK model encompasses three forms of knowledge: technological, pedagogical, and content, which combine to form a complex framework [35] with over seven structures [36].

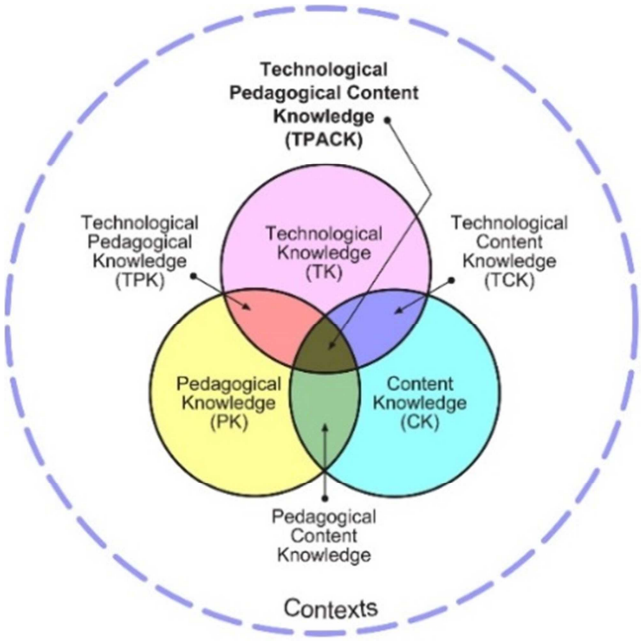

Figure 2. *The TPACK Model.*

Content Knowledge (CK): refers to insight into the subject matter to be delivered in class [37].

Pedagogical Knowledge (PK): is the understanding of teaching and learning methods, tactics, and approaches, as well as how they connect to learning goals [36].

Technological Knowledge (TK): is the understanding of conventional technologies and how to use them [38].

Pedagogical Content Knowledge (PCK): Pedagogical content is an awareness of pedagogy that is unique to the delivery of a particular topic [39].

Technological Content Knowledge (TCK): is an understanding of how technology and content are inextricably linked [32].

Technological Pedagogical Knowledge (TPK): Technological Pedagogical Knowledge (TPK) is about how employing technology changes teaching methods and techniques [31].

Technological Pedagogical Content Knowledge (TPACK): TPACK is the knowledge of how ideas may be presented,

pedagogical strategies, what makes concepts hard or easy to learn, previous knowledge, and how technology can assist students in learning. It is the cornerstone of successful technology-based learning [35].

In summary, the integration of technology into teaching and learning environments is vital to enhance instructional approaches, engage modern learners, and increase teaching efficacy. Proper integration of technology and pedagogy is necessary to achieve this, and the TPACK model is an essential framework for teachers to develop the competencies necessary to succeed in this regard.

2.3. The Unified Theory of Acceptance and Use of Technology (UTAUT) Model

The Technology Acceptance Model (TAM) was initially developed by Davis, [40] to examine the link between technology usage and profit margins in the business world. Based on the traditional theory of reasoned action by Fishbein and Ajzen [41], TAM provides a methodical approach for predicting the acceptance and usage behaviour of technology [42]. TAM assumes that the decision to utilize recent technology is influenced by numerous factors, but perceived usefulness (PU) and perceived ease of use (PEOU) are the main drivers of the intention to use technology, which determines acceptance behaviour [43]. However, TAM has significant limitations, which led to the development of a more unified model called the Unified Theory of Acceptance and Use of Technology (UTAUT) by Venkatesh et al. [44, 15].

Compared to previous models, the UTAUT model may explain up to 70% of the variation in Behavioural Intention and 40% of the actual usage [16]. The UTAUT model includes four primary exogenous variables: Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), and Facilitating Conditions (FC), as well as an endogenous variable called Behavioural Intention (BI), which leads to Use Behaviour (UB) [44].

The UTAUT paradigm is currently the most powerful and widely used [16, 43, 45, 46], as well as the most frequently referenced model in recent years [47]. The UTAUT model has been applied in various contexts, such as understanding how students in underdeveloped nations use e-learning systems [45] and building a conceptual model of successful ICT-based education in the Philippines [48]. The UTAUT paradigm is also useful in assessing the environment in which teachers can successfully integrate ICT into their teaching [42].

In conclusion, while TAM laid the groundwork for understanding technology acceptance behaviour, the UTAUT model has surpassed it in terms of explanatory power and practical applicability. The UTAUT model's primary exogenous variables - Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), and Facilitating Conditions (FC) - have been shown to be effective in predicting the Behavioural intention and usage of technology in various contexts.

2.4. The CBC and Techno-Pedagogy

The use of technology in the classroom is strongly connected to competency-based learning, which produces lifelong learners with a range of skills such as information seeking, problem-solving, creativity, communication, and collaboration [7]. Technological pedagogy helps learners improve their learning achievements and overall competencies [3]. Incorporating modern technology in the classroom can shift the roles of teachers and students, making them more active partners in the learning process [49]. The modern classroom is transforming into a well-resourced smart learning environment that utilizes ICT to enable students to have hands-on experience using virtual reality, simulation, and 3D activities [49]. Teachers with elevated levels of tech-pedagogical competency are likely to implement competency-based learning better than others [35]. Effective use of digital technologies is a necessary skill for instructors in the 21st century if they want to assist learners in acquiring high-level competencies [6]. Therefore, the demands of the new technology-driven classroom will force teachers to change or risk becoming obsolete [7].

2.5. Linking the TPACK Model and the UTAUT

The Technology, Pedagogy, and Content Knowledge (TPACK) model and the Unified Theory of Acceptance and Use of Technology (UTAUT) are two widely used frameworks in educational technology research [50]. The TPACK model emphasizes the integration of technology, pedagogy, and content knowledge to support effective teaching and learning [51]. On the other hand, the UTAUT model focuses on understanding the factors that influence users' acceptance and use of technology [52].

The TPACK model provides a useful framework for understanding the relationship between technology, pedagogy, and content knowledge, and how they interact to support effective teaching and learning [53]. The model highlights the importance of teachers' understanding of how technology can be used to support teaching and learning in their subject area [54]. This understanding is critical to the effective integration of technology in the classroom.

The UTAUT model complements the TPACK model by focusing on the factors that influence teachers' acceptance and use of technology [55]. The model identifies four primary factors that influence users' behavior [50–52, 55–58]: Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), and Facilitating Conditions (FC). The UTAUT model has been extensively used to understand the factors that influence teachers' acceptance and use of technology [50].

The TPACK model was employed in this research to generate the techno-pedagogical competence construct, which was used as an indication of teachers' grasp of how to successfully incorporate technology in their teaching practice. In a competency-based teaching and learning environment, the UTAUT model was used to examine the variables that impact instructors' adoption and usage of techno-pedagogy.

The combination of the two models provides a complete framework for comprehending the interaction between technology, pedagogy, and subject knowledge, as well as the variables influencing teachers' adoption and use of technology in the classroom.

3. Research Methodology

A quantitative survey approach was used in this research to explore the subject under investigation. Purposive sampling was used to choose participants, ensuring that people with certain features or experiences relevant to the research were included. To collect data, a questionnaire with a 7-point Likert scale was constructed, and the data was analyzed using IBM SPSS and Structural Equation Modelling (SEM-AMOS) to evaluate the correlations between variables and test the suggested theoretical model.

3.1. Research Design

In this research, the variables impacting the acceptance and utilization of techno-pedagogy in a competency-based curriculum among Ugandan teachers were investigated using a quantitative survey technique. The study approach was based on the Unified Theory of Acceptance and Use of Technology (UTAUT) paradigm, which is regarded as a solid foundation for comprehending consumers' acceptance and use of technology. The impact of the UTAUT model's exogenous variables, including Performance Expectancy (PE), Effort Expectancy (EE), Social Influence (SI), and Facilitating Conditions (FC), on Behavioral Intention and technology integration in competency-based teaching and learning was investigated. The study used this research approach to give insights into teachers' uptake and utilization of techno-pedagogy, which might guide the creation of successful methods for promoting its integration into the education system.

3.2. Sampling

Purposive sampling was used to choose a sample of instructors who are presently implementing the most current Competency-Based Curriculum (CBC) in Uganda for this research. With the goal of obtaining a representative sample, 300 survey questionnaires were delivered to prospective participants. A total of 245 questionnaires were returned, producing an estimated response rate of 81.7%. All participants had to fulfil the inclusion criteria of being teachers presently teaching in a lower secondary school in Uganda and having expertise utilizing technology in their instructional practices. Purposive sampling was used to guarantee that the participants were representative of the target population and had the appropriate expertise and knowledge to provide significant insights into the study issues.

3.3. Questionnaire Development

The study utilized a questionnaire designed on a 7-point Likert scale to collect data. The questionnaire also included demographic questions for participating teachers, while other items were based on the Unified Theory of Acceptance and Use of Technology (UTAUT) constructs adapted from previous studies [45, 58]. UTAUT has a robust theoretical foundation and highly valid measurement scales, making it well-suited to describing how technology is adopted across various organizations, cultural contexts, technological contexts, and expertise levels [16]. The study collected data from teachers currently teaching the competency-based curriculum.

3.4. Data Analysis

(i) Analysis Tools

The study employed two widely used analytical tools [59]: IBM SPSS and Structural Equation Modelling (SEM-AMOS). IBM SPSS was utilized for data coding, cleaning, assumption testing, and factor analysis, while AMOS was used to assess validity, reliability, discriminant validity, and goodness of fit metrics in the measurement model. Additionally, a structural model was employed to test the proposed hypotheses. The analysis proceeded in two stages: first, the goodness of fit was assessed, along with tests of reliability, convergence validity, and discriminant validity for the measurement model using IBM AMOS. Second, a structural model examination was performed.

(ii) Item Validity (Cronbach's Alpha Test)

Cronbach's alpha, widely regarded as the best way to check the validity of items of each construct [42] was used to evaluate the data's reliability.

(iii)Data Screening

Prior to conducting any statistical analysis, the coded data was screened to ensure dependability, usefulness, and correctness [60]. Data cleaning was carried out to detect any missing values, normality, and respondent misconduct.

(iv)Missing Data

To identify any missing values in the encoded data, the researcher employed the Statistical Package for Social Sciences (SPSS) software tool. The tool detected variables with missing data, and the researcher subsequently performed a significance test to determine the extent of the missing data. Following this, the researcher opted to use the "Series Mean" imputation method to replace the missing values. The Series Mean approach involves computing the average value of the non-missing data for each variable and then substituting this value for all the missing data within that variable [61]. This approach ensures that the missing values do not significantly affect the overall statistical analysis [62].

(v) Structural Equation Modelling (SEM)

Since the research sought to evaluate numerous items against constructs in a multivariate context, SEM was used. Additionally, there was a need to concurrently determine the relationship between dependent and independent variables. As suggested by Collier [59], a two-step strategy was employed to execute the SEM. The measurement model was first examined using confirmatory factor analysis (CFA) to assess the extent to which indicators measure the unobserved

constructs. The structural model (SM) was then analysed to test the proposed hypotheses and evaluate the goodness of fit.

4. Results and Discussions

This section covers the study's findings and gives a thorough explanation of the findings in relation to the research objective and current literature. The findings are analysed and interpreted in detail once the results are presented in a methodical way.

4.1. Analysis of Respondent's Demographic Information

A sample of 245 instructors participated in the research based on demographic data. A sizeable portion of respondents (64.5%) were male, while 35.5% were female. The responses ranged in age from 18 to over 65 years old, with the biggest age group (50.2%) being between the ages of 25 and 34. Most respondents (35.5%) had 6-10 years of experience, followed by those with 11-15 years of experience (21.6%). Many respondents (77.1%) had a bachelor's degree, with just a tiny minority holding a master's degree (3.3%) or a PhD (1.6%). In terms of ICT experience, the bulk of respondents (72.2%) had 1-5 years of experience, while just 11.8% had more than 10 years of experience. Using the Unified Theory of Adoption and Use of Technology (UTAUT) paradigm, this demographic data proved valuable in examining teachers' adoption of techno-pedagogy in a competency-based curriculum.

4.2. Analysis of Measurement Model

To test the measurement model, Confirmatory Factor Analysis (CFA) was conducted using Amos 26. Each item's factor loading was examined, and two items (SI4 and BI4) were removed due to extremely low factor loading (>.50). The model's overall goodness of fit was assessed using various model-fit measures, including CMIN/DF, GFI, CFI, IFI, TLI, SRMR, and RMSEA. All values were within their respective commonly accepted levels. The six-factor model demonstrated good fit, with the following goodness-of-fit indices for the SEM model: Probability of getting discrepancy (P) was insignificant, Tucker-Lewis Index (TLI) = 0.902, Comparative Fit Index (CFI) = 0.917, Root Mean Square Error of Approximation (RMSEA) = 0.057, Incremental Fit Index (IFI)=.919, Root Mean Residual (RMR)=.157, and Discrepancy divided by Degree of Freedom (CMIN/DF) = 1.786. While some values were slightly below the commonly recommended cut-off value, all indices indicated an acceptable level of fit.

Table 1. *Results of Model Fit Indices.*

Fit Indices	Acceptable Value	Obtained Value
P	Insignificant	.000
CMIN/DF	<3-5	1.786
Goodness of Fit Index (GFI)	>.90	.882
Incremental Fit Index (IFI)	>.90	.919
Comparative Fit Index (CFI)	>.90	.917
Tucker Lewis Index (TLI)	>.90	.902
Root-Mean Residual (RMR)	<.08	.157
Root-Mean Square Error of Approximation (RMSEA)	<.08	.057

4.3. Reliability Results

To assess the internal consistency of the constructs in this study, reliability was measured using Cronbach's Alpha. A construct is considered reliable if the alpha value is greater than.70 [59]. The results indicated that the Performance Expectancy scale had a prominent level of internal consistency with five items (α=.840), as did the Effort Expectancy scale with four items (α=.682), Behavioural Intention scale with four items (α=.731), and Use Behaviour scale with three items (α=.863). However, the Social Influence scale had a lower alpha value of.583, suggesting that the four items in this scale may not be as internally consistent as those in the other scales. These reliability results are summarized in Table 2. While an alpha value of.70 is often used as a cut-off for acceptable reliability, higher values are preferred, and most of the constructs in this study exceeded this criterion. Overall, the assessment of internal consistency using Cronbach's Alpha was appropriate, and the reported reliability results provide useful information for interpreting the study's findings.

Table 2. *Results of the internal consistency of the constructs.*

Construct	No. of items	Alpha (α) Value
Performance Expectancy	5	.840
Effort Expectancy	4	.682
Social Influence	4	.583
Facilitating Conditions	5	.662
Behavioural Intentions	4	.731
Use Behaviour	3	.863

4.4. Structural Model Analysis

The structural model analysis was conducted using Amos 26 to assess the relationships among the variables. The model was evaluated using several goodness-of-fit indices. The Probability of getting discrepancy (P) was found to be insignificant, indicating that the model fits well. The Tucker-Lewis Index (TLI) and Comparative Fit Index (CFI) values were 0.891 and 0.909, respectively, indicating an acceptable fit. The Root Mean Square Error of Approximation (RMSEA) value of 0.064 was also acceptable, indicating a reasonable fit. The Incremental Fit Index (IFI) value of 0.910, Root Mean Residual (RMR) value of 0.153, Discrepancy divided by Degree of Freedom (CMIN/DF) value of 2.010, and Goodness of Fit Index (GFI) value of 0.879 also indicate an acceptable fit.

The study evaluated five hypotheses that examined the influence of Performance Expectancy, Effort Expectancy, Social Influence, and Facilitating Conditions on Behavioural Intention, and the subsequent effect of Behavioural Intention on Use Behaviour. The results indicate that Performance Expectancy has a significant positive relationship with Behavioural Intention ($\beta = 0.234$, $t = 3.220$, $p < 0.005$),

providing support for hypothesis 1. This suggests that teachers are likely to use technology in their instruction if it enhances learning. However, the relationship between Effort Expectancy and Behavioural Intention was found to be insignificant (β = 0.114, t = 1.533, p = 0.125), indicating that hypothesis 2 is not supported. Thus, the effort required to use technology for instruction does not appear to influence a teacher's intention to apply techno-pedagogical approaches to learning.

Additionally, the study found that the relationship between Social Influence and Behavioural Intention was insignificant (β = 0.070, t = 1.649, p < 0.099), indicating that hypothesis 3 is not supported. Therefore, a teacher's intention to use technology is not necessarily influenced by others. Conversely, the relationship between Facilitating Conditions and Behavioural Intention was found to be significant (β = 0.473, t = 5.296, p < 0.001), supporting hypothesis 4. This suggests that the existing conditions surrounding a teacher can influence their intention to use technology. Finally, hypothesis 5 was supported, as the relationship between Behavioural Intention and Use Behaviour was found to be significant (β = 1.168, t = 4.218, p < 0.001). This indicates that a teacher's intention strongly influences their use of technology.

In summary, the study supports three of the UTAUT hypotheses, consistent with previous research that indicates Performance Expectancy and Facilitating Conditions influence Behavioural Intention and that Behavioural Intention influences Use Behaviour.

Table 3. *Evaluation of Hypotheses.*

H	Dep	Relationship	Indep	Estimate	S.E.	C.R.	P	Result
H1	BI	<---	PE	.234	.073	3.220	.001	Supported
H2	BI	<---	EE	.114	.074	1.533	.125	Un supported
H3	BI	<---	SI	.070	.042	1.649	.099	Un supported
H4	UB	<---	BI	1.168	.277	4.218	***	Supported
H5	UB	<---	FC	.473	.089	5.296	***	Supported

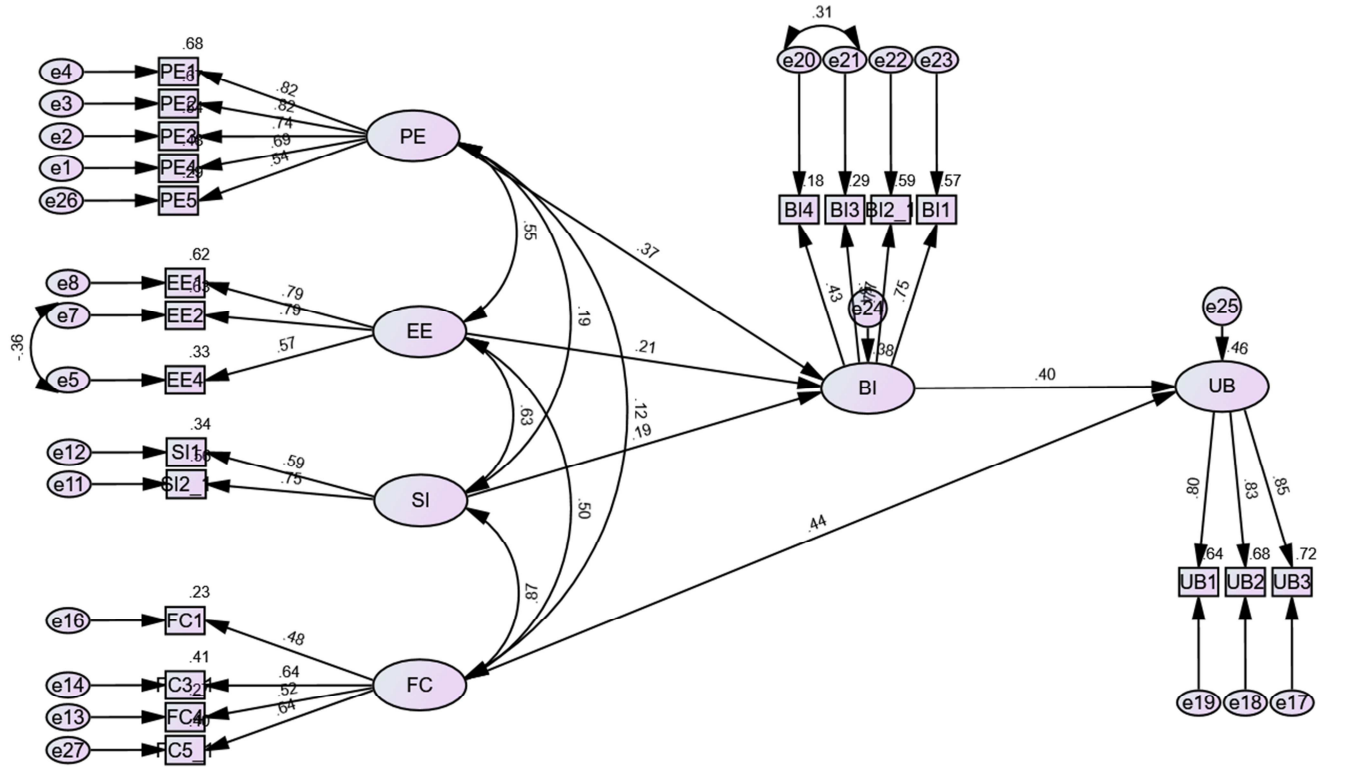

Figure 3. *Structural Modal.*

4.5. Discussions

The current research sought to investigate the factors that impact Ugandan teachers' acceptance and utilisation of techno-pedagogy in a competency-based curriculum utilising the UTAUT paradigm. The SEM analysis findings showed that the model fit was satisfactory, with all goodness-of-fit indices falling within their respective common acceptability criteria. Three of the five hypotheses that were examined were supported. Performance Expectancy and Facilitating Conditions were shown to be positively and substantially associated to Behavioural Intention, confirming hypotheses H1 and H4, respectively. Previous research has revealed that these two characteristics are major determinants of intention to utilise technology in educational contexts [43-46].

The data, on the other hand, did not support hypotheses H2 and H3, which postulated correlations between Effort Expectancy/Social Influence and Behavioural Intention. In other words, neither the perceived effort necessary to utilise technology nor social pressure from colleagues or other external variables impacted instructors' inclination to use technology. This study shows that attempts to enhance technology adoption among instructors should prioritise enhancing performance goals and creating favourable enabling circumstances over lowering perceived effort or increasing social influence. Furthermore, the findings revealed that Behavioural Intention had a substantial and significant beneficial influence on Use Behaviour, lending credence to hypothesis H5. This finding is consistent with the UTAUT framework, which posits that Behavioural Intention is a key determinant of technology use behaviour [43, 46]. It implies that initiatives focused at enhancing teachers' willingness to embrace technology may result in more technology acceptance and utilisation in the classroom. Finally, the reliability study demonstrated that all constructs had sufficient internal consistency, as shown by Cronbach's alpha values more than 0.70 [59]. The findings of this research, when taken together, give vital insights into the variables that impact teachers' use of technology in the classroom, and may help to inspire the creation of successful interventions to increase technology acceptance and usage among instructors.

4.6. Implications of the Study

The current research sought to investigate the characteristics that impact Ugandan teachers' acceptance and utilisation of techno-pedagogy in a competency-based curriculum utilising the UTAUT paradigm. The SEM analysis findings showed that the model fit was satisfactory, with all goodness-of-fit indices falling within their respective common acceptability criteria. This implies that the UTAUT model is a good instrument for researching the variables influencing teachers' adoption and usage of technology in Ugandan classrooms. The study's results have significant implications for policymakers, educators, and academics interested in boosting technology uptake and use in Ugandan classrooms. The research emphasises the need to concentrate on Performance Expectancy and Facilitating Conditions as significant factors in instructors' inclination to employ technology. Policymakers and educators should work together to ensure that instructors have appropriate technical equipment and assistance to integrate technology into their teaching practises. Furthermore, interventions focused on encouraging teacher technology adoption should highlight the potential advantages of employing technology in the classroom to enhance teaching and learning outcomes, particularly in competency-based learning.

The study's results also show that lowering perceived effort or enhancing social influence may not be effective tactics for encouraging instructors to utilise technology. Instead, initiatives aimed at enhancing teachers' willingness to utilise technology should concentrate on raising performance requirements and creating positive enabling circumstances. This might be accomplished via professional development programmes that provide teachers with the skills they need to successfully utilise technology while also creating a supportive atmosphere that supports technology acceptance and usage. Furthermore, the substantial and significant positive influence of behavioural intention on use behaviour shows that interventions aiming at enhancing teachers' desire to utilise technology may result in higher technology acceptance and usage in the classroom. As a result, policymakers and educators should consider establishing and implementing programmes that cultivate a favourable attitude towards technology usage and a culture of creativity and experimentation in the classroom.

Finally, the internal consistency of all constructs was found to be satisfactory in the reliability analysis, suggesting that the measures utilised in the research are trustworthy and valid. These findings lend credence to the study's conclusions and support the application of the UTAUT model in future research on technology acceptance and usage in educational settings. This research sheds light on the variables that impact teachers' usage of technology in the classroom in Uganda. The study's results imply that efforts to encourage technology acceptance and usage among instructors should concentrate on raising performance requirements and creating conducive environments, as well as emphasising the potential advantages of employing technology to enhance teaching and learning outcomes. These findings might help to guide the development of successful initiatives to promote technology acceptance and usage in Ugandan schools, resulting in better educational results for students.

5. Conclusions

Based on the results of this research, it is possible to deduce that a variety of variables impact Ugandan teachers' acceptance and utilisation of techno-pedagogy in a competency-based curriculum. Performance Expectancy and Facilitating Conditions were shown to be key predictors of Behavioural Intention, which had a considerable favourable influence on Use Behaviour. Effort Expectancy and Social impact, on the other hand, had no significant impact on Behavioural Intention, indicating that interventions targeted at encouraging technology adoption among teachers should concentrate on enhancing performance expectations and establishing positive enabling circumstances.

The current study's conclusions have various policy and practise consequences. To begin, initiatives to improve teachers' use of technology in the classroom should concentrate on encouraging positive attitudes towards technology, improving teachers' technical skills and knowledge, and providing suitable technological equipment and support. This may include educating teachers in technology usage, offering incentives for technology use, and developing enabling policies and infrastructure that allow instructors to successfully incorporate technology into their teaching practises. Second, the results of the current research

emphasise the need to include teachers in the creation and implementation of technology-related policies and initiatives. Policymakers can guarantee that technology-related initiatives are relevant, viable, and successful by incorporating teachers in decision-making processes, and by meeting the unique demands and constraints encountered by Ugandan teachers.

Finally, the results of this research add to the expanding body of knowledge on technology uptake and usage in educational settings. This research gives useful insights into the processes underpinning technology adoption and use behaviour among teachers by utilising the UTAUT model to analyse the variables that impact teachers' acceptance and utilisation of techno-pedagogy in a competency-based curriculum. This may help shape future research in this area, as well as the creation of more effective interventions to encourage technology acceptance and usage in educational settings.

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Acknowledgements

I would like to thank the Manager of ICT (Tuhame Moses) and the Senior Specialist (Siima Gilbert) at NCDC for their essential assistance during this research. Their advice, knowledge, and support were important in determining the path and execution of my study. In addition, I want to express my heartfelt gratitude to the instructors who generously gave up their time to participate in the survey during our data gathering period. Their excellent ideas and contributions have enhanced the study's results. Finally, I would like to express my gratitude to my wife (Nabaggala Maria) for her unfailing support, understanding, and patience during this journey. Her affection and support gave me the bravery and inspiration I needed to overcome obstacles and finish my project.

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Biography

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