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Students' experiences and perceptions of online collaborative learning in two Kenyan universities

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Abstract

Modern advancements in technology have diffused into the higher education sector with electronic communication platforms being used for learning in these institutions. While course instructors are utilizing these platforms in Kenyan universities, there is a dearth of evidence on students' experiences and perceptions of online collaborative learning tools. As such, this study sought to establish the experiences and the perceptions students have of one of the tools, namely blogs, as a learning and collaborative tool. A questionnaire with both closed and open-ended questions was administered to 71 students from a public and a private university in the country. The findings indicate that blogging enhanced interaction among fellow students and instructors and encouraged students to research further outside the classroom. However, students also experienced challenges in blogging, such as a lack of adequate infrastructure and slow internet speed. The study recommends that instructors should adopt the use of collaborative learning tools as teaching and learning moves from physical interaction to online platforms. In addition, institutions should mitigate the challenges faced by the students. This is especially so considering that students have a positive perception towards online collaborative learning.

Introduction

The internet was not originally established for educational purposes but to enable communication for the military in the United States of America (USA) in the 1960s (Flew, 2007; Green, 2010; Schmidt & Cohen, 2013). Several decades since this development, the internet has evolved into a technology that is now being used in virtually every industry and facet of human life, including teaching and learning in schools and universities across the world.

The physical closure of schools and universities worldwide due to the COVID-19 pandemic has catapulted the deployment of the internet as the key tool driving the pedagogical experience in these institutions. This shift from physical learning to virtual environments justifies the undertaking of the current study, as universities have adopted various internet platforms to guard against disruptions in their academic calendars and events (Nyerere, 2020).

In higher learning institutions, technology offers rich, real-time educational resources, support capabilities, synchronized communication between learners and instructors, and between learners and other learners (Means, Toyama, Murphy, Bakia, & Jones, 2009; Schimdt & Cohen, 2013; Maina, Wagacha, & Oboko, 2016). Learning through the internet is achieved through e-learning platforms. Clark and Mayer (2016:7) define e-learning as "instruction delivered on a digital device that is intended to support learning… the instructional goal is to support individual learning". They add that some of the features of e-learning are collaboration on discussion boards, knowledge and skills building of learners, and knowledge sharing in a blended learning environment. E-learning entails engagement in the learning process and discovery using the online tools. One of these online tools that are utilized by educators for online engagement is blogs.

A blog is defined as "an online journal where different users contribute to posting and discussing various topics" in a chronological order (Alkhathlan & Al-Daraiseh, 2017:9). In a learning institution, blogs not only provide information online but they are also an educational tool with functions and features that allow the students to do reflective and critical thinking, while collaborating and interacting with other students (Kiliç & Gökdaş, 2014). According to Huffaker (2005), some of the features of a blog include instant publishing of texts and graphics on the web with little technical knowhow, getting feedback and comments on the blog, viewing of past blogs by date, and enabling hyperlinks for connection.

As a form of online communication, e-learning is integrated into the academic world across the globe at different rates and with varying impacts (Sabanovic, 2015). However, it is not contested that e-learning is influencing students' perceptions and learning environment by creating vibrant engaging learning spaces for both students and instructors. As with other educational contexts across the world, in the Kenyan classroom, blogs have been used for information sharing, learning, posting writing, linking to other online sources and as a learning management tool (Blood, 2004; Alkhathlan & Al-Daraiseh, 2017). As an online tool, students are not limited to accessing them in class or in the higher institution environment, but they can access them using their mobile and portable electronic devices from anywhere as long as they have internet accessibility.

Millennial generation students have been exposed to the digital era and do not consider learning to be limited to the physical classroom. Online learning affords them more opportunities to collaborate in the educational process through the use of various pedagogical tools available (Mahmud, Ramachandiran & Ismail, 2016; Nyerere, 2020). While online learning is criticized for lacking the physical human interaction that lecture halls offer, it nevertheless offers collaborative tools that have gained popularity in higher learning institutions, with both lecturers and students utilizing the affordances (Maina *et al*, 2016; Nyerere, 2016).

In the Kenyan context, digital inequalities are still a glaring challenge, with there being unequal access to the technological affordances by the lower socio-economic strata of the society (DiMaggio, Hargittai, Celeste, & Shafer, 2004; Communications Authority, 2020). But the uptake of e-learning at higher education institutions in Kenya has been influenced by two factors: a large youthful population and the availability of cheap mobile phones that are connected to the internet (Communications Authority, 2020).

Blogging is therefore used for various reasons and at varied levels during the teaching and learning process in the country's public and private universities (Nyerere, 2016; Nyerere, 2020). Students and educators utilize blogs for interactions and collaborations where they share ideas through their posts, discuss their opinions and comment on other users' posts. Through this experience, there is interaction between the educators and the students, along with shared knowledge. This is echoed by Richardson (as cited in Ellison and Wu (2008:106), who say that blogs assist students to:

> a) Reflect on what they are writing and thinking as they write and think it, b) carry on writing about a topic over a sustained period of time, maybe a lifetime, c) engage readers and audience in a sustained conversation that then leads to further writing and thinking and d) synthesize disparate learning experiences and understand their collective relationship and relevance.

While educators are advocating for online communication as a communication and pedagogical tool for learning, previous research has recommended that it is important to evaluate *if* the perceived outcomes are in line with students' expectations and experiences (Mahmud *et al*, 2016). The current study therefore fills this knowledge gap in the Kenyan context by assessing students' perceptions of the use of blogs in the educational process of two universities in Kenya – one, a public university and the other a privately owned university.

Even though blogs are used to increase interaction and collaboration among educators and students, research on the effectiveness and the perceptions of blogs as an educational and engagement tool is limited and contradictory (Kiliç & Gökdaş, 2014). Some studies (Ellison & Wu, 2008; Šabanović, 2015) indicate that blogging enhances learning, engagement and interaction amongst peers, while others (Kim, 2008; Duncan, Hoekstra, & Wilcox, 2012; Flanigan & Babchuk, 2015) indicate that it can be distractive as it hinders learning and academic performance.

With these contradicting schools of thoughts, it is important to clarify how blogging, as a means of online communication, has influenced students' learning in higher learning institutions in Kenya. As some educators consider blogging to increase students' engagement and participation (Dawkins,

2010), it is important to study and analyze the perceptions of blogging based on the students' experiences in writing, reading and commenting in the Kenyan context, as the research is hardly visible. The present research therefore advances our understanding of the use of internet applications in pedagogy, and specifically in the global South.

Literature review

E-learning in Kenya

Since 2007, the country's 74 public and private universities have gradually integrated online learning. This has been in line with the Kenyan government directive under the *Kenya Vision 2030* strategic plan (Mwenzwa & Misati, 2014). The plan is a socio-political and economic vision aimed at making the country a mid-level economy by the year 2030. To achieve this goal, Kenyan universities were directed to integrate technology in their delivery of higher education (Mwenzwa & Misati, 2014). But a fairly recent assessment of the country's public universities showed that the challenge of access to, and use of, online teaching and learning was still problematic despite the strides made in enabling access to affordable internet connectivity (Nyerere, 2016; Nyerere 2020). Although Nyerere (2016) sampled only 12 universities out of the 74, the figures are informative in assessing the situation of electronic learning in Kenya: few students in these 12 universities, namely 19,000 students out of a population of 500,000 students, had been fully enrolled in online degree programmes. However, all universities have partly integrated online learning, especially private universities, in their curriculum delivery. One of the key developments in this regard has been the establishment of *Kenya Education Network Trust* (KENET) to promote and support information and communications technology (ICT) in educational institutions, thus enhancing students' learning process through education and research. KENET has the mandate to provide educational technological services through cost-effective, fast and reliable internet connectivity to educational institutions, which they have done for over 140 member institutions – both private and public universities and other mid-level colleges in the country (KENET, 2020).

In line with this policy directive, the closure of the universities because of the COVID-19 pandemic is expected to catalyze the adopting of ICT in Kenyan universities. As discussed in the literature review below, universities have also collaborated with telecommunication firms to help in the integration of ICTs in their curriculum (Nyerere, 2020). In terms of access, Kenya's internet subscription – as reported by Communications Authority of Kenya (CA) – is on the rise with over 44 million users by end September 2019, compared to 42 million users in the previous year (CA, 2019). The CA report attributes this rise to mobile data subscription that comprises over 41 million users by end September 2019 In the 2019 *State of the Internet in Kenya* report by *Bloggers Association of Kenya* (BAKE), the increase in internet subscription has led to growth in locally generated content which is shared on blogs and social networking sites (BAKE, 2019). The locally generated content includes posting and sharing information, videos and even journalistic news articles. Students access blogs using their electronic devices, which include the mobile phones, tablets and laptops.

BAKE recognizes that there is increase in blogs, especially with the female gender, as there is continuous training to bloggers on local content creation and online safety (BAKE, 2019). Some of the accomplishments and acknowledgments of students utilizing blogs was in 2017 where a private

university lecturer and a former public university student won blogger awards (BAKE, 2018). The former public university student started his blog while in the university. Nevertheless, specific data on blogs usage in universities in Kenya especially as an educational tool is hardly visible. Yet, based on the internet subscribers and mobile data users, one can deduce that university students are using blogs and social networking sites. Nevertheless, BAKE also reports that there have been negative ratifications which include cyberbullying, kidnapping and even suicide based on information posted on social networking sites. This led to Kenya enacting the *Computer Misuse and Cybercrimes Act* (Walubengo and Mutemi, 2018).

Collaborative learning

Collaborative learning (CL) is a motivational theory that has the following characteristics: active participation by the students, the teacher is a facilitator, and the learning environment is shared with intense student and peer interactions (Lin, 2015). It is a theory that focuses on social interaction between learners and their instructors. In collaborative learning, the learner and the facilitator are actively involved in the learning process.

Collaborative learning theory is rooted in the epistemology of social constructivism. Here, theories such as sociocultural theory by Lev Vygotsky (1978) and social interdependence theory by David Johnson and Roger Johnson (1989) illuminate understanding of the concept and postulate that learning is achieved based on social contexts, social interactions and social experiences a learner has with their peers. In other words, learning is social rather than individual in nature and social interaction enables the development of cognition that contributes to the learning process. Social interaction is one of the aims of CL theory, where students engage with one another and with the teacher and this fosters a student's learning development.

Gokhale (1995:22) defines CL as "an instruction method in which students at various performance levels work together in small groups toward a common goal. The students are responsible for one another's learning as well as their own". Through their participation, the students become critical thinkers and hopefully lifelong learners. Dillenbourg (1999:1) broadly defines CL as a "situation in which two or more people learn or attempt to learn something together". He adds that CL can range from two or more individuals, to a small group, to a society. Such learning can entail course material or otherwise, and together can be face to face or via computer mediated communication. Gokhale (1995) went further to conduct a study to determine if CL enhanced critical thinking. The findings indicated that students who participated in CL performed better than those who studied individually. He accredited the better performance to group diversity which enhanced knowledge, experiences shared and problem-solving strategies, and thus the development of critical thinking.

In CL, adults or peers who guide or collaborate with the learners provide learning. In a learning institution, the facilitator and students engage in the learning process. In the instance of this study, blogs are used as a collaborative tool where students write, comment, reason and even solve problems with fellow students and the facilitator, thus enhancing their learning. Also, in CL, students can exchange ideas, expand on their knowledge and blogs assist the students in learning and interacting even after the course or in-class interactions have been completed. As pointed out by Lin (2015:14), "The idea of learner autonomy in modern educational pedagogy also draws on the

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importance of CL. The concept of learner autonomy requires learners to be independent and to become lifelong learners". CL is viewed as a motivational theory where students' learning is enhanced by the rewards one gets. This would therefore influence the student's attitude and behaviour. CL posits that for one to achieve the reward or objective, there is the need for co-constructive learning. In essence, for CL to be effective, both individual and social efforts contribute to one's learning process and performance (Gokhale 1995). In a classroom setting, students can organize their learning, interaction, and engagement based on how they decide to utilize blogs.

In the concept development of CL, students first think about the topic provided by the instructor and then share their ideas with the peers, thus encouraging discussion, participation and involvement. This allows students to not only share their opinions but their reasoning. Mastery of knowledge in the structure enables the students to compare their takes on the topics, thus building on their understanding, critical thinking and analysis of the topics (Gokhale 1995).

Collaborative learning in higher learning institutions in Kenya

There is a demand, and increased availability of, online collaborative tools in institutions of higher learning in Kenya. However, there are also challenges that have led to students to not fully engaging with these tools. In a quantitative study by Maina, Wagacha and Oboko (2015) on the perceived challenges in an online collaborative environment in universities in Kenya, they found that a lack of feedback from the instructors and peers, slow internet connectivity and low participation are the main challenges. It is important to note that in their study, e-learning was a substitute to face-to-face learning. In other words, e-learning was designed for students who could not attend the physical classes and had limited face-to-face tutorials; this is commonly referred to as open and distance learning. In this mode, universities use e-learning platforms to send students the course materials. It is also important to note that initially, e-learning in universities in Kenya was for communication between the learners and their instructors, but not peers (Maina *et al*, 2015). One of the challenges of CL highlighted in this study is a lack of feedback from the instructors who have heavy workloads and lack e-pedagogy skills. It is thus unfeasible to expect the students to participate and embrace online collaborative tools when their instructors are short on feedback and knowhow.

As observed earlier, the government established KENET to promote and support ICT in educational institutions, thus enhancing students' learning process through education and research. However, in Tarus, Gichoya and Muumbo's (2015) study on challenges of implementing e-learning in public universities in Kenya, they highlight that there have been negative implications according to staff on the effective utilization of this new learning approach. One of the challenges was the low number of computers in the institutions, where only 17% of the students accessed computers in Kenyan universities (Kashorda & Waema, 2014). Some of the challenges associated with infrastructure included: a lack of affordable internet bandwidth, a lack of operational e-learning policies in universities, a lack of technical skills, a lack of interest and commitment by the instructors, along with time constraints and a shortage of knowhow for e-content development (Tarus *et al*, 2015).

As per the aforementioned literature review, some scholars highlight the advantages of e-learning when associated with collaborative learning, while others view e-learning as a source of distraction in students' learning. In Kenya, e-learning is being utilized in universities though it has experienced

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challenges associated both with university infrastructure and technical skills, and uptake challenges associated with instructors and students. Therefore, this study sought to establish the e-learning experiences and perceptions of students in both public and private universities in Kenya. The findings will assist in evaluating the effectiveness of blogging as a collaborative e-learning platform. This is particularly important for students who are pursuing courses that are related to communication and media studies, as they are required to possess such skills in the workplace.

Advancement in communication technologies not only influences how students collect information and communicate, but also how educators teach (Habul-Šabanović, 2015). In Habul-Šabanović's (2015) quantitative study that focused on students' perceptions and attitudes towards using blogs to foster learning and interaction in Sarajevo, Bosnia, the findings indicated that students have a positive attitude towards blogging as it enhances learning and social skills. The participants also viewed blogging as a way of engaging peers in a larger learning community. A similar exploratory study done in a Midwestern university in the USA by Ellison and Wu (2008) also focused on students' perceptions, specifically on the writing, reading and commenting on student blogs. The results indicated that students preferred reading other students' blogs to understand concepts; they also enjoyed the convenience of blogging and the less formal writing style compared to the traditional hard copy papers. In blogging, the interactivity aspect and engagement are components associated with the Web 2.0. The features of giving and receiving feedback from peers seem to be appreciated, as it led to engagement. This also enhanced the students' communication skills as they prepared to join the workforce environment. In an educational system, students' engagement is viewed as an important indicator in the teaching and learning process (Mahmud *et al*, 2016). The online blog engagement is also used to evaluate the student's understanding of topics.

However, according to Ehrmann (2002), before adopting any new communication technology it is important to examine how they can be incorporated into the learning pedagogy. This would assist in coming up with the most effective way to utilize the technology. While in the classroom, the millennial generation of students utilize digital devices for both educational and non-educational purposes (McCoy, 2016). This is evidenced in his study where devices became a distraction in the classroom, with 29.9% of the surveyed 675 respondents indicating that they use digital devices while in class for non-academic activities. Furthermore, 89% of the respondents indicated that the concurrent usage of digital devices inhibits the ability to pay attention while in the classroom (McCoy, 2016). In a similar study by Flanigan and Babchuk (2015:43), where they sought to describe students' experience with online communication both in class and outside classroom, the students reported that social media "hijacks their attention during lectures, infiltrates their homework and studying experiences, and lowers their learning and achievement outcomes". The respondents added that social media is a distraction in class and outside the classroom, as it decreases quality of learning and study sessions, leading to missed and decreased retained information that affects their overall grades. In the study, one of the respondents described it as "like being set up to fail" (Flanigan & Babchuk, 2015:43). Thus, as much as blogging is viewed as a (social) educational tool that encourages interaction, it can also hinder learning. Therefore, even though the millennial generation respond positively to technological advancements and incorporate it to their learning (Oblinger, 2003), it can lead to negative impact in their learning.

As blogs are a component of social networking sites which is defined by Boyd & Ellison (2008:211) as:

> Web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system.

Based on this definition, a blogger must open an account with a profile and have connections with others in the system. As the blogger posts messages, others can comment and share the information with others. In Lee, Lee and Kim's (2015) study on perceptions of students and teachers on the effects of social networking sites as an educational application, the study incorporated teachers who used Social Networking Services (SNS) for regular classes and extra educational activities, while students used SNSs for interactions with other students, sharing information and asking teachers questions. The findings indicated that SNSs can be used for learning activities by expanding face-to-face interactions as learning became more interesting, increase the frequency of interactions, and positive improvements in learning competence and communication skills (Lee *et al*, 2015). The negative effects in the same study included excess usage of electronic devices, cyber bullying and access to unhealthy information. Therefore, they recommended that teachers should find an appropriate method of using SNSs for collaborative educational purposes and include teaching students the etiquette of SNSs usage and supervision.

This study's objective is therefore to establish students' perceptions about blogging as a means of educational and collaborative tool and whether blogging fosters interaction and engagement amongst Kenyan students. As shall be discussed in the demographic section, the students in this survey were pursuing communication and media studies degree programmes in the universities, making them a relevant population to study in the use of blogs for their learning process. To achieve the objective, the following research questions were formulated:

1. What were the students' experiences of writing, reading and commenting on blogs as an educational activity?
2. What were the students' perceptions to the educational benefits of writing, reading and commenting on blogs?
3. How useful are blogs in fostering interaction among students?

Method and data collection procedure

In this study, students' experiences of blogging as an educational tool were explored through a set of open-ended questions in the questionnaire (Creswell and Plano-Clark, 2007). The survey instrument was a questionnaire that was distributed to undergraduate level students of two universities in Kenya (one public university and one private university). The sample size was 82 students. This comprised the entire student population in the two classes in the two universities. The universities and classes were conveniently sampled and selected to include a public and private university. The authors of this study were teaching the sampled classes. The data were collected during the period of August 2018 from the two classes. This period was selected as the students had utilized blogs during the semester

and also, the researchers were looking for classes that were currently using blogs as part of their instructional method.

The questionnaire consisted of five closed-ended questions, two Likert scale questions and four open-ended questions. Some of the questions were adapted and modified from Ellison and Wu's (2008), and Habul-Šabanović's (2015) studies. The closed-ended questions collected respondents' data on demographics information: university, gender, age and year of study. The respondents were also asked to respond blogs used in a multiple response closed-ended question with the option of adding any other blogging site. The first Likert scale questions collected data on respondents' perceptions on writing, reading and commenting on topics on blogs. Respondents were required to choose an answer from a three-point scale of either 'very helpful', 'helpful' or 'not helpful'. The second four-point Likert scale question, ranging from 'strongly agree' to 'strongly disagree', was based on students' experiences of blogging. The subsequent open-ended questions explored students' perceptions on blogging by inquiring what they liked best and least about blogging and what they would change about.

To ensure reliability of the scale, a pilot study was undertaken to pre-test the questionnaire. The pre-testing results showed some redundant questions that were corrected before the final questionnaire was administered. The Likert scale questions were also checked for reliability and internal consistency using Cronbach Alpha. Cronbach Alpha basically measures and calculates the internal consistency reliability (Gliem & Gliem, 2003). According to George and Mallery (2003), a Cronbach Alpha score should be as close to 1.0 as possible as it translates to an excellent score, while 0.7 is the minimum acceptable score for internal consistency. The Likert scale should have a minimum of ten items, since the score is sensitive to the number of items (George & Mallery, 2003). In the current questionnaire, the Cronbach Alpha score was .917 for the 19 items in the Likert scale, translating to an excellent score for internal consistency. Responses to the open-ended questions were used to further substantiate data drawn from closed-ended questions.

Before administering the questionnaire, consent from both the public and private institution were obtained. Further permission was obtained from the lecturers of the specific classes in both institutions. The final ethical measure was to protect the respondents' identity ensuring all surveys were collected anonymously. The questionnaire was paper-based and was distributed to the students at the end of the semester. The researchers informed the students in both universities of the aim and purpose of the study. No financial or extra course credit was given to the respondents. The students were also informed about confidentiality and anonymity with any information provided. The researchers' contact information was also made available to the students. The questionnaires were distributed to the students and collected in the month of August 2018.

Data analysis

Of the 82 questionnaires distributed, 71 were returned. All the completed questionnaires were checked for accuracy and signed consent. The data were analysed using SPSS software. The respondents (n=71) corresponded to a response rate of 86.6%. Table 1 below shows the respondents' demographics information. The students in this survey were pursuing communication and media studies degree programmes in the universities, making them a relevant sample in the use of blogs for

their learning process. This is particularly important as they are required to possess blogging skills in the workplace.

Table 1: Respondents' Demographic Information.

Area	Demographic	N	Percentage
University	Private	39	54.9
	Public	32	45.1
Gender	Male	29	40.8
	Female	42	59.2
Age (years)	18-20	13	18.3
	21-25	44	62.0
	26-30	10	14.1
	31- older	4	5.6
Year of study	Second	32	45.1
	Third	4	5.6
	Fourth	35	49.3
Total		71	100.0

As indicated in Table 1, a slightly higher percentage (54.9%) of the respondents who participated in the survey were enrolled in the private university while 45.1% were from the public university. There were more female respondents (59.2%), compared to their male counterparts (40.8%). The age varied, with two-thirds (62.0%) of respondents aged between 21-25 years old, while most (49.3%) of the respondents were fourth year undergraduates. This indicates that most respondents were youth or young adults who access the internet from their phones and other electronic devices (Communications Authority, 2020).

Results and discussion

In this section, the results of each part of the survey instrument will be presented, analysed and discussed based on the objectives of the study. Before addressing the objectives, it was important to find out if the respondents had either viewed or contributed to any blogs before attending the current class. This data were captured by asking the respondents which blogging sites they had used before this class. This was a multiple response question and results are presented in Table 2.

Table 2: Usage of blogging sites.

Blog Sites	Frequency	Percentage
Wordpress.com	44	62.0
Tumblr.com	8	11.3
Blogger.com	16	22.5
Blogspot.com	1	1.4
None	2	2.8
Total	71	100.0

From the results in Table 2, there was a clear indication that majority of the students had previous interacted with blogging before the current course. The results indicated that two-thirds (62.0%) of respondents had previously used Wordpress.com, while 22.5% had used Blogger.com. Only 2.8% of the respondents indicated they had not used a blog before this class. As acknowledged by Alkhathlan and Al-Daraiseh (2017), students are not only consuming information, but they are also producing the content that is shared on social networking platforms such as blogs. While acknowledging that online learning is student centered, interaction and engagement are essential to help the students learn and keep them motivated. Blogging is a tool that can facilitate this experience. This supports both literature and theory on collaborative learning where students become active contributors in the learning process (Gokhale 1995).

The first research objective sought to find out the students' experiences on writing, reading and commenting on blogs as an educational activity. The data on this question were collected using three Likert scale questions. The first one was how helpful the students thought posting (writing) on a blog was in understanding the course topic. The second was on how helpful students thought reading another students' blog assisted in understanding the topic. The final question was how helpful the other students' comments on the blog were helpful in a student understanding a topic. The results are indicated in Table 3 below.

Table 3: Respondents' experiences on blogging in education in percentages.

Blogging Experience Item	Very helpful	Helpful	Not helpful
How helpful do you think writing a blog was in assisting you understand the lecture/ course topics?	66.2	31.0	2.8
How helpful do you think reading other students' blogs assisted you understand the topics?	45.1	53.5	1.4
How helpful was reading other students' comments on the blog helpful to your understanding the topics?	57.7	39.4	2.8

As shown in Table 3, 66.2% of the respondents indicated that writing a blog assisted with understanding the topic, 53.5% of the respondents found reading another student's blog contributed to learning while 57.7% of the respondents indicated that other students' comments were helpful in understanding the topics. In the three questions, over 95% of the respondents indicated that the blogging experience was either 'very helpful' or 'helpful' in understanding the topics. Thus, students found blogging key in reaching their overarching educational objectives.

Further analysis using independent samples t-test was conducted to compare if there was a difference in the blogging experience scores between the students in the two universities. The results indicated that there was no significant difference in scores for private university (M = 4.46, SD = 1.45) and public university (M = 4.28, SD = 0.92; t (65.35) = 0.636, p = .5, two-tailed). The magnitude of the differences in the means (mean difference = .18, 95% CI: −.39 to .75) was very small (eta squared = .006). The magnitude of the difference was interpreted in accordance with Cohen's (1988) guideline of interpreting the Eta squared values, where .01 is small effect, .06 moderate effect while .14 is large effect.

On the blogging experience, writing, reading and commenting on blogs were used to gauge the students' experiences. Writing on blogs was considered most helpful in understanding class topics and was associated with students producing content that was posted on the blogs. Consumption which was associated with reading other students' posts and comments are also used to build on student's blogging experiences. Axel Bruns (2016) combined the production and consumption elements and coined the term 'prosumption'. In prosumption, blog users are involved in both online content production and content consumption. When students write content, post it on blogs, read other students posts, share them and comment on the posts, they are involved in prosumption. Writing, reading and commenting, in that order build on student's blogging experience as indicated in the study. Prosumption therefore become important elements in today's learning.

Benefits of blogging in education

The second research question asked the students their perceptions towards the educational benefits of blogging. A Likert scale question, with 16 items and four options, was used to collect the data. Table 4 below outlines the questions and responses from the students.

Table 4: Respondents' perceptions to blogging in percentages.

Blogging Perception Item	Strongly Agree	Agree	Disagree	Strongly Disagree
Blogging is an excellent medium for social interaction	59.2	38.0	2.8	0.0
Blog discussions helped me understand other points of view	52.1	45.1	1.4	1.4
I was stimulated to do additional reading and research on topics discussed in the blog	56.3	32.4	11.3	0.0
As a result of this experience, I would participate in another class with blogging	46.5	49.3	4.2	0.0
I believe that incorporating blogs with teaching enhanced my learning experience in general	46.5	45.1	8.5	0.0
Overall using the blog was helpful in my learning	47.9	45.1	5.6	1.4
I was able to learn through blogging	46.5	45.1	7.0	1.4
I learned to value other points of views	36.6	62.0	1.4	0.0
I think there was a lot of interaction between the participants in the course	42.3	49.3	8.5	0.0

I felt comfortable to actively participate in the course discussions on the blogs	45.1	47.9	4.2	2.8
I learned a lot from other participants	39.4	53.5	7.0	0.0
Other students' comments on the blog posts are important	38.0	57.7	2.8	1.4
In comparison to my other classes, the amount of my interaction with other students in this class has increased due to the blog	46.5	36.6	15.5	1.4
The feedback on the blog was valuable to me	29.6	66.2	4.2	0.0
The blogs helped me feel connected to other students in the course	38.0	46.5	15.5	0.0
My point of view in the blogs was acknowledged by my peers	40.8	45.1	11.3	2.8

In all the 16 items on blogging-perception Likert scale, more than 80% 'strongly agree' and 'agree' responses were selected by the respondents as shown in Table 4. The lowest percentage was 29.6% on 'strongly agree', while the highest percentage was 66.2% on 'agree' in the items. This indicates that students had a positive perception towards blogging. Blogging encouraged interaction and participations by the students as they posted content, engaged fellow students by reading and commenting on their posts. However, about 17% disagreed that their interactions with students has increased due to blogging, while about 16% disagreed that blogs have helped the students feel more connected with the students in the course. Nevertheless, blogging was mostly perceived as a medium for social interaction, even though the students felt that there was some room for improvement in blog acknowledgement.

Advancement in technological infrastructure is also a contributing factor in today's learning environment. The results on students' blogging perceptions indicated that students felt that blogging was an excellent platform for interaction and that the incorporation of blogs to the teaching experience has enhanced their learning experience. Oblinger (2003) pointed out that course instructors and students belong to different generations and it is important for institutions to acknowledge the changes in the learning environment. Traditional learning techniques maybe deemed not as effective now as they were by 'baby boomers'. Online learning techniques which are student centred are associated with blogging where students' utilize them to gain more information on class topics. Blogging encourages collaborative learning where students produce content and post it on the blogs, share the posts and receive comments and feedback from instructors and fellow students. In such experiences, the students stay connected with fellow students and instructors even after classroom interactions.

Blogging stimulates discussions in an environment where posts and comments are based on class topics as students are able to learn more about the course. In this study's results, most of the students indicated that the blog discussions helped them understand the topics and value other student's point of view, encouraged additional reading and research, and in essence contributed to their learning experiences. As noted also in Kiliç and Gökdaş (2014), the findings indicated that students acknowledged that other students' comments and discussions helped them understand other students' points of view. Habul-Šabanović (2015) emphasizes the need to incorporate blogging in teaching so as to motivate and encourage online exchange among students. Not only do blogs encourage interaction, but students also get to reflect on their learning and build on positive attitudes towards class blogs. Learning is therefore not constricted to the classroom environment, as it can also take place outside the classroom. As noted, collaborative learning theory is viewed as a motivational theory where students look at the rewards gained from what is learned in class and from engagement and participation online. A sense of collaboration where students are encouraged and rewarded for engaging on blogs can be used as an incentive to encourage learning (Alkhathlan & Al-Daraiseh, 2017). The results of this study indicated that students have a positive perception towards collaborative learning and therefore they should be further encouraged to engage in blogging as a means to enhance their learning.

Reasons for blogging

In the open-ended questions, the respondents were asked what they liked about blogging. Each respondent wrote at least one reason. The total number of responses were 96 responses to the multiple response question. This yielded an average of 1.5 responses, depicting an average of at least one reason indicated per respondent. The responses were categorized and grouped as presented in Table 5.

Table 5: Reasons for liking blogging.

Reasons for liking blogging	N	Percentage
Writing my point of view	31	32.3
Interaction with content	28	29.2
Getting feedback	22	22.9
Do more research	13	13.5
New way of learning using technology advancement	2	2.1

'Writing my point' of view was cited by 31 students as the most important reason for their liking blogging. This was followed by 'interaction with content', which was cited by 28 students, contributing to a combined 61.5% of the responses. Others included: getting feedback (22.9%), doing more research (13.5%) and new innovation (2.1%). The findings are in corroboration with Kiliç and Gökdaş' (2014) study who found that students valued blogging as they were able to share knowledge, experiences and comments from other students. In the study by Oblinger (2003), students indicated that they use the internet to express ideas they would not normally express in class and use the internet for research more than they visit the library. When students post on the blogs (especially if their opinions are backed up with references), then students can do more research, comment and also get feedback. Students no longer have to only conduct their research and read from the resources in the library, as they are able to access the resources online from any part of world. With reliable

internet and with the right login credential, most of the scholarly sites can be accessed remotely. With blogs, students are able to post their opinions and source references for others to engage with. The engagement leads to interaction and participation from other students and the instructor. The students are able to receive feedback and thus collaborative learning takes place.

Reasons against blogging

When the respondents were asked what they did not like about blogging. Out of the 71 respondents, 61 respondents indicated various reasons as shown in Table 6. As a multiple response question, there was a total of 68 reasons. Table 6 summarizes the categories from the open-ended responses.

Table 6: Reasons for disliking blogging.

Reasons for disliking blogging	N	Percentage
Slow upload and system failures	17	25.0
Class course requirements	14	20.6
Others not commenting/ non positive comments	13	19.1
Students just posting content without understanding blogging	8	11.8
Different styles that could be intimidating	6	8.8
More reading work	5	7.4
Time consuming	5	7.4

Technological issues (slow upload and system failures) was cited as the most disliked by 25% of students. Other students felt blogging added more work to their course work (20.6%), while and 19.1% were disheartened by lack of feedback on their blogs. In Tarus *et al's* (2015) study, the challenges of e-learning in Kenya involved technological, organizational and pedagogical factors. The implementation of e-learning has been slow in Kenya and most universities use it as blended learning, where traditional face-to-face delivery is the main mode of learning. This is due to expensive infrastructure that is needed to facilitate e-learning. Inadequate ICT and e-learning infrastructure, lack of affordable and adequate internet bandwidth were some of the challenges pointed out in Tarus *et al*'s (2015) study of Kenyan public universities. When the main mode of learning is face-to-face, students feel that blogging is an extra requirement for the course which can be avoided. When students feel that blogging is not mandatory or extra work, and with slow internet and other technological challenges, students end up feeling burdened.

Training is essential to both students and instructors on how to utilize blogs effectively. As noted in Table 6, some students posted content without understanding blogging. Lack of technical skills on e-learning and lack of interest on blogging were also mentioned as some of the challenges in the Kenyan Public universities study (Tarus *et al*, 2015).

Proposed changes / advancements into blogging

The respondents pointed out different areas for improvement or advancement in blogging as tabulated in Table 7. Out of the 71 respondents, 55 responded to this multiple response question. The total number of responses was 62 with the majority (41.9%) indicating 'commentary'.

Table 7: Proposed changes / advancements to blogging.

Proposed areas of improvement	N	Percentage
Commentary	26	41.9
Course class requirements	9	14.5
Writing element	7	11.3
Nothing	7	11.3
Blog weekly or more often	5	8.1
Make it more interactive with the participants	4	6.5
Reading element	3	4.8
Use more visuals and videos	1	1.6

Commentary was based on respondents feeling that feedback was essential in blogging. Some respondents felt that the comments were either not enough, missing or not relevant based on class content.

The final open-ended question sought to collect the general comments or additional information about the blogging experience. In general, majority (44.4%) of the comments showed that the respondents felt that blogging met its educational objective as they were able to interact and learn from the posts, 16.7% said blogging was interactive, 13.9% felt that blogging should be applied in several courses, while 8.3% said blogging contributed to the students doing research outside of the classroom. This is tabulated in Table 8 below.

Table 8: General comments about blogging experience.

Comments	N	Percentage
It was educational, interesting and an eye opener	16	44.4
Very interactive	6	16.7
Blogging should be applied across all courses	5	13.9
Led to more research	3	8.3
Needs to be consistence	3	8.3
Allow using personal blogs rather than class-based	2	5.6
None genuine comments	1	2.8

Training is important both to the students and facilitators as it guides the process of blogging. To add on Tarus *et al*, (2015) who emphasises the importance of training, Nyerere, Gravenir and Mse (2012) also point out that provision of student support services is also as important. The support services guide the students on how to effectively use blogs as a distance learning platform. Some of the respondents in the study even suggested that blogging should be a course requirement. This corroborates Mahmud *et al*, (2016) who acknowledged in their study that blogging contributes to a better learning environment.

Recommendations and Conclusions

This study not only has a bearing on both collaborative learning (CL) theory and policy issues in the immediate context of the study, but also for higher education across the globe and in specific the global South. This study supports the tenets of CL in various ways, including but not limited to, active participation by the students and the teacher becoming a facilitator, along with a shared learning environment with intense student and peer interactions (Lin, 2015). Because of this implication, this study makes the following recommendations for theory and practice of pedagogy in higher education institutions: when designing curricula, course instructors need to consider new ways of learning especially using new technologies. Common observation is that in most institutions of higher learning, the instructors are in a different generation compared to the students (Nyerere, 2016; Nyerere, 2020). The instructors are mostly 'baby boomers' while the students are either Millennials or Gen X (Oblinger, 2003). Instructors therefore need to acknowledge and incorporate information technology while designing the courses and move away from teacher-centred pedagogy to more student-centred techniques. Instructors need to encourage and incorporate blogging in order to enhance students' learning experiences. With the opportunity to consume and produce content that is shared on the blogs, students are able to interact with not only the instructor but also with fellow students. Such interactions assist in keeping students engaged while in a less formal environment and encourages them to own their content. Institutions need to update and upgrade their information communication technologies in order to create reliable and efficient internet platforms. This should be accompanied with proper training in both technical implementation, and proper utilization, of the communication technologies. The course content and writing style should be part of the training. This will contribute to proper and more engagement on the blogs as a collaborative tool.

This study sought to establish students' perception based on their blogging experiences as a learning and collaborative tool. The findings indicate that most students had interacted with blogs before the current courses. Based on the students' experiences in blogging, the results indicated that the respondents utilized the platform to write their posts, as well as read and comment on other students' posts. This assisted them in understanding topics better, as it led to outside classroom research. Blogging also contributes to better social interactions, as well as discussions and engagement between the students and the course facilitators. Students therefore it was found have a positive perception towards blogging.

However, the utilization of the platform has its challenges such as lack of adequate university infrastructure, and a lack of proper training and technical skills on how to effectively use the platform. With technological advancement, institutions and facilitators need to acknowledge that learning is not only face to face, but also takes place online where students utilize social networking platforms as a collaborative tool to enhance their learning experiences.

With the current COVID-19 pandemic, institutions of higher learning are adopting e-learning as a learning pedagogy, but the technical skills and adequate infrastructure are lacking as highlighted in the study. It is therefore important that the higher learning institutions, both public and private, should incorporate e-learning as a mandatory aspect in their learning management systems and have adequate mechanisms and skills to utilize the online platform. It is recommended that the Kenyan government, through KENET, reinforce the directive as stipulated in Vision 2030 on ICT development

that requires institutional ICT policies and strategic plans and ICT human capacity to be in place in order to facilitate e-learning in universities. This will facilitate e-learning not only as an integrated learning option but will and also encourage collaborative learning and build on peer-to-peer learning.

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