Users' Attitudes and Usage Intentions towards Integration of Web 2.0 in Teaching and Learning Processes from Selected Universities in Tanzania

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Abstract
This study examined users' attitudes and intentions to integrate Web 2.0 technologies in teaching and learning activities. It was conducted in three Universities in Tanzania. The study employed a quasi-experimental design to faculty members and postgraduate students. Training was intended to involve faculty members and students on the use of Web 2.0 technologies. Data were collected using questionnaire and interviews from 24 faculty members and 30 students. The findings revealed that users' attitudes towards the technology influence its integration into teaching and learning activities. The study therefore recommends organizing regular workshops with faculty members and students to raise their familiarity with Web 2.0 technologies and influence their attitude and intention to integrate technologies in teaching and learning activities.

Keywords: *behavioural intention, emerging technologies, use of Web 2.0 tools, users' attitude, virtual Learning*

Introduction

Recently, teaching and learning activities in universities have tremendously changed due to the adoption of new and emerging technologies. Researchers around the world have been and are still involved in pedagogical research on the viability of using ICTs and related technologies in uplifting the quality of teaching and learning activities. Such researches aim to promote learning by

emphasizing the acquisition of right competences such as knowledge, skills, performance, and attitudes needed in the 21st century.

Consequently, such development has encouraged instructors in higher learning institutions to develop rich and technology-based learning environments (Mtega, Bernard, Msungu & Sanare, 2012; Sankey, Birch & Gardiner, 2011). The notable impact of this development is the emergence and application of e-learning technologies accompanied by multimedia in teaching and learning activities, especially in universities. Some scholars (Sife, Lwoga & Sanga, 2007; Sankey *et al.,* 2011) indicate that access to multimedia using computer provides opportunities for the development of collaborative and interactive learning resources to enhance traditional learning environments.

Literature on the adoption of ICT and related technologies in teaching and learning (Kahiigi, 2013; Mollel, 2013; Nagunwa & Lwoga, 2012; Sife *et al.,* 2007) acknowledge that the use of ICTs and other emerging technologies have greatly improved teaching and learning in universities. In the same vein, Nihuka (2011) and Kahiigi (2013) observe that the application of technology in teaching and learning in recent years has shifted teaching and learning from traditional methods to new and innovative approaches that greatly incorporate twenty-first century skills, which require students to engage in critical thinking, problem-solving and effective communication. Thus, there is a need for teachers to engage students in technology- enriched environments to meet varied needs of individual learners. Kahiigi (2013) further contends that ICT can serve as a catalyst for educational development by providing tools which teachers use to support and improve teaching and learning

activities. One of the ICT tools that have been adopted into education is Web 2.0.

Adoption of Web 2.0 in teaching and learning activities

Web 2.0 technologies are among the emerging platforms used by students and instructors in universities to create and share their insights into current and emerging themes within their education (Salehe, 2008; Shafique, Anwar, & Bushra, 2010). As some studies such as O'Reilly (2005) as cited in Kazoka (2016) show, Web 2.0 is the phenomenon describing the second web generation whereby the web users can create and share information, comment and critique others' ideas and most notably, collaborate among users. In fact, Web 2.0 technologies increase interactivity and collaboration among web users. Among the Web 2.0 tools are blogs, wikis, podcasts, folksonomies, Facebook, and many more web-based services. In Tanzania, Web 2.0 technologies especially Facebook, WhatsApp and Twitter are popular and thus, mostly used for social communication and information dissemination among individuals and organisations (Uimonen, 2012) and not necessarily in the teaching and learning activities. In support of this, Jimoyiannis, Tsiotakis, Roussions, and Siorenta, (2013) assert that students are increasingly using emerging technologies such as social networks, text messaging, media sharing, blogs, wikis, and other Web 2.0 applications, to communicate and collaborate, but this is not the case with many educators. The empirical data from previous studies conducted in Tanzania (Koloseni & Omary, 2011; Lwoga, 2012; Mollel, 2013; Mtega *et al.,* 2012; Nagunwa & Lwoga, 2012; Salehe, 2008) indicate that there is a significant increase in the number of people using the internet for surfing, electronic mail and

socialisation through the World Wide Web but such tremendous usage does not mirror the integration of Web 2.0 technologies in the teaching and learning activities, whose rate remains rather low or non-systematic (Lwoga, 2012). Darwsh and Lahkhtaria (2011) underscore understanding what Web 2.0 technologies can and cannot do so that users can make prudent decisions on their application in future endeavours. This can be done through exposing faculty members to practical training on proper integration of the technologies and influence their attitude and intention to integrate it in teaching and learning practices.

Users' attitudes and application of Web 2.0 technologies in teaching and learning

Some studies such as Selevičienė and Burkšaitienė (2015) and Masele (2019) relate the adoption of technologies to the users' attitudes towards them. For example, a study by Masele (2019) on top management team's green entrepreneurial attitude and its influence in green business adoption in Tanzania show that, managers with positive attitudes towards sustainability also perceive themselves as having the ability to adopt green entrepreneurship practices. In this respect, the faculty members' and students' attitudes make them either like or dislike the integration of Web 2.0 technologies in teaching and learning activities. A study by Keller (2007) on users' acceptance of virtual learning in higher education institution contends that when confronted with a new information technology, individual users can demonstrate behaviours ranging from complete rejection, active resistance to genuine acceptance. Conversely, Long (2010) observes that people make use of information system if it is not too hard to use and that the performance

benefits of usage are outweighed by the effort of using the application'. Therefore, perceived usefulness and ease of use influence users' attitudes towards using technologies to perform their job especially in teaching and learning activities.

Despite the uses of emerging technologies in teaching and learning activities, research on faculty members' and students' attitudes and their intentions towards the integration of Web 2.0 technologies is still in its infancy. For that reason, Selevičienė and Burkšaitienė (2015) insist on the need to establish users' specifically faculty members' and students' attitudes and behavioural intentions towards technology, in this case Web 2.0 technologies, and their application in teaching and learning. Therefore, this study was designed to examine faculty members' and students' attitudes towards integrating Web 2.0 technologie s and their intentions to integrate it in teaching and learning. Specifically, the study aimed to:

i) Determine the current uses of Web 2.0 technologies in teaching and learning activities in selected universities in Tanzania.
ii) Establish faculty members' and students' attitudes towards the integration of Web 2.0 technologies in teaching and learning respectively.
iii) Find out the intentions of faculty members and students to integrate Web 2.0 technologies in teaching and learning activities respectively.

Use of Web 2.0 technologies to support teaching and learning

With the advancement of technologies and more innovations on the use of technologies in teaching and learning, several virtual learning technologies

have emerged. Virkus (2008) argues that with the advent of Web 2.0 tools, users can actively update websites in real-time, and collaboratively create and share their own insights into current and emerging themes in education as opposed to non-interactive websites (Web 1.0) whose users are passive viewers of the content created for them. In the same vein, Lwoga (2012) observes that Web 2.0 tools are suitable for active and meaningful learning and collaborative knowledge-building. Furthermore, Boulos & Wheeler (2007) indicate that the use of Web 2.0 applications in teaching and learning stimulates reflections on the part of learners and yield powerful learning experiences. Supporters of collaborative learning believe that it helps students retain information better than working individually (Mohammad, 2011). This is because students are co-authors or co-developers of ideas and contents that tap into their collective intelligence (Gadanidis, Gadanidis, Hoogland & Hughes, 2008).

Results from a study conducted by Brodahl, Hadjerrouit and Hansen (2011) on the collaborative writing with Web 2.0 technologies show that learning takes place when it can collaboratively create knowledge. Furthermore, Gadanidis, Hoogland and Hughes (2008) argue that Web 2.0 infrastructure such as wikis entrust their users as co-authors or co-developers and tap into their collective intelligences. The use of Web 2.0 technologies allows students to develop new knowledge and skills through collaboration. Under this scenario, Web 2.0 technologies such as wikis help students create contents collaboratively (Brodahl, Hadjerrouit & Hansen (2011). Notably, the twenty-first century students need more engagement in the learning process through collaboration in knowledge creation, which the use of Web 2.0 tools

actualises. However, a study conducted by Gaffar, Singh and Thomas (2011) at the University of Guyana on the readiness of faculty members and students to use Web 2.0 tools shows that some students were uncomfortable with the use of Web 2.0 tools, suggesting that Social Networking Software (SNS) should be limited to social interaction but not in the educational context.

Awareness of technology

Technological awareness plays a crucial role in the adoption and integration of technology into different activities. Awareness of technology is possible if the intended users have an exposure to the usage and application of that technology. Sahin (2006) reveals that once individuals learn the existence of technology, they will always seek information about that technology. Once individuals learn the existence of a particular technology, it is likely they will be aware of how it works. For Web 2.0 technologies, students and faculty members can use its tools in teaching and learning if they are exposed to Web 2.0 platforms or are familiar with those tools (Anderson, 2007; Armstrong & Franklin, 2008). Regular training is one of the fundamental ways of familiarizing the faculty members and students with the technology. Through training, the faculty members and students understand the use of technology and apply the knowledge they have gained from the training in their real life situations. It is very important to create awareness through training to the faculty members and students on the available Web-based technologies in the teaching and learning process. Characteristically, exposure to the use of technology makes the participants perceive the

technology's ease of use. Sahin (2006) further indicated that any technology needs to be experimented before it is used. This will make the user; in this case, faculty members and students build positive attitudes towards using it.

Attitude towards the technology use

Technology acceptance model (TAM) as developed by Davis in 1989 has several constructs including attitude towards technology. According to Masele (2019), attitude refers to a person's endurance of favourable or unfavourable evaluation of performing target behaviour. It is clear that every person has an attitude in almost everything that shapes his behaviour (Masele, 2019). Empirical studies such as Mollel (2013), Buabeng-Andoh (2012) and Mohammad (2011) indicate that personal attitudes towards the technology greatly influence its adoption and integration in teaching and learning. TAM model predicts that users' behavioural intentions to use technology normally depend on the attitude towards the technology (Elkaseh, Wai Wong & Che Fung, 2016; Masele, 2014). Mohammad (2011) and Elkaseh et al. (2016) assert that ease of use, usefulness, and compatibility of web 2.0 determine its use. Conversely, some studies such as Echeng & Usoro (2014) show that motivation to use Web 2.0 tools in learning activities influences the learners' attitudes and behavioural intentions to use technology. Apart from that, the culture of community can influence personal attitude towards the technology (Elkaseh et al., 2016). Many of the existing empirical evidences on the use of Web 2.0 tools are from the developed countries and they have been tested and validated more in business settings than in education. Furthermore, theories are applicable in few cultures especially in the developed countries. These studies have provided useful information, however, there is still a

general lack of empirical findings on users' attitudes towards the integration of Web 2.0 in teaching and learning from the developing countries such as Tanzania.

Intention to use technology

Intention to use technology is referred to as the readiness of individual faculty members and students to use technology in teaching and learning activities (Kazoka, 2016). As postulated in the TAM theory, behavioural intention to use technology basically looks at the readiness of faculty members and students to integrate web-based teaching and learning technologies. Literature indicates that there is a strong link between the intention to use and the actual usage of the new technology (Masele, 2014; Selevičienė, & Burkšaitienė, 2015), that is, the web-based technologies, by the end-users' intention to use the system. Intention to use is what makes commitment and later adoption and integration of technologies in teaching and learning activities. Intention of use comes after the perceived ease of use and perceived usefulness of the technology in question. Therefore, intention to use technology is important as it predicts the commitment to use it (Masele, 2014) and, finally, the adoption and integration of the web-based technologies such as Web 2.0 technologies in teaching and learning. In this regard, Masele (2014) affirms that when there is high intention to use technology, then the commitment to use it would be high. However, inconsistencies in the perceived quality of Web 2.0 tools and processes constitute barriers to their effective deployment (Armstrong & Franklin, 2008; Jimoyiannias et al., 2013).

Support to use technology

Support to use technology refers to the assistance provided to individuals or group of people in the organization to use technology (Masele, 2014). These supports include technical and leadership support towards the use of technology in teaching and learning activities. Buabeng-Andoh (2012) revealed that technical support is very important for efficient adoption and integration of technology in classroom environment. He revealed that failure to provide technical support to teachers such as maintenance of computer discourages teachers to use technology in the teaching and learning activities. Some scholars such as Sahin (2006) assert that even the faculty members who have technical background may not use technology in teaching if they do not get technical support on how to use the technology correctly. Generally, support to use technology to both students and faculty members is essential for smooth adoption and integration of web-based technologies in teaching and learning activities.

Generally, support from the leaders of the institution to use technology is also crucial for efficient adoption and integration of the technology. Buabeng-Andoh, (2012) believes that a leader who implements technology plans and also shares common vision with the teachers stimulates them to use technology in their lessons.. Support needed for efficient adoption and integration of web-based technology includes but not limited to installation of ICT infrastructures, acquisition of ICT facilities such as computers, ICT capacity building to instructors and students, ICT plans and policies, putting in place the e-learning strategies, and ensuring availability of power and

internet. These will greatly influence the adoption and integration of web-based technologies in teaching and learning activities.

Theoretical foundation of the study

This study draws insight from the construct of the Theory of Planned Behaviour (TPB). The theory was developed by Ajzen in 1991. It aimed at predicting an individual's intention to engage in certain behaviour at a specific time and place (Ajzen, Albarracin & Lohmann, 2018; Masele, 2019). According to the theory, intentions express attitudes and they are powerful predictors of actual behaviour (Ajzen et al., 2018). According to TPB, positive attitudes on behaviour and its outcomes will lead to an increase in that behaviour. Furthermore, Masele (2019) argues that attitude improves prediction of intention beyond that of standard TPB variables. This study therefore, proposes that Web 2.0 technologies training influence the attitude of the faculty members and students and their intention to integrate it in teaching and learning activities. This is because, awareness or familiarity of the technology is one of the determinants of user-acceptance and usage behaviour of the technology.

The second insight in this study was drawn from the constructs of Technology Acceptance Model (TAM). TAM has been widely used to study the adoption of various technologies and it has arguably become the most influential theory in the Information System (IS) field (Ajzen et al., 2018; Masele, 2014). The aim of TAM is to predict users' experience of information systems and to identify design problems before users experience the system. TAM has four constructs that lead to the actual usage of the information

system. However, Selevičienė and Burkšaitienė (2015) modified the model and came up with five constructs. These are awareness, perceived usefulness, perceived ease of use, attitude towards using the system and behavioural intention to use the system as presented in Figure 1. TAM has been used to examine the factors affecting users' intentions to use and adopt different technological systems or tools. TAM recognizes the intention to use information systems by identifying the measurement of users' attitudes toward a system's usefulness and ease of use, and proposes external factors that influence usage intentions.

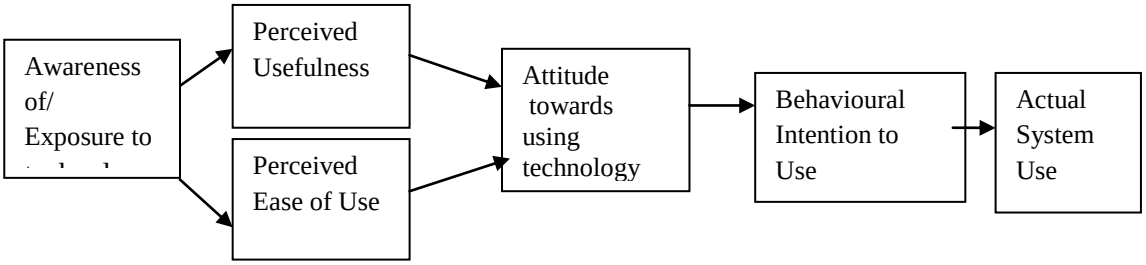

***Figure 1**:* Technology Acceptance Model

(Adopted and modified from Selevičienė & Burkšaitienė, 2015)

Research design

This study adopted quasi - experimental research design. Quasi-experimental design involves selecting groups (in this case academic staff and postgraduate students) upon which a variable is tested, without any random pre-selection (Muijs, 2004). Quasi experiments generate results of the general trends. Furthermore, Neuman (2006) and Kothari (2004) show that quasi - experimental designs help researchers test for causal relationships between an intervention and an outcome in various situations. Thus, there

were no controlled and non–controlled (experimental) groups in the intervention of the programmes (perform practical on the use of Web 2.0 technologies in teaching and learning). This design is frequently used when it is not logistically feasible or ethical to conduct a randomized controlled trial (Muijs, 2004; Neuman, 2006).

The design of the training considered the incorporation of pedagogical practices such as reflective learning and the need to include key thinking skills associated with independent learning and creative thinking skills as exemplified by Kahiigi (2013). Training sessions were conducted to faculty members and postgraduate students who voluntarily registered to participate in the training with ICT experts of the respective universities. The training was based on the use of collaborative platforms such as Wikis, Google Drive, academia.edu, Dropbox and Mendeley in teaching and learning activities. These tools were opted in the training because they offer collaborative and participatory features needed in active teaching and learning practices.

Study area

This study was conducted in the three selected Tanzanian higher learning institutions, namely the University of Dar es Salaam (UDSM), Sokoine University of Agriculture (SUA) and Muhimbili University of Health and Allied Sciences (MUHAS). These institutions were selected purposely because they had well organized ICT infrastructure and ICT-related programmes. They also had well-established teaching, learning and research infrastructures, and have generated substantive teaching and learning materials and research

output, hence more likely to benefit from the use of ICTs and web platforms (Lwoga, 2012).

Study population and sample size

The study involved 24 faculty members and 30 postgraduate students who attended the training in using Web 2.0 technologies in teaching and learning. These faculty members and students were those who were conveniently available and voluntarily registered to participate in the Web 2.0 technologies training with ICT staff of universities involved in this study.

The socio-demographic characteristics of the respondents are presented in Table 1.

Table 1: *Socio-Demographic Characteristics of the Respondents*

Personal Characteristics (n = 54)		**Faculty Members**		**Students**	
		F	**%**	**F**	**%**
Gender	Female	9	37.5	12	40
	Male	15	62.5	18	60
Age	20 - 29 years	5	20.8	18	60
	30 - 39 years	12	50	9	30
	40 - 49 years	4	16.7	3	10
	50 - 59 years	3	12.5	0	0
Academic Discipline	Social Sciences and Humanities	5	20.8	6	20
	Business and	3	12.5	3	10
	Computer Sciences	9	37.5	12	40
	Agricultural	4	16.7	5	16.7
	Health and Allied	3	12.5	4	13.3

Access to Internet	Yes	24	100	29	99.2
	No	0	0	1	0.8

Note: F = Frequency; % = Percent

Data collection

The study used triangulation methods such as the use of questionnaire and face –to-face interview with selected faculty members to collect data. The questionnaire was designed using Google forms and was sent to respondents using their email addresses indicated during the training sessions in their respective institutions. Jimoyiannis et al. (2013) assert that the design of questionnaire should base on theoretical knowledge already available in literature and the practical knowledge and research experience of the researcher. The questionnaire contained likert-type scale items presenting statements designed to solicit closed responses on the usefulness of Web 2.0 tools as well as attitude and intention to integrate it in teaching and learning activities. Gathering of in-depth information from mainstream faculty members was done using face-to-face interviews with selected key informants. The use of more than one method of data collection enabled convergence or confirmation of findings from different data sources.

Findings

Usefulness of Web 2.0 tools in teaching and learning activities

The study results showed that 96.3% of the respondents used Web 2.0 technologies whereas 3.7% did not use them despite accessing the Internet. In addition, the results showed that 96.3% of faculty members accessed the

Internet and used Web 2.0 technologies whereas only 3.7% did not use Web 2.0 technologies.

Furthermore, faculty members and students who participated in the quasi experiment particularly on the use of Web 2.0 technologies in teaching and learning activities were asked to indicate whether Web 2.0 tools that they were trained in and practised in teaching and learning are useful. Table 2 summarises the results:

Table 2: *Web 2.0 Tools Adopted in Teaching and Learning and their Usefulness*

Web 2.0 technologies Adopted	**Response n = 54**			
	Useful		**Not useful**	
	Frequency	**Per cent**	**Frequency**	**Per cent**
	54	100	0	0
Mendeley	49	91	5	9
Academia.edu	50	92	4	8
Wikis	51	94	3	6
Youtube.edu	43	80	11	20
Blogs	49	91	5	9
Dropbox	50	92	4	8

The findings in Table 2 showed that 100% of the respondents indicated that Google Drive was useful in teaching and learning. 91% indicated that Mendeley was used in organizing educational resources such as references in research articles. 94% showed that wikis were useful in teaching and learning activities especially in collaborative group assignments while 6% found it useless. Furthermore, it was revealed that 91% of the respondents used blogs and 92% indicated that it was useful in teaching and learning

activities while 9% did not support blogs as useful in teaching and learning activities. It was further revealed that 92% used Drop box and viewed it useful. It was also revealed that 92% found Academia.edu useful in uploading, sharing, and accessing research articles while 80% indicated Yutube.edu as useful in accessing different tutorials while 20% did not see its usefulness in teaching and learning activities.

Teaching and learning activities performed using Web 2.0 tools

The study investigated teaching and learning activities that participants were able to implement after attending the training in the Web 2.0 tools. Results are as summarised in Table 3.

Table 3: *Web 2.0 Based Teaching and Learning Activities Performed*

Activities Performed n= 54	Frequency	Per cent
Uploading and sharing information using		
Organizing information retrieved from the		
Creating online discussion groups	34	63
Creating documents through the use of Google		
Searching and sharing information	33	61.1
Accessing course materials uploaded by	30	55.5
Uploading research papers in the	30	55.5
Doing group assignment using Wikis	29	53.7
Posting and receiving assignments and		
Teaching information literacy	15	27.8

The results showed that most of the participants could upload and share information using Google Drive and Drop box, 51.8% could post and receive assignments and make announcements to students, 100% organised information they retrieve from them for research purposes using Mendeley. Furthermore, 61.1% participants could create documents through the use of Google Drive and share with colleagues, 63% created online discussion groups, and 53.7% could collaboratively do group assignment using wikis, 55.5% students could access materials uploaded by instructors, 55.5% uploaded research papers in the Academia.edu and got feedback from different individuals, and 61.1% could search for materials and share them with their colleagues.

During interview with faculty members it was revealed that familiarity with Web 2.0 tools and their applicability in teaching and learning for most of the lecturers seemed to be limited. For example, one faculty member had this to say during the interview: “I started using these tools after attending training workshop on the use of Web 2.0 tools in teaching and learning activities. Before that I was not familiar with these tools and how they can be used to accomplish academic activities.”

It was also revealed that Web 2.0 technologies mostly used for posting and accessing teaching resources were Google Drive, Wikis, and Dropbox. Other Web 2.0 tools used were YouTube.edu, blogs, Academia.edu, and Mendeley. Web 2.0 technologies used were those that could be used for creating multimedia information, storing and sharing information and references. For example, one faculty member during interview had this to say: “Youtube.edu

is one of the tools providing tutorials lecture for different courses. I remember when I was analysing data for my PhD studies; I used to listen to tutorials through Youtube.edu. It helped me a lot."

The findings further revealed that Mendeley and Delicious were the most well-known social bookmarking tools. They were used by students, especially postgraduates when writing their research proposals and dissertations or theses. The findings from the study showed that participants had opened their accounts in Mendeley and Delicious where they shared references with their colleagues. However, during interviews with some respondents, it was revealed that although they were familiar with those tools, they rarely used them in teaching and learning activities.

***Attitude on the use of Web 2.0 technologies in teaching and learning* activities**

Among the factors deemed influential to the integration of Web 2.0 tools in teaching and learning is users' attitude. According to the TAM developed by Davis (1989), attitude can affect the acceptance of, for example, intention to use Web 2.0 technologies in the teaching and learning process. Respondents were asked to indicate their attitude towards Web 2.0 technologies as a teaching and learning platform. A one-way ANOVA statistical test was used to establish their attitude towards the integration of Web 2.0 technologies in teaching and learning among faculty members and students. Table 4 presents the obtained results.

Table 4: *Attitude towards the Use of Web 2.0 Technologies*

Attitude to the use of Web 2.0 technologies n=54		Sum of Squares	Df	Mean Square	TF	P
It is a good idea to use Web 2.0 technologies in teaching and learning	Between Groups	1.134	1	1.134	2.814	.099
	Within Groups	20.958	52	.403		
	Total	**22.093**	**53**			
Web 2.0 technologies help to build confidence in teaching and	Between Groups	4.156	1	4.156	24.963	.000
	Within Groups	8.658	52	.167		
	Total	**12.815**	**53**			
The advantage of using Web 2.0 technologies overweighs the disadvantages of not using it	Between Groups	5.894	7	.842	10.167	.000
	Within Groups	3.810	46	.083		
	Total	**9.704**	**53**			

The results on attitude towards the integration of Web 2.0 technologies in teaching and learning among faculty members and students indicated that there were insignificant statistical differences between the mean scores (MS=.1.134, .403) between and within groups on the idea to use Web 2.0 technologies in teaching and learning activities as $F_{1,52} = 2.814$; $p = .099$. Apart from that, the results on the attitude to the idea that Web 2.0 technologies build confidence in teaching and learning indicated that there were significant statistical differences between the mean scores (MS=.4.156, .0167), that is, between and within groups among faculty members and

students on their attitude towards Web 2.0 technologies on building confidence in teaching and learning activities across both genders as F (1, 52) = 24.963; *p* = .000. Furthermore, the test results indicated that there were significant statistical differences between the mean scores (MS=.842, .083), in fact, between and within groups on the attitude that the advantages of integration of Web 2.0 technologies in teaching and learning activities overweighs the disadvantages of not using it among faculty members and students as *F*(7,46) = 10.167 and *p* = .000.

***Intention to use Web 2.0 technologies in teaching and learning* activities**

As postulated in the TAM model, behavioural intention to use Web 2.0 technologies basically looks at the readiness of the participants to integrate technologies in their work. The study findings in this regard showed that 91% were ready to integrate Web 2.0 technologies in teaching and learning whereas 9% were not ready to integrate them. Furthermore, the ANOVA test was performed to determine whether there were any statistical differences on the mean score regarding the readiness to integrate Web 2.0 technologies in teaching and learning among faculty members and students. Table 5 presents the results.

Table 5: *Intention to Use Web 2.0 Tools in Teaching and Learning Activities*

Intention to use Web 2.0 n=54		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
I am Planning to add Web 2.0	Between Groups	3.559	1	3.559	17.571	.000

technologies as another medium to learn different courses	Within Groups	10.533	52	.203		
	Total	14.093	53			
I am thinking of adding Web 2.0 technologies to improve the learning process	Between Groups	.093	1	.093	.243	.624
	Within Groups	19.833	52	.381		
	Total	**19.926**	**53**			

The results showed that there was statistical significant difference between mean scores (MS= 3.559, .203) on behavioural intention to integrate Web 2.0 technologies among faculty members and students in the teaching and learning activities including planning to use Web 2.0 technologies in the classroom as F (1, 52) = 17.571; *p* = .000 across both genders among faculty members and students. On the other hand, the results on adding Web 2.0 technologies to courses they teach and across gender showed that there was an insignificant statistical difference as F (1, 52) =.243; p=.624 and Ms= 0.093, 0.381.

Reasons for the intention to use Web 2.0 technologies in teaching and learning activities

Faculty members and students were also asked to give reasons for their plans to integrate Web 2.0 technologies in teaching in the subsequent academic year (2014/2015). Table 6 summarises the results.

Table 6: *Reasons for Integrating Web 2.0 in Teaching and Learning Activities*

Reasons for Integrating Web 2.0 in Teaching and Learning Activities	Response n= 54	
	Frequency	Per cent
Easiest way of getting feedback from lecturers	53	98.1
Innovative way of teaching and learning	52	96.2
Easiest way of sharing information	44	81.4
Interactions among students and building social networks	37	68.5
Students complete assignments on time and improve their writing skills	37	68.5
New way of sharing ideas	36	66.7
It helps students in developing critical ideas	35	64.8
It is a simple and fast way of doing assignment online	34	63
It helps students in building arguments and confidence	29	53.7

Findings from the study showed that 98.1% of the faculty members and students indicated that the use of Web 2.0 is the easiest way of getting feedback from the lecturers. 92% indicated that using Web 2.0 technologies is an innovative way of teaching and learning. The findings further indicated that 68.5% of the faculty members and students supported that Web 2.0 technologies increase interactions among students in addition to cultivating social networks. 81.4% said it was the easiest way of sharing information. Furthermore, 68.5% of the faculty members and students confirmed that students complete assignments on time and improve their writing skills; 66.7% indicated that it is the easiest way of sharing ideas; 64.8% indicated

that Web 2.0 technologies help students develop critical ideas and arguments.

Discussion of Findings

The findings of this study revealed several Web 2.0 tools adopted in teaching and learning activities of the surveyed universities and indicated the extent to which these tools were useful in the teaching and learning processes. These tools were used in doing group assignments given in classes, organizing resources such as references and others were used in uploading and sharing research articles retrieved from different databases.

Evidently, the findings showed that the introduction of Web 2.0 technologies in university courses required support and training for lecturers and students. On the whole, university management could play a significant role in supporting lecturers and students in the integration of Web 2.0 technologies in teaching and learning activities. They could support faculty members and students to adopt technologies by organizing short - term training, seminars and workshops aiming to improve knowledge and skills and creating awareness of the uses of technologies and influence their attitude and intention in using technologies in the teaching and learning activities. Gaffar, Singh and Thomas (2011) contend that the adoption and integration of Web 2.0 technologies require a change in mind-sets of the educators and administrators on the perceived quality of Web 2.0 technologies with regard to the teaching and learning processes. Moreover, Buabeng-Andoh (2012) believes that managers implement technology plans and also share a

common vision with faculty members by stimulating them to use technology in their lessons.

Likewise, findings have revealed that attitude towards the use of technology plays a vital role in the intention to use Web 2.0 technologies in the teaching and learning activities. Scholars such as Masele (2014, Mollel (2013), Buabeng-Andoh (2012) and Mohammad (2011) agree that personal attitude towards technology greatly influences its adoption and integration in teaching and learning. They argue that if users feel uncomfortable with certain technologies that they use in their learning and do not feel confident in their ability to use the technology effectively, they may experience difficulties in their interactions with peers and instructors, and in the completion of their assignments. This negatively affects their attitudes towards the use of technology and also impacts on their learning outcomes. Results stemming from the current study suggested that the attitude towards Web 2.0 technologies have impact on the adoption and integration of such tools in teaching and learning activities.

The findings further revealed that the faculty members and students were ready to integrate Web 2.0 technologies in teaching and learning activities. Usually, there is a strong link between the intention to use and actual usage of a new technology; that computer usage is a function of the end-user's behavioural intention to use the system. In fact, behavioural intention to use Web 2.0 technology in teaching and learning would positively influence the actual usage of Web 2.0 technologies in teaching and learning activities. The study findings show that most of the faculty members and students were

ready to integrate Web 2.0 technologies in teaching and learning activities with only nine per cent indicating otherwise. In fact, exposure, support to use Web 2.0 technologies, commitment and acquisition of knowledge and skills can make the faculty members and students strive to use Web 2.0 technologies in teaching and learning activities.

Moreover, it was revealed that attitude and perception play a key role in the adoption of Web 2.0 technologies in teaching and learning activities. The study finding is supported by the findings of the study conducted at Caribbean University by Gaffar, Sigh & Thomas (2011) on the readiness of lecturers and students to integrate Facebook in teaching and learning activities which indicated that attitude and perception are important indicators of acceptance and subsequent use of technology. When Pradia (2016) examined Web-based technologies in this case Web 2.0 technologies with students' needs, their needs were expected to influence behavioural intention through attitude. Ajzen, Albarracin, and Lohmann (2018) assert that individuals' actions are a function of behavioural intention that in turn is a function of attitude. Therefore, leaders who believe that technology enhances learning may influence their teachers' attitudes and stimulate them towards using technology in their lessons.

Conclusion and Recommendation

The study findings showed that the use of Web 2.0 technologies is growing as means of facilitating teaching and learning. These tools were found useful in teaching and learning activities and they were used in doing group assignments given in classes, organizing resources such as references and

others were used in uploading and sharing research articles retrieved from different databases. The study revealed that attitude towards technology influences behavioural intentions to integrate it in teaching and learning activities. The study findings further showed that most of the faculty members and students were ready to integrate Web 2.0 technologies in teaching and learning activities. Therefore, the study recommends that the university management organize regular workshops for the faculty members and students aiming to increase familiarity with Web 2.0 technologies and influence their attitudes and intentions to integrate technologies in teaching and learning activities. University management should also ensure reliable ICT infrastructure and fast and reliable internet connectivity, establishment of ICT and E-learning policies and availability of ICT tools such as computers connected to the internet for ease of use by faculty members and students.

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