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Adoption and Perception of WEB 2.0 by Students and Academic Staff of Federal Polytechnic Ado-Ekiti

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Abstract

Emerging technologies such as Web 2.0 technologies have been adopted and integrated to foster teaching and learning activities in universities, polytechnics and colleges. Web 2.0 technologies provide lecturers and students with the ability to actively update websites in real-time, and collaboratively create and share their own insights into current and emerging issues within their education domain, as opposed to non-interactive websites. The study was conducted to examine the Adoption and perception of WEB 2.0 by Students and Academic Staff of the Federal Polytechnic Ado-Ekiti. It sought to to evaluate the level of knowledge and utilization of Web 2.0 technologies for teaching and learning in the study area. The study adopted survey research design to elicit response from staff and students of The Federal Polytechnic Ado-ekiti. Data revealed that majority of the respondents in the study area employ WhatsApp as the most frequently use technology in teaching and learning. The study further concluded that The features of Web 2.0 concept provide greater opportunities and possibilities for teaching and learning. The uses of Web 2.0 tools in educational environment such as the Federal Polytechnic Ado Ekiti is still a new approach and the benefits and drawbacks are not yet fully recognized. Based on the result of the study, it is recommended that the management of Federal Polytechnic Ado Ekiti should provide ICT infrastructure that will encourage and enhance the use of Web 2.0 technologies such as Google Meet, Google +, and Google Doc. for teaching and learning in the institution.

Keywords: *Technologies, WEB 2.0, Education, Academic Staff, Students, Teaching, Learning.*

1. Introduction

Educational systems across countries worldwide have adopted Web 2.0 technologies as educational platforms. The sudden Covid 19 outbreak made adoption of web 2.0 technologies the best option for a safe and conducive leaning environment despite a global crisis. Web 2.0 technologies in classrooms provides lecturers and students with a more engaging and meaningful learning experience that is highly relevant to their needs. The advancement of ICTs and related innovations continue to change the mode of teaching and learning in higher learning institutions (Eligi & Mwantimwa, 2017).

Emerging technologies such as Web 2.0 technologies have been adopted and integrated to foster teaching and learning activities in universities, polytechnics and colleges (Kazoka, 2016). Technologies such as YouTube, Facebook, Google Meet, Social networking, Blogs, Wikis, etc., are examples of Web 2.0 technologies (Mwantimwa & Nkhoma-Wamunza, 2016). In particular, Mohammad (2011) disclose that Web 2.0 technologies adoption is gradually developing interactive, inquiry-based, technology-rich curricula, suitable for preparing students for the present complex world.

He further stated that, Web 2.0 technologies provide lecturers and students with the ability to actively update websites in real-time, and collaboratively create and share their own insights into current and emerging issues within their education domain, as opposed to non-interactive websites (Web 1.0), whose users are passive and only view contents created for them (Choudhury, 2014). Besides that, the technologies are suitable for active and meaningful learning as well as collaborative knowledge-building (Lwoga, 2012). In the same note, these technologies foster information sharing, easy communication, collaborative learning and management (Howe & Kekwaletswe, 2010). It is also important to note that these technologies provide both lecturers and students with room for interaction that enhances their creation and sharing of knowledge, information, teaching and learning materials (Choudhury, 2014).

Globally, many academicians are embracing the use of web 2.0 technologies in teaching and learning. The rapid penetration and use of these technology platforms is also being driven by the rise of affordable handsets (Mohammad, 2011). However, with the erratic power supply; poor internet connectivity, poor ICT infrastructure, etc. in Nigeria, it is difficult to know whether lecturers and students of higher institutions of learning have adopted the utilization of web 2.0 technologies in teaching and learning.

Despite the potentials of Web 2.0 technologies to teaching and learning processes in higher institutions, such as the Federal Polytechnic Ado Ekiti, there is a continuing debate on the availability and the quality of resources provided for the adoption of Web 2.0 among lecturers and students of the institution. Muhammad, (2011) raised a number of questions and policy issues regarding the adoption and support of Web 2.0 technologies in teaching and learning. Mainly, the questions and issues raised surround matters to do with the quality, appropriateness, and reliability of Web 2.0 tools used to support teaching and learning, privacy of students' data, control and freedom of students' use of Web 2.0 tools, etc. Therefore, it has become imperative to analyze the importance of Web 2.0 and its specific technologies such as YouTube, Facebook, LinkedIn, Google Meet, video conferencing, and social networking, which offer support tools for collaborative learning to students.

1.1. Objective

1. To evaluate the level of knowledge and utilization of Web 2.0 technologies for teaching and learning in the study area;
2. To identify most frequently used web 2.0 technology for teaching and learning in the study area;
3. To describe the role of web 2.0 technology for teaching and learning in the study area.

2. Literature Review

1.2. The Concept of Web 2.0

The concept of Web 2.0 is a collaborative web development platform that has tremendous usage in building effective, interactive and collaborative virtual societies (Hossain and Aydin, 2011). Although the term Web 2.0 has been used since 2005, the notion of Web 2.0 is not clarified yet (Constantinides and Fountain, 2008). A huge dispute has emerged upon this issue, reaching today with no consensus for a specific definition by the academic community and the business world.

O'Reilly (2008), who is the inventor of the term, considers Web 2.0 the network as platform. Hoegg et al. (2006) perceive Web 2.0 as a philosophy-and not as a specific technology- that is structured by its users' common vision, reflects their knowledge and continuously adapts to changes in the environment. The overall aim of all Web 2.0 services is to mutually maximize the collective intelligence of the distributed knowledge among the participants.

1.3. Web 2.0 and Higher Education

According to Tyagi (2012), the potential of Web 2.0 technologies in teaching and learning environments has caught the attention of universities, polytechnics and colleges around the world. Web 2.0 trends in distance education, globalization, digital literacy skills, and collective intelligence are now driving the restructuring of academic programmes (Mutula 2013). However, according to Hicks and Graber (2010), the implementation of Web 2.0 technologies in academic contexts raises questions about the mismatch of the existing traditional learning paradigm with the new pedagogies inherent in Web 2.0 tools. Until recently, higher education embraced a teaching model based on traditional conceptions of learning.

This traditional learning paradigm focused on how the environment, which included teachers' actions, led to the desired response in students consisting of observable changes of behavior that were maintained over time (Shuell 1986). For example, a well-structured lecture led to students "learning" the material as demonstrated by the correct responses in an exam. Internal variables unique to the learner such as prior knowledge, engagement, and motivation were not part of this traditional learning model and learning. Cognitive psychologists, however, began to question this learning model in the 1960s and 1970s, shifting their focus from the environment and the products of learning to the processes of learning. Learning became "active, constructive, cumulative, and goal oriented" (Shuell 1986).

1.4. Web 2.0 Tools

Fundamentals of the Web 2.0 concept are based on a number of web services and applications, which are already being used to a certain area in education. Many of the applications of web technologies are relatively mature including hosted services (goggle map), web applications (Google Docs, Drop Box), Video sharing sites (You Tube, Flickr), Wikies (MudiaWiki), Blogs (Word press), Social networking (Facebook), Microblogging (Twitter, now X), Podcasting and Content tagging services. These services have been used for a number of years although new features and capabilities are being added on a regular basis (Anderson, 2007). Major feature of Web 2.0 allows users to collectively classify and find dynamic information that flows two ways between site owner and site user by means of evaluation, comments and reviews.

1.5. Perceived Usefulness of Web 2.0 tools

According to Usoro, Echeng and Majewski (2014), perceived usefulness is an individual belief that a technology will make their work better. On the other hand, Lwoga (2014) views perceived usefulness as the degree to which students believe that using technologies will improve their learning performances. Several studies (see Masele, 2014; Mollel, 2013; Mohammad, 2012) acknowledge that perceived usefulness is a determining factor of the adoption, integration and utilization of technologies in teaching and learning activities. Basically, web-based technologies

used in teaching provide lecturers and students with opportunities to collaborate in knowledge creation and sharing. In this regard, elements of collaboration, communication and participation in knowledge creation and critiquing of ideas given by others are essential factors for the adoption and integration on web-based technologies in teaching and learning (Kazoka, 2016). These inform that technologies and tools provide a learning environment in which students can construct their learning experiences and collaborate with others to generate ideas (Alsadoon, 2018). For example, web applications open the door to direct communication among learners and lecturers (Light, 2011). In these aspects, many constructivist theorists affirm that the use of technologies enhances interactions between individuals and the sharing of information between them (Mohammad, 2011). Furthermore, supporters of collaborative learning believe that collaborative learning helps students to retain information better than when they work individually (Ndumbaro, 2018). This is attributed to the fact that when Web 2.0 tools are used, students and instructors become co-authors or co-developers of ideas and contents (Gadanidis, Hoogland & Hughes, 2008).

It is evident that using Web 2.0 tools have been found to help learners understand complex materials and enhance effective transfer of information and concepts learned in one setting to problem-solving processes in other settings (Gadanidis et al., 2008). It is also a well-known fact that when users actively participate in their learning, their ability to apply and retain knowledge is higher (Huang, Jeng & Huang, 2009). On the same note, studies (e.g. Jimoyiannis et al., 2013) show that today's digital students learn more when they are engaged in meaningful, relevant, and intellectually stimulating schoolwork and that the use of technology is fundamental in such learning. Besides that, it is worth noting that web tools enhance blended learning and create a positive learning environment both for the teaching staff and students (Tatli, Akbulut & Altinisik, 2019), and provide learners with opportunities to create and edit the content accessed (Grosseck, 2009). Along these, the employment of web tools increases self-confidence levels of learners (Tatli et al., 2016), and enhances the development of critical thinking skills among teachers (Sendag et al., 2015.

3. Methodology

The research will adopt a survey research design, which allows for the gathering data through the collection of peoples opinion for the purpose of investigating the subject of the research study. This is because when research involves a group of people or members of the public, a survey method is relevant and will be required to collect data from the respondents through the use of questionnaires. The respondents of this study are the lecturers and students of the Federal Polytechnic, Ado Ekiti. The data when collected will be subjected to quantitative and qualitative analysis. Quantitative data will be analyzed using Statistical Package for Social Sciences (SPSS), where descriptive statistics (frequency, percent and mean) will be performed and presented in the form of tables and figures.

4. Findings and Discussions

4.1. Level of Knowledge and Utilization of Web 2.0 Technologies for Teaching and Learning in The Study Area

4.1.1. Knowledge of Web 2.0 technologies

The able 1 shows knowledge of web 2.0 technologies among respondents in the study area. The table revealed that 52% of the respondents have excellent knowledge of Web 2.0 technologies for teaching and learning, while 43% of the respondents have above average knowledge of Web 2.0 technologies for teaching and learning. However, only 8% of the respondents have average knowledge of Web 2.0 technologies for teaching and learning. This shows that majority the respondents in the study area are knowledgeable of Web 2.0 technologies.

Table 1: Knowledge of Web 2.0 technologies Among Students and Lectures in The Study Area

Knowledge of Web 2.0 technologies	Frequency	Percentage
Excellent	52	52
Above average	40	43
Average	8	8
Total	**100**	**100**

Source: Field Survey, 2025

4.1.2. Utilization of Web 2.0 technologies for teaching and learning

The table 2 shows utilization of web 2.0 technologies for teaching and learning among respondents in the study area. The table revealed that 67% of the respondents employ Web 2.0 technologies for teaching and learning regularly, while 21% of the respondents employ Web 2.0 technologies for teaching and learning occasionally. However, only 12% of the respondents rarely employ Web 2.0 technologies for teaching and learning. This shows that majority the respondents in the study area are utilize Web 2.0 technologies in teaching and learning.

Table 2: Utilization of Web 2.0 technologies for teaching and learning in the study Area

Utilization of Web 2.0 technologies	Frequency	Percentage
Always	67	67
Sometimes	21	21
Rarely	12	12
Total	**100**	**100**

Source: Field Survey, 2025

4.1.3. Most Frequently Used Web 2.0 Technology for Teaching and Learning in The Study Area

The table 3 shows the most frequently used of Web 2.0 technology among for teaching and learning in the study area. The table revealed that 63% of the respondents uses WhatsApp for teaching and learning in the study area. This shows that WhatsApp is the most frequently use Web 2.0 technology among lecturers and students in the Federal Polytechnic, Ado Ekiti.

Table 3: Most Frequently used Web 2.0 technology for teaching and learning in the study Area

	No		Yes	
Web 2.0 Technology	**Frequency**	**Percentage**	**Frequency**	**Percentage**
Wikies	100	100	0	0
Facebook	78	78	22	22
YouTube	93	93	7	7
Google +	92	92	8	8
Google Doc	76	76	24	24
X (former twitter)	94	94	6	6
Google Meet	72	72	28	28
WhatsApp	37	37	63	63
LinkedIn	100	100	0	0

Source: Field Survey, 2025

4.1.4. The role of Web 2.0 technology in teaching and learning in the study area

The table 4.9 shows the roles of Web 2.0 in teaching and learning in the study area. The table revealed that majority Web 2.0 offers an interactive and collaborative feature for teaching and learning, with a mean of 4.43, and this was ranked 1st, while timely assessment and tracking of students learning process was ranked 2nd with a mean of 4.25. Web 2.0 fosters a culture of innovation, encouragement and new teaching methodology with a mean of 4.23, and this was ranked 3rd, while promoting collaboration among lectures and students was ranked 4th role of Web 2.0 among other roles. The table further revealed that Web 2.0 offers customized individual learning styles (4.16) was ranked 5th, facilitates cross cultural communication and networking (4.15), and encouraging critical thinking and evaluation (4.15) was ranked 6th, respectively, and lastly, provide easy access to educational resource (3.90), ranked 8th.

Table 4: The Role of Web 2.0 technology for teaching and learning in the study Area

Role of Web 2.0	Mean	Std. Deviation	Ranking
Web 2.0 offers interactive and collaborative features	4.43	0.50	1st
Web 2.0 provides timely assessment and track students leaning process	4.25	0.50	2nd
Web 2.0 fosters culture of innovation, encouraging new teaching methodology	4.23	0.42	3rd
Web 2.0 promotes collaboration among lecturers & students	4.18	0.39	4th
Web 2.0 offers customized individual learning styles	4.16	0.44	5th
Web 2.0 facilitates cross cultural communication & networking	4.15	0.54	6th
Web 2.0 encourages critical thinking and evaluation	4.15	0.44	6th
Web 2.0 provides easy access to educational resources	3.90	0.46	8th

Source: Field Survey, 2025

4.2. Discussion of findings

The result revealed that majority of the respondents have excellent knowledge of Web 2.0 technologies and, uses it always in their daily life. Furthermore, majority of the respondents in the study area employ WhatsApp as the most frequently use technology in the study area. However, the major role of Web 2.0 technologies for teaching and learning in the study area include offering interactive and collaborative features for teaching and learning, provide timely assessment and track students learning process as well as foster a culture of innovation, thereby encouraging new teaching methodology among students and lecturers of Federal Polytechnic, Ado Ekiti.

5. Conclusion

The features of Web 2.0 concept provide greater opportunities and possibilities for teaching and learning. The uses of Web 2.0 tools in educational environment such as the Federal Polytechnic Ado Ekiti is still a new approach and the benefits and drawbacks are not yet fully recognized. There is a need for further research to evaluate this uses more deeply in order to understand the issues at hand. From the study, Web 2.0 such as WhatsApp, X, YouTube, blog, wiki, Google Docs,

etc., have been found to be very useful for teaching and learning. The ability to incorporate personalization, scalable and customized learning system has been provided by the use of social media technologies in education. Web 2.0 technologies provides students with a learning atmosphere, which has the capacity to support a variety of different resources and systems. The use of these technologies is attractive to both students and lecturers, because of its extensive feature. Lectures and Students use social media technologies every single day in their personal lives, hence, the Federal Polytechnic, Ado Ekiti can position itself by adopting and providing these social media technologies to enhance students learning abilities in a more personalized manners that will enhance easy understanding and comprehension.

5.1. Recommendation

1. Based on the result of the study, it is recommended that the management of Federal Polytechnic Ado Ekiti should provide ICT infrastructure that will encourage and enhance the use of Web 2.0 technologies such as Google Meet, Google +, and Google Doc. for teaching and learning in the institution. This will go a long way in providing convenient learning environment for the students who are faced with the challenges of inadequate classrooms and learning facilities in the satellite campus.
2. Lecturers and students of the Federal Polytechnic Ado Ekiti should be encouraged to develop digital skills, and also be provided with incentives such as Wi-Fi in their offices to encourage the adopted of Web. 2.0 technologies. Resistance of the changes by lecturers, and preference of traditional teaching methods where students must attend class physical despite the distance and the harsh economy realities may slow down the level of assimilation and understanding among their students.
3. Federal Polytechnic's management should organize training and re-training to sensitize and both lectures and students on how to use Web. 2.0 technologies responsibly to enhance teaching and learning in the study area. This will motivate students and lectures in the utilization of Web 2.0 technologies in teaching and learning in the study area

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