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THE PERCEPTION OF UNDERGRADUATES TOWARDS THE EASE OF USE OF ONLINE COLLABORATIVE TOOLS FOR LEARNING IN SOUTH-WEST NIGERIA

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Abstract

Online collaborative tools are online innovative and instructional tools that can be used to supplement traditional teaching and learning for the enhancements of students' positive academics performance. In spite of its immense instructional benefits, these tools has not been fully utilised for learning among undergraduates in Nigeria. Hence, the study examined the Perception of Undergraduates on the Utilization of online Collaborative tools for learning in selected Universities in South-west, Nigeria. The objectives of the study were to ; (i) Take inventory of the kind of online accessible tools available for learning among undergraduates in South-west Nigeria; (ii) investigate the perception of undergraduates towards the ease use of online collaborative tools for learning;. The study was a descriptive of the cross-sectional survey type. Two research questions were answered and tested respectively. One thousand, four hundreds and twelve sample of respondents were drawn from 12 Federal and State universities in South-west, Nigeria. Data were collected using structured questionnaire. Descriptive statistics of Mean score, Frequency counts and Percentage distribution were used to answer research questions. The study concluded that there was a significant relationship between undergraduate students' ease of use to use collaborative tools for learning. Based on the findings, the study recommends that government should give the necessary supports on the procurement of all needed facilities for collaborative learning.

Undergraduates should help themselves by exhibiting high positive attitudes and competencies in the utilization of online collaborative tools. Also, Undergraduate should help themselves by making use of online collaborative tools for instructional purpose and shift their foci from using it for fun and entertainment.

Keywords: Ease of Use, Online Collaborative Tools, Learning, Perception, Undergraduate

Introduction

Information and Communication Technology (ICT) has ushered in transformative changes across the economic, political, and educational domains, to the extent that its utilization has emerged as a vital indicator of a nation's progress and economic development. It has evolved into the fundamental building block of contemporary society. In the realm of education, the ICT landscape has shifted its focus from traditional educational research-based technological advancements to a digital knowledge-based approach (Jude & Dankoro, 2012).

The adoption of ICT has also emerged as a strategic imperative for universities worldwide, offering alternative avenues to enhance the delivery of high-quality education with greater effectiveness and efficiency (Ruthven, Hennessy & Brindley, 2004).

The impact of Information and Communication Technology (ICT) resources on higher education is evident through improved access to high-quality learning materials and their effective use in instructional delivery. Specifically, educators are proficient in utilizing these resources to foster creativity and intellectual development among learners. In an age characterized by information proliferation and technological advancements, the integration of ICT into the teaching and learning process is an undeniable necessity (Ozoji, 2020).

The 21st century is undeniably driven by ICT, and the extensive benefits and applications of ICT in education have garnered the attention of both the federal and state governments in Nigeria, as well as non-governmental organizations. This recognition of ICT in education is rooted in its demonstrated effectiveness and its contributions to performance enhancement in virtually all aspects of life (Pollard, 2004). The role of ICT in instructional methods in the 21st century is rapidly emerging as one of the most crucial and widely discussed issues in contemporary education policy (Aduwa-Ogiegbean & Iyamu, 2005).

Furthermore, the integration of ICT into the curricula of many nations is a proactive step toward achieving widespread computer literacy (Tenson, 2003).
The rapid expansion of Information and Communication Technology (ICT) has brought about significant changes in the 21st century, positively impacting the evolving needs of modern societies (Bandele, 2008). Consequently, ICT tools are becoming increasingly essential within the educational system. Educational institutions face a growing demand to employ ICT in teaching the skills and knowledge necessary for students to thrive in the 21st century (Tenson, 2003). It is argued that the influence of ICT is one of the most crucial aspects of education. The integration of ICT into education creates learning environments and transforms the learning and teaching processes, enabling students to engage with knowledge actively, self-directed, and constructively (Bandele, 2008). The author further emphasizes that ICT should not merely be seen as tools that can be added to or replace traditional teaching methods but should be regarded as vital tools supporting innovative approaches to teaching and learning, thus enhancing the quality of education.
Recognizing the significance of ICT in education, numerous studies have underscored its educational advantages across all levels. Nwankwo (2020) asserts that the effective management of the education system necessitates the proficient use of ICT tools, which facilitate seamless operations in policymaking, teaching and learning, research, and education monitoring through information dissemination. ICT encompasses a broad range of communication devices and applications, especially those involving the Internet, all of which contribute to its pivotal role in modern education.
Information and Communication Technology (ICT) has become an essential tool for democratic societies, fostering the development of information technology and high-quality education. Consequently, it is impossible for any nation to fully engage in globalization and harness the potential of its citizens without promoting technological literacy (Cunningham, 2007). In contemporary times, it is widely recognized that knowledge has supplanted industrial organization and production as the primary driver of productivity. The concept of a knowledge society typically refers to a society where knowledge serves as the primary production resource, with education as a key conduit (Evers, 2003). The explosion of knowledge has led to significant advancements in learning, facilitated by a multitude of media, with the aim of elevating human knowledge.

Perceived usefulness, as defined by Hamid, Razak, Bakar, & Abdullah (2016), pertains to the extent to which an individual believes that using a specific system would enhance their job performance. Conversely, perceived ease of use refers to the degree to which a person believes that using a particular system would require minimal effort.

Statement of the Problem

Online collaborative tools represent just one aspect of effective learning tools, and their use in education, particularly in Nigerian universities, is still in its early stages, as highlighted by Aladesusi (2016) in Christopher, Kayode, Shedrach, and James (2014). A significant portion of Nigerian undergraduate students lacks familiarity and proficiency in employing these tools for learning purposes. It is imperative that traditional teaching methods be complemented with the integration of online collaborative tools such as Blogs, Twitter, Skype, YouTube, Wikis, Google Docs, LinkedIn, Drawbox, Facebook, and Flickr. These tools have the potential to engage and ignite students' interest in effective learning, ultimately leading to improved academic performance and enhanced learning outcomes. Unfortunately, a majority of Nigerian university students predominantly use these online collaborative tools for entertainment purposes, such as listening to music and engaging in social media chats, which can serve as distractions from their educational pursuits, as noted by Focheri and Molfino (2010).

There are mobile-friendly online collaborative tools available for download, which have the potential to enhance students' skills and have a positive impact on their academic performance. In Nigerian universities, there has been a limited effort to embrace online collaborative tools as innovative learning resources, as observed by Abimbade (2011). To the researcher's best knowledge, there is a scarcity of studies that explore the utilization of online collaborative tools for learning and their effects on learning outcomes. In light of this gap in the literature, this study was undertaken to investigate undergraduate students' perceptions regarding the use of online collaborative tools for learning in selected universities within the South-west geopolitical zone of Nigeria.

Research Questions

1. What is the perception of undergraduates towards the ease of use of online collaborative tools for learning in South-west Nigeria?

2. Do Nigeria university undergraduates' perceptions on the ease of use of online collaborative tools for learning vary based on gender in South-west Nigeria?

Significance of the Study

The study would be of great benefit to the following; students, universities, teaching and learning, colleges of education, and polytechnics lecturers, curriculum planners and education policy makers and future researcher. The findings of this study when completed would give insight into various concepts of online collaborative tools used in the process of teaching and learning. The study would also enable lecturers in the universities, colleges of education and polytechnics lecturers to utilize and adopt appropriate online collaborative tools in teaching and learning process. This study would also enable lecturers to be fully aware of the various online collaborative tools and their usefulness in an instructional process. In addition, time and space will be eliminated when lecturers properly integrate right online collaborative tools into teaching.

Literature review

Technological affordances of new and emerging online collaborative tools, their balance of functionality, ease of use and low cost make educators consider their pedagogical value (Ajjan & Hartshorne, 2008; Boulos, Maramba, & Wheeler, 2006). (Baltzersen, 2010) opined that the use of several online collaborative writing tools, such as blogs and wikis, has been integrated into educational settings. The advantages of wikis for a variety of different uses and their inclusion in learning processes have been broadly studied and documented in classrooms, distance and blended learning, as have the potential pitfalls and critical issues associated with their use. In higher education settings, research has been carried out on a wide range of subjects related to wikis, including issues as didactic and organizational arrangements for learning, design of open learning environments, and knowledge production (Kim & Ling, 2009).

However, the use of Google Docs (2008) being collaborative writing tools relatively comparable to wikis, remains a gap in research literature (Benson, 2012; Chu & Kennedy, 2011), though recently a number of contributions to the body of research particularly in an online collaborative learning have been made (Brodahl et al, 2011; Burden, 2012) Google Docs (GD) and EtherPad (EP) are tools promoted by software designers to be fairly intuitive to adopt for anyone

accustomed to a word processor like Microsoft Word or Open Office Writer. Yet, the fact remains that it is difficult to predict how students will behave in a real educational setting.

How important is the students' digital literacy and previous knowledge in ICT in such situations? What role do parameters such as age, gender and number of collaborators play in the collaboration and learning process? Are GD and EP potentially powerful tools supporting collaborative learning and encouraging the students to collaborate? And, is introducing the tools possible without teaching them in detail? Researches have been carried out on the benefits of online collaborative tools in higher education. Rienzo and Han (2009) found significant benefits of using GD's real-time editing capabilities in a management course with more than 400 students, and they anticipate additional benefits in the future, for example raising collaboration to a new level. Likewise, Tsoi (2010) reported that the outcomes of the process of integration of Web 2.0-mediated collaborative activities in terms of the richness of the contents of the blogs and wikis have been encouraging and positive. Furthermore, Rice (2009) claims collaborative writing in Web 2.0 environments not only to be a practical tool, but also a fluid, dialogical situation existing among writers, objects, and the informational contexts.

Garner (2010) provide a discussion of how technologies like GD can support collaboration around information and personal knowledge management. Chu, Kennedy, and Mak (2009) assessed students' perception on the effectiveness of MediaWiki and GD in report-writing processes, and analyzed usage experience, severity of potential problems and knowledge management (Chu & Kennedy,[94] 2011; Chu, Kennedy, & Mak,[94] 2009). The authors reported on undergraduate students in the Information Management Program, who found both Media Wiki and GD to be effective and enjoyable online collaboration and management tools. In a study with a total of 1002 students on technologies that may be suited to challenge the combination of Word and email in solving a non-face-to-face collaborative writing and editing task in three-person groups and distributed in time and space, Dishaw (2013) found that GD achieved high scores, much higher than Wiki, both due to its perceived usefulness and ease use, and its support for collaboration (real-time up-date editing; email, real-time chat and threaded comments available within the tool) and the clarity of the collaboration process. Brodahl et al (2011) highlight the importance of GD and EP claiming that properties and characteristics of the tools provide opportunities for multiple users to work on the same document and afford mega communication. Brodah &

Hansen (2014) found that use of GD increased motivation in writing tasks for academic purposes depending on how efficiently students used the tool.

Blau and Caspi (2009a) did research on education and psychology students sharing their written assignment for suggestions or editing via GD. "They found differences in psychological ownership, perceived quality of the document, but not in students perceived learning, and believe that a collaboratively written document might have higher quality than a document written alone (Brodahl,2011). They conclude that relation between perceived ownership and perceived learning is mediated by perceived quality of the written product (Caspi, & Blau, 2011) and improvement suggestions preferred over editing one another's writing (Blau, & Caspi, 2009a, 2009b).

Kittle and Hicks (2009) discuss, from new perspectives on literacies, issues about how learners work together and what online tools like word processors and wikis can enable, synchronously and asynchronously. They present sample procedures for how we can teach collaborative writing using technology and how to pay attention to what is happening in the document and mentally. Similarly, Brodahl (2014) considered, from the perspective of teacher-librarians, GD as collective writing tool in inquiry-based education. They discussed ways writing tools can be used in facilitating teaching and learning in order to think, create, and share at the same time as addressing subject areas in the classroom. Also, Krebs, Schmidt, Henninger, Burden (2012) think that weblogs and wikis are a promising way to improve students' learning and to impart their 21st century skills, but these assumptions are the best hypotheses. Empirical research is still necessary to confirm the potentialities of Web 2.0 for collaborative learning. (Brodahl, Hadjerrouit & Hansen,2011).

Burden (2012) opined that GD and EP are online collaborative tools that support and transform teacher learning. These collaborative editing tools are argued to facilitate new forms of interaction between individuals and groups, and they play a significant role in supporting the processes and contexts of learning, through three major affordances. They invite collaboration, participation and practice, and knowledge construction.

Elgort, Smith, and Toland (2008) argued that university students still favour individual learning instead of working collaboratively, although wiki technologies require collaboration among students. According to Luckin et al (2009), few learners reported engaging in genuine collaborative learning using Web 2.0 technologies. On the contrary, most learners reported that they did not

work collaboratively. Furthermore, despite the potential capabilities of Web 2.0, Azizi, Hession & Newpher (2023) reported that face-to-face meetings were the students' preferred means of facilitating group work and discussion. Kraut, Fussell, Brennan, and Siege (2002) indicated that people within limits can adopt the means of communication available, but "communication will be less social, more focused on the topic at hand, more planned, less ambiguous, and more likely to contain misunderstandings, than communication conducted in person".

Drion (2022) pointed out that the structure generated through social software intended to support collaboration and group interaction may not be pedagogically useful, and there are many ways that social software can fail to address the learners' needs. Criticisms are also expressed by Grion and Varisco (2007).The researchers explored the shared construction of professional identity and the nature of interaction in students sharing their case-work, a synthesis of real life scholastic experiences and pedagogical theoretical reasoning, by means of a collaborative writing tool. The authors further identified the need to provide a space for supporting these novice students to reflect more.

Ge & Huang (2023) opined that collaborative tools (like GD) can be used for empowering inquiry-based teaching practices in social studies classrooms, having pre-service students collectively gather, analyze, and interpret information. However, the author indicated that "even if teachers do have expertise in technology integration and time to mentor pre-service teachers, they may not have the opportunity to model diverse teaching strategies in the limited amount of time a pre-service teacher is present in their classroom, or they may lack of technology resources at a given placement school. Moreover Parker and Chao (2007) think that the role of the teacher is as important as in the traditional classroom. Teachers still need to teach web 2.0 as a skill, by incorporating social software into classroom, and to prepare students to make innovative uses of collaborative software tools.

Brodahl, (2011) found that digital competencies do not present any difficulty for the realization of GD-based activities in web-based peer assessment, while good preparation and support guidelines, and the response and support given by the teacher (versus peers) are essential for its success and students' use and appreciation of feedback. Likewise, Kim, Hong, Bonk, and Lim (2009) stressed that effective teacher intervention is a crucial component leading to better group performance, collaboration, and reflection. In contrast, Prensky (2010) claimed

that online collaborative tools could be a tool that students use for learning essential skills and "getting things done" (p. 103).

Hadjerrouit (2013) asserted that wiki and its relationship in teacher education is the factors of success that can be divided into content-related, tool-related, and group-related factors. Lomas, Burke, and Page (2008) opined that collaboration tools, as opposed to online communication tools, should encourage communication among learners, aids creative writing and thinking among learners. Online collaboration tools are excellent way to engage students in both virtual and physical classrooms. They enable active learning and facilitate peer learning. For example, incorporating online brainstorming tools such as Padlet or Mind Meister into library instruction allows students to bounce ideas off one another and share their own individual experiences and perspectives, which has been shown to increase cognitive thinking and comprehension (Cooper, 2014). Collaboration tools also have some drawbacks. Some of the tools involve a learning curve, which can be an issue for students and librarians who are resistant to trying new technologies. One strategy for dealing with this challenge is to assign an introductory activity using the technology to help students become more familiar with the tool (Center for Teaching Excellence, Cornell University 2014).

In library instruction, online mind and concept mapping tools can be used to generate keywords for searches, to narrow down research topics, and for students in groups to give feedback on each other's topics. Fuchs (2014) describes a variety of possible uses of Padlet, including students post to search for topic at the beginning of an instruction. The author pointed out that in addition to serving as a formative assessment, this tool engages students in peer learning and helps them to assess their own skills. The activity could be taken further by having students suggest additional terms for their peers and adding terms to the Padlet after the library instruction session. From the fore going online collaborative tools has revolutionised higher education students' pattern of learning and it has transformed teaching and learning process.

Methodology

This chapter presents 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.

Research Design

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.

Sample and Sampling Techniques

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.

Research Instrument

The instrument for this study was a questionnaire adapted from the previous studies of Lund (2001)[106], Moon, Ji-won and Kim (2001)[106] 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 ease to use 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).

Data Analysis Techniques

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 1: What is the perception of undergraduates towards the ease of use of online collaborative tools for learning in South-west Nigeria?

Table 1: Perceived Ease of Use of Online Collaborative Tools

S/N		SA		A		D		SD		Mean	SD
		N	%	N	%	N	%	N	%		
1)	Online Collaborative tools are easy to use for learning	688	48.7%	601	42.6%	117	8.3%	6	0.4%	3.40	.656
2)	Online collaborative tools are simple to use for learning	341	24.2%	891	63.1%	173	12.3%	7	0.5%	3.11	.610
3)	Online collaborative tools are user friendly	498	35.3%	676	47.9%	237	16.8%	1	0.1	3.18	.700
4)	I learned to use online collaborative tools quickly for learning	395	28.0%	747	52.9%	246	17.4%	24	1.7%	3.07	.719
5)	I quickly remember	467	33.1%	640	45.3%	294	20.8%	11	0.8%	3.11	.748

	how to use online collaborative tools for learning										
6)	Online collaborative tools make my work faster	501	35.5%	721	51.1%	188	13.3%	2	0.1%	3.22	.668
7)	I became more skilful with using online collaborative tools for learning	485	34.3%	702	49.7%	208	14.7%	17	1.2%	3.17	.714
8)	My interaction with other student using online collaborative tools is understandable	378	26.8%	824	58.4%	204	14.4%	6	0.4%	3.11	.645
9)	I can use online collaborative tools for learning without any written instructions	477	33.8%	625	44.3%	281	19.9%	29	2.1%	3.10	.781
10)	I recover from	457	32.4%	701	49.6%	232	16.4%	22	1.6%	3.13	.731

	mistakes quickly when I use online collaborative tools for learning										
	Perceived ease of use of online collaborative for learning									3.16	

The perception of undergraduates towards the ease of use of online collaborative tools for learning in South-west Nigeriawas investigated and the results were presented as shown in table 10. The findings indicated that 688 (48.7%) respondents strongly agreed that Online Collaborative tools are easy to use for learning, 601 (42.6%) respondents agreed, 117 (8.3%) respondents disagreed while 6 (0.4%) respondents strongly disagreed. The mean score of 3.40 established that majority of the respondents believed that Online Collaborative tools are easy to use for learning. Also, 341 (24.2%) respondents strongly agreed with the statement that Online collaborative tools are simple to use for learning, 891 (63.1%) respondents agreed, 173 (12.3%) disagreed while 7 (0.5%) respondents strongly disagreed with the statement. With a mean score of 3.11, most of the respondents accepted that Online collaborative tools are simple to use for learning. But, 498 (35.3%) respondents strongly agreed that Online collaborative tools are user friendly, 676 (47.9%) respondents agreed, 237 (16.8%) respondents disagreed while only 1 (0.1%) respondents strongly disagreed. A mean score of 3.18 means that higher number of the respondents agreed that Online collaborative tools are user friendly.

In addition, 395 (28.0%) respondents strongly agreed that they learned to use online collaborative tools quickly for learning, 747 (52.9%) respondents agreed, 246 (17.4%) respondents disagreed while 24 (1.7%) respondents strongly disagreed. The mean score of 3.07 established that most respondents learned to use online collaborative tools quickly for learning. Moreover, 467 (33.1%) respondents strongly agreed that they quickly remember how to use online

collaborative tools for learning, 640 (45.3%) respondents agreed, 294 (20.8%) respondents disagreed, while 11 (0.8%) respondents strongly disagreed. With a mean score of 3.11, majority of the respondents quickly remember how to use online collaborative tools for learning. Furthermore, the findings indicated that 501 (35.5%) respondents strongly agreed with the statement that Online collaborative tools make their work faster, 721 (51.1%) respondents agreed, 188 (13.3%) respondents disagreed and just 2 respondents with a percentage of 0.1 % strongly disagreed. The mean score of 3.22 proved that most respondents support the statement that Online collaborative tools make their work faster.

Also, 485 (34.3%) respondents strongly agreed that they became more skilful with using online collaborative tools for learning, 702 (49.7%) respondents agreed, 208 (14.7%) respondents disagreed, 17 (1.2%) respondents strongly disagreed with the statement. With the mean score of 3.17, most of the respondents became more skilful with using online collaborative tools for learning. In addition, the findings indicated that 378 (26.8%) respondents strongly agreed that their interaction with other student using online collaborative tools is understandable, 824 (58.4%) respondents agreed, 204 (14.4%) respondents disagreed while 6 (0.4%) respondents strongly disagreed. A mean score of 3.11 established that most respondents agreed that their interaction with other student using online collaborative tools is understandable.

Also, 477 (33.8%) respondents strongly agreed that they can use online collaborative tools for learning without any written instructions, 625 (44.3%) respondents agreed, 281 (19.9%) respondents disagreed while 29 respondents with percentage of 2.1% strongly disagreed with the statement. With a mean score of 3.10, higher percentage of the respondents agreed that they can use online collaborative tools for learning without any written instructions.

However, 457 (32.4%) respondents strongly agreed that they recover from mistakes quickly when they use online collaborative tools for learning, 701 (49.6%) respondents agreed, 232 (16.4%) respondents disagreed and 22 (1.6%) respondents strongly disagreed. A mean score of 3.13 proved that majority of the respondents agreed that they recover from mistakes quickly when they use online collaborative tools for learning. But the grand mean score on the Perceived ease of use of online collaborative for learning was 3.16. Thus the grand mean score of 3.16 which was greater than the 2.50 benchmark for a 4-likert scale response mode, it was established that most respondents perceived online collaborative tools ease of use for learning.

Research Question 2: Do Nigeria university undergraduates' perceptions on the ease of use of online collaborative tools for learning vary based on gender in South-west Nigeria?

Table 2: Difference in the Perceived Ease of Use Between Male and Female Undergraduate Students

Gender of Respondents	N	% of Total N	Mean	Mean Difference
MALE	744	52.7%	3.1448	
FEMALE	668	47.3%	3.1766	0.0318
Total	1412	100.0%	3.1598	

Difference in the Perceived ease of use of online collaborative tools for learning between male and female Undergraduate Students in South-west Nigeria were analysed in Table 15. The results showed that the mean score on the Perceived ease of use of online collaborative tools for learning of male Undergraduate Students was 3.14 while that of their female counterparts was 3.18. The difference in the mean score on Perceived ease of use of online collaborative tools for learning was 0.03.The differences in the mean scores established a difference in the Perceived ease of use of online collaborative tools for learning between male and female Undergraduate Students in favour of the female students.

Discussion

Based on the mean values of the results of the perception of undergraduates towards the ease of use of online collaborative tools for learning, the respondents' perception was positive. The grand mean score showed positive perception. This revealed that there will not be much difficulty in making use of collaborative tools for learning among undergraduates in South-West Nigeria.

This findings is consistent with the previous findings of (Elgort, Smith, and Toland (2008) argued that university students still favour individual learning instead of working collaboratively, although wiki technologies require collaboration among students. According to Luckin et al (2009), few learners reported engaging in genuine collaborative learning using Web 2.0 technologies. On the contrary, most learners reported that they did not work collaboratively. Furthermore, despite the potential capabilities of Web 2.0, Azizi, Hession & Newpher (2023) reported that face-to-face meetings were the students' preferred means of facilitating group work and discussion.

From the above findings, it can be deduced that perceived ease of use has prominent role in the meta-analysis of the relationship between the characteristics of an innovation and its adoption. This showed that majority of the undergraduates are not likely to have problem if collaborative tools should be finally integrated into learning. Capacity building of students as well as administrators and managers will therefore play a major role.

Conclusions

This research explored the relationship among lecturers' perceived ease of use 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 usefulness of collaborative tools for learning was positive. It also showed that the undergraduates positively perceived the ease of use of collaborative tools for learning.

Recommendations

Based on the findings and conclusions of this study, the following recommendations were made:

Government should give the necessary supports on the procurement of all needed collaborative facilities. This could be in form of free excise duty, reduction in their prices and free supply of the facilities into higher institutions. This will encourage all undergraduates to embrace its integration;

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

Reference

Abimbade, A. O. (2011). University of Ibadan social science pre-service teachers' gender perspective towards computer self-efficacy, Internet skills and attitude towards educational blogging. Unpublished theses for Degree of Masters of Education(EducationalTechnology, University of Ibadan).

Aduwa-Ogiegbaen, S. E, & Iyanu, E. S. (2005). Using information and communication technology in secondary schools in Nigeria: Problems and prospect. Educational Technology and society, 8(1), 104-112.

Ajjan, H., & Hartshorne, R. (2008). Investigating faculty decisions to adopt Web 2.0 technologies: Theory and empirical tests. The internet and higher education, 11(2), 71-80.

Aladesusi G. A. (2016). University of Ilorin Effect of Blog on College of Education Student Performance in Selected Educational Technology concepts in Kwara State, Nigeria. Unpublished theses for Degree of Masters of Education (Educational Technology, University of Ilorin).

Azizi, Y., Hession, J., & Newpher, T. M. (2023). Comparing student performance in emergency remote and face-to-face collaborative learning courses. Journal of Undergraduate Neuroscience Education, 21(2), A126.

Baltzersen, R. K. (2010). Radical transparency: Open access as a key concept in wiki pedagogy. Australasian Journal of Educational Technology, 26(6), 791-809.

Bandele, S. O. (2008). Development of modern ICT and internet system. In Agagu AA(ed). Information and communication Technology and Computer Application Abuja: Pan of Press PP 68-76.

Benson, A. (2012). Collaborative authoring and the virtual problem of context in writing courses. (Doctoral dissertation, University of North Carolina at Greensboro.) Retrieved from http://libres.uncg.edu/ir/uncg /f/Benson_uncg_ 0154D_10980.pdf

Blau, I., & Caspi, A. (2009). What type of collaboration helps? Psychological ownership, perceived learning and outcome quality of collaboration using Google Docs. In Proceedings of the Chais conference on instructional technologies research (Vol. 12, No. 1, pp. 48-55).

Boulos, M. N. K., Maramba, I., & Wheeler, S. (2006). Wikis, blogs and podcasts: a new generation of Web-based tools for virtual collaborative clinical practice and education. BMC medical education, 6(1), 1-8.

Brodahl, C., & Hansen, N. K. (2014). Education students' use of collaborative writing tools in collectively reflective essay papers.

Brodahl, C., Hadjerrouit, S., & Hansen, N. K. (2011). Collaborative writing with web 2.0 technologies: education students' perceptions. Journal of Information Technology Education, 10, 73-103. Retrieved from http://www.jite.org/documents/Vol10/JITEv10IIPp073103Brodahl948.pdf

Burden, K. J. (2012). Crossing the transformation horizon: Conceptualising teachers' learning and transformations with the affordances of Web 2.0 (Doctoral dissertation, University of Hull). Retrieved from http://www2.hull.ac.uk/ ifl/pdf/Burden ,%20K%20Complete%20thesis.

Center for Teaching Excellence, Cornell University.Collaborative Learning: Group Work Last updated July 16. http://www.cte.cornell.edu/teaching -ideas/engagingstudents/collaborative -learning.html.

Chu S., Cheung J., Ma, Ma L. and Leung D (2008). Student's Co-Construction of Group Project Work Via Twiki. In Hawamdeh S., Stauss K. and Barachini F. (Ed.), Series on Innovation and Knowledge Management - Vol. 7 Knowledge Management: Competencies and Professionalism (pp. 27-41), Singapore: World Scientific.

Cooper, C., & Belle. B. (2014). The Science of Collaboration: How to Optimize WorkingTogether." The Next Web (blog), July 15. http://thenextweb.com/en trepreneur/2014/07/15/sciencecollaboration-optimize -working-together

Cunningham, C (2007). Linking STEM and Communication Technology Research: A research agenda for technology and gender equality paper presented at the annual meeting of the NCAD 3rd Annual convention, TBA, Chicago IL, retrieved 15th January 2016 http://www.aalacademic.comlmetalp 193877.

Dishaw, M. T., Eierman, M. A., Iversen, J. H., & Philip, G. (2013). examination of the characteristics impacting collaborative tool efficacy: The uncanny valley of collaborative tools. Journal of Information Technology Education: Research, 12, 301- 325. Retrieved from http://www.jite.org/documents/Vol12/ JITEv12ResearchP301-325 Dishaw 0343.pdf

Drion, G. J. (2022). Towards a theory and practice of cultural communication. European Journal of Cultural Management and Policy, 12, 11085.

Elgort, I., Smith, A.G., & Toland, J. (2008). Is wiki an effective platform for group course work? Australasian Journal of Educational Technology, 24 (2), 195–210.

Evers, H.-D. (2003). "Transition towards a Knowledge Society: Malaysia and Indonesia in Comparative Perspective." Comparative Sociology

Fuchs, B. (2014). The writing is on the wall: using Padlet for whole-class engagement. Loex Quarterly, 40(4), 4.

Garner, S. (2010). Personal knowledge management and student learning. Journal of Business & Economics Research (JBER), 8(12).

Ge, X., & Huang, K. (2023). Designing Online Learning Environments to Support Problem-Based Learning. In Handbook of open, distance and digital education (pp. 1269-1286). Singapore: Springer Nature Singapore.

Google Docs (2008). Free web-based word processor, spreadsheet, presentation, and form which allow you share and collaborate online. Retrieved from http://docs.google.com.

Grion, V., & Varisco, B. M. (2007). On line collaboration for building a teacher professional identity. PsychNology J., 5(3), 271-284.

Hadjerrouit, S. (2013). EVALUATING STUDENTS'EXPERIENCES WITH WIKI-BASED COLLABORATIVE WRITING IN TEACHER EDUCATION. e-society2013, 27.

Hamid, A. A., Razak, F. Z. A., Bakar, A. A., & Abdullah, W. S. W. (2016). The effects of perceived usefulness and perceived ease of use on continuance intention to use e-government. Procedia economics and finance, 35, 644-649.

Jude, W. I., & Dankaro, J. T. (2012). ICT Resources Utilisation, Availability and Accessibility by Teachers Educators for Instructional Development in Colleges of Education Katsina-ala. New Media and Mass Communication, 3, 1-6. Retrieved from https://www.iiste.org/Journals/index.php/NMMC/article/view/1766

Kim, Y., & Ling, H. (2009). Human activity classification based on micro-Doppler signatures using a support vector machine. IEEE transactions on geoscience and remote sensing, 47(5), 1328-1337.

Kittle, P., & Hicks, T. (2009). Transforming the group paper with collaborative online writing. Pedagogy: Critical Approaches to Teaching Literature, Language, Composition, and Culture, 9(3), 525-538.

Kraut, R.E., Fussell, S. R., Brennan, S. E., & Siege, J. (2002). Understanding effects of proximity on collaboration: Implications for technologies to support remote collaborative work. In P. Hinds & S. Kiesler (Eds.), Distributed work (pp. 137-162). MIT Press.

Krebs, M., Schmidt, C., Henninger, M., Ludwig, M., & Müller, W. (2012). Are wikis and weblogs an appropriate approach to foster collaboration, reflection and students' motivation? In N. Reynolds & M. Turcsányi-Szabó (Eds.), IFIP advances in information and communication technology: 324. Key competencies in the knowledge society (pp. 200-209). Berlin: Springer.

Lomas, C., Burke, M., & Page, C. L. (2008). Collaboration tools. Educause learning initiative, 2(11).

Luckin, R., Clark, W., Graber, R., Logan, K., Mee, A., & Oliver, M. (2009). Do Web 2.0 tools really open the door to learning? Practices, perceptions and profiles of 11–16-year-old students. Learning, Media and Technology, 34(2), 87-104.

Nwankwo, I. N. (2020). Assessment of Principals' Implementation of Education Management Information Systems in Staff Personnel Management in Secondary Schools in South-East States of Nigeria. Assessment, 5(10).

Ozoji, E. D. (2020). TEACHER QUALITY IN THE ERA OF CRISIS IN QUALITY LEARNING. Journal of the Nigerian Council of Educational Psychologists, 11(1).

Parker, K., & Chao, J. (2007). Wiki as a teaching tool. Interdisciplinary Journal of e-learning and Learning Objects, 3(1), 57-72.

Pollard, A. (2004) Making the most of ethnography: bridging research and policy from inside and outside NGOs', Paper presented at NGO Study Group Seminar Ethnography of NGOs :Understanding Organisational Processes, 28 Oxford.Online at http://www.intrac.org/Intrac/docs /AmyPollard.doc.

Prensky, M. R. (2010). Teaching digital natives: Partnering for real learning. Corwin press.

Rice, J. A. (2009). Devising collective knowledges for the technical writing classroom: A course-based approach to using Web 2.0 writing technologies in collaborative work. IEEE Transactions on Professional Communication, 52(3), 303-315.

Rienzo, T., & Han, B. (2009). Teaching Tip: Microsoft or Google Web 2.0 Tools for Course Management. Journal of Information Systems Education, 20(2), 123.

Ruthven, K., Hennessy, S., & Brindley, S. (2004). Teacher representations of the successful use of computer-based tools and resources in secondary-school English, Mathematics and Science. Teaching and Teacher Education, 20(3), 259-275.

Tenson, J. (2003). Teachers' ICT skills and Knowledge needs: Report on study conducted for SOEID. Aberdeen. The Gordon University.

Tolorunleke, E. A., Haruna, M. M., & Olugbade, D. (2023). INFLUENCE OF TERTIARY STUDENTS'USAGE OF ONLINE COLLABORATIVE TOOLS FOR LEARNING AND IMPROVING STUDENTS'ACADEMIC PERFORMANCE IN KOGI STATE, NIGERIA. Journal of Science, Technology and Mathematics Pedagogy, 1(1), 59-68.

Tsoi, J. (2010). Stakeholders' perceptions and future scenarios to improve corporate social responsibility in Hong Kong and Mainland China. Journal of business ethics, 91, 391-404.