



PERCEIVED INTENTION TO USE ONLINE COLLABORATIVE TOOLS FOR LEARNING IN SOUTH-WEST NIGERIA.

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Abstract

The world is experiencing a wave of social and technological transformation as the society is becoming more oriented to the usage of ICT. Today, people live in a society where instantaneous worldwide communication through electronic media such as Internet, computer as soon becomes common. This study is a descriptive research using cross-section survey method. The study is descriptive in the sense that the research describes events as they appear without any manipulation. The population for the study consists all the university undergraduate students in the South-western States of Nigeria. The target population for this study were all undergraduates' students of the Faculty of Science and Education in all Federal and State universities in South-west Nigeria. The result from Research Question one investigated whether there was any difference between male and female undergraduate students' intention to use online collaborative tools for learning in South-west, Nigeria. The findings revealed that the mean score on male undergraduate students' intention to use online collaborative tools for learning in South-west, Nigeria was 2.29 and that of their female counterparts was also 2.29. Research Question 2 investigated whether proprietorship of undergraduates influenced their intention to use online collaborative tools for learning in South-west Nigeria. The findings revealed that the mean score on federal owned universities' undergraduate students' intention to use online collaborative tools for learning in South-west, Nigeria was 2.28 and the mean score on state owned universities' undergraduate students' intention to use online collaborative tools for learning in South-west, Nigeria was 2.29. The research concludes that undergraduate students generally have a positive intention to employ collaborative tools for their learning purposes. The study recommended that government should provide essential assistance for the acquisition of required collaborative facilities. This assistance could take the form of exemptions from excise duties, price reductions, and the provision of these facilities to higher education institutions at no cost. Such measures would incentivize undergraduate students to readily adopt and incorporate these tools into their learning processes.

Keyword: Intention to Use, Online Collaborative Tools, Learning, Proprietorship, Undergraduate Students'

Introduction

The significance of education for humanity is immeasurable, especially in the age of breakthroughs in science and technology. According to Kolawole and Aderogba (2019), education is described as a pivotal tool for fostering national socio-economic growth and development. The National Policy on Education (FRN, 2014) underscores the crucial role of education as a catalyst for societal transformation, with a primary focus on meeting the individual needs of citizens. Education is not only a fundamental right but also a central component of human development, serving as a prerequisite for achieving broader social, cultural, and economic objectives (NPE, 2004). UNESCO (2006) recognizes education as an essential and valuable endeavour for the advancement of a nation.

Tolorunleke, Haruna & Olugbade, (2023) described education as the total development of individual child, through acceptable methods and techniques, according to abilities and interest, as well as the needs of the society to take rightful place and the child meaningful contribution towards the development and advancement of his society. UNESCO (2006) perceived education as an act or experience that as a formative outcome, character and physical ability of an individual. In dispensation of technological growth and development, Nigeria's dream of educational change may never be achieved without upgrading the state of educational system at all levels (Kolawole and Aderogba, 2019). Development of any nation is dependent on her level of educational advancement and no country can claim to be educationally advanced unless it embraces technology for her educational activities this is important in order to aid her citizen's smooth transition from present technological stage into their desired global knowledge economy, where focus is on how people use knowledge rather than technology (Tijani, 2009; Yusuf, 2005 & Nancy, 2008).

Catherine, Javier & Francisco (2020) defined education as a process of preparing children for the real world by giving them the tools they need to live and function on their own. In the past, a person was considered literate based on his or her ability to read and write. However, in recent time, being literate has gone beyond these alone to include how online technological devices (Mullen & Wedwick, 2008) utilise. The world is experiencing a wave of social and technological transformation as the society is becoming more oriented to the usage of ICT. Today, people live in a society where instantaneous worldwide communication through electronic media such as Internet, computer as soon becomes common.

Statement of the Problem

Online collaborative tools are not the only effective learning collaborative tools. The application of online collaborative tools for learning, particularly in Nigerian universities is still at its infancy. Majority of Nigerian undergraduate students are neither familiar, nor skilful in employing these tools in the process of learning. It is of high importance that the conventional learning method should be supplemented with online collaborative tools like Blog, Twitter, Skype, YouTube, Wikki, Google Docs, LinkedIn, Drawbox, Facebook, Flickr which can stimulate and arouse students' interest to learn effectively. This will greatly influence their academic performance positively and consequently facilitate learning. Most Nigerian university students utilize these online

collaborative tools for entertainment purposes (listening to music, chatting on social media sites) which distract them from learning (Focheri & Molfino, 2010).

There are online collaborative tools that they can download to their mobile devices, which may improve their s and positively influence their academic performance. In Nigerian universities, much has not been done in employing online collaborative tools as innovative tools for learning (Abimbade, 2011). To the best knowledge of the researcher, there are limited studies on how online collaborative tools can be utilized for learning and how it can affect learning rate. It is in the light of this that this study set outto investigate the perception of undergraduate on the utilization of online collaborative tools for learning in selected universities in South-west, geopolitical zone of Nigeria.

Purpose of the Study

The main purpose of this study is to investigate perception of the utilization of online collaborative learning tools by universities undergraduate, in South-West Nigeria. Specifically, this study will:

1. investigate the intention of undergraduates to the use of online collaborative tools for learning;
2. investigate the influence of university proprietorship on undergraduates' intention to use online collaborative tools for learning.

Research Questions

1. Do Nigerian university undergraduates intend to use online collaborative tools for learning in South-west Nigeria?
2. What is the influence of proprietorship on undergraduates' intention to use online collaborative tools for learning in South-west Nigeria?

Literature review

In recent years, there has been an interest on how computers and the internet can best be harnessed to improve the efficiency and effectiveness of education at all level and in both formal and non-formal settings. The emergence of information and communication technology in sustaining Nigeria's standard of education cannot be overruled due to its benefits in the teaching and learning (Suleiman, Onojah, Omoyajowo, & Aderoju, 2017). ICT is an umbrella term that includes any communication devices or application, encompassing radio, television, cellular phones, computer and network hardware and software, satellites systems and as well as the various services and application associated with them such as video conference and distance learning (Akpan, 2008).The study further emphasize, that the use of ICT has become very important in human life most especially at the present time.

ICT has changed the way businesses and industries are conducted and influenced the way people work, interact and function in society (Bhattacharya & Sharma, 2007; UNESCO, 2002). ICT has become common phenomenon at home, at work, and in educational institutions (Kirkup & Kirkwood, 2005). The rapid rate at which new technologies change and develop also implies that higher education systems must keep pace with advancements in knowledge and skills, in addition to the demands and requirements for employees to stay relevant. It is crucial that universities in the region equip their students with the appropriate knowledge, skills and aptitudes to be competitive in an increasingly global and competitive economy. Although, the use of ICT is not

the panacea for all the challenges faced by higher education systems in the region, it does leverage and extend traditional teaching and learning activities, and has the potential to positively impact on learning (Jaffer, Ng'ambi & Czerniewicz, 2007).

Furthermore, ICT is becoming increasingly ubiquitous within higher education, and it has been used far beyond enhancing teaching and learning to include promoting research, scholarly community engagement, and administration (Jaffer, 2007). In addition, the integration of ICT in higher education is also moving beyond getting personal computers into the hands of learners and towards mobile technology, virtual world, and cloud computing, among others. Thus, higher education systems has to be innovative and leverage on the developments in ICT to lead by example in using these technologies to provide more accessible, affordable, effective and efficient higher education. The nations and the people in the region are counting on graduates of their higher education systems to be competitive in creating wealth for their respective countries.

Researchers tend to use different terms when referring to the use of ICT in higher education, and some of the common ones include educational technologies, learning technologies, e-learning, online teaching, digital learning objects, communication technologies, web-based learning, hybrid or blended learning and virtual learning environments (Mlitwa 2007; Kirkup & Kirkwood; 2005, Smith, 2004). Blurton (2002) defined ICT broadly as a diverse set of technology tools and resources for communicating, creating, disseminating, storing, and managing information. However, regardless of the terms used, (Mlitwa, 2007) linked these terms to knowledge about ICT, ICT as a tool to advance knowledge, or ICT as a domain of knowledge for using ICT as a tool. As a tool, it extends human capabilities to solve problems, helps students in acquiring knowledge, and assists teachers and administrators in enhancing teaching and learning. Technology also encompasses the knowledge and skills required to effectively use ICT as a tool.

Traditionally, courses in universities have emphasized content and are centered on textbooks. Lecturers taught through lectures and presentations, and tutorials and assignments enabled students to rehearse and consolidate learning (Oliver, 2000).¹⁰⁹ However, current pedagogical orientation and instructional technologies coupled with the pervasive presence of ICT encourage curricula focusing on competency and performance. These curricula emphasize capabilities and place importance on how information is used and, thus, require access to a multitude of information sources and information types. Learning is student-centered and learners require confidence in their core intellectual abilities, such as communication, interpretation, reflection and resolution (Forde, 2007)

The use of ICT in higher education has resulted in a move from teacher-centered delivery and transmissive learning to student-centered learning. ICT functions as information sources and cognitive tools, supporting and enabling students to be responsible for their own learning (Jonassen & Reeves, 1996). Hattangdi and Ghosh (2008) used the terms informative, situating and constructive tools to further define the functions of ICT. Learning environments become inquiry-based and problem-centered within authentic settings. Lecturers are facilitators, coaches and mentors and ICTs support the learning environment (Oliver, 2000).

Meaning, Concepts and Categories of the selected Online Collaborative Tools for Learning

Heritage (2011) defines collaborative as an adjective which means working together towards a common end. Collaborative tools are computer software designed to help people involved in a common task achieve their goals. It is usually associated with individuals not physically co-located, but instead working together across an Internet connection. It can also include remote

access storage systems for archiving data files that can be accessed, modified and retrieved by the distributed work group members.

Online collaboration tools are web-based applications that offer basic services such as instant messaging for groups, mechanisms for file sharing and collaborative search engines (CSE) to find information distributed within the system of the organization, community or team. Additionally, the functionality is sometimes further expanded by providing integrated online calendars, shared online-whiteboards to organize tasks and ideas or internet teleconferencing integrations. The variety of available online collaboration tools is overwhelming. Their focus ranges from simple to complex, inexpensive to expensive, locally installed to remotely hosted and from commercial to open source (Kim, 2005).

In recent global development, collaboration has become an essential skill necessary for effective functioning in society. The emergence of Web 2.0 has been heralded as a tool for facilitating collaboration. Examples of Web 2.0 technologies include Twitter, Facebook, MySpace, Wikis, Google Docs, and Blogs, which allow the exchange of thoughts via the Web without restrictions of time or place. One of the most popular Web 2.0 technologies is Wiki, which has shown much promise in promoting communication, collaborative authoring, and information sharing (Parker, 2009; Trentin, 2009). There are many examples of Wiki applications (for instance, Wikidot, Mediawiki, Wiki) that have been spawned since the launch of Wikipedia in 2002. Wikis are characterized by simplicity, accessibility, and interoperability. They combine the functionality of a word processor and a web browser.

As long as a computer with internet access is available, web users are able to create and edit the content of Wiki pages collaboratively without the technical knowledge normally required for writing HTML code. Similar functionality is also provided with Google Docs. Google Docs, another online collaborative tools, is a free web-based application that allows users to create and to share online documents, spreadsheets, presentations, and forms. Similar to Wikis, Google Docs allows concurrent online editing and collaboration for knowledge building by multiple users. These applications have the potential to alter the educational experience of students. In recent years, education has been undergoing a shift from teacher-centered and instruction-based curriculum implementation to student-centered and inquiry-based learning (Chu, 2009).

Students are routinely required to engage in collaborative learning activities such as group projects, presentations, group discussion, and peer evaluation that require significant collaboration and communication with classmates. Among all available online collaborative applications, choosing a suitable online platform to facilitate collaboration with and among students could be a difficult task for a course instructor. The use of Web 2.0 technologies has the potential to harness cyberspace in a more interactive and collaborative manner, increasing individuals' social interactions and active engagement (Murugesan, 2007).

Rollett, Lux and Strohmaier, (2007) described online as an ideal online platform for collaborative projects (Engstrom & Jewett, 2005). The web-based open-editing functions of Wikis allow a relatively low-cost knowledge creation process (Stvilia, Twidale, Smith, & Gasser, 2008). Wikis are easy to use because they do not require additional software and are easily accessible (Desilets, 2005). Wiki users can create wiki pages and fill them with a variety of content (for example, text, images, graphs, maps). users can then edit the content as needed or desired (Raitman, 2005), while application tracks the revisions made.

Through the use of a wiki, groups of people with a common goal can work collaboratively and simultaneously on a project by jointly creating one single hypertext document. Thus, facilitating

knowledge construction (Fuchs-Kittowski & Kohler, 2005). The Wikipedia is perhaps the most influential wiki-based web project. Wikipedia is one of the most commonly used encyclopedias in the world (Richardson, 2004). Thousands of web users have volunteered their time in co-authoring this high-quality encyclopedia in their native language (Tapscott & Williams, 2006). However, unlike any other encyclopedia, Wikipedia is not annually reviewed by appointed reviewers but reviewed when seen fit by peers (Long, 2006). An investigation conducted by Nature in 2005 has shown that information accuracy of Wikipedia came close to the professionally developed Encyclopaedia Britannica in that 162 errors were found in Wikipedia while 123 errors were identified in Encyclopaedia Britannica (Leadbeater, 2009).

The characteristics of a wiki as a shared tool fit well with the processes associated with collaborative learning and knowledge management. In the education domain, web-based environments are used for joint problem-solving, knowledge building and sharing (Nevgi, 2006) where learners are able to practice, collaborate, reflect critically, negotiate, and build consensus similar (but not the same) to that of a face-to-face setting (Liaw, Chen, & Huang 2008). Applications of Wikis also involve aspects of course management and support distance education (Chao, 2007; Parker & Chao, 2007; Bold, 2006), while the use of a constructivist pedagogy has resulted in considerable benefits to students (Richardson, 1998). Previous research in education has focused on four major areas: the rationale for using wikis, collaborative learning and writing, knowledge building and management, and sharing and structuring of information (Chu, 2009; Chu, 2008; Bruns & Humphreys, 2007; Bold, 2006; Changwatchai, 2005).

The literature provides evidence that wikis provide useful platforms for collaborative learning activities at different education levels and in different subject areas (Lamb & Johnson, 2010), including heightened accessibility and effective collaboration between tertiary students through their use (Bold, 2006). For example, Augar, Raitman, and Zhou (2004) utilized Media-Wiki to enhance social interaction with an icebreaker assignment. Bruns and Humphreys (2005) also adopted Media Wiki for developing an encyclopedia in an undergraduate course to provide a non-linear approach at documenting the multi-faceted evolution of new media technologies. Such collaborative work experience possibly helps enhance students' critical thinking skills and creativities, which are essential abilities for excelling in their future workplaces of this networked economy.

Despite the benefits mentioned, there have also been discussions about the potential pitfalls associated with the use of wikis in education. Rollett (2007) noted the uncertainties in providing stable services of Web 2.0 technologies by start-up companies. In addition, some applications and functions of a wiki may be disabled when it is installed on private servers owned by schools or universities. In order to maximize the benefits of using wikis in education, existing teaching practices and learning beliefs may also need to be revised (Thompson, 2007). For example, the traditional framework that only involves scheduled classes may need to recognize that considerable student work may be accomplished outside normal class times, requiring different strategies for teachers to manage the process and provide feedback. Clearly there needs to be recognition by teachers that the use of wikis in educational settings needs to be managed carefully. Effective implementation would seem to rely on understanding the balance between the strengths and weaknesses associated with the affordances of wikis, and the relationship between face-to-face and online student experiences.

Another online collaborative tools that has the potential to promote collaboration is Google Docs. Combining a suite of tools including web-based word processor, presentation, spreadsheet, and

online forms, Google Docs allows its users to work on collaboration projects by importing existing documents or creating new documents effectively and flexibly (Thompson, 2008). This suite of tools allows multiple authors to edit a document stored on a Google repository by using a simple browser-based editor simultaneously (Dekeyser & Watson, 2006; Skaf-Molli, Ignat, Rahhal & Molli, 2007). Users can contribute and fine-tune the contents while simultaneously allowing others to read the existing material and the changes as they are made (Thompson, 2007).

To get started with Google Docs, users must first create an account and then a document. They can then invite others to collaborate, assigning rights to update or edit the document. Changes to a document are automatically uploaded and saved to the server. Extensive revision histories are also maintained by the Google server, and authors can view the article as it appeared at any time in the past. Google Docs is relatively simple to use, relying on a WYSIWYG interface that doesn't require knowledge of special (as for Wikis) commands (Dekeyser & Watson, 2006). Multiple authors can create and edit documents, spreadsheets, and presentations in real-time using this tool, with all changes saved automatically on the Google (Skaf-Molli, 2007). There is considerable potential for Google Docs to serve as a platform for collaborative work. However, empirical evidence of the impact on online collaborative work is yet inadequate as much of the research focus has been on Wiki, which require users to learn syntax, rather than the simpler approach adopted by Google Docs.

Methodology

The methods and procedures that was employed in the process of collecting data for this research. It will be presented under the following sub-headings: Research Design, Sample and Sampling Technique, Research Instrument, Validation of Research Instrument, Procedures for Data Collection and Data Analysis Techniques.

This study is a descriptive research using cross-section survey method. The study is descriptive in the sense that the research describes events as they appear without any manipulation. A researcher-designed questionnaire was used to collect information from the respondents on the Perception of Undergraduates on the utilisation of Online Collaborative Tools for learning in selected Universities in South-West, Nigeria. Survey method was chosen for the study because it enabled the researcher to gather large amount of information on Undergraduates' perception of collaborative tools for learning.

The population for the study consists all the university undergraduate students in the South-western States of Nigeria. The target population for this study were all undergraduates' students of the Faculty of Science and Education in all Federal and State universities in South-west Nigeria. Stratified random sampling technique was used to select undergraduates along gender from the Faculty of Science and Education of the federal and state Universities so as to obtain clear data for the variables of gender that was used for the analysis. This was done across departments in each of the selected faculties in the universities.

The instrument for this study was a questionnaire adapted from the previous studies of Lund (2001), Moon, Ji-won and Kim (2001) and Olasedidun (2014). The questionnaire titled perception of undergraduates on the utilisation of online collaborative tools for learning. Items were selected based upon their relevance to perceived usefulness, perceived ease of use, attitudes toward use and intention to use online collaborative tools for learning.

Section III was sub-divided into four (A-D). These sub-divisions are:

A. Undergraduate perceived usefulness of online collaborative tools for learning.

The response mode for the items was Likert type rating of Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree (SD).

The analysis of data that was gathered through the questionnaire was done using descriptive and inferential statistics. The frequencies were converted to mean to answer the research questions

Result

Research Question One: Do Nigerian university undergraduates' intention to use online collaborative tools for learning vary based on gender in South-west Nigeria?

Table 1: Difference between Male and Female Intention to use Online Collaborative Tools for Learning

Gender of Respondents	N	% of Total N	Mean	Mean Difference
MALE	744	52.7%	2.29	
FEMALE	668	47.3%	2.29	0.00
Total	1412	100.0%	2.2858	

Research Question one investigated whether there was any difference between male and female undergraduate students' intention to use online collaborative tools for learning in South-west, Nigeria. The result was shown in Table 1. The findings revealed that the mean score on male undergraduate students' intention to use online collaborative tools for learning in South-west, Nigeria was 2.29 and that of their female counterparts was also 2.29. The grand mean score on difference between male and female academic undergraduate students' intention to use online collaborative tools for learning in South-west, Nigeria was 2.29 and the mean difference was 0.00. Since no differences existed in the mean score, it can be deduced that there is no difference between male and female undergraduate students' intention to use online collaborative tools for learning in South-west, Nigeria.

Research Question Two: What is the influence of proprietorship on undergraduates' intention to use online collaborative tools for learning in South-west Nigeria?

Table 2: Influence of Proprietorship on Intention to Use Online collaborative Tools for Learning

University Proprietorship	N	% of Total N	Mean	Mean Difference
FEDERAL	525	37.2%	2.2758	
STATE	887	62.8%	2.2918	-0.0160
Total	1412	100.0%	2.2858	

Research Question 2 investigated whether proprietorship of undergraduates influenced their intention to use online collaborative tools for learning in South-west Nigeria. The result was shown in Table 2. The findings revealed that the mean score on federal owned universities' undergraduate students' intention to use online collaborative tools for learning in South-west, Nigeria was 2.28 and the mean score on state owned universities' undergraduate students' intention to use online collaborative tools for learning in South-west, Nigeria was 2.29. The grand mean score on difference between federal and state undergraduate students' intention to use online collaborative tools for learning in South-west, Nigeria was 2.29 and the mean difference

was 0.02. With the differences which existed in the mean score, it can be deduced that university proprietorship of undergraduate students had influence on their intention to use online collaborative tools for learning in favour of state universities.

DISCUSSION

The intention of undergraduates intend to use online collaborative tools for learning in South-west Nigeria was examined by research question 1. I wish I never had anything to do with learning with online collaborative tools. The result of the mean score proved that university undergraduates intend to use online collaborative tools for learning in South-west Nigeria. The findings of this study agreed with the earlier findings of Venkatesh et al., (2003) as cited by Stigzelius (2011) defined behavioural intention, as the person's subjective probability that he or she will perform the behaviour in question. Robin (2011) explained Technology Acceptance Model to include the individual's behavioural intention to adopt the use of a system; behavioural intention is however intended to jointly determine the perceived usefulness and undergraduates attitude toward using online collaborative tools for learning. The study could not locate any other study to support or contradict this assertion.

The influence of proprietorship on undergraduates' intention to use online collaborative tools for learning in South-west Nigeria was investigated using research question 2. The result of the mean score established that university proprietorship of undergraduate students had influence on their intention to use online collaborative tools for learning in favour of state universities. The t-test analysis established that there was no significant difference among undergraduates in federal and state universities on their intention to use online collaborative tools for learning. The study is inconsistent with the empirical studies of Technology Acceptance Model variance in usage intentions and behaviour of individuals in collaborative system. In the original TAM2 study also affirmed that the extended model accounts for 40%-60% of the variance in usefulness perceptions and 34%-52% of the variance in usage intentions.

Implication of the Findings

Based on the findings of the study, the following implications can be drawn:

The findings have strong implications for the teaching learning process in Nigeria. It is an indication that there would be great improvement in the teaching and learning at the University level if collaborative tools could invariably be integrated into teaching and learning.

If collaborative tools is incorporated into teaching, it can lead to increased teaching competencies in the lecturers as well as enhancing the lecturers' confidence, interaction and involvement of the students in collaborative learning. The rigour of the talk and chalk method inherent in the traditional teaching and learning could be done away with.

Conclusions

This research explored the relationship among lecturers' intention towards collaborative tools in South-West Nigeria. The result obtained from data gathered and analyzed in this study indicated that the perception of undergraduates toward the intention of collaborative tools for learning was positive. It also showed that the undergraduates positively perceived the intention of collaborative tools for learning.

The research findings also revealed that male students exhibit a more favorable attitude towards the utilization of online collaborative tools for learning when compared to their female

counterparts among undergraduate students. Additionally, it was observed that undergraduate students generally have a positive intention to employ collaborative tools for their learning purposes.

The result as well showed that there was a significant relationship between undergraduates students' perceived usefulness, ease of use, attitude and intention to use collaborative tools for learning. The significant relationship was evident when each of the variables was used as dependent variable and others used as independent variables.

Recommendations

Based on the findings and conclusions of this study, the following recommendations were made: The government should provide essential assistance for the acquisition of required collaborative facilities. This assistance could take the form of exemptions from excise duties, price reductions, and the provision of these facilities to higher education institutions at no cost. Such measures would incentivize undergraduate students to readily adopt and incorporate these tools into their learning processes.

Undergraduates should help themselves by exhibiting high competencies in the utilisation of collaborative tools for cooperative learning;

Government and policy makers in education should endeavour to introduce the use of collaborative tools into university education curriculum in the universities so that both the lecturers and students will be using it for instructional purposes.

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