IMPACT OF WEB 2.0 TECHNOLOGIES ON UNDERGRADUATES' LEARNING IN OGUN STATE, NIGERIA

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Abstract
The goal of this paper is to look at the influence of Web 2.0 technologies utilization on undergraduates' learning in Ogun State, Nigeria. This study employed the use of a descriptive survey. The study's participants were undergraduates in Ogun State. A total of three hundred and five (305) students were chosen as sample across 200-400 level. For the demographic parameters, the data was presented using frequency tools and basic percentages; however, chi-square ($\chi 2$) statistical tools were also employed. It was discovered that there is a significant impact of awareness of Web 2.0 technologies on learning. The study found that there is a significant impact that the access of undergraduates to Web 2.0 technologies has on learning. The study also found that there is a significant difference in the utilization of Web 2.0 technologies for learning among undergraduates of public tertiary institutions in Ogun State. The study also revealed that there is a significant difference in the attitude of undergraduates towards the use of Web 2.0 technologies for learning. Finally, the study revealed that there are perceived challenges confronting undergraduates in utilizing Web 2.0 technologies for learning.

Keywords: *Web 2.0 Technologies, Undergraduates, Learning*

Introduction

Technological advances in recent years have dramatically impacted the ways in which learning is achieved in and outside the classroom. Web 2.0 technologies, as one of these advances, are becoming a global concept that is used to support learning activities in learning environments. This is so because these technologies have the potential to create a more interactive and powerful learning environment. In the 21st century, students in tertiary institutions no longer access the internet only for specific actions, such as browsing, reading, extracting information, accessing the content, and sending emails; instead, they create, share, distribute, search educational content, and access and create collective knowledge through social interactions. Since the advent of Web 2.0 technologies, the social aspects of internet communications have changed. Internet users can tag, share, and tweet their opinions and engage in conversations. (Kinza Yasar, 2023). The term Web 2.0 was coined by information architecture consultant Darcy DiNucci in 1999 to differentiate the post-dot-com bubble. It was later popularized by O'Reilly Media during the Web 2.0 Conference in 2004 (Will Kenton, 2022). According to Wikipedia, Web 2.0 technologies refer to “web applications that facilitate interactive information sharing, interoperability, user-centered design, and collaboration on the World Wide Web”. A simpler way of saying this is that it refers to apps that encourage learning, sharing, and collaboration across the internet. Rather than just consuming the information we find (as we did with Web 1.0), we are using it as a resource to improve skills and knowledge elsewhere.

Web 2.0 is the second generation of the World Wide Web. It focuses on the web as a platform and offers more opportunities for collaboration, functionality, various applications, and user-generated content. It is the World Wide Web as it is used today (Heather Hall, 2023). A web 2.0 technology does not refer to any specific technical upgrades to the internet. It simply refers to a shift in how the internet is used in the 21st century. In the new age, there is a higher level of information sharing and interconnectedness among participants. This new version allows users to actively participate in the experience rather than just acting as passive viewers who take in information (Will Kenton, 2022).

Although Web 2.0 technologies are meant to minimize the stress of lecturers and students in tertiary education institutions and turn them into an environment that encourages personalized learning so that the undergraduates may grow and learn better, it is recommended to use learner-centered instructional methods. Camberlion (2022), Al-Mukhaini, Al-Qayoudhi, and Al-Badi (2014) reported that tertiary education institutions need to make sure they provide an infrastructure in which social media tools are accessible to all students and academics; create an atmosphere of support for Web 2.0 technologies; foster and integrate new teaching and learning models; and be open to new assessment and grading strategies. A key issue in 21st-century education is preparing academics to effectively use Information and Communication Technologies (ICT)in the classroom. Academics are to be continuously trained to successfully integrate ICT, in this case Web 2.0 technologies, into instruction and learning. Web 2.0 technologies have blurred the line between producers and consumers of content and have shifted attention from access to information toward access to other people. Web 2.0 technologies contrasts with the first generation of Web 1.0-era websites, where people were limited to viewing content in a passive manner. Compared to Web 1.0, Web 2.0 offers a greater degree of collaboration among internet users, content providers, and enterprises. It highlights user-generated content and offers interoperability among end users (KinzaYasar, 2023). Web 1.0 focused on reading; Web 2.0 focused on participating and contributing. This Internet form emphasizes user-generated content (UGC), ease of use, interactivity, and improved compatibility with other systems and devices. Web 2.0 is all about the end user's experience. Consequently, this Web form was responsible for creating communities, collaborations, dialogue, and social media. As a result, Web 2.0 is considered the primary form of web interaction for most of today's users and offers many benefits when utilized (John Terra, 2023).

When Web 2.0 is effectively utilized by tertiary education institutions, the benefits and influence cannot be downplayed. The introduction to newer ways of learning and sharing information encourages students to remix and re-use resources across the web as well as create new knowledge based on all that they have learned (Brown & Adler, 2022). Will Kenton (2022) asserted that with Web 2.0 technologies, people could now publish articles and comments, and it became possible to create user accounts on different sites, therefore increasing participation. Web 2.0 technologies also gave rise to web apps, self-publishing platforms like WordPress, and social media sites. Okello-Obura and Ssekitto (2015) also reported that Web 2.0 technologies enable students to become active participants in the learning process by creating and sharing content rather than passively receiving information from academics. Web 2.0 technologies enable students to take control and manage their own learning. Examples of Web 2.0 technologies features include social networking sites or social media sites (e.g., Facebook), blogs, wikis, folksonomies ("tagging" keywords on websites and links), video sharing sites (e.g., YouTube), image sharing sites (e.g., Flickr), hosted services, Web applications ("apps"), collaborative consumption platforms, and mashup applications (Technopedia, 2018, Heather Hall, 2023).

Efforts have been made in varying research to understand the benefits and influence of Web 2.0 technologies in education and how they can enhance learning quality. Nevertheless, some educators view some of these Web 2.0

technologies as having the potential to disrupt academic activities (Okello-Obura and Ssekitto, 2015). Thus, a number of researchers also examined the challenges and barriers of Web 2.0 technologies to learning; these include time management issues, a lack of ICT skills, a lack of training, a lack of awareness of Web 2.0 learning tools, and erratic power supply, among others (Anunobi and Ogbonna 2018; Kolawole and Ogunniran 2017). Despite these, Web 2.0 technologies have, however, enabled more responsive learning (Okello-Obura and Ssekitto, 2015). Despite the fact that some of the Web 2.0 technologies have the potential to disrupt academic activities, they have aided in more responsive learning (Okello-Obura and Ssekitto 2015). In addition, students use Web 2.0 technologies applications on a regular basis to actively participate in the learning process and to keep themselves up-to-date with recent developments in their various disciplines. Web 2.0 technologies provide an enabling environment and offer opportunities for students and lecturers to network, communicate, collaborate, co-create, and aggregate knowledge (Marinoni et al., 2020).

Statement of the Problem

This study sought to investigate the influence of Web 2.0 technologies utilization on undergraduates' learning in Ogun State, Nigeria. Web 2.0 technologies are extensively employed to facilitate the teaching and learning process, particularly in public universities. Web 2.0 technologies express the perception of many educationists that learning takes place best within technology-supported environments where learners (or students) can on their own or collaboratively create and use content (Selwyn 2019).While many Universities around the world are using Web 2.0 technologies for teaching purposes, most Nigerian universities are still battling with some challenges that affect the effective integration of Web 2.0 technologies into the classroom. Similarly, there is a dearth of research on the use of Web 2.0 technologies among academics in Nigeria (Diyaolu and Rifqah 2015). Echeng, Usoro, and Majewski (2013) pointed out that many universities in Nigeria have yet to effectively embrace Web 2.0 technologies, particularly for teaching and learning purposes. The reasons for the limited adoption of Web 2.0 technologies by Nigerian universities have not been clearly researched and understood. However, anecdotal evidence seems to suggest low awareness, lack of recognition of the importance of Web 2.0 technologies, paucity of technical support, poor ICT infrastructure, erratic power supply, and slow technology acceptance culture (Echeng, Usoro, and Majewski 2013).The extent of adoption of Web 2.0 technologies by universities in Nigeria for computer-aided instruction by academics and students, respectively, is both limited and unclear. Studies by Olasina (2011), Atulomah (2010), Emmanuel, Ebiere, and Vera (2013), and Onuoha (2013) researched the use of Web 2.0 by librarians in providing information services. Understanding the extent of use of Web 2.0 technologies among academics and students in Nigerian Universities would assist policy and practical interventions to improve the quality and productivity of the teaching and learning process as well as the visibility of the universities in global academic environments. Web 2.0 technologies, when effectively integrated into the teaching and learning process would improve and democratize access to higher education. This study, therefore, sought to investigate the extent of use of Web 2.0 technologies by undergraduates' in selected public tertiary institutions in Ogun State, Nigeria.

Research Questions

The following research questions were answered in this study:

1. Which Web 2.0 technologies are undergraduates mostly aware of for learning?
2. Do undergraduates access Web 2.0 technologies for learning?
3. Which Web 2.0 technologies do undergraduates mostly utilize for learning?
4. What is the attitude of undergraduates towards the use of Web 2.0 technologies for learning?
5. What are the perceived challenges confronting undergraduates in utilizing Web 2.0 technologies for learning?

Methodology

The methodology adopted was a descriptive survey research design. The research was carried out at three randomly selected public universities in Ogun State, which are Tai Solarin University of Education, Ijagun; Olabisi Onabanjo University, Ago-Iwoye; and the Federal University of Agriculture, Abeokuta. A total of 700 questionnaires were administered in the three universities, which were at variance, while 305 questionnaires were retrieved and found usable. A simple random sampling technique was used for sample selection. A research instrument titled "Influence of Web 2.0 Technologies Utilization for Undergraduates Learning Questionnaire (IWTUULQ)" was used for data collection with the following options: Strongly Agreed (SA), Agreed (A), Disagreed (D), and Strongly Disagreed (SD), respectively. The instrument was validated by two lecturers in the Department of Educational Technology to assess its face and content validity. The reliability of the instrument was assured by using test-retest method, and after the Cronbach Alpha reliability testing, a coefficient of 0.79 was obtained, which confirmed that the instrument was reliable. It was divided into six sections:

Section A: Biographical information of the respondents.

Section B: The level of awareness of Web 2.0 technologies for learning among undergraduates in Ogun State.

Section C: Access to Web 2.0 technologies for learning among undergraduates in Ogun State.

Section D: The level of utilization of Web 2.0 technologies for learning among undergraduates in Ogun State.

Section E: Attitude of undergraduates towards the use of Web 2.0 Technologies for learning.

Section F: Perceived challenges confronting undergraduates towards utilizing Web 2.0 technologies for learning.

The instrument was validated and found to be valid and reliable (r value = 0.890 using Cronbach's alpha).

Results

The analysis of the bio-data of the respondents is presented as follows:

Table 1: Gender of Respondents

Sex	Frequency	Percentage
Male	139	45.6%
Female	166	54.4%
Total	**305**	**100.0%**

The gender of the sampled population for the study is presented in Table 1. It showed that 139 respondents, representing 45.6%, were male, while 166 respondents, representing 54.4%, were female. This showed that female respondents were more represented than male respondents.

Table 2: Age of Sampled Respondents

Age Group	Frequency	Percentage
16–20 years	168	55.1%
21–25 years	105	34.4%
26–30 years	22	7.2%
31 Years and Above	10	3.3%
Total	**305**	**100.0%**

The age group of the sampled respondents is presented in Table 2. The table showed that 168 (55.1%) were between the ages of 16 and 20; 105 (34.4%) indicated they were between 21 and 25 years of age. Also, 22 respondents (7.2%) indicated they were between 26 and 30 years old, while 10 respondents (3.3%) indicated they were over 31 years old. The implication is that the majority of the respondents that took part in this study were below 25 years of age.

Research Question 1: Which Web 2.0 technologies are undergraduates mostly aware of for learning?

Table 3: The awareness of undergraduates towards the use of Web 2.0 technologies for learning.

Web 2.0 technologies	Frequency	Percentage (%)
Blogs	78	25.6
Instant messaging	4	1.3
Podcasts/Webcasts/Vodcasts	35	11.5
RSS feeds	1	0.3
Skype	3	0.9
Facebook	20	6.6
Twitter	10	3.3
WhatsApp	154	50.5
TOTAL	**305**	**100**

The results in Table 3 identified WhatsApp as the Web 2.0 technology that undergraduates are widely aware of. The study revealed a high awareness (50.5%) of WhatsApp. The study further revealed that undergraduates are also aware of blogs as part of Web 2.0 technologies for learning, with seventy-eight respondents, which is 25.6 percent of the total respondents. Thirty-five respondents (11.5%) are aware of the use of podcasts, webcasts, and podcasts for learning, while twenty respondents (6.6%) are aware of Facebook as a Web 2.0 technology for learning. Furthermore, ten respondents (3.3%) are aware of Twitter as a Web 2.0 technology for learning, while four respondents (1.3%), three respondents (0.9%), and one respondent (0.3%) are aware of instant messaging, Skype, and RSS feeds, respectively, as a Web 2.0 technology for learning.

Research Question 2: Do undergraduates access Web 2.0 technologies for learning?

Table 4: Access to Web 2.0 technologies for learning among undergraduates in Ogun State.

Items	SA	A	D	SD
Access Web 2.0 technologies for learning	137 **(44.9%)**	89 **(29.2%)**	43 **(14.1%)**	36 **(11.8%)**
I access Web 2.0 technologies for communicating with colleagues	113 **(37%)**	97 **(31.8%)**	70 **(23%)**	25 **(8.2%)**
Access to read lecture notes/materials via Web 2.0 technologies	180 **(59%)**	103 **(33.8%)**	18 **(5.9%)**	4 **(1.3%)**
Access to learning resources via Web 2.0 technologies	151 **(49.6%)**	111 **(36.4%)**	27 **(8.9%)**	16 **(5.2%)**
Web 2.0 technologies are very difficult to access thus affect its utilization	10 **(3.3%)**	35 **(11.5%)**	92 **(30.2%)**	168 **(55.1%)**
I do not access Web 2.0 technologies for learning as I have little knowledge about them	9 **(2.9%)**	28 **(9.2%)**	103 **(33.8%)**	165 **(54.1%)**

The results in Table 4 revealed that the majority, approximately (44.9%)of the respondents, reported that they access Web 2.0 technologies for learning, while (29.2%) agreed, (14.1%) disagree, and (11.8%) strongly disagree that they access Web 2.0 technologies for learning. Also, the table revealed that the majority the majority of the respondents approximately (37%) access Web 2.0 technologies for communicating with colleagues, (31.8%) agreed, (23%) disagreed, and (8.2%) of the respondents disagreed that they access Web 2.0 technologies for communicating with colleagues. Table 4 also showed that the majority (59%) of the total respondent's access to read lecture notes/materials via Web 2.0 technologies, while (33.8%) agreed, (5.9%) disagreed, (1.3%) strongly disagreed that they have access to read lecture notes/materials via Web 2.0 technologies.

The table also revealed that one-hundred and fifty-one which is (49.6%) of the total respondents strongly agreed that they have access to learning resources via Web 2.0 technologies. On the other hand, one hundred and eleven which is (36.4%) agreed, twenty-seven which is (8.9%) disagreed, and sixteen respondents which is (5.2%) strongly disagreed that they have access to learning resources via Web 2.0 technologies. Furthermore, the table showed that ten respondents which is (3.3%) of the respondents strongly agreed that web 2.0 technologies are very difficult to access, while thirty-five agreed which is (11.5%) agreed that Web 2.0 technologies are very difficult to access. On the other hand, ninety-two respondents which are (30.2%) disagreed and majority of the respondents that is one hundred and sixty-eight which is (55.1%) strongly disagree that they Web 2.0 technologies are very difficult to access.

Finally, nine respondents (2.9%) strongly agreed and twenty-eight (9.2%) agreed that they don't access Web 2.0 technologies for learning because they have little knowledge about them, while one hundred and three respondents (33.8%) disagreed and one hundred and sixty-five (54.1%) strongly disagreed that they don't access Web 2.0 technologies for learning. These result revealed

that undergraduates access Web2.0 technologies for learning.

Research Question 3: Which Web 2.0 technologies do undergraduates mostly utilize for learning?

Table 5: Level of utilization of Web 2.0 technologies for learning among undergraduates in Ogun State.

Web 2.0 technologies	Frequency	Percentage (%)
Blogs	78	25.6
Instant messaging	4	1.3
Podcasts/Webcasts/Vodcasts	35	11.5
RSS feeds	1	0.3
Skype	3	0.9
Facebook	20	6.6
Twitter	10	3.3
WhatsApp	154	50.5
TOTAL	**305**	**100**

The results in Table 5 identified WhatsApp as the Web 2.0 technology that undergraduates mostly utilize for learning. The study revealed a high level of utilization (50.5%) for WhatsApp. The study further revealed that undergraduates also utilize blogs as part of Web 2.0 technologies for learning, with seventy-eight respondents, which is 25.6 percent of the total respondents. Thirty-five respondents (11.5%) utilize podcasts, webcasts, and podcasts for learning, while twenty respondents (6.6%) utilize Facebook as a Web 2.0 technology for learning. Furthermore, ten respondents (3.3%) utilized Twitter as a Web 2.0 technology for learning, while four respondents (1.3%), three respondents (0.9%), and one respondent (0.3%) utilized instant messaging, Skype, and RSS feeds, respectively, as a Web 2.0 technology for learning.

Research Question 4: What is the attitude of undergraduates towards the use of Web 2.0 technologies for learning?

Table 6: Attitude of undergraduates towards the use of Web 2.0 technologies for learning.

	Statement	SA	A	D	SD
1	I do not have the necessary skills and knowledge to use Web 2.0 technologies	20 6.6%	39 12.8%	93 30.5%	153 50.2%
2	I did not receive enough Web 2.0 technologies training to effectively use them	24 7.9%	70 23.0%	90 29.5%	121 39.7%
3	I do not have access to computers	18 5.9%	38 11.1%	94 30.8%	159 52.2%
4	I am able to connect to the internet to use Web 2.0technologies	16 5.2%	42 13.8%	100 32.8%	147 48.2%
5	Using Web 2.0 technologies put my privacy at risk	19 6.2%	74 24.3%	109 35.7%	103 33.8%
6	Web 2.0 technologies are mainly for entertainment purposes and thus not good for learning	28 9.2%	43 14.1%	100 32.8%	134 43.9%

The results in Table 6 revealed that the one hundred and fifty-three approximately (50.2%) of the respondents strongly disagreed that do not have the necessary skills and knowledge to use Web 2.0 technologies, while (30.5%) disagreed, (12.8%) agree, and (6.6%) strongly disagree that that do not have the necessary skills and knowledge to use Web 2.0 technologies. Also, the table revealed that one hundred and twenty-one of the respondents approximately (39.7%) strongly disagreed that they did not receive enough Web 2.0 technologies training to effectively use them, while ninety-four (30.8%) respondents disagreed, thirty-eight (23%) respondents agreed, and eighteen (8.2%) of the respondents strongly agreed that they did not receive enough Web 2.0 technologies training to effectively use them.

Table 6 also showed that one hundred and fifty-nine (52.2%) of the total respondents strongly disagree, while ninety-four (30.8%) of the respondents disagreed, thirty-eight (11.1%) of the respondents agreed, and eighteen (1.3%) strongly agreed that they do not have access to computers which greatly affected the utilization of Web 2.0 technologies for learning. The table also revealed that one-hundred and forty-seven which is (48.2%) of the total respondents strongly disagreed that they able to connect to the internet to use Web 2.0technologies. On the other hand, one hundred respondents which are (32.8%) disagreed, forty-two respondents which is (13.8%) agreed, and sixteen respondents which is (5.2%) strongly agreed that they are able to connect to the internet to use Web 2.0technologies.

Furthermore, the table showed that one hundred and three respondents which is (33.8%)

of the respondents strongly disagreed that using Web 2.0 technologies put their privacy at risk, while one hundred and nine disagreed which is (35.7%) agreed that Using Web 2.0 technologies put their privacy at risk. On the other hand, seventy respondents which is (24.3%) agreed and nineteen respondents which is (6.2%) strongly agree that using Web 2.0 technologies put their privacy at risk. Finally, one hundred and thirty-four (43.9%) strongly disagreed and one hundred (32.8%) disagreed that Web 2.0 technologies are mainly for entertainment purposes and thus not good for learning, while forty-three (14.1%) agreed and twenty-eight (9.2%) strongly agreed that Web 2.0 technologies are mainly for entertainment purposes and thus not good for learning.

These result revealed that undergraduates have a good attitude towards the use of Web 2.0 technologies for learning.

Research Question 5: What are the perceived challenges confronting undergraduates towards utilizing Web 2.0 technologies for learning?

Table 7: Perceived challenges confronting undergraduates towards utilizing Web 2.0 technologies for learning.

S/N	Items	SA	A	D	SD
1	I do not have the necessary skills and knowledge to use Web 2.0 technologies.	113 **(37%)**	97 **(31.8%)**	70 **(23%)**	25 **(8.2%)**
2	Financial constraints are affecting my utilization of Web 2.0 technologies.	24 **(7.9%)**	70 **(23.0%)**	90 **(29.5%)**	121 **(39.7%)**
3	I do not have access to computers and other electronic devices.	9 **(2.9%)**	28 **(9.2%)**	103 **(33.8%)**	165 **(54.1%)**
4	I am able to connect to the internet to use Web 2.0 technologies.	156 **(51.1%)**	78 **(25.6%)**	34 **(11.2%)**	37 **(12.1%)**
5	Using Web 2.0 technologies puts my privacy at risk.	19 **(6.2%)**	74 **(24.3%)**	109 **(35.7%)**	103 **(33.8%)**

The results in Table 7 revealed that approximately twenty-five (8.2%) of the respondents strongly disagreed that they do not have the necessary skills and knowledge to use Web 2.0 technologies, while (31.8%) disagreed, (23%) agreed, and (8.2%) strongly agreed that they do not have the necessary skills and knowledge to use Web 2.0 technologies. Also, the table revealed that one hundred and twenty-one of the respondents, approximately (39.7%), strongly disagreed that financial constraints are affecting their utilization of Web 2.0 technologies, while ninety (29.5%) respondents disagreed, seventy (23%) respondents agreed, and twenty-four (7.9%) of the respondents strongly agreed that financial constraints are affecting my utilization of Web 2.0 technologies. Table 7 also showed that one hundred and sixty-five (54.1%) of the total respondents strongly disagree, while one hundred and three (33.8%) of the respondents disagreed, twenty-eight (9.2%) of the respondents agreed, and nine (2.9%) strongly agreed that they do not have access to computers and other electronic devices. The table also revealed that thirty-seven, or (12.1%), of the total respondents strongly disagreed that they were able to connect to the internet to use Web 2.0 technologies. On the other hand, thirty-four respondents (11.2%) disagreed, seventy-eight respondents (25.6%) agreed, and one hundred and fifty-six respondents (51.5%) strongly agreed that they are able to connect to the internet to use Web 2.0 technologies. Finally, the table showed that one hundred and three respondents, which is (33.8%) of the respondents, strongly disagreed that using Web 2.0 technologies put their privacy at risk, while one hundred and nine disagreed, which is (35.7%) agreed that using Web 2.0 technologies put their privacy at risk. On the other hand, seventy respondents (24.3%) agreed and nineteen respondents (6.2%) strongly agreed that using Web 2.0 technologies put their privacy at risk. These results revealed that the perceived challenges confronting undergraduate students towards utilizing Web 2.0 technologies for learning are the lack of the necessary skills and knowledge to use Web 2.0 technologies, which appeared to have a high number of respondents strongly agreeing with the statement.

Discussion of Findings

The discussion of the findings of this study is based on the questions raised. Research question one has to do with the awareness of undergraduates on the use of Web 2.0 technologies for learning. The result revealed that WhatsApp is the Web 2.0 technology that

undergraduates are widely aware of as the study revealed a high level of awareness. Research question two has to do with the access of undergraduates to Web 2.0 technologies and it was found that majority of the respondents' access Web 2.0 technologies for learning. Aside from being widely aware by the respondents, WhatsApp is the most utilized Web 2.0 technology by undergraduates. Research question four has to do with the attitude of undergraduates towards the use of Web 2.0 technologies for learning which revealed that undergraduates have a good attitude towards the use of Web 2.0 technologies for learning. Finally, the results for research question five revealed that the perceived challenges confronting undergraduates towards utilizing Web 2.0 technologies for learning are the lack of the necessary skills and knowledge to use Web 2.0 technologies, which appeared to have a high number of respondents strongly agreeing with the statement.

Recommendations

Based on the findings of the study, the following recommendations are made:

1. Lecturers should introduce more effective ways to improve the understanding of undergraduates on the use Web 2.0 technologies for learning.
2. Schools administrators of various tertiary institutions should continue to investigate ways to improve the use of Web 2.0 technologies, as this will help in impacting the performance of the undergraduates, particularly in public tertiary institutions.
3. Curriculum planners should look further into making Web 2.0 technologies as an important tool to improve teaching and learning process.

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