Students' Experiences in Using Web 2.0 Technologies for Learning: A Case of Muni University, Uganda

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Abstract

The advancement of web technologies has innovated tools and software applications, also known web 2.0, to support collaborative teaching, learning and research. These technologies offer learners and learning facilitators an opportunity to interact both vertically and horizontally beyond four walls of the classroom. This study provided further understanding, from students' perspective, of issues surrounding usage of web 2.0 Technologies in Mui University, Uganda. This was achieved by: assessing the students' awareness of Web 2.0 technologies, ascertaining the usage of Web 2.0 technologies, and establishing barriers that hinder students to use web 2.0 technologies for teaching and learning beyond the four walls of classroom. Questionnaires were administered to 100 students from the Faculty of Technoscience, Muni University. SPSS v.21 was used to analyse the data collected. The results were presented in form of tables, charts, means, and percentages were used to indicate the student's experiences on the usage of web 2.0 technologies in the learning process at Muni University. The research revealed that the students know and always use mainly YouTube, Facebook and Google during their studies. The study further showed that students use web 2.0 in both academic and personal activities with at least 73.8% of the respondents expressing that they use web 2.0 in collaborating with lecturers and fellow students in addition to fulfilling the university learning requirements. The study also found that students are challenged by low-speed Internet connections, lack of appropriate devices to support web 2.0, time-consuming nature of web 2.0, inadequate literacy skills to use web 2.0, and tight restrictions and lengthy procedures by local authorities over the use of internet e.g. Over the Top Tax (OTT) being imposed by the Government of Uganda. The researchers recommend that different stakeholders should support students to embrace the use web 2.0 in learning, e.g., the learning facilitators need to advocate for and provide continuous awareness, the national government needs to provide an equitable environment like internet and its infrastructure that will foster learning through the use of web 2.0, and parents should provide basic facilities like smartphones and laptops for use in learning.

Keywords: Web 2.0 Technologies, Universities, Awareness, Usage, Barriers, Students' Experiences, Learning, Muni University

1. Introduction

Over the past three (3) decades there has rapid growth and development in the area of information and communication technologies (ICT) and within the last decade, the proliferation of social media and web 2.0 technologies has greatly impacted the way people share and interact [1]. Tools like Facebook, Twitter, Linkedin and Google+ among others have the potential to become important disruptive technologies [2, 3] for building cutting-edge models of management education. In the research by Byrne [4], it's highlighted that integrating educational technology resources into classroom instruction creates an interactive class with engaged students. Web 2.0 technologies give the learning facilitators and learners new teaching and learning tools and can change the: vertical interaction between lecturers and students; horizontal interaction between lecturers; and horizontal interaction between students. These interactions are all possible beyond four walls of the classroom.

According to Wilson, et al. [5], Web 2.0 refers to the second generation of the Web, wherein interoperable, user-centered web applications and services promote social connectedness, media and information sharing, user-created content, and collaboration among individuals and organizations. The researchers highlighted examples of web 2.0 technologies as information sharing sites, social networking, syndication, weblogs (blogs) and wikis among others. These technologies are used in different ways to support more effective learning outcomes. Web 2.0 technologies are shifting the Web to turn it into a participatory platform, in which people consume content and contribute to the production of new content. Through the incorporation of techniques like tagging, blogs, wikis and mashups, web 2.0 breaks the barriers between users and data-providers, by creating new and useful links among them [6].

All the web 2.0 technologies encourage a more active, participatory role for users. Communities no longer use the web to obtain information, but instead create information and share it with others using Web 2.0 technologies. The web has become one of the most powerful means of information (in most of the cases, the most powerful). In countries like UK, which seem to have advanced ICT-enabled teaching and learning, have established facilities to facilitate interactive learning like web conversations among staff, students and parents [7]. According to Conole and Alevizou

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[8], as stated in Selevičienė and Burkšaitienė [9], a recurrent discourse around the application of Web 2.0 points to the notions of evolution and transformation. Transformation is in terms of transcending formal educational contexts and evolution is in form of facilitating more informal and nonformal learning contexts which caters for diverse categories of learners (student, adult-learner and informal learner among others) who are empowered to become the centre of teaching and learning.

A research by Owusu-Ansah, et al. [10] stipulated that studies and anecdotal evidence from African academic institutions suggest that web 2.0 has not been exploited to support teaching, learning and research. This is attributed to lack of knowledge and skills involved in the use of these new media, as well as awareness of their educational benefits. There is also lack of guidance on the use of web 2.0 for educational purposes which results in disinterest and appreciation of web 2.0 tools in terms of their potential uses and benefits in education. Furthermore, librarians who are the information providers for research also lack some web 2.0 skills, and in some cases are far behind the consumers of the information they provide in terms of the skills to engage in the web 2.0 revolution.

2. Problem Statement

ICT adoption is key strategy in transforming University education by integrating ICT in the Universities' functions [11]. Muni University introduced the use of Moodle platform as tool for facilitating e-learning and teaching. This supplemented the Amazon kindles, e-book readers which were pre-loaded with the relevant electronic learning materials. At the university, there is free access to internet to both staff and students and every student is expected to own a mobile device to help in accessing the e-learning platform. Given the above innovations, Muni University has not yet fully implemented the use of web 2.0 in teaching and learning processes and yet the available facilities are positioned to support the implementation of Web 2.0 technologies in teaching and learning beyond the four-wall class room. Therefore, this study explored the awareness and status of use of web 2.0 technologies in Muni university and barriers that hinder students to use web 2.0 technologies in learning process beyond four walls of the classroom.

3. Objectives of the study

1. To assess the awareness and use of web 2.0 technologies.
2. To determine the students' opinion on the usage of web 2.0 technologies in learning process beyond four walls of the classroom.
3. To ascertain the barriers that hinder students to use web 2.0 technologies in learning process beyond four walls of the classroom.

4. Scope of Study

The study looked at the awareness and usage of the web 2.0 technologies like blogs, wikis, social networking, social bookmarking, podcast, instant messaging, Google docs and Video Chat among others. It also looked at the students' opinion on usage of web 2.0 technologies in learning process. The study finally looked at the hindering factors to use the web 2.0 technologies by students in learning beyond four walls of the classroom. This study took place at Muni University located in West Nile, Arua District, Uganda. The study took place during the period of August 2018 to August 2019.

5. Literature Review

5.1. Web 2.0 Technologies

The original Web, also known as Web 1.0 did not meet Tim Berners-lee, the inventor of WWW who wanted the web to be a place for connection. In early 1900s, Web 1.0 required a fairly-high level of training to publish online. For example, it required an understanding of HTML (Hyper Text Markup Language) [12]. Web 1.0 became a one-way road for communication and a place where the users simply collected information. The arrival of new technologies, the inventor read/write web, now called web 2.0, has a simplified communication and collaboration [13].

Web 2.0 is described generally as web technologies, tools, applications and social software that support collaborative effort to generate and share contents or data [14]. It is also referred to as the "read/write Web" because it is the second generation of the web that users are able and allowed to read and also write content to the internet, hence providing them with interactive features and services to control (edit, share and delete) any information they put on the internet. Examples of these technologies include instant messaging, internet Facebook, YouTube, Twitter, E-mail, Wikis, Blogs, LinkedIn, Google Maps, Podcasts, Instant messaging, Social bookmarking, moblogging, vlogging or video blogging, Flickr [11], [14].

5.2. Usage of web 2.0 Technologies for Learning

It is very vital to understand the importance of web 2.0 technologies such as instant messaging, internet telephony, social bookmarking, social networking sites, blogs, wikis, podcasts and discussion forums.

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According to Abel and Razep [14] emergence of Web 2.0 technologies has opened doors for more effective and efficient learning experiences. Good use of these tools supports quality learning enhancement, learner centeredness and lifelong learning [15], [16]. Okello [17] noted in his finding that web 2.0 are used for: collaboration with fellow scholars for the engagement of students' learning; social networking with students on academic matters; social networking with students; creating learning/training materials for students; sharing learning materials with learners; providing online distance learning; use for online meeting with co-lecturers for the course; use for classroom announcements to students and discussion; used as platforms for sharing research findings; used for students assessment and submission of assignments; used as a platform for intelligence gathering of what students are thinking about lecturers; used for private business not related to teaching. However, Teresita [18] categorized the usage of web 2.0 as in enabling one to participate, share, collaborate, contribute and create content which summaries the findings of Okello [17].

5.3. Barrier to Web 2.0 Technologies Usage

Crook, et al. [19] identified numerous barriers concerning web 2.0 integration in schools, such as the time-consuming character of such educational activities, the teachers' inability to control the internet use in class, the tight restrictions and lengthy procedures/protocols by local authorities for using the internet, technical issues, teachers' uncertainty concerning the opportunities that web 2.0 offers, lack of awareness of legal and copy right issues, students' lack of critical literacy skills and the influence of the assessment system. A study by An and William [20] also identified barriers such as student uneasiness with openness, public discourse and interaction, technical difficulties regarding students' lack of new computers, glitches due to the in-progress nature of many Web 2.0 tools, lack of adequate technical support and the time-consuming process to learn and manage new Web 2.0 technologies.

Recently, Ertmer et al. [21] supported that the external barriers to teachers' technology integration practices such as training, support, and hardware and internet access have been reduced. Interestingly, educators indicated that their own beliefs as well as internal factors (passion for technology, having a problem-solving mentality) and support from others (administrators and personal learning networks) had the greatest importance concerning the success of their practices. Hence, while there are several cases in which Web 2.0 was integrated in the classroom and offered significant learning benefits, there are also barriers and prerequisites for the teachers that have to be addressed to take advantage of its premises.

6. Methodology

The study used a cross-sectional survey research design in assessing the students' awareness and use of web 2.0 technologies in learning as well as the barriers that hinder them to use the tools. This study targeted a population of 100 students from the three departments of Computer and Information Science, Education and Nursing that formed a Faculty of TechnoScience, Muni University.

The study used a self-made questionnaire which made students assess their awareness and use of web 2.0 technologies using a five-point scale (I don't know it, I know but don't use it, I know but rarely use it, I know and use it and I know and always use it). For usage of web 2.0 technologies, a four-point Likert scale (Strongly Disagree, Disagree, Agree and Strongly Agree) was used. A four-point scale (Strongly Disagree, Disagree, Agree and Strongly Agree) was used to assess the barriers that hinder the use of web 2.0 technologies in learning.

The results were analyzed using SPSS version 21 and results presented in form of tables, charts and means, and percentages were used to assess students' awareness and use of web 2.0 technologies in learning as well as the barriers that hinder them to use the tools.

7. Findings

The data for this study was collected by a web survey of the students of Muni University between August 2018 and July, 2019. The questionnaire included a section on demographic information and questions for measuring the awareness and use of web 2.0 technologies, usage of web 2.0 technologies and barriers that hinder the use of web 2.0 technologies in learning. The instrument was tested with a group of 20 students before the final launching of the survey. These students were selected based on availability and willingness to participate.

The data indicate that the measures are robust in terms of their internal consistency reliability as indexed by composite reliability. The reliability of the collected data in this study was assessed by the Statistical Package for Social Science (SPSS). Cronbach's alpha of 0.725 was obtained which exceeded the recommended threshold value of 0.60.

In total, 92 completed responses were obtained and this represents a response rate of 92% of which 58 (63.04%) are from males and 34 (36.96%) are females. The distribution of the ages of the respondents as highlighted in Figure 1 was recorded as follows: 16-25 were 81 (88.04%) students; 26-23 were 6 (6.52%) students; and 36-45 were 5 (5.43%) students.

The data was gathered from the students of offering four programmes of: Bachelor of Information Systems (ISM) as shown in Figure 2, with 34 (36.57%) respondents; Bachelor science in Information Technology (ITM), with 15 (16.30%) respondents;

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Bachelor of Nursing Science (BNS), with 23 (25.00%) respondents; and Bachelor of Science with Education (BSc. Ed), with 21 (22.83%) respondents.

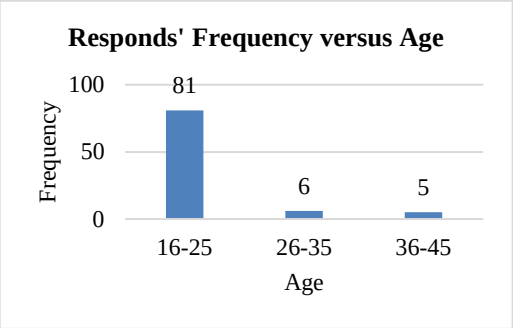

Figure 1. Respondents' Age

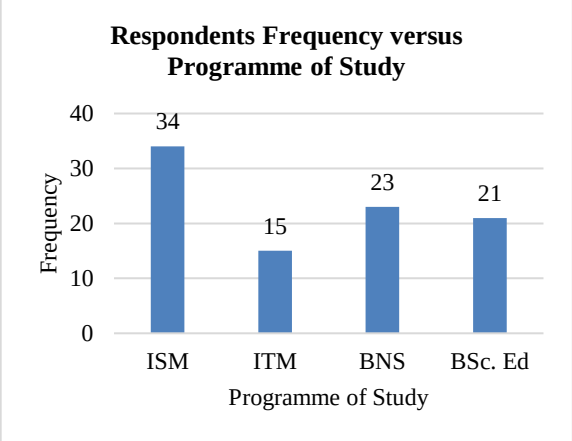

Figure 2: Respondents' Programme of study

Table 1. 5-Point Likert Scale for Objective 1

Response Rate	Description
1	I don't know it
2	I know but don't use it
3	I know but rarely use it
4	I know and use it
5	I know and always use it

In order to analyse objective 1 of the study, a 5-point Likert scale was used as shown in Table 1 while the analysis of objectives 2 and 3, a 4-point Likert scale was used as shown in Table 2.

Table 2. 4-Point Likert Scale for Objectives 2 and 3

Response Rate	Response Mode	Description
1	SD	Strongly Disagree
2	D	Disagree
3	A	Agree
4	SA	Strongly Agree

7.1. Objective 1: To assess the awareness and use of web 2.0 technologies

From Table 3 the respondents clearly showed their affinity for mainly three (3) web 2.0 technologies and these are; YouTube, Facebook and Google applications in that chronology. The research revealed that the students of Muni University know and always us YouTube, Facebook and Google apps. The study also revealed that the responds have knowledge of certain web 2.0 technologies even though they don't explore their usage. The known and unused web 2.0 applications are Twitter, Wiki and Blogs. The study further revealed that the respondents had either little or no knowledge about a number of web 2.0 technologies. The unknown web 2.0 technologies include; LinkedIn, Video Blogging, Social Bookmarking, Flickr, Moodle, Zoom, Wiki Spaces, Edx, MIT Courseware, TED Ed, Endnote, Dropbox and Audicity.

7.2. Objective 2: To determine students' opinion on usage of web 2.0 technologies in the learning process beyond four walls of the classroom

In determining the students' opinion on the usage of web 2.0 technologies, as shown in Table 4, the respondents agreed web 2.0 technologies (with a median and mode of 3) are used in various activities which are both academic and personal activities. At least 73.8% of the respondent expressed that they use web 2.0 technologies in collaborating with lecturers, networking with fellow students, used to fulfil university learning requirements like student-centered learning, sharing learning materials with lecturers and fellow students, making classroom announcements, assignment planning and submission, versioning software codes, data gathering, and having virtual discussions among others. From Figures 2 and Table 4, it can be evident that a percentage of respondents (approximately 53%) who use web 2.0 technologies in software project code versioning was equivalent to the percentage of respondents from both Bachelor of Information Systems (ISM), with 34 (36.57%) respondents and Bachelor Science in Information Technology (ITM), with 15 (16.30%) respondents.

This implies that the majority of the students in ISM and ITM have used web 2.0 technologies in source code versioning. Among the constructs under opinion on usage, the highly ranked one is the construct of "Used for networking with my fellow students on academic matters e.g., through discussion forums" which cross-cuts the entire study population. The least ranked opinions are "Use for online meeting with my fellow students for the shared courses" and "Used to setup virtual discussion forums" with

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Table 3. Awareness and use of web 2.0 technologies

No	Awareness Item		I don't know it	I know but don't use it	I know but rarely use it	I know and use it	I know and always use it	Median	Mode	Interpretation
		n	%	%	%	%	%			
1	YouTube Usage	92	1.1	4.3	12.0	27.2	55	5	5	They Know and Always Use it
2	Facebook Usage	92	5.4	8.7	9.8	25.0	51	5	5	They Know and Always Use it
3	Google Apps Usage e.g., Google docs, drive, mail, etc.	91	2.2	12.1	22.0	26.4	37	4	5	They Know and Always Use it
4	Twitter Usage	92	6.5	38.0	25.0	13.0	17	3	2	They know but don't use it
5	Wiki Usage	89	18.0	30.3	16.9	18.0	17	3	2	They know but don't use it
6	Blogs Usage	89	30.3	41.6	18.0	3.4	8	2	2	They know but don't use it
7	LinkedIn Usage	89	41.6	24.7	18.0	10.1	6	2	1	They don't know
8	Video Blogging Usage	88	50.0	36.4	9.1	3.4	1	1.5	1	They don't know
9	Social Bookmarking Usage	89	58.4	29.2	9.0	2.2	1	1	1	They don't know
10	Flickr Usage	88	67.0	23.9	5.7	2.3	1	1	1	They don't know
11	Moodle Usage	88	67.0	10.2	6.8	10.2	7	1	1	They don't know
12	Zoom Usage	88	67.0	18.2	9.1	4.5	1	1	1	They don't know
13	Wiki Spaces Usage	88	73.9	21.6	2.3	2.3	0	1	1	They don't know
14	Edx Usage	90	82.2	13.3	2.2	1.1	1	1	1	They don't know
15	MIT Courseware Usage	89	88.8	6.7	3.4	1.1	0	1	1	They don't know
16	TED Ed Usage	90	85.6	11.1	2.2	0.0	1	1	1	They don't know
17	Endnote Usage	89	71.9	22.5	3.4	2.2	0	1	1	They don't know
18	Dropbox Usage	90	65.6	18.9	12.2	2.2	2	1	1	They don't know
19	Audicity Usage	88	79.5	9.1	9.1	0.0	2	1	1	They don't know

"45.5%" and "43.9%" respectively of those who don't agree with the research constructs. This implies that students of University rarely use video/voice over internet protocol (IP) while using web 2.0 tools.

7.3. Objective 3: To ascertain the barriers that hinder students to use web 2.0 technologies in the learning process beyond four walls of the classroom

The study found out a number of challenges that hinder the use of web 2.0 technologies in the learning process at Muni University. From the constructs used to ascertain the barriers that hinder the use of web 2.0 technologies as shown Table 5, the respondents strongly agreed that "Lack of speedy Internet connections to support the usage web 2.0 technologies" is a highly ranked barrier (with median and mode of 4 and a percentage of 86.4% agreeing to that construct) followed by "Lack of appropriate devices to support web 2.0 technologies" (where the respondents agreed with median and mode of 3 and a percentage of 64.3% agreeing to that construct)).

The respondents also agreed that: "Web 2.0 technologies are time-consuming", with median and mode of 3 and a percentage of 63.4%; "Lack of critical literacy skills to use web 2.0 technologies", with median and mode of 3 and a percentage of 61.7%; "The tight restrictions and lengthy procedures by local authorities over the use of internet e.g. Over the Top Tax (OTT)", and "Lack of awareness of legal and copy right issues", with median and mode of 3 and a percentage of 60.2%. there is one peculiar construct of "Lack of specific web 2.0 technologies required by my lecturer", with median and mode of 3 and a percentage of 61.4%; where 50% of the respondents agreed and disagreed.

The respondents strongly disagreed to the construct "Web 2.0 technologies are not relevant to the courses I teach or my research", with a median of 2 and mode of 1 and a percentage of 71.1%.

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Table 4. Students opinion on usage of web 2.0 technologies in the learning process

No	Usage		SD	D	A	SA	Median	Mode	Interpretation
		n	%	%	%	%			
1	Used for collaboration with my lectures	86	7.0	22.1	46.5	24.4	3	3	Agreed
2	Used for networking with my fellow students on academic matters e.g., through discussion forums	88	0.0	6.8	56.8	36.4	3	3	Agreed
3	Just for social networking with my fellow students e.g., through instant messaging	90	6.7	15.6	46.7	31.1	3	3	Agreed
4	Used to fulfill the university policy on teaching, learning and research	86	8.1	17.4	58.1	16.3	3	3	Agreed
5	Sharing learning materials with my lecturers and colleagues	88	2.3	5.7	54.5	37.5	3	3	Agreed
6	Use for online meeting with my fellow students for the shared courses	88	12.5	33.0	38.6	15.9	3	3	Agreed
7	Used for classroom announcements to my fellow students and discussion	88	9.1	14.8	43.2	33.0	3	3	Agreed
8	Used as platform for sharing my research findings	90	11.1	18.9	51.1	18.9	3	3	Agreed
9	Used for assignment planning	88	4.5	15.9	47.7	31.8	3	3	Agreed
10	Used for submission of assignments	86	4.7	14.0	46.5	34.9	3	3	Agreed
11	Used for versioning my project codes	86	11.6	34.9	39.5	14.0	3	3	Agreed
12	Used for data research gathering	84	8.3	8.3	52.4	31.0	3	3	Agreed
13	Used for online data storage/backup	82	7.3	18.3	48.8	25.6	3	3	Agreed
14	Used for Note taking and making	87	9.2	23.0	50.6	17.2	3	3	Agreed
15	Used to setup virtual discussion forums	82	13.4	30.5	45.1	11.0	3	3	Agreed
16	Use for accessing personal academic and non-academic materials	83	7.2	16.9	44.6	31.3	3	3	Agreed

The respondents further disagreed to the following constructs: “Lack of interest in using web 2.0 technologies”, with a median of 2 and mode of 3 and a percentage of 56.3%; “Lecturers are unable to control the internet use in class”, with a median of 2 and mode of 3 and a percentage of 54.3%: “Lack of institutional support for web 2.0 usage”, with a median of 2 and mode of 3 and a percentage of 51.2%; and “Lecturer’s uncertainty concerning the opportunities that web 2.0 offers”, with a median of 3 and mode of 2 and a percentage of 47.6%.

8. Limitations and suggestions

While reviewing the literature, it was evident that very limited studies has been done in the area of web 2.0 technologies in Uganda. The study was solely done based on the previous studies from other areas of world. More local studies need to be done to ascertain the use of these technologies as well as to understand the implication of using them. This challenge is similar to what Wilson et al. stated, “… little academic work has been done regarding security, privacy, and legal issues related to Web 2.0 technologies. These important areas should heavily influence the business and personal application of web 2.0 technologies, and should be a key area of academic research in the future…” [5].

The research employed quantitative approach and this left a gap in knowing the individual reasons behind the choices they made while responding to the research instrument. In future a similar study that explores both quantitative and qualitative research needs to be conducted. The study population needs to be expounded to include other higher institutions of learning in Uganda in order to have results that can easily be generalised.

From this study, it can be projected that with the improvement in the network infrastructure that supports high speed internet connection will facilitate a steady use of web 2.0 technologies in teaching and learning in higher institutions of learning in Uganda.

The respondents also expressed that their inability to access the required devices like smartphones, tablets and laptops hinders their use of web 2.0 technologies in learning. Therefore, any interventions that would reverse this situation are needed to support

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Table 5. Barriers that hinder students' use of web 2.0 technologies in the learning process

No	Barriers		SD	D	A	SA	Median	Mode	Interpretation
		n	%	%	%	%			
1	Web 2.0 technologies are time-consuming	82	15.9	20.7	41.5	22.0	3	3	Agreed
2	Lack of speedy Internet connections to support the usage web 2.0 technologies	81	6.2	7.4	35.8	50.6	4	4	Strongly Agreed
3	Lack of appropriate devices to support web 2.0 technologies	84	9.5	25.0	45.2	19.0	3	3	Agreed
4	Lecturers are unable to control the internet use in class	81	27.2	27.2	35.8	9.9	2	3	Disagreed
5	The tight restrictions and lengthy procedures by local authorities over the use of internet e.g. Over the Top Tax (OTT)	83	12.0	26.5	33.7	27.7	3	3	Agreed
6	Lecturer's uncertainty concerning the opportunities that web 2.0 offers	84	8.3	39.3	39.3	11.9	3	2	Disagreed
7	Lack of awareness of legal and copy right issues	83	8.4	31.3	42.2	18.1	3	3	Agreed
8	Lack of critical literacy skills to use web 2.0 technologies	81	16.0	22.2	37.0	24.7	3	3	Agreed
9	Lack of interest in using web 2.0 technologies	80	31.3	25.0	32.5	11.3	2	3	Disagreed
10	Web 2.0 technologies are not relevant to the courses I teach or my research	83	38.6	32.5	24.1	4.8	2	1	Strongly Disagreed
11	Lack of specific web 2.0 technologies required by my lecturer	80	22.5	27.5	41.3	8.8	3	3	Agreed
12	Lack of institutional support for web 2.0 usage	82	19.5	31.7	32.9	15.9	2	3	Disagreed

learners in using the revolutionary technologies in the learning process.

Also, students should be prepared to use technologies like web 2.0 through trainings that results in the acquisition of critical literacy skills to use web 2.0 technologies. The acquisitions of such skills should be part and partial of students' career development process where some of the skills are acquired from high school in preparation for open and distance learning (ODeL) model of learning which is becoming a new normal among many higher institutions of learning in Uganda.

There is a need for providing regular awareness programmes about Web 2.0 technologies for students and lecturers. This is also supported by Chawinga and Zinn who wrote that " …the awareness is necessary to explore a sheer number of Web 2.0 technologies that have overlapping functionalities which can be difficult for students and lecturers to choose the best ones amongst them…" [22].

There's also a need for the government of Uganda to lessen the restrictions for accessing internet on some popular web 2.0 technologies like Facebook by revising the current OTT that is being imposed on the users of these technologies.

9. Conclusion

The study revealed important information regarding the use of web 2.0 technologies by students of higher institutions of learning like Muni University. It's evident from this study that students like using web 2.0 technologies in their learning. The results shows that the commonly used tools are YouTube, Facebook and Google apps. Several other web 2.0 technologies are known by the students though their usage intensity is still sluggish. Interestingly, the research revealed that students use web 2.0 technologies in both academic and personal activities as well as in learning beyond the four-walled classrooms.

The latter is key in the teaching and learning process since it promotes the transition from the ordinary classroom-based to online teaching and learning. This matches the current need of transforming teaching and learning during the times of

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uncertainties like world-wide lockdowns and social distancing brought about by the Covid 19 pandemic.

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