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The Use of Information Technology and Social Media for Academic Purposes by Students in Higher Learning Institutions in Tanzania

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Abstract: *Social interactions amongst peers were the sole purpose for the invention of social media platforms. Later on, realizing its potential, other sectors embraced the technology and has been strategically used to add value and in the case of Higher Learning Institutions (HLIs), reach learners beyond classroom walls. However, it was not clear enough whether social media is sufficiently utilized for learning as compared to social activities; thus, this research aimed at exploring this dilemma. A review of literature reveals that there is insufficient research done exploring perceptions of students in HLIs regarding their use of social media for learning. A random sample of 250 students from one HLI in Tanzania participated in the study belonging to the following disciplines; Pharmacy, Nursing, Natural and Applied Sciences, Education and Humanities and Commerce and Business Studies. Data was analyzed through SPSS statistical package. A principal finding is that the use of social media for knowledge sharing hasn't only increased but rather supersedes that for social interactions. Social media is no longer just for relaxation and electronic commerce. Analysis recommends policy makers to formalize the use of social media for academic purposes, improve Information Communication Technology (ICT) infrastructure nation-wide and incorporate ICT subjects in studies from lower levels of education upwards. But most important, Digital Strategies in HLIs is mandatory if any significant impact of technology is intended; not only to support administrative tasks but rather be at the core of the institution's strategy*.

Keywords*: Social media, Technology, Learning, Knowledge sharing, Higher learning institutions*

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1. Introduction

Digitalization is a reality for higher education and research as it is for other sectors; driven by expectations of learners and opportunities for cooperation. Information and Communication Technology (ICT) can be leveraged to accelerate achievement of targets of Education 2030 Agenda by combining views of policymakers, academicians and the private sector (UNESCO, 2017).

Technological innovations, the hiking increase in bandwidth and easy access to the internet has brought revolutionary changes in the way students learn and

collaborate in HLIs; the more the advancement in technology the higher the expected volume of its usage in knowledge sharing. In the current digital era, ICT plays a major role in all spheres of development and information highway. It is further used to promote engagement of students in the learning environment. Universities in Tanzania have adopted the use of ICT for enhancing teaching and learning. The high demand for higher education has resulted to an increased number of students which in turn have stretched the infrastructure capacity of many Universities in Tanzania.

In the National ICT Policy of Tanzania, the Tanzanian Ministry of Education, Technology and Vocational Training acknowledges the significant role ICT plays in education. One of its key objectives is to ensure ICT is used to improve the quality of education and training and utilize the emerging technologies for the benefit of the education sector in Tanzania.

In their research, Deng and Travares (2015) highlight how social media can be a useful and effective tool for engagement in education. Some of social media platforms mentioned are blogs, wikis, Facebook®, LinkedIn®, YouTube® and Twitter®. Currently, students in HLIs are accepting the use of mobile devices such as smartphones and tablets as a means for learning through social media platforms and related technologies. Mobile devices and social media provide great e-learning opportunities to the students with an increased ease of access to course contents and collaboration with peers and instructors despite of the physical boundaries (Gikas & Grant, 2013: Davis et al., 2014).

However, the use of the aforementioned technologies present some pros and cons; whereby the pros seen in terms of collaboration, knowledge sharing, accessing course contents, transfer of instructor's notes etc. On the other hand, insufficient studies have been carried out to understand the use of social media and technology in Tanzanian HLIs for academic purposes.

Therefore, the purpose of this research was to assess the use of social media platforms and technology by students in HLIs in order to determine their value addition in the whole process of learning, knowledge sharing and collaboration. In addition, the research aimed at obtaining up to date in-depth perspectives of students' perception of learning and sharing knowledge through social media platforms and related technologies. Meanwhile, draw meaningful conclusions as to why students in HLIs in Tanzania prefer using social media more for social interactions than academic purposes.

1.1 Problem Statement

Digitalization and Big Data have disrupted the way things ought to be done in every industry, including HLIs. The hiking increase in bandwidth, availability, connectivity and use of internet access pose as an opportunity to use such social media platforms and related technologies for day-to-day activities for instance socializing, buying, selling and marketing just to mention a few.

However, as much as there is a high number of students who are tech-savvy and acquainted with social media platforms, the use of such technologies for academic purposes is very low. Acknowledging the significance Information and Communication Technology has in the academic industry; the researchers found that there is insufficient research done exploring perceptions of students in HLIs regarding their use of technology and social media for learning, knowledge sharing and collaboration.

Although learning and knowledge sharing is still mostly confined in class rooms and less through aforementioned technologies, the Tanzanian Ministry of Education, Technology and Vocational Training acknowledges that one of the key objectives of the National ICT Policy is to ensure ICT is used to improve the quality of education and training in all areas, including distance learning, which involves the use of social media and related technologies.

1.2 Research Objectives

a. General Objective

The general objective of this study was to identify and understand the reasons as to why students in HLIs use social media and technology more for social activities than for knowledge sharing and collaboration.

b. Specific Objectives

i. To determine to what extent social media and technology is used in HLIs for knowledge sharing and collaboration.

ii. To identify the most used social media platforms by students in HLIs for knowledge sharing and collaboration and the reasons behind.

1.3 Theoretical Framework

Technology Acceptance Model (TAM) by Davis 1989 was introduced as a theoretical model for testing user adoption of information systems.

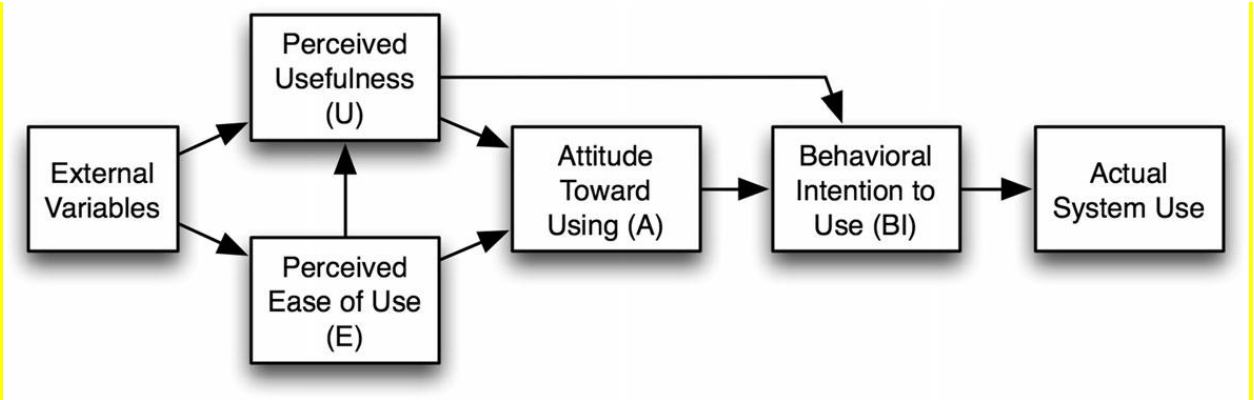

Figure 1: Technology Acceptance Model (Davis 1989)

There are different factors that results in technology and mobile device usage in an organization; and these factors can easily cause impact and be taken on in one part but hardly on another part as study by (Lashayo and Gaspar, 2018) indicated. The acceptance of technology, networking sites and mobile devices in education sector is still in its early stages (Alshurideh et al.2019).Moreover, various studies explaining technology embrace in different areas have not been enough to explain how TAM can be applied in higher learning institution specifically in the area of networking sites and mobile devices. The Technology Acceptance Model suits the study because there are two factors; perceived usefulness and perceived ease of use which were significantly influencing the usage of information technologies in organizations (Davis, 1989).It's purpose in this study is that students in higher learning institutions specifically Tanzania will use a particular technology, mobile device or networking sites when it is easy to use and when they perceive it useful in their academic performance.

2. Literature Review

Information Technology and Social Media for Academic Purposes in HLIs

Technology advancement has been changing the way institutions and business organizations perform and grow. It is a fact that technology is valuable to organizations and if not incorporated into their day to day operations, can be a cause of low performance rather than a tool to maximize resources and opportunities for the growth of such organizations. According to research, the business sector has been a pioneer in embracing new technologies, social media included. A number of businesses and sectors have been influenced by digital change (Daniels, 2002) and have been applying such technologies in numerous ways; for instance, to allow predictive maintenance of resources in terms of machines and equipment in factories (Sang et al., 2020) and improved decision making in real time by executives in order to provide solutions for any challenges and tap first and fast into the vast opportunities emerging every now and then in the business environment.

Researchers agree that rethinking of policies and embracing new technology play a big role in revolutionizing institutions and business organizations. For instance, Laurell and Sandström (2016) in their research explain that Uber, has no vehicles of their own but leads the transportation sector; taking advantage of technology to leverage their profit margins. The largest hotel company, Airbnb has no hotels of their own (Zekanovic-Korona & Grzunov, 2014), the largest retailer but without inventory and Netflix has successfully revolutionized the entertainment sector (Aliloupour, 2016). The IMF stresses that "reorganizing the economy around revolutionary technologies generates huge long-term benefits (IMF, 2018).

Like other industries, academic institutions have been forced to adapt to new technologies as well. Not just for driving administrative operations, but to use it strategically, in order to add value and as a means to reach students and learners beyond classroom walls.

Nevertheless, incorporating currently emerging technologies in teaching and learning is no longer a denial. "that's like asking our ancestors whether they were for or against fire", as stated by Max Tegmark, a professor at the Massachusetts Institute of Technology in a Washington Post interview (Aberman, 2017).

The influence of social media and social networking sites in our social and professional lives in the present time is evident. In literature, Perez, Araiza, and Deoerfer (2013) reveal that, students spend a reasonable amount of time in social media networks. The nature of the networking sites whereby a message is sent and delivered instantly have attracted youth, whom majority are students in higher learning institutions.

This creates an opportunity to the education sector whose major responsibility is to produce knowledgeable

individuals expected to take on significant roles in developing societies and the globe at large. According to recent research, higher education environment is also experiencing a period of great change (Bolat & Sullivan, 2017). University staff, especially instructors, uses social media and technology in interacting with students, collaborating with colleagues from other institutions and for academic purposes such as; preparation of teaching materials, assignments, exams and results, follow up students' assessments, conducting research, consultancy and community engagements.

Research from Moran, Seaman and Tinti-Kane (2011) highlight that Facebook® and YouTube® are the most visited sites for the professional outcomes. These networking sites and interactive media when used strategically and in cooperated in with teaching and learning, will be of great benefit to staff. Academic staff will be able to multi task a number of activities and still get time to do other job related tasks such as research and consultancy.

Social media and technology have been utilized in various institutions whereby one of them was used as a case study and data were collected. Students were interviewed and shared their experiences through questionnaires on how they in cooperate networking site, mobile devices and technology in their academic lives. In brief, the new technologies have disrupted the usual way of knowledge sharing and collaboration.

Literature makes evident that majority of university instructors appreciate the usefulness of networking sites and technology in enhancing learning and teaching. Instructors are ready to use video, podcasts, and wikis as they are valuable tools for teaching and collaborative networking therefore recognize their usefulness. Nevertheless, network infrastructure has to be improved and more resources made available for students and instructors in support of the new journey towards improving learning and knowledge sharing. Moreover, strong policies should be put in place in order to formalize the application of these technologies in the education system. Currently, there is a much laid back idea of how important social media can be in enhancing the learning process (Daniel et al., 2016).

As most students in HLIs are very acquainted in using social media platforms and associated technologies, if the use of the aforementioned platforms can be diverged from social interactions and more for knowledge sharing, it is with no doubt that it will increase students' interaction with mentors, engagement with content obtained through learning resources from various platforms for instance YouTube®, Twitter®, WhatsApp® without forgetting LinkedIn® and other platforms the likes of edX® and Udemy® which consequently affect students' academic performances. Although the academic literature acknowledges that the use of such social media and networking sites facilitate collaborative learning, but to some their use seem only for entertainment (Daniel et al., 2016).

In their recent research, Ansari and Khan (2020) point out that with the rapid advancement in technology, there is a need to shift the mentality that social media platforms can only be of much benefit in socializing. Along with the shift of mentality, guidelines and strong policies should be enforced to ensure that students stay on course when practicing the use of such technologies either in classrooms or in the whole sphere of learning, the aim being ensuring they don't deviate from academic activities while "online".

The positive effects of social media platforms for academic purposes may not be as noticeable as it is with other industries because it takes a while for a disruptive technology to finally reflect its significance. In 1774 James Watt introduced the first steam engine to the market and it wasn't until 1830s when British's output per capita accelerated (British Broadcasting Corporation (BBC), 2014: Campbell et al., 2011). The computer has been in use for only about 40years to-date so the global economy is yet to realize massive gains brought about by the digital revolution. Nevertheless, digital platforms are reconfiguring business models, bringing to light new opportunities in terms of new ways of doing things and new markets.

However, as valuable as social media and related technologies are, literature highlights that they are mostly used for social interactions and less for academic pursuits. This research aimed at assessing reasons as to why social media and technology are not sufficiently utilized in HLIs for the sole purpose of knowledge sharing and collaboration. Moreover, the study adopted Technology Acceptance Model (TAM) by Davis 1989.

3. Methodology

The study involved students from different schools and faculties in a selected HLIs from Tanzania. Cross sectional study design was used to understand social media and use of technology in Higher learning Institution for knowledge sharing and collaboration. Cross sectional study design is where subjects of different ages are compared at the same time. The study used quantitative, qualitative and in-depth interviews.

A questionnaire was developed based on the in-depth interview questions and the replies obtained. Before the interview, the researchers explained to interviewees the reason for doing the research and that the information given is private and confidential to the interviewee. The resulting questionnaire featured questions like on which

social media networking students are using the most for knowledge sharing and collaboration and for how long they have been using social media networking sites for learning purposes. Before distributing the questionnaire, the researchers found time to explain to each group of the students from each faculty and school on how to fill out the questionnaire and responded to random questions whenever required to.

Simple Random Sampling was used by researchers on this current study. The choice of the technique was due to the time and population, in addition to that in this kind of technique each member of the population has an equal chance of being selected as subject. Students in schools and faculties were randomly selected during practical sessions in computer labs and asked to volunteer in participating in the current research by research. Researchers took time to explain to participants/volunteers on the research what is needed to be done. Then, questionnaire was distributed to students; 50 students from each school and faculty participated in a research. The current higher learning institution used in the study have three (3) faculties and two (2) schools which makes a total of 250 students who participated in this study. 50 students from school of nursing (SONU), 50 students from school of pharmacy (SOPH), 50 students from faculty of natural and applied sciences (FaNAS), 50 students from faculty of commerce and business studies (FOCB) and 50 students from faculty of humanities (FAHE). In terms of year of study, in the end out of 250 students who participated in the current study, 54 students were first years, 77 students were second years, 83 students were third years and 36 students were fourth years (where majority were from school of pharmacy and nursing). Questionnaire was designed for purpose of collecting suitable data from students of three (3) faculties and two (2) schools, analysis of results was executed through application of SPSS statistical package.

4. Results and Discussion

The presentation, analysis of data and discussion are sequenced in line with the arrangement of research questions developed. It highlights the use of Social Media and use of technology in Higher Learning Institution for Knowledge Sharing and Collaboration in Tanzania Context. It was found out in one of the higher learning institutions in Tanzania that the social media is used for knowledge sharing and collaborations, and WhatsApp was found to be used the most compared to the other media platforms.

4.1 Characteristics of the respondents

This section describes the characteristics of the respondents.

4.1.1 Gender of respondents

The gender of respondents who was participants on answering the questions was 53.6% of male and 46.4% of female as table 1 shows. The analysis shows that the number of male is higher than the number of female by the difference of 7.2%.

Table 1: Gender:

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	116	46.4	46.4	46.4
	Male	134	53.6	53.6	100
	Total	250	100.0	100.0	

Source: Compiled from Field Survey (2021)

4.2 Age of Respondents

The analysis from table 2 shows that 157 respondents have the age between 20-25 with 62.8%, while 63 respondents have the age between 25-30 with 25.2%, 29 respondents have the age between 35-40 with 11.6% while only 1 respondent have the age of 40 with 0.4%.This implies that, the age of the university student's range from 20 years to 25 years.

Table 2: Age of the Respondents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20-25 years	157	62.8	62.8	62.8
	25-30 years	63	25.2	25.2	88.0
	35-40 years	29	11.6	11.6	99.6
	Above 40 years	1	0.4	0.4	100.0
	Total	250	100.0	100.0	

Source: Compiled from Field Survey (2021)

4.3. The use of social media and technology for knowledge sharing and collaboration in HLI

4.3.1 Which Social Media do you use for knowledge sharing and collaboration?

The findings from field survey shows that, many students use WhatsApp for knowledge sharing and collaboration by 74.4% while least social media used by students for learning, knowledge sharing and collaboration is Twitter by 5.2%.The reasons behind from students was, WhatsApp media is user friendly and does not need much IT knowledge when using it. Also it provides swift messaging, group messaging, and discussion forums. Research indicates that WhatsApp is the global messaging app of choice (Butcher, 2018).

Table 3: Which Social Media do you use for knowledge sharing and collaboration?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	WhatsApp	186	74.4	74.4	74.4
	Facebook	32	12.8	12.8	87.2
	You tube	19	7.6	7.6	94.8
	Twitter	13	5.2	5.2	100.0
	Total	250	100.0	100.0	

Source: Compiled from Field Survey (2021)

4.3.2 For how long have you been using this Social media?

Many students use the social media for one to two years for learning, knowledge sharing and collaboration purposes as shown in Table 4.

Table 4: For how long have you been using this Social media?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than one year	58	23.2	23.2	23.2
	One year	74	29.6	29.6	52.8
	One to two years	97	38.8	38.8	91.6
	More than two years	21	8.4	8.4	100.0
	Total	250	100.0	100.0	

Source: Compiled from Field Survey (2021)

4.3.3 What kind of gadgets do you use for knowledge sharing and collaboration?

The survey shows that, 66.4% of the students use smart phones for their learning and knowledge sharing purposes as shown in Table 5. The least gadgets used by students for learning and knowledge sharing were notebooks by 2.4% only.

Table 5: What kind of gadgets do you use for knowledge sharing and collaboration?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	smartphones	166	66.4	66.4	66.4
	tablets	23	9.2	9.2	75.6
	laptop	55	22.0	22.0	97.6
	notebook	6	2.4	2.4	100.0
	Total	250	100.0	100.0	

Source: Compiled from Field Survey (2021)

4.3.4 How many times per week do you use Social media for knowledge sharing and collaboration?

Table 6 shows that, 55.6% which are 139 students use social media more than two times a week for learning and knowledge sharing purpose. While only 33 students which

is 13.2% use social media once a week for learning and knowledge sharing purpose.

Table 6: How many times per week do you use Social media for knowledge sharing and collaboration?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Once a week	33	13.2	13.2	13.2
	Twice a week	78	31.2	31.2	44.4
	More than two times a week	139	55.6	55.6	100.0
	Total	250	100.0	100.0	

Source: Compiled from Field Survey (2021)

4.3.5 In what percentage has Social Media improved your Academic Performance?

More than 62.4% of the students confirmed that, the use of social media and technology has improved their academic performance by more than 70% as shown in Table 7.

Only 6 students which is 2.4% confirmed that, the social media and use of technology improve their academic performance by only 20%.

Table 7: In what percentage has Social Media improved your Academic Performance?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0-20%	6	2.4	2.4	2.4
	20-49%	17	6.8	6.8	9.2
	50-70%	71	28.4	28.4	37.6
	Above 70%	156	62.4	62.4	100.0
	Total	78	100.0	100.0	

Source: Compiled from Field Survey (2021)

Discussion of Findings

The main findings of this research portray that students in HLIs use social media and related technologies for academic purposes. Moreover, these platforms play a major role in accelerating their academic performance. A great number of students in HLIs who fall under youth category prefer social media sites for communicating, learning and collaborating (Mpungose, 2020; Selwyn&Stirling, 2016). Knowledge sharing is no longer confined within classroom walls, but rather goes beyond physical boundaries.

Research findings further make evident that WhatsApp® is the most preferred platform for knowledge sharing amongst students in HLIs in Tanzania. Reasons supporting this fact are vast in number and not limited to; the nature of instant interactions makes it convenient for a student to get immediate assistance whenever in need, it allows sharing of various file formats from documents to images, videos and hyperlinks redirecting students to deeper sources of information that facilitate the learning process. (Churcher, Downs, and Tewksbury, 2014).

Furthermore, WhatsApp® makes it more convenient for course instructors to stay connected with students through course coordinators. Since WhatsApp® became popular, it has been known to facilitate creation of "WhatsApp® groups"; and the academic sector has not been left behind when it comes to utilizing such a facility. Course instructors create these groups for the courses /module they instruct and are thereafter in instant rather constant communications with the class whenever need be. Giving updates regarding handouts and reading materials or changes in assignment submission dates and assessments have never been easier.

Nevertheless, video calls, especially at this time and era have been very useful; connecting students and peers across cities, countries and borders, allowing them to exchange meaningful information and ideas pertaining to academics in the respective fields. However, ease of access and the user interface being friendly makes WhatsApp® quite attractive to majority of students. As one of the interviewees confirmed, "It is user friendly, anybody can easily use WhatsApp® compared to Twitter® and Instagram®.

Based on the nature of social media platforms, it makes sense if smartphones are the mostly preferred electronic devices when using the aforementioned technologies (Arifani, 2019; Susanti & Tarmumji, 2016). The "mobility advantage" that comes hand in hand with smartphones, makes it a perfect choice for such use.

The second most preferred device is the Personal Computer (PC) or famously known as a "laptop". Even

though a smartphone outweighed a laptop based on data from research, it does not submerge its significance when it comes to the academic sector and technology. A larger Graphical User Interface (GUI) makes it more reasonable to do plenty of academic activities with it as compared to a smartphone. Typing and formatting documents, literature search, and reading are some examples of activities that can be accomplished more effectively using a laptop rather than a smartphone. Either way, both smartphones and laptops play significant roles in academic lives in terms of knowledge sharing and collaboration.

The high rate of use of social media for the purposes of social and business activities is undeniable. Social interactions were the sole purpose when these platforms were first invented. Later on, realizing the potential in them, other sectors joined the line and have never stopped benefitting from the decision made. The huge impact social media has on social activities would not simply submerge to give way to academics and academics alone.

Interesting enough, based on data collected in this research, students in their third year of study in HLIs confirmed that their use of social media for knowledge sharing hasn't only increased but rather superseded the competition, in this case, social interactions.

As highlighted by a third year student from school of pharmacy at St. John's University of Tanzania, social media is no longer for relaxation and electronic business (e-business) but for academic purposes as well. Moreover, it is convenient to conduct academic discussions by creating WhatsApp® groups for every subject/module and send/receive instant updates concerning their studies at the University.

Interview with some student from first year found out that, most of first year students use social media for social activities compared to learning. Another third year students from faculty of humanities and education indicated that the way technology is changing every day, learning is not only in traditional way (face to face) but even outside the class and by any means even with different gadgets and different platforms, for example social media. This student mentioned that his fellow students find social media more convenient to do some discussion relating to their subjects by creating some groups per subjects, but also giving each other information quickly about their programs of study at the University.

5. Conclusion and Recommendations

5.1 Conclusion

The study has demonstrated that students in higher learning institutions use social media and technology for various activities, including knowledge sharing and learning. The preferred networking site being WhatsApp, and the key mentioned benefits include instant sharing of information, academic collaboration and ability to communicate beyond lecture room hours. Smart phones are a gadget preferred by students in higher learning institutions, because of portability and affordability compared to laptops and tablets. The findings of the current study also show that more than 50% of the students confirmed that, the use of social media and technology has improved their academic performance.

5.2 Recommendations

From the discussion of the data and the literature of the use of social media and technology, we can see the strengths of using the social media for communicating with one another to build better rapport and maintain friendly relationships between the students and their peers and with their lecturers. There could be learning at any time and at any preferred place beyond the textbook and the classroom. The use of social media and technology coincide with the principles as espoused by social constructivists to promote active social engagement, to encourage the students towards collaborative learning and sharing through networking and in communicating to allowing for feedback from a wide audience, and to connect people between the students and their lecturers and peers and the knowledge community for learning beyond the shores of the classroom and the textbooks.

Since social media and technology use is continuing to progress and students need more combined and collaborative learning environment that gives them an opportunity to control their own learning, the current study recommends the following;-

1. Policy makers should formalize the use of social media and related technologies for academic purposes in HLIs.
2. The Tanzanian Government in collaboration with stakeholders in the academic sector should improve ICT infrastructure nation-wide.
3. HLIs should consider improving internet connectivity and increase bandwidth in their institutions.
4. HLIs should collaborate with Telecommunication companies in order to tailor-make affordable internet services (bandwidth) and mobile devices within reach and means of students belonging to Tanzanian societies.
5. ICT studies should be incorporated in studies from lower levels of education and not just in HLIs. Private schools in Tanzania have been ahead when it comes to this, but public schools need attention.
6. Guidance should be given to students so that they don't stray from academic pursuit while "online" because the interactive nature of social media can easily distract a student when using the technology.

Suggestions for Further Research

Digital transformation in the education sector is mandatory. Currently technology is used as a means to support administrative operations and teaching rather than a driving force for institutions. Prior to physically implementing any technology, policies need to be put in place; and the most crucial are digital strategies for academic institutions. These strategies will act as a guide and a map towards achieving transformation of the academic sector and make it smooth embracing emerging technologies such as social media, Big Data and Internet of Things (IoT) just to mention a few.

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