# Applicability and Effectiveness of UTAUT Model in Teaching and Learning Economics at FCT College of Education, Zuba, Abuja.

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## ABSTRACT

The integration of technology into education is increasingly crucial for preparing students for the demands of the 21st century. This study investigates the adoption and use of Information and Communication Technology (ICT) in teaching economics and social science courses at the FCT College of Education, Zuba, Abuja, utilizing the Unified Theory of Acceptance and Use of Technology (UTAUT) model as a theoretical framework. Through a mixed-methods approach including surveys and analysis of demographic data, the study examines various factors influencing technology adoption and usage behaviour among lecturers and students. Findings indicate that while ICT facilities are perceived as beneficial and easy to use, there is a need for enhanced technical support and assistance availability. The study underscores the importance of fostering a supportive environment for technology integration and recommends strategies to improve ICT adoption and utilization in educational settings.

**Keywords:** Technology integration, ICT adoption, Unified Theory of Acceptance and Use of Technology (UTAUT), education, economics, social science, FCT College of Education Zuba, Abuja, Nigeria.

## INTRODUCTION

The adoption and effective use of technology in education are critical in today's knowledge-driven society. As lecturers seek to prepare students for the demands of the 21st century, integrating technology into the classroom has become imperative (Prensky, 2001). The FCT College of Education in Zuba, Abuja, like many other educational institutions globally, faces the challenge of effectively incorporating technology into the teaching and learning of economics and economics and social science courses. The integration of technology into education has become an essential component of modern pedagogy. As digital technologies continue to reshape the educational landscape, lecturers and institutions seek effective frameworks for understanding and facilitating technology adoption among teachers and learners. The success of such integration depends on understanding the factors that influence both teachers' and students' acceptance and use of technology.

In this context, the Unified Theory of Acceptance and Use of Technology (UTAUT) model emerges as a robust theoretical framework for comprehending the factors influencing the adoption and utilization of technology in the teaching and learning processes. This research study explores the application of the UTAUT model in the context of teaching and learning economics and social science courses at the FCT College of Education, Zuba, Abuja (FCT College of Education Zuba), shedding light on its relevance and effectiveness in enhancing educational outcomes.

The Unified Theory of Acceptance and Use of Technology (UTAUT) model is a comprehensive framework

developed by Venkatesh et al. (2003) to understand the factors influencing technology adoption and use in various contexts. Grounded in social psychology and behavioural science theories, the UTAUT model posits that the acceptance and use of technology depend on several critical constructs, including performance expectancy, effort expectancy, social influence, and facilitating conditions. Additionally, the model acknowledges the moderating influences of gender, age, experience, and voluntariness of use. By synthesizing these factors, the UTAUT model provides a holistic perspective on technology adoption and usage behaviour.

The integration of technology in education has emerged as a transformative force in modern pedagogy. The model has been extensively applied in various contexts and has yielded valuable insights into technology adoption. Likewise, educational institutions worldwide are increasingly adopting technology-enhanced teaching and learning practices to enhance educational outcomes and student engagement. In this context, the Unified Theory of Acceptance and Use of Technology (UTAUT) model, has become a valuable framework for understanding the factors that influence the adoption and utilization of technology in educational settings.

In recent times, the College of Education Zuba, Abuja most particularly, the School of Arts and Social Science, specifically the Department of Economics, in line with global trends have taken a giant stride to introduce the use of technology in teaching and learning their courses. The great question is what is the level of this innovative stride in terms of performance expectancy, effort expectancy, social influence, and facilitating conditions amidst the traditional system of teaching and learning?

FCT College of Education Zuba, located in Abuja, Nigeria, is an institution dedicated to preparing future lecturers and enhancing their pedagogical skills. Given the dynamic nature of education and the increasing integration of technology, the college faces the challenge of effectively incorporating technological tools and resources into the teaching and learning of economics and social science courses. Understanding the factors that influence the acceptance and utilization of technology among both lecturers and students at this institution is vital for optimizing the benefits of technology-enhanced education. This research study explores the applicability and effectiveness of the UTAUT model in the context of teaching and learning economics at the FCT College of Education, Zuba, Abuja.

**Statement of the Problem**

The integration of technology in education has become a global imperative, offering the potential to enhance teaching and learning experiences. However, despite its transformative potential, there are persistent challenges related to the adoption and effective use of technology in educational institutions. The Federal College of Education, Zuba, Abuja (FCT College of Education Zuba) is no exception to these challenges.

One of the central problems facing FCT College of Education Zuba is the relatively low adoption rates of technology among both lecturers and students. Despite the availability of technological resources, there is a disconnect between the potential benefits of technology-enhanced learning and its actual utilization. This raises questions about the factors contributing to this low adoption and the barriers that hinder lecturers and students from embracing technology in their teaching and learning processes.

While previous research has examined technology adoption in educational settings, there is a dearth of comprehensive studies that specifically investigate the applicability of the UTAUT model in the Nigerian context and, more specifically, within institutions like FCT College of Education Zuba. The study delves into the underexplored factors such as cultural, infrastructural, and institutional aspects that may influence the acceptance and use of technology, thereby contributing to a richer understanding of the dynamics at play.

However, Fresh awareness of ICT came to the college by the new Provost and with the assistance of the

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Tertiary Education Trust Fund (TET fund) and National Communication Commission has called for new research into how to develop and integrate ICT into teaching and learning in the College as a testing ground for ICT integration into Nigeria Colleges of Education system. According to this action plan, FCT College of Education, Zuba is focusing on several innovations such as; to assure the availability of all anticipated ICT services at any workplace in the College.

To assure the availability of user-level data communication services such as e-mail, access to internet and internet/ intranet services. Thirdly, to promote office computing, fourth, to improve the efficiency and effectiveness of library operations, among others. This background has accentuated the use of ICT as having the potential to benefit the individual user and his/ her organization. Unfortunately, the use of ICT by students in the College has consistently been reported to be low implying non-use of the ICT resources. The effectiveness of technology integration in improving teaching and learning outcomes remains an essential concern.

Many questions are raised about the adoption and integration of ICT in the college. i. is, whether the adoption of technology, guided by the UTAUT model, has a significant impact on the quality of education and the academic performance of students in social science courses. ii. it also raises questions about the extent to which technology integration aligns with the educational goals and objectives of FCT College of Education Zuba. iii. Is there an existing gap between technological availability and lecturers' ability to harness its potential? iv. Can we identify potential areas for capacity-building and professional development? This is the crux of this study.

**Background to Unified Theory of Acceptance and Use of Technology (UTAUT)**

Unified Theory of Acceptance and Use of Technology (UTAUT) was introduced by Venkatesh and colleagues the year 2003. The UTAUT infers the use of innovations such as ICT to four core paradigms. The four paradigms are: "performance expectancy" (PE), "effort expectancy" (EE), "social influence" (SI) and "facilitating conditions" (FC) (Travica, 2008; Gupta, Dasgupta & Gupta, 2008).

The purpose of this study was to determine the strength of the predictors (EE, PE, SI, and FC) on students' intention to accept and use ICT for learning and research. The factors that may influence ICT acceptance by ECONOMICS students are illustrated in Figure 1. The study is based on the model of Venkatesh et al. (2003), which has four exogenous variables and two endogenous variables, however, the moderating variables have been excluded in this study.

However, from their analysis of 450 articles, Williams, Rana, Dwivedi and Lal (2011), reported that, although a large number of studies have cited the [UTAUT] originating article [Venkatesh et al., 2003] since its appearance, only 43 utilized the theory or its constructs in their empirical research, implying that so far, most researchers cite UTAUT instead of using it. This study was intended to narrow this theoretical gap where UTAUT is generally ignored.

**Objective of the Study**

1. To show the extent to which students have accepted the use of ICT in the teaching of Economics.
2. To highlight the extent to which students perceive ICT in the teaching of Economics.
3. To investigate the level at which lecturers influence other students' intention to use ICT in the teaching of Economics.
4. To examine the extent to which technical support has influenced students to use ICT available for learning Economics.
5. To establish the effect of students' background knowledge of ICT on their usage behaviour of ICT provided for learning Economics.

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**Research Questions**

The study focused on four research questions to address the research purpose.

1. To what extent have students accepted the use of ICT in teaching economics at FCT College of Education Zuba?
2. To what extent have students perceived ICT in the teaching of economics at FCT College of Education Zuba?
3. To what extent do students influence other students' intention to use ICT in teaching economics at FCT College of Education Zuba?
4. To what extent does technical support influence students to use ICT available for learning?
5. How has students' background knowledge of ICT influenced students' usage behaviour of ICT provided for learning?

**Hypothesis of the Study**

The following Null Hypothesis was tested:

**$H_{o1}$:** Effort expectancy has no influence on behavioural intentions to use ICT for learning by Economic students in FCT College of Education Zuba, Abuja.

**$H_{o2}$:** Performance expectancy does not influence students' behavioural intention to use ICT.

**$H_{o3}$**: Social Influence conditions have no influence on the behavioural intentions of students of Economics to use ICT for learning.

**$H_{o4}$:** Facilitating conditions have no influence on Economics students' use behaviour of ICT provided for learning.

**$H_{o5}$**: Behavioural intentions have no direct influence on Economics students' usage behaviour of ICT provided for learning.

**$H_{o6}$:** Background knowledge of ICT has no influence on Economics students' usage behaviour of ICT provided for learning.

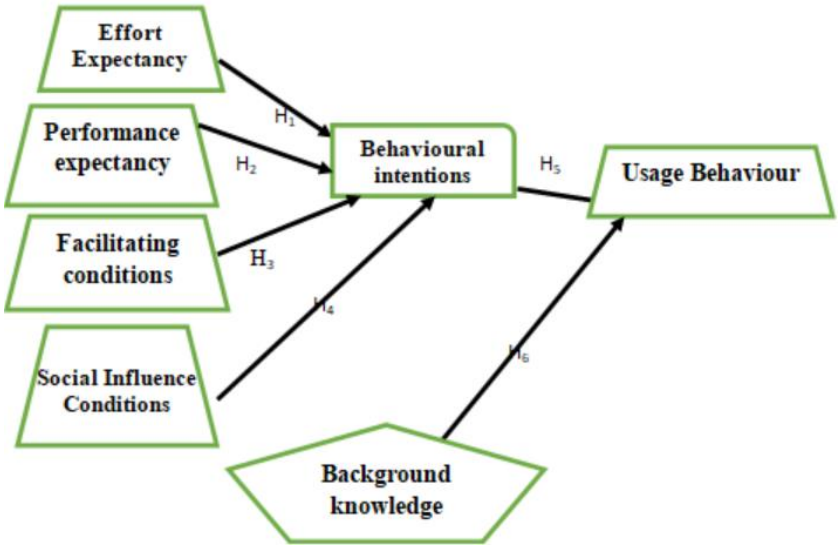


Figure 1: Conceptual and Hypothesis Framework

Source: Author's Design, 2023

By addressing these objectives, this research contributes to the broader discourse on technology integration in education, offering practical insights into how the UTAUT model can inform strategies for improving teaching and learning processes in the context of FCT College of Education Zuba and potentially in similar educational institutions.

This research study holds significant implications for both educational practitioners and policymakers. Examining the factors influencing technology adoption and use in the teaching of economics and social science courses, offers insights into how the college can enhance its pedagogical practices. Furthermore, the study's findings contribute to the development of strategies aimed at improving educational outcomes, fostering student engagement, and preparing students for the digital age.

## METHODOLOGY

### Research Design

### Population of the study

The target population used for this study comprises lecturers and students of FCT College of Education. Zuba. All six hundred and sixty-five (665) students registered for NCE I, NCE II and III in the Department of Economics in FCT College of Education, Zuba for the 2022/23 academic session.

### Sample

Out of the 665 population, 234 students were selected as samples in line with Krejcie and Morgan's 1970 guideline for sample size selection with 95% degrees of confidence, and 5% margin of error. The sample students were divided into experimental and control groups based on pre-test scores. To equate the experimental and control groups, a Lecturer pre-test was administered. Then the sample students were divided into two groups through a random sample technique. The total number of male participants was 141 while the female students were 93. Each group has at least 50 female students.

### Validity

Content validity of both pre-test and post-test was approved by the doctorial committee and subject experts. Items were chosen from learning materials which were taught during the period of experimental study. All the test items were based on the material of the units taught to the sample students.

### Analysis and interpretation of data

Two sets of questionnaires were designed for the study. The first was based on a seven-point Likert scale while the second questionnaire was designed to gather demographic information. The seven-point Likert scale ranges from (1) to (7) representing strongly agree and strongly disagree respectively, (2) and (6) represent moderately agree and disagree while (3), (5) and (4), represent agree, disagree and neutral. A total of 234 questionnaires were administered and 220 were returned representing 94% of the total sample. Questionnaires were circulated by the researcher assistants and class representatives immediately at the end of the semester. Data were analyzed using STATA 2.0 software for data analysis.

## DATA ANALYSIS

### Demographic Representation.

As earlier stated, a total of 234 questionnaires were administered, while 220 were returned representing 94% of the total sample. The researcher and his team thus work on the returned 220 questionnaire for data

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analysis.

Table 1: Respondents' Demographic Data (N=220)

| Character | | Frequency | Per cent |
|---|---|---|---|
| Gender | Male | 120 | 54.55% |
| | Female | 100 | 45.45% |
| Age | Under 20 | 67 | 30.45% |
| | 20 -30 | 83 | 37.73% |
| | 31-40 | 34 | 15.45% |
| | 45 and above | 36 | 16.36% |
| Course combination | Eco/His | 22 | 10% |
| | Eco/Sos | 132 | 60% |
| | Eco/Eng | 21 | 9.55% |
| | Eco /Geo | 45 | 20.45% |
| Character | | Frequency | |
| ICT Usage | Once or more a day | 147 | 66.82% |
| | Once a week | 36 | 16.36% |
| | Twice a month | 13 | 5.91% |
| | Once a month | 22 | 10% |
| | Never | 2 | 0.91% |
| Prior knowledge of ICT | Already had knowledge. | 69 | 31.36% |
| | No serious knowledge | 47 | 21.36% |
| | Never had. | 104 | 47.27% |

Source: Field Survey, 2023

Table. 1 provides demographic data on respondents, including gender, age, course combination, ICT usage, and prior knowledge of ICT. Regarding Gender Distribution show there were 120 male respondents (54.55%) and 100 female respondents (45.45%). This implies that the gender distribution is relatively balanced, with slightly more male respondents. In relation to age distribution, the largest age group is 20-30, with 83 respondents (37.73%), followed by under 20 with 67 respondents (30.45%). The age group 31-40 has 34 respondents (15.45%), and those 45 and above have 36 respondents (16.36%). Form the above, it can be implied that the majority of respondents are in the younger age brackets, with a significant portion falling between 20-30 years old.

The most common course combination is Economics-social studies combination with 132 respondents (60%). Follows by economics – geography combination with 45 respondents (20.45%), Economics – English combination has 21 respondents (9.55%), and Economics-History with 22 respondents (10%). It shows from the above that Economics-/Social studies combination is the most populous respondents, indicating a strong interest or enrolment in this course pairing.

On ICT usage, the majority of respondents (66.82%) were reported to be using ICT once or more a day. Only a small percentage (0.91%) reported never use ICT. There is a range of usage frequencies reported, with some using ICT once a week (16.36%), twice a month (5.91%), or once a month (10%).

On having prior knowledge of ICT, only a meagre amount, 31.36% of respondents reported already having

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knowledge of ICT. 21.36% reported having no serious knowledge of ICT.

Nearly half of the respondents (47.27%) reported never having had any knowledge of ICT.

This indicates a diverse range of experiences with ICT among the respondents, with a significant portion having limited or no prior knowledge. The data suggests a relatively diverse sample in terms of gender, age, and prior knowledge of ICT. This disparity might be unconnected with the fact that most of the respondents come from interior villages where there was no presence of ICT devices and electricity supply.

**Descriptive Statistics**

Table 2: Data for ICT adoption using UTAUT indicators.

| Indicator | Mean | Std. Dev | N |
|---|---|---|---|
| pe1: The ICT facilities provided by the college are very useful to my learning activities | 5.7 | 1.82 | 220 |
| pe3: The use of ICT has increased my learning ability | 5.4 | 1.82 | 220 |
| pe4: The introduction of ICTs to the college has informed my chances of getting a good grade | 5.2 | 1.85 | 220 |
| ee1: Availability and interaction with ICTs in the college is clear and understandable | 5.1 | 1.72 | 220 |
| ee2: The availability and the use of ICTs have made me skilful. | 5.1 | 1.89 | 220 |
| ee3 It is easy to use ICT device provided by my college | 5.1 | 1.91 | 220 |
| ee4: It is very easy to learn and operate ICT devices provided by the college. | 5 | 1.79 | 220 |
| si3: My lecturers have been helpful in the use of ICT | 5.1 | 1.96 | 220 |
| si4: People have been encouraging me to always use the ICTs provided by my institution | 5.2 | 2.00 | 220 |
| fc1: there are resources necessary to use the ICT system | 4.9 | 1.94 | 220 |
| fc4: there are people readily available to assist with ICT usage difficulties | 4.4 | 2.06 | 220 |
| bi1: I will be ready to use the ICT devices provided in the next semester | 5.8 | 1.65 | 220 |
| bi2: I will use the ICTs provided in the next semester | 5.5 | 1.81 | 220 |
| bi3: I intend to use the ICTs provided in the next semester | 5.8 | 1.66 | 220 |
| use2: the ICT devices are used when learning in class | 4.8 | 1.88 | 220 |
| use3: Apart from learning, I use the ICTs for accessing personal materials. | 4.6 | 1.99 | 220 |

Source: Field Survey, 2023

The table presents data on various indicators related to the use of Information and Communication Technology (ICT) in teaching economics at Fact College of Education (COE) in Zuba. Each indicator is measured using a Likert scale, with mean scores and standard deviations provided for each indicator along with the sample size (N).

On the perceived effectiveness (PE) of ICTs, the mean scores for indicators related to the usefulness of ICT facilities (pe1), the impact of ICT on learning ability (pe3), and its contribution to academic performance (pe4) are all relatively high, ranging from 5.2 to 5.7. This suggests that students perceive ICT as beneficial to their learning and academic outcomes. For ease of use and skill development, the indicators related to the clarity of ICT availability and interaction (ee1), ease of use (ee3, ee4), and skill development (ee2) all have

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mean scores above 5, indicating that students find ICT devices provided by the college clear, easy to use, and conducive to skill development. When Support and Encouragement are considered, students perceive their lecturers (si3) and peers (si4) as supportive and encouraging regarding the use of ICT, as evidenced by mean scores above 5. This positive perception suggests that there is institutional support for ICT integration in teaching.

On resource and assistance availability, while the mean score for the availability of necessary resources (fc1) is relatively high, indicating perceived adequacy, the mean score for the availability of assistance with ICT usage difficulties (fc4) is comparatively lower. This suggests that there may be room for improvement in providing support for students facing ICT-related challenges. More so, based on the behavioural intentions and actual usage, the indicators related to students' intentions to use ICT devices in the next semester (bi1, bi2, bi3) all have high mean scores, indicating a strong intention among students to continue using ICT. However, the mean scores for actual usage of ICT devices in class (use2) and personal purposes (use3) are slightly lower, indicating a potential gap between intention and behaviour.

Overall, table 3 illustrates the descriptive statistics for the UTAUT constructs. The mean values for effort expectancy, performance expectancy and social influence indicators are between 5 and 6, which implies that most of the students' responses were either somewhat Agree or Moderately Agree. The descriptive statistics also suggest that most of the respondents agree with the statements in the questionnaire as observed in Table 3. The data also suggest that students at Fact COE Zuba perceive ICT integration in teaching economics positively, attributing it to increased learning effectiveness and academic performance. The college's ICT facilities are generally perceived as useful, easy to use, and supported by both lecturers and peers. However, there is a need to ensure adequate support for students facing ICT usage difficulties and to bridge the gap between behavioural intentions and actual usage. Addressing these areas can further enhance the effectiveness of ICT integration in teaching economics at Fact COE Zuba.

## KEY FINDINGS

1. Perceived Effectiveness of ICTs the findings reveal that students perceive ICT facilities as highly beneficial to their learning activities, with mean scores indicating strong agreement regarding the usefulness of ICT, its impact on learning ability, and its contribution to academic performance.
2. Ease of Use and Skill Development Students find ICT devices provided by the college clear, easy to use, and conducive to skill development. This positive perception underscores the importance of user-friendly technology in enhancing the learning experience.
3. Support and Encouragement Both lecturers and peers are perceived as supportive and encouraging regarding the use of ICT, indicating institutional backing for ICT integration in teaching. This supportive environment is crucial for fostering technology acceptance among students.
4. Resource and Assistance Availability While students acknowledge the presence of necessary resources for ICT usage, there is room for improvement in terms of readily available assistance for overcoming ICT usage difficulties. Addressing this gap could further enhance students' confidence and competence in utilizing technology for learning.

## CONCLUSION

The study conducted at FCT College of Education Zuba aimed to assess the effectiveness of integrating modern technology-based teaching methods in economics and social science courses, using the Unified Theory of Acceptance and Use of Technology (UTAUT) model as a theoretical framework. Through a comprehensive analysis of various indicators related to ICT adoption and usage, the study provides valuable insights into the perceptions and experiences of both students and lecturers in leveraging technology for teaching and learning.

## POLICY RECOMMENDATIONS

Towards enhance the effectiveness of technology integration in teaching economics and social science courses, ultimately improving educational outcomes and preparing students for the demands of the digital age, this paper recommends the following:

1. The college should prioritize the provision of readily available technical support to assist students and lecturers in overcoming ICT usage difficulties. This could involve establishing help desks, organizing training sessions, or appointing dedicated IT support staff.
2. Emphasis should be placed on ensuring that ICT devices and platforms provided by the college are user-friendly and intuitive. User experience should be prioritized in the selection and design of technology solutions to facilitate seamless integration into teaching and learning activities.
3. Efforts should be made to sustain and strengthen the supportive environment for ICT integration, including encouraging peer collaboration, recognizing and rewarding innovative teaching practices, and facilitating continuous professional development for lecturers.
4. The college should explore avenues to expand access to ICT resources, particularly for students with limited prior knowledge of ICT. Initiatives such as providing ICT literacy courses, improving internet connectivity, and establishing computer labs can help bridge the digital divide among students.
5. Regular evaluation of ICT integration initiatives should be conducted to assess their effectiveness and identify areas for improvement. Feedback mechanisms should be established to solicit input from students and lecturers, ensuring that ICT policies and practices remain responsive to evolving needs and challenges.
6. more so, the government should endeavour to ensure the development of the rural hinterland by providing basic facilities that can drive ICT integration into Nigerian education most importantly in the rural area.
7. Finally, students from diverse departments and multiple colleges of Education should be involved in future studies to ensure the reliability of this research findings. While additional variables be incorporated to enhance the explanatory power of predictors, considering the variations in research environments.

## EXECUTIVE SUMMARY

The world today is going digitally gaga, and technology is taking over the whole system. The reverse of technology today, in all aspects of life, especially in teaching and learning cannot be compromised especially in teaching courses in arts and social science. In line with this fact, there is an astute need to make a U-turn from the dogmatic/traditional methods of teaching and learning Economics toward a digitalized and technological-based teaching and learning system. This study to be undertaken therefore is a skill-based and observational research aimed at looking at students' outcomes using different modern-technology-based teaching methods using some multimedia.

The study sources data from both primary and secondary sources. The primary source consists of student academic performances in arts and social science courses in the period of using modern technology-based teaching methods in selective courses. The secondary source is students' responses to a questionnaire titled: to generate their experiences in the selected courses and over the periods when modern technological gadgets were not introduced. Means were used for the descriptive data analysis, while multiple linear regression analysis tested the hypotheses at the multivariate level.

It is believed that the result of the research is an epoch-making contribution to the field of teaching and learning in general and School Arts and Social Sciences in particular.

When the study is completed, the researchers intend to organize a workshop/seminar on the discovery(ies). And make

available their findings to the general public particularly the stakeholders (i.e. School administrators in secondary and tertiary institutions, educational administrators, ministry, departments and agencies of education, and UNESCO to mention but few.

**Motivation Statements**

There are three motivation statements for the paper.

1. **Closing the Educational Technology Gap:** In an era where technology is reshaping the educational landscape, there exists a critical need to investigate the acceptance and utilization of technology in teaching and learning. By examining the UTAUT model in the context of social science courses at FCT College of Education Zuba, this research aims to bridge the gap between theoretical frameworks and practical implementation, offering valuable insights to enhance the effectiveness of technology integration in education.
2. **Enhancing Learning Outcomes through Technology**: Education plays a pivotal role in shaping societies, and technology has the potential to revolutionize how knowledge is imparted and acquired. This research seeks to explore the UTAUT model to uncover factors influencing the acceptance of technology by both lecturers and students at FCT College of Education Zuba. The ultimate goal is to identify strategies that can optimize the use of technology, ultimately leading to improved learning outcomes in the field of social sciences.
3. **Empowering Lecturers and Students for the Digital Age:** As technology continues to evolve, lecturers and students must adapt to remain competitive and engaged in the learning process. This research aims to empower lecturers and students at FCT College of Education Zuba by examining the UTAUT model within the specific context of social science courses. By identifying barriers and facilitators to technology acceptance, this research can inform policies and practices that equip both lecturers and students with the digital skills necessary for success in the 21st century.

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