FRAMEWORK FOR INTEGRATION OF SOCIAL MEDIA FOR COLLABORATIVE LEARNING IN INSTITUTIONS OF HIGHER LEARNING IN KENYA

KAMAU WAITHERA JOYCE

A THESIS SUBMITTED IN PARTIAL FULFILMENT FOR THE REQUIREMENTS OF THE CONFERMENT OF THE DEGREE OF MASTER OF SCIENCE IN COMPUTER INFORMATION SYSTEMS OF KENYA METHODIST UNIVERSITY

OCTOBER, 2020

DECLARATION

Declaration by the Student

This thesis is my original work and has not been presented for a degree or any other award in any other University.

Signed……. Date 05/11/2020

Kamau Waithira Joyce

MCS-3-0588-2/2014

We confirm that the work reported in this thesis was carried out by the candidate under our supervision.

Signed……. Date……

Dr. Chao Mbogo

School of Computing and Informatics,
Kenya Methodist University

Signed……. Date……

Ms. Dorothy Chege

School of Computing and Informatics,
Kenya Methodist University

COPYRIGHT

DEDICATION

I dedicate this thesis to my late husband, my children Natasha and Natalie for their love, support, and encouragement throughout my studies.

ACKNOWLEDGEMENT

First, I thank God for the strength that he has given me throughout my studies and in the process of writing this thesis. Second, my gratitude to my supervisors Dr. Chao Mbogo and Ms. Dorothy Chege for the invaluable support and academic guidance they have given me throughout the process of writing this thesis report.

Thirdly, I am indebted to Kenya Methodist University for the opportunity to undertake my Masters at the institution and most specifically the school of science & Technology for all the support accorded to me during this entire period. Finally, I thank my classmates for the support and encouragement that has enabled me to move this far. Your support and unity were a daily inspiration, may God bless you all.

ABSTRACT

The increasing advancement in technology is creating new opportunities that can be incorporated in learning especially in institutions of higher learning. Majority of stakeholders in the institutions of higher learning, preferably the lecturers and students possess smartphones and computers as well as active social media accounts. The increased usage of social media coupled with the necessity to interact with people all over other would is posing a challenge to integrate social media into learning, that will enrich the formal learning happening in institutions of higher learning. This integration is of great importance especially during challenging and difficult times as witnessed during the Covid-19 period that saw learning come to a standstill for more than six months. Therefore, this study sought to suggest and come up with a framework for social media integration in collaborative learning, that allows learners to interact with others and tutors all over the world in sharing learning content. The study was guided by several theories that support adoption of information systems and technology among users, notably, Technology Acceptance Model (TAM), TOE Framework Model and UTAUT Model. The study employed descriptive survey research design. The target population was all the 11 institutions of higher learning in Meru County. The total number of respondents was 150 including student representatives and lecturers. Stratified sampling was used to select 108 respondents to participate in the study. Structured questionnaires were used to collect the data for analysis. Descriptive and inferential statistics were employed in data analysis. The findings of the study indicated that the institutions of higher learning allow access to social media sites using the institution's resources but there is no specific policy on social media usage. The study also established that institutions of higher learning have reliable Internet but limited computer resources based on 80% of the respondents. Social media exposure was found to be high based on social media accounts possessed by respondents and the frequency of usage. The regression model adopted in this study indicated that the independent variables explain 93.8% of the variations in collaborative learning. The study concluded that there is positive and significant relationship between institutional governance, technological infrastructure, and social media usage/exposure on collaborative learning. Thus, a framework for social media integration would be a success considering the relationship of the independent variables. The study recommends that, administration should have a general and favourable policy regarding technology usage as well as encourage students to share learning content via social media. Further research can be undertaken to identify challenges facing information system adoption in universities.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABBREVIATIONS AND ACRONYMS

ICT	: Information Communication Technology.
IT	: Information Technology.
SM	: Social Media.
SPPS	: Statistical Package for the Social Sciences
IHL	: Institutions of Higher Learning.
TAM	: Technology Acceptance Model.
UTAUT	: Unified Theory of Acceptance and Use of Technology

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

The advancement of the Internet has caused seismic change in how people interact professionally and socially. Unlike in the last decade where people were mastery over emails and face-face communication, social media has pervaded our lives as a new medium of interaction (Chris, 2019). Social media has provided many opportunities for different people in different fields of operation which has made some digital collaborators, social creators and curators, and critics.

Merriam-Webster (2019) defines social media as an electronic form of communication, where users form online communities and accounts for the purpose of sharing ideas, messages, and other content. According to Chris (2019) the development and growth of social media is anchored on web 2.0 technologies that has enhanced the Internet environment to be more dynamic, participatory, and interactive. Undoubtedly, the foundation of social media is user generated content that includes comments, messages, posts, images, and videos. The sharing of social media content requires users to create their profiles which adds to their online identity in a professional and personal manner. It is through these different features and content that permit users to connect and network with others either as an individual or as a group (Obar & Wildman, 2015).

The development of professional networks can be dated back in 2002 when LinkedIn originally known as Colleaguester was formed. The uptake and usage of LinkedIn back then was not highly adopted compared to the rate at which Facebook was adopted after its formation in 2004. In fact, according to Statista (2020), Facebook has an approximate of over 2.6 billion monthly users, rating it as the leading social media platform in the world. Apart from LinkedIn and Facebook, there are other social media

that fit the professional context. These include: use of blogs like WordPress, Tumblr and Blogger; microblogging such as Twitter; academic social networks such as Academia.edu and ResearchGate; social bookmarking for instance Mendeley and Diigo; Multimedia platforms for videos, audio and images that include, Vimeo, YouTube, AudioBoom, SoundCloud, Flicker, Instagram, Zoom and WhatsApp.

The existing social media therefore presents a rich environment through which institutions of higher learning can adopt and foster learning. Social media has been described as a rich environment for people to share knowledge, raise and answer questions, provide feedback, discuss, network, and learn more especially on career and job opportunities. The new crop of entrants into universities and colleges have strong capabilities to communicate via social media. Every student in institutions of higher learning owning a smartphone or with access to Internet has at least one social media account through which they interact, with other students, relative and other groups a situation which for this one reason supports the outline of such technologies and resources as learning support systems.

Integration of Social media and learning in institutions of higher education has been tested and implemented in different parts of the world. In United Kingdom, PGCert in HE is offered in a blended mode with some face-to face mode and online elements. UK students spend only four days in the campus while international students spent two days in the campus for a year. The rest of the course is undertaken online with Moodle being the backbone of the online learning. Other social media platforms are integrated with the Moodle such as twitter and free cloud-based tools for sharing classroom materials, discussions, and slide presentations (Amandu et al., 2013). Using Digital Badges, learners can enrol and participate in online learning with capabilities of downloading

video lectures for offline learning. Such institutions include Lynda.com, John Wiley and Sons, Instructure (Canvas LMS) and Open University (OU). Massachusetts Institute of Technology, Berkeley University of California, Harvard University, The University of Texas System and Boston University introduced Massive Open Online Course (MOOC) through edX platform that integrated other social media like Facebook, Twitter, and LinkedIn to offer higher education learning worldwide (Wang & Zhu, 2019).

In Africa, a study conducted in South Africa indicated that, some universities such as Universities of Cape Town, Pretoria and South Africa have moderately adopted social media in learning, although majorly, social media is used for communication and entertainment by students (Seedat et al., 2019). In Kenya, most of the universities introduced distance learning to help reach more learners, mostly those in far locations and tied with jobs (Tarus et al., 2015). This mode of learning entails posting of learning materials, assessment tests and assignments through university portal. In this model however, one-on-one learning or interactive learning through real-time content exchange, video conferencing and video lectures is not available.

Considering the potential social media has on learning, many institutions have had difficulty assimilating the habit of social media in their learning practices (Linke & Zerfass, 2013).). This research therefore, aimed proposing development of a framework for integration of social media to enhance its application in learning institutions.

1.2 Statement of the Problem

Use of social media in learning especially in institutions of higher learning is an area that has attracted attention especially with advancement of technology. While there is general acceptance that African universities have embraced technology in delivering

university content, majority can be described to have Information Management System that provides information on courses offered, enrolment, academic status as well as facilitation of distance learning. However, integration of social media is beyond IMS that, lecturers can engage students through virtual learning in a manner that appears to be a normal setup. This entails real-time engagement between the students and the lecturer as well as students and students

The real picture of underusage of social media in institutions of higher learning was evident on how learning was paralysed in these institutions during the outbreak and spread of Corona Virus (Covid-19). While learning continued in institutions where social media has been integrated in institutions of higher learning, in Kenya, higher education learning majorly on lecture delivery came to a stand-still.

Several researchers have delved on social media and learning proposing several strategies that can be integrated into learning both international and national. While major concentration has been integrating social medial and normal learning, there is limited research proposing integration of social media in collaborative learning, that in turn will promote and reinforce the formal learning in institutions of higher learning. Therefore, this creates a knowledge that the study sought to fill, by proposing framework for social media integration in collaborative learning.

1.3 Purpose of the Study

The purpose of this study is to propose development of social medial framework that can integrate social media and content delivery in institutions of higher learning. Therefore, this study has been motivated by robust frameworks that integrate social media in developed countries with low uptake or none in developing countries.

The study comes handy in advocating for a framework and not an application on the grounds that, there exists suitable, reliable, strong, and fast social media applications currently in use. This implies that, a framework is larger in that it includes many facets of learning and has a room for integrating social media platforms such as LinkedIn, Facebook, Twitter among others.

There is need for continued learning even after an outbreak of diseases as well as other calamities. In circumstances where learning cannot continue beyond brick and motor in the current Internet generation portrays a flaw, fight to maintain status quo and untapped opportunity. With a social media framework therefore, learning can take place anywhere, given there is Internet connectivity.

1.4 Objectives of the Study

The general objective of this study is to propose and develop a framework for social media integration into collaborative learning.

The specific objectives were as follows;

i. To evaluate the role of governance in the adoption of framework of social media integration for collaborative learning.
ii. To establish the state of technological infrastructure, and its effect on social media integration for collaborative learning.
iii. To establish the effect of social media exposure on collaborative learning in relation to Framework for social media integration.

1.5 Research Questions

i. What is the role of governance in the adoption of framework of social media integration for collaborative learning?

ii. What is the state of technological infrastructure, and how does it affect the adoption framework of social media integration for collaborative learning?

iii. What is the effect of social media exposure on the adoption of framework for social media usage in collaborative learning?

1.6 Justification of the Study

As technology continues to evolve and diffuse, education stakeholders have been challenged to find ways in which they can integrate technological innovations into the classroom environment. The proposed framework will therefore help teachers and learners understand how best to adopt, integrate, and use social media in the classroom for the very purpose of supporting teaching and learning process. In addition, this work will be of great benefit to the Library department and information sciences as well as to future researchers and scholars in this field as it will be a valuable addition to existing literature.

The findings will also be used by the computer department and curriculum offices to advice the Institutional authorities and regulating authorities on how to enhance social media usage among students and staff in the entire institutions for educational benefits. Finally, this work will be of immense benefit to the Kenya Institute of Curriculum Development and universities when developing the curriculum to be used to integrate and teach I.C.T in institutions of higher learning.

1.7 Study Limitations

There are hundreds if not thousands of social media sites ranging from web-based systems to mobile applications available. Hence it is technically impossible to focus on them all as the project would be completely impossible because of the large size.

Therefore, the researcher will limit herself to a few common social media tools to form the basis of this study. These are Facebook, twitter, LinkedIn, and YouTube. The technological characteristics and their complexity size and usage are the major reasons why the researcher focused on the two platforms.

1.8 Scope of the Study

This study was undertaken in Technical Training Institutions, colleges, and universities because, students in these institutions can possess smartphones and computers in general. The study targeted all public institutions of higher learning in Kenya, with key focus of those institutions in Meru County. This is because, Meru is among the counties with many institutions of higher learning in Kenya.

1.9 Assumptions of the Study

The researched reached to an assumption that, the information given by the study respondents was honest thus the data collection tools and the analysis is dependent on the given data.

1.10 Operational Definition of Terms

Web 2.0	The platform technology that allows making connections through users and user communities to enable users to publish and share user generated.
Social Media	The services that allow users to generate and share content online.
Social Networking	The services that allow to managing the relationships in online social communities.
Collaborative Learning	The type of learning experiences or learning strategies that allow learners to create knowledge and meaning in a form of social construct.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents a review of other researches and studies relating to this research. The chapter is divided into empirical literature; conceptual framework; summary of literature review and an identification of gaps in literature that this research aimed at developing solutions for.

2.2 Theoretical Framework

This research was guided by two research theories: The Technology, Organization and Environment Framework Model (TOE) and the Technology Adoption Model (TAM). The rational for using TOE model is that, technological change in institutional level is determined and influenced by organization and the environment. On the other hand, TAM describes the willingness and the attitude one has on technological. While TOE model is on institutional level, TAM is on personal level.

2.2.1 TOE Framework Model

The TOE model detaches three factors; organizational situation, environment, and environmental situation as the three components that influence the way by which an organization holds and gears a technological idea.

The technological setting designates both intra and extra technologies necessary for the performance of the firm. It contains present practices, tools and capabilities that exist inside the organization's boundaries, this also includes any technologies that the firm is capable of acquiring to support its functions (Awa et al., 2016). The organization's

setting explains the sensitive actions about an organization like independence, scope, viewpoint of the organization, reputation of staffs, relations among staffs and the density of the management viewed in terms of control, upright differentiation, and solemnization. These three features of this framework present together chances and restrictions for technical discovery (Maina, 2015).The essentials influence on the way an institution perceives the need for, examinations for and holds new technology.

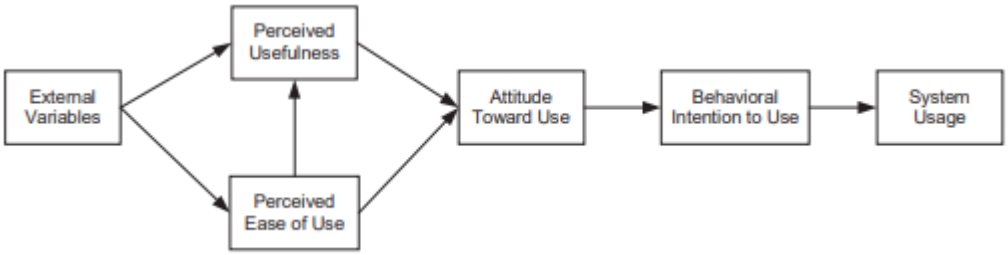
TOE model was used in this study to link the aspect of governance and effectiveness of organizational intranets with framework development and integration of social media in institutions of higher learning.

2.2.2 Technology Adoption Model

The Technology Acceptance Model (TAM), was developed by Davis (1986). It is one of the most widely used models that tries to explain technology acceptance. This theory is based on the social psychology-philosophy in general and the Theory of Reasoned Action in particular (Ma & Liu, 2011). The theory of reasoned action opines that opinions influence attitudes and attitudes lead to purpose which influence performance. These components of the technology acceptance model as introduced in the original Technology Acceptance Model which is presented in Figure 1, include: perceived usefulness (PU), perceived ease of use (PEOU), attitude, and behavioural intention to use. Among the concepts, PU and PEOU form an end-user's beliefs on a skill and therefore forecast his or her attitude in the direction of the technology, which in turn foresees its acceptance.

Figure 2.1

Technology Acceptance Model. Adopted from Davis (1989)



Davis (1989) carried out several tests to validate the Technology Acceptance Model by using perceived ease of use and perceived usefulness as two independent variables and system usage as the dependent variable. He discoursed that perceived usefulness was meaningfully correlated with self-reported present usage as well as self-predicted future usage. Perceived affluence of use was meaningfully correlated with present and upcoming usage. Overall, he found that usefulness had a meaningfully greater correlation with system usage than did the perceived ease of use (Ma & Liu, 2011).

Adoption of technology, its use and acceptance are centred on the attitude of an individual. The organization may adopt and implement new technologies. However, success and usage of those systems are based on the user willingness to use the technology. This is the reason behind using TAM in this study.

2.2.3 Unified Theory on Acceptance and Use of Technology (UTAUT)

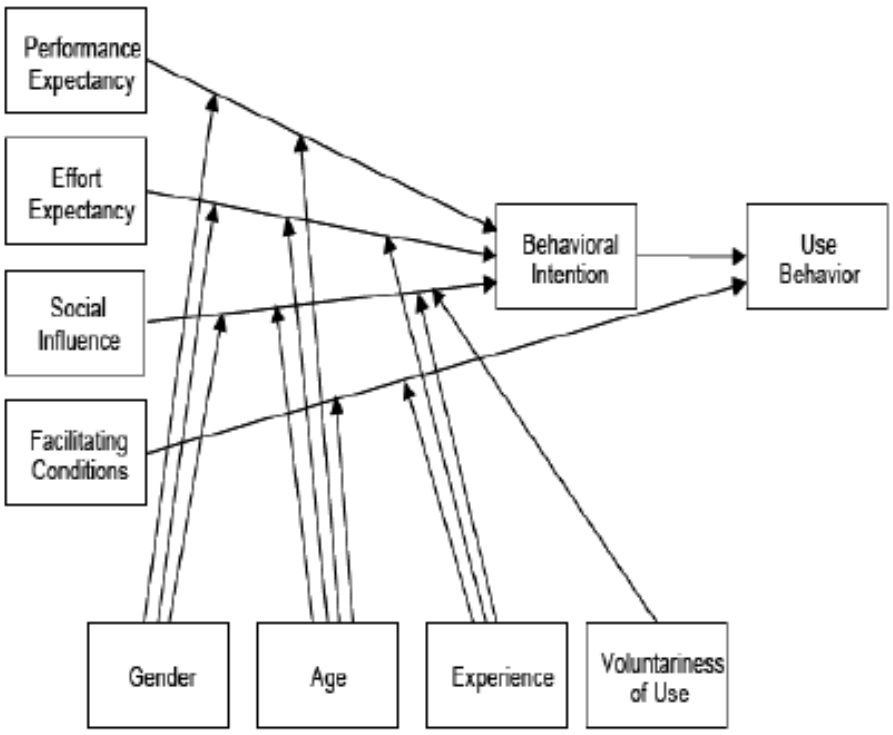
The UTAUT model was developed by Venkatesh et al. (2003) by including eight technology acceptance models to form a unified model. Venkatesh et al. (2013) several models that include; combined innovation diffusion theory, technology acceptance model, motivation model, theory of reasoned action, social cognitive theory, combined TAM and TPB and model of PC utilization.

The model includes four core constructs which are; performance expectancy which entails the extent to which an individual believes that system usage will bring increased job performance, social influence, effort expectancy that entails ease of usage is linked with system use and facilitating conditions that entails existence of infrastructure to support use of system in an organization. In addition, the model insists on the importance of four moderators which are age, gender, experience and voluntariness of use that has a role in user's acceptance towards technology.

The model has been widely adopted in studies related to mobile learning acceptance. The model has also been used to test learner's acceptance of mobile learning especially in Pakistan (Iqbal & Qureshi, 2013), Thailand (Jairak et al., 2009), Guyana (Thomas et al, 2013) and Saudi Arabia (Nassuora, 2012).

Figure 2.2

UTAUT Model



2.3 Collaborative Learning

According to Lai (2011), collaboration refers to the shared appointment of members in a harmonized effort to work together when solving a problem. Collaborative learning is also defined by Reed (2014) as a state in which two or more persons study something together, and further precisely in joint problem solving. As cited by Lai (2011), even among specialists, there is difficulty in coming up with one meaning of collaborative learning. This difficulty in coming up with a common definition for CL is a result of several explanations. First, the number of connections between learners might vary from two to a thousand people, by diverse hypothetical and applied materials required to inspect communications happening at diverse levels. There is difficulty in describing what really institutes learning. As Lai (2011) opines, detectives use "learning" to refer to numerous varied reasons of doing such as students learning development materials together for a trial; joint problem solving in which learning is expected to take place as a result of communications; learning as a "organic and/or social process" that takes charge over several years and "learning from concerted work, which refers to the all-time gaining of know-how within a specialized community".

Collaborative interactions involve shared goals as well as a high level of concern, interactions, and interdependence. Relations producing descriptions are mostly valuable for purifying student learning. Nonresponsive response, on the other hand, can be detrimental to student learning in concerted situations (Springer, 2015). Collaboration can have powerful effects on student learning, mostly for low-achieving learners. Numerous factors may nevertheless determine the influence of partnership on student learning, as well as student structures, group arrangement, and task features.

According to Kagan (1994) there are four key essentials of collaborative learning: the capability to interact simultaneously, positivity and interdependence, accountability at an individual level as well as capability to ensure equality in participation. This contrasts the traditional approach to environment where the teacher is expected to deliver the talk as the students listen; collaborative learning therefore provides active participation for all the learners at the same time (Springer, 2015).

The capability for social media to improve the interactivity among students and teachers and enhance collaboration for the benefit of all was recognized in its earlier stages of development (Henderson et al., 2013). According to Mondahl and Razmerita (2014), social media has shaped new potentials for digitally active students to occupy, interact and collaborate in learning responsibilities that improve learning processes and the overall learning experience. Bozanta (2017) opines that social media can be an influential tool to support students' educational communications and collaborations with their networks and faculty followers. However, Henderson et al. (2013) notes that there is lack of experiential research in schools about educational designs using social media and mainly the factors that enable or deter desirable outcomes.

Sites such as Gaggle.net have provided extended collaborative features for enabling the integration of social media for collaborative learning. The paid version of Gaggle.net has several features that improve social media experience for learning (Bralić & Divjak, 2018). This online collaborative system consists of a social wall that looks and works just as Facebook, along with an email account, a digital online locker, blogging and many other accessible items. One of the key reasons why such social networking sites are worth the time and favoured by educationists is the exemplary security features it offers to students. These includes the ability to filter slang words, abusive words or foul

language, pornographic content, and many more (Mergel, 2016). It is an ideal system with which students can be educated on how they can use social media professionally and to enhance their interaction/communication skills as well as academically, helping them prepare for the job market upon completion of their studies. The students are thus able to enjoy having the social aspect of it while their teachers appreciate the capability of such systems to help them acceptably and safely reach their students. The teachers can also upload assignments into set drop-boxes that are only accessible by their students. Further, teachers are notified when their students complete and upload their assignment and submit and this record is safely kept through the logs of the system; teachers can also mark these assignments online and avail student performance reports in real time totally without the need for printing anything.

The capability to access YouTube videos directly from these social media sites is a great innovation for teachers/tutors, with the available filters; tutors can display any educational video without being congested by the filters. As this is a cloud-based system, anybody can get through their account anyplace they are as long as they are connected to Internet, this means that learners can get through their social site at homegrown and at the same time attend to their exercise and projects (Dunn, 2012). One can add records to the student's digital locker and worked in co-operation, without necessarily being in the same area together at any given time**.** When educators generate "sittings" within the system, it alongside generates a session on social platform for the students registered in that course, in such a way that they can dialogue with each other, share pictures, communicate with each other, among other functionalities of social media. Such abilities create a very constructive experience for all students and staff (Selwyn, 2012).

2.4 The State of Digitization and Social Media Usage

Digital technologies and media describes a broad range of technologies as well as the wide range of ever expanding communication tools; such as intranets, websites and social media systems, mobile communications, smartphones and applications (Mattern & Floerkemeier, 2010). Social media usage has grown dramatically in the last few years. Businesses, non-governmental organizations as well as government agencies are now much reliant on social media either to market or grow their businesses, recruitment and even communication of policy and directives to the general public (Molla, 2008). Several researchers have opined that the continuous growth and the influence of social media will continue to grow. In this case, it is evident that social media will for long continue to transform and improve public service, enhance business performance, improve business communication and improve personal connections through interaction with people from diverse culture and legions (Health and Safety Executive [HSE], 2010).

The emergence and growth of Web 2.0 has transformed the way content is generated and transmitted on the web (Pletikosa et al., 2013). Consumers, with the growth of social media, are no longer passive but active participants with the ease in capability to easily share information relating to products, opinions and experience with each other (Levin & Kojukhov, 2013). This continued dependence on social networking sites has generated the interest of business and organizations that have identified the potential to transmit their marketing messages to their friends and relatives, enter into dialog with them using word of mouth and to use their social networking information to gain a

closer and better understanding of their customers tastes and preferences as well as their considered opinion of the firm's products and services (Dhawan & Zanini, 2014).

According to Chee and Jon (2005), the world has changed and has become highly technological world, despite the fact that these were the infancy years of social networking sites, these words hold to date. Social media has continued to influence every sector of the economy today. For business organizations, digital networking and marketing has become the key driver of their competitiveness. Social networking marketing is not just affordable, but its guarantee to reach a wide group of audience within a short time, that makes it an ideal marketing tool (Manyika et al., 2013). The capability to respond to customer queries; offer after sale service to customers and still provide product information to customers are some but a few capabilities that social networking offers that traditional marketing tools such as newspapers and radio/television don't. Armed with the right data mining tools, firms with digital presence can become market controllers within a short time. This is largely due to the rich amount of data containing essential facts about their customer' tastes and preferences as well as the market itself.

In education, social media has in so many ways impacted the learning environment by transforming the traditional classroom into a digital realm where students and lecturers can interact virtually, hold discussions and students can still be able to do their exams virtually while being monitored by digital systems (Kimani, 2016). As learning institutions continue to invest more in acquiring computers and computing devices, the traditional mode of delivery of education content has been thrown into a spin, with more reliance on multimedia systems, online systems, and online collaborative learning as opposed to the traditional school setup. However, these transformations are never in

any way meant to eliminate the traditional classroom but are tools for improving learner experience and improve the performance of students through practical and interactive approaches to content delivery (Vlachopoulos & Makri, 2017).

Blankenship (2011) supports that social networking and media tools assist in educational activities by making collaboration, interaction as well as knowledge, information and resource sharing, and critical thinking achievable (Manyika et al., 2013). In a research regarding what social media sites students use and interact, WhatsApp, Twitter, YouTube, and Facebook were identified as the three most visited sites by the students. The respondent's opined their ease of use, large group of users and the efficiency in streaming contents as the main reasons why they preferred these sites. YouTube was preferred for the rich education content it contains that seemed to be really supportive to learners' understanding of basic concepts that they are interested in as well as the quality of video. Oyedemi (2015) in his research established that Students reported that they constantly chat, send text messages, and used online social communities like Facebook and MySpace, for educational related tasks, including collaboration with other students and school projects. Facebook, WhatsApp, Twitter, and YouTube are mostly preferred by the students because of the ease for the students to interact and exchange knowledge/information in a very easily accessible manner.

Blankenship (2011) carried out a study relating to Facebook to find out how social media usage affects the academic performance of students. In this study, a hundred and twenty-two respondents from Jordanian Universities took part. The study aimed at finding out how heavily students were reliant on social networking sites; and its effect on their performance academically. The findings revealed that social networking sites were an effective tool to deliver and ensure academic performance is improved if well

applied as well as being an essential tool that can be exploited to ease communication and interaction between tutors and their students. The research results opined that there was a necessity to integrate social networking sites within the learning systems and culture of learning institutions. The results of the study concurred with earlier researchers on the importance of social networking within the education system and concluded that if applied in an organized framework, social media can be a key driver of learning in future. The report further suggested that there is need for education policy makers to develop effective strategies that can be used to guide and ensure that social media systems are effectively utilized for academic purposes especially in institutions of higher learning based on the fact that students at this level are already conversant with social media and they have the technological devices to access and use these sites.

The support of social media in school is also supported through a research by (DeDominicis, 2013). The study findings revealed that social networking sites were already influencing how teachers identify and prepare their teaching materials as well as how they captured and shared knowledge among themselves and in collaboration with each other. Teachers, according to the research suggested that they perceived social media as an important tool for enhancing learning.

The study further established that almost all teachers were considered to be aware of the major social media sites; a large percentage of those who responded to the research confessed to be aware of social media and having several social media accounts while still a large percentage of them further said that they had visited a social media site within the past month and close to 55% had posted content on their social media sites. However, based on the findings of this research, there seemed to be a large diversity on the patterns of use from one social media site to another. Facebook was the social

media choice for personal use, being the most visited site in this category. YouTube and online videos consist of more than half of the total usage of social media for online and classroom videos in teaching. The study also established the difficulty and concerns among teachers in the use of social media. Most teachers seemed to be concerned with the time it takes hence they considered it to be time consuming.

Their main concern on the use of social media for teaching and lecture delivery to students being privacy and integrity. More than 70% of those interviewed considered the lack of integrity among student submissions and over 60% reported privacy concerns as an important barrier to the application of social media in education. These concerns notwithstanding, however, there was widespread believe among teachers that social media and networking sites are an invaluable tool for teaching and learning. The majority report of the respondents identified online academic YouTube videos as the most important educative tools that were in use for education purposes by the students and opined that social media is essentially relevant to teaching and considered social media sites as having great potential to be the critical drivers of collaborative learning.

Cadag (2017) carried out a research to try and establish the influence of student-centred learning on the performance of students in colleges and universities. The research much focused on the interaction between the student and the course content, tutors, and learning. Interactive learning via the use of social media was the primary theme of this study; serving as a potential vehicle to deliver a richer and more enhanced learning experience for our students. They found out that social networking: Increased students engagement and motivation with the study material being delivered in a much more "fan" way, enhanced the interaction between the student and the lecturer/teachers (Kalasi, 2014). According to the study, social networking also has the capability to

accelerate information retrieval and sharing; eliminate the barriers for self-expression by improving interaction between the involved parties. Social networking also has the capability to provide students with the essential skills necessary to empower them survive in the 21st Century and which could support their employability and enhance their levels of satisfaction (Kevin & Kibaara, 2016).

Blankenship (2011) points out to the fact that social networking sites are not just used for communication, but rather, they are used in the delivery of education content too. He opines that Universities and colleges are taking the necessary action by providing the necessary platforms and resources including social intranets, digital learning content, locations labs/classrooms and lecture halls as well as personnel who can be able to induct students into these systems and guide them in their usage (Ganis & Kohirkar, 2015). Some or all the concerned activities could be on a one on one basis, but majority of them are also mediated using social media technologies, including digital peer assessment, online discussions, and collaborative work. Blankenship further opines that 30% of today's learners' use networking sites and the Internet to communicate among themselves, sharing posts, exchange of notes as well as holding class discussions. The study further revealed that social media tools support educational activities by enabling interactive collaboration, resource sharing and participation where possible amongst them and also with their lecturers (Kumar & Nanda, 2019).

Over the last decade, teaching practices have evolved in higher education with a greater emphasis being now placed on student centred learning pedagogy. This has largely been revolutionized by the growth and application of digital media and content in place of the traditional teaching tools and methods (Selwyn, 2012). This has had several benefits to the learners; not only do digital tools make education delivery much more

interesting, but more content can be delivered in an easier way and this content is much easier for the students to assimilate, process and digest. It becomes therefore easy to conclude that social media content adds more value to the learners and learning environment as opposed to the traditional modes of education delivery (Collin et al., 2011).

Further, there has been an increase in the expectation of social media and digital systems in terms of the role that they can play in improving the quality of the education offered. It is no secret that expectations on what the computer can do has always been high, hence the same challenge faces social networking sites today especially in harnessing effective learning. Several arguments have been made that there still remains a major disconnect between the promise of social media and digital technologies and our ambition for interactive learning through these tools visa vis the realities of education (Dunn, 2012). Thus, it is important for educators and technologists to place a balance between these facets of today's realities.

According to the Economist Intelligence Unit (2008), technological innovations which had for long been the key focus of educational research at the university and practitioner level were now influencing the approach and mechanisms that learning institutions were carrying the same research as well as how they were delivering content to their students. For academic institutions which are charged with equipping their graduates with the right knowledge and skills for them to compete effectively in today's knowledge driven economies, the capabilities offered by information technologies and the merging of the same with education offer greater promise (Kalasi, 2014). Distance education for example has been made easy and more interactive through the deployment of complex learning-management systems and the chance

interactively engage with researchers from globally being some of the benefits that universities have been tapping and which can never be ignored (Brick, 2012).

The capability to deliver lectures via video-conferencing makes it even more interesting. But still several challenges exist. With all the benefits that it brings, social media technologies remains disruptive innovations and in this case expensive innovations (Brackin et al., 2019). Faculty members used to teach in one way may be loath to invest the time to learn new methods, and may lack the budget for needed support. Yet despite this, they have no alternative otherwise the wind of change will sweep them off the classroom environment.

Online education programs as well as distance learning have become the norm globally and gained a firm foothold across universities around the world (Moore et al., 2011). What was once considered a limited channel for the delivery of educational content has rapidly become the main lifeline of several universities and with the reducing funding from governments, universities have turned to digital recruitment of students and delivery of education to their global network of students (Ahmed, 2016). This has enabled a wider access to education as well as leading to drastic reduction in the cost of higher education, in the same way, new markets for content as well as an expanded revenue base for academic institutions has been created. This has fundamentally altered the structure of educational systems globally with more focus now being placed on the preparation of better content for students

Emerging digital media technologies are also affecting other aspects of university and college administration. Social media and digital networking tools are helping to build connections with alumni and support career growth and identification activities (Moran et al., 2011). Digital marketing campaigns have expanded the reach and success of

recruiting and fundraising efforts, have driven down the cost of these campaigns compared to traditional means. In the same way, local institutions now have a global reach with minimal cost. Automated self-service programmes as well as online help systems have helped cut down on the associated administrative costs and requirements, streamlined course registration and enhanced academic life (Raspopovic et al., 2017). Further research on the growth and assimilation of social networking sites and media in education have opined that just like any other organizational information systems, the role of social media in higher learning has undergone through three major phases (Anderson, 2013); Development, Acceptability and Governance.

Deloitte (2012) identifies the capabilities of social media and summarizes them as shown in Figure 4. On education, the report notes that social media is a critical tool for integrating social capabilities within employees and student's lifecycle that encourages continuous learning. They also argue that social media enables interaction and iteration to foster collaboration and innovation.

Applications like schoology.com have been used as examples of how social media can be applied in higher education. For distance learning for example, social media has been exploited to offer fast and reliable communication to students (Kane et al., 2015). Not forgetting that these capabilities came at astronomically low costs or even zero costs at all (Umezuruike & Onwodi, 2015). Regular students can be linked up with distance learning students to easily foster discussions and deliver content to them all. And with the capability of social media to deliver real time communications, chat room features have become appropriate tools that can be used to extent lessons outside the classroom distance learning (Mafenya, 2016).

There is no question therefore that social media has greatly impacted our society in many ways. Every sector of the economy seems to be on the lookout for major transformations being brought about by social media. On education, major changes in the future of the global education system lie within the developments in social media. By helping break regional boundaries, social media will in the future have a great influence on the standardization of the education standards across states and governments (Falloon, 2020). This will have ripple effects on the quality of education offered such that universities across the world will shift their focus to offering quality education through social media and digital platforms to enhance their competitive position. It remains the responsibility of individual institutions to choose the direction to take as regards social media integration within their education systems. But of importance to note is that despite the issues being raised, social media offers a great deal of benefits to learners, lecturers and to the overall institution.

2.5 Social Media and Higher Education

Over the last few years, demands and expectations on higher education have grown globally. The rising recognition on the role of research and innovation on the global economies have pushed governments and research institutions as well as students to demand more in terms of quality and content from these important education institutions (Linke & Zerfass, 2013). Even more, anticipations on the part of students and their close relative are great driven by the open society created by the Internet and social media that permits them to interact and part ideas with their age groups across the world (Delello et al., 2015).

The emerging changes in funding and enrolment in higher education has forced institutions of higher learning to find more innovative ways to compete effectively

while delivering quality education to students (Mafenya, 2016). The reduced funding by states has forced institutions to reconsider their operational and strategic models by integrating marketing strategies that can help them remain more competitive and be capable of maintaining economic viability (Kundishora, 2010). This means that marketing theories that were more present in the business environment are now being integrated into HIEs for them to gain a competitive advantage.

These are some of the reasons that have made social media marketing an ideal platform for marketing by universities and colleges with the drive to tap onto their prime market. There are several other reasons that make social media marketing and presence by universities and colleges an ideal fishing environment for student numbers (Bradley & Bradley, 2015). The cost of advertisement on social media sites is relatively low and social media advertisements have been proven to reach many targeted audiences. The ability to customize these advertisements on social media to target a given age group and even a specific geographical location makes social media presence a worth investment for institutions of higher learning. There is also proven evidence that youth devote more time on social media sites as opposed to other media (Kumar & Nanda, 2019).

Although there is broad agreement on the importance of social media for the society and learners, there lies a huge resource to still tap and foster academic achievement in institutions of higher learning (Collin et al., 2011). Adoption and integration of social media is therefore applicable for both students and their tutors for them to be able to work collaboratively after school. The major advantage of social media integration into collaborative learning is the beauty and fun that is generated if used effectively and correctly. For the sake of this research, social media generally is used to refer to all

related social Internet sites. In addition it should be noted that a variety of resources and tools exist for social networking which if well applied can be able to enhance learning skills and make classrooms more interactive and knowledgeable (Ahmed, 2016).

According to (Al-Rahmi et al., 2015), there is widespread evidence that social media and creative learning are usually supported by collaborative learning. Collaborative learning involves the connections and interactions of the students and the curriculum such that social media supports the extension of the classroom environment as only a small part of learning takes place in the classroom (Yildirim & Şimşek, 2015). It makes it important thus for education stakeholders to evaluate and determine effective approaches and methods that can enable in the integration social media in order to enhance collaborative and creative learning. In this case, social media can be effectively used to enhance student creativity and in-depth exploration of the curriculum (Oh, et al., 2015). Social media also provides various alternatives that can be applied in the generation of diverse products for learning institutions especially via the use of blogs and YouTube and it also has the capability to enable the exploration of content materials using emerging tools and capabilities (Valos et al., 2016). By satisfying the creative learners' need with collaborative learning, students will therefore be capable of balancing their individual and peer connection, and this will in the long run result to idea creation (Levin & Kojukhov, 2013).

2.6 Existing Social Media Integration Frameworks

Several authors have delivered rich content on the benefits and the positive impact of social media and learning in institutions of higher education. Supportive frameworks for integration of social media for collaborative learning have taken effect in different parts of the world that born fruits on academic achievement (Josefsson, 2013); Some of

the existing research frameworks in literature which can be considered essential for research on the integration of social media for collaborative leaning are discussed.

2.6.1 Social Media Measurement Framework

The social media measurement framework was proposed by (Etlinger & Li, 2011). The framework defines four key components of social media measurement namely: strategy, metrics, organization, and technology. It proposes that the key starting point for adoption of any new technology in an organization is strategy in that the organization must first define what it plans to accomplish and the approach it will take to achieve its objectives. After the strategy is laid out, the organization must define checkpoints of success, that is, how it will measure progress of the implementation of the technology in question (metrics). The third critical component is organization- this involves the internal assessment of organizational factors and structures that will be critical in influencing the success of adoption. This can be an assessment of the organizational readiness for the given technology. It looks at the resources available within the organization to support adoption and tries to assess how capable they are to fully support the adoption process; if these resources are not fully available, then the question on whether the organization can be able to acquire the same must be answered. This may also include the availability of personnel and skills necessary to support the adoption process. Finally, the final component is technology. This involves the selection and implementation of the right tool that fits within the organizational requirements for adoption.

2.6.2 Social Media Framework for Continued Engagement

The framework was proposed by Kumar and Nanda (2019), it considers the various social media platforms (Facebook, twitter, YouTube and Pinterest in this case) and considers how each of them can be incorporated into the education matrix as well as identifies the point of incorporation of students into the system. The framework specifies how students can participate in responding to fast answer questions (FAQ) via social media sites, raise queries using their accounts on social media accounts as well as receive necessary notifications through their group accounts and inbox. This online interaction is meant to enable potential students feel a sense of belonging even before they join the university. In general, the framework simply focuses on student engagement and not the integration component thus its applicability to assist institutions of higher learning integrate social media for collaborative learning does not come out as one of its objectives.

2.6.3 The Social Media Governance Framework

The Social Media Governance framework was developed by Linke and Zerfass (2013). The framework offers a list of aspects in line with a broader understanding of implementation and regulatory frameworks. The framework defines the key regulatory components as consisting of guidelines, performance indicators (metrics), and clear-cut responsibilities as the most important factors that are essential for the successful social media integration process and success of social media usage. The research concludes that organizations that want to avoid activism and being controlled by the growth of social media communications need to invest more resources in the structural development of their internal social media communication systems and ensure close alignment with the internal aspects of the firm (Raspopovic et al., 2017). This

framework is thus only limited to the governance aspect of the social media integration process and thus cannot be fully considered as a framework for the overall integration of social media.

2.7 Social Media Support Infrastructure

Social media support infrastructure looks at the infrastructural requirements necessary to support social media usage (Productivity Commission, 2016). Without any of these key infrastructural components, it would be technically impossible to implement social networking sites or even access them. Hence, these infrastructural requirements are the key components through which social networking sites exist (Lin et al., 2014).

These components include social intranets (Lundgren et., 2012), computer networking and the Internet (GSMA Association, 2014; Moore et al., 2011), pervasive technology (Ayman, 2013 ;Cisco Systems Inc., 2014 ;Kevin & Kibaara, 2016) as well as general computer hardware (Cisco Systems Inc., 2014).

Bariu (2020) conducted a study to evaluate the state of ICT infrastructure in Kenyan secondary schools. His study employed descriptive survey research design and collected data through questionnaires, discussions and interviews. The findings of his study indicated that, the state of ICT infrastructure is way below the global standards. The findings also found little investment on ICT infrastructure. However, the study indicated that, through the availability of ICT infrastructure, teachers and learners have learned new ideas.

Study by Chun and Tsai (2015) on the role of ICT infrastructure in classroom's done in china indicated that availability of ICT infrastructure determines uptake of technological ideas and studies. The findings of the study indicated that the proportion of ICT in schools helped courses in schools and counties and that, use of multi-media in class especially in rural; setups can be linked with infrastructure.

2.7.1 Social Intranets

Concurring with prior investigations, one of the most excellent ways for organizations to flourish in today's computerized world is to construct and support genuine inside communities. Enabled communities, in which the larger part of your employees is collaborating and communicating in an Internet environment, are quickly getting to be the soul of each organization. Within the future, the organizations that builds and supports worker communities with the correct supplements will find how much less demanding it is to react to exterior showcase changes effectively and viably (Baccarella et al., 2016).

By creating dialog-driven networks in their social intranet, learning institutions can become more efficient and responsive to the needs of their students and staff Baccarella et al., 2016). With the rising levels of adoption of digital devices and media, the need for efficient use of internal organization networks to reduce on cost and offer better services to employees, students and potential students has grown. Social intranets are an important step in this process (Dörfel & Beuthner, 2016). Social intranets optimize organizations for the system economy of the data and learning society, they can support worker dedication and make organizations progressively alluring to more youthful jobholders who have grown up with current types of communication (McGrath & Freed, 2012). The ever-increasing number of organizations are perceiving these advantages and utilizing them effectively. This research furnishes you with an understanding into the universe of the social intranet. It gives you data in regards to the focal viewpoints which you ought to consider on the off chance that you'd like to put new life into your intranet.

As cited by Price Water Coopers (PWC, 2014), a study carried out by Communications and Management and United Planet titled “Internal communication and social intranet”, found out that social intranets which are gaining much acceptance in organizations. The study involved 196 specialists, equivalent to 90 percent of the organizations utilizing social intranet. The respondents were approached to give their perspectives on the utilization and estimation of their social intranet. The findings indicated that, 73.1% of those addressed utilize an intranet or social intranet. A proportion of 25% indicated that they intend to execute such an intranet sooner.

Another investigation completed in the (US) by Ward (2011) discovered that the inclination of informal communication was a direct result of its relative minimal effort with most associations saying that they spent pretty much nothing or nothing on their venture in online networking instruments. Numerous associations that execute web-based life apparatuses spend under US$10,000: 47% had spent under US$10,000; 30% have spent somewhere in the range of US$10,000 and US$99,999 while 23% have burned through US$100,000 or more.

2.7.2 Computer Networks and the Internet

According to Wellman (2001), computer networks are integrally social networks, connecting people, organizations, and knowledge together. Computer networks integrate devices together to enable them to communicate with each other while data communication is the transfer of data between electronic devices. This communication is supported and controlled by the five basic principles of data communication which are: hardware, software, databases, procedures, and people. Computer networks are social institutions. These social elements need not be studied in separation but together must be combined into everyday lives. The growth and expansion of computer

networks has enabled the collection and processing of data as well as provided the ease of sending this information across vast geographical environments and at minimal costs. This in turn has afforded a turn to network people within social dynamics that are loosely bound and sparsely knit. The Internet has in so many ways raised the people's social capital, growing contact with friends and relatives who live nearby and far away (Mergel, 2016). With these incredible innovations in the data communication world, the need for new apparatus to help people navigate and share knowledge has been overly demanding and complex, fragmented but with unquestionable benefits in every sector of the economy (Rajalampi, 2011).

2.8 Social Media Policy and Strategy

In an innovatively determined and media-soaked world, natives (women/men and young men/young ladies) need skills to successfully draw in with media and other data suppliers, including those on the Internet. Media and information literacy (MIL) arrangement and system upgrade the formation of information driven, comprehensive, pluralistic, vote based, and open societies (United Nations Educational, Scientific and Cultural Organization [UNESCO], 2013). Access to this data is additionally a privilege for all.

Online networking arrangement and procedure are vital for the survival of present-day administration and worldwide citizenship in the advanced world. Without an approach and system, disparities are probably going to increase between the individuals who have and the individuals who don't have approach data and media, and appreciate or not opportunity of expression (UNESCO, 2013). Extra disparities will rise between the individuals who are capable and incapable to examine and fundamentally assess and apply data and media content for basic leadership.

New media and data innovations, while offering more noteworthy open doors for new sorts of natives' commitment, fixated on opportunities, and killing imbalances, likewise offer ascent to issues of wellbeing, security, and protection. They further make a strain between the need to engage or to secure residents. This requires the requirement for associations to create fitting systems and approaches to help the appropriation, access, and utilization of data advancements inside them.

On account of Internet based, the advantages of democratization of data are huge. Furthermore, significantly progressively basic is the development in portable innovations which have turned online networking to be considerably increasingly ground-breaking as a result of the 24-hour access and accessibility. Developing reliance via web-based networking media as an apparatus for data and news sharing has along these lines developed. Unavoidable issues anyway still stay on how best this data can be tapped by enterprises and learning institutions to support their core objectives. In the case of enterprises, most global giants have realized this potential and exploited it maximally so far. The establishment of social media brands by global giants have opened new frontiers of competition and branding, created entirely new forms of businesses, and enabled real-time interaction of enterprises and customers. Not forgetting the low cost of advertisement on social media.

Education institutions have not been left behind too. From offering interactive channels through which students interact with others and on which university and college managements interact with students, social media has had fundamental influences on learning. Several solutions and applications have been developed that exploit the role of social media to enhance learning.

Despite all these benefits, the question of social media governance has been a subject of debate in many board rooms and conferences. How do schools maintain control over an Internet resource that is mainly un-policed? Is there a growing emergency to police social media? How do we control what students can access from the Internet and at the same time ensure we don't limit their right to freedom of information? These are some of the questions that need to be answered to provide direction to the adoption of social media in E-learning. Even with this in mind, every institution has a fundamental right to develop strategies and policies to support usage of information technologies within (Baccarella et al., 2016).

The purpose of a social media Policy is to regulate and provide guidelines on the proper use of an institution's Corporate IT facilities by students and staff in their day to day educational routines (Bloxx, 2013). It regulates how teachers and students can be able to apply social media for their intended purposes without infringing legal requirements, privacy policy and without creating unnecessary risks to self and to other students or the institution. It also seeks to protect against the risk of virus/malware attacks, theft and disclosure of information, disruption of network systems and services (Ministry of Education, 2012).

As social media is an Internet resource, having a social media policy is fundamental to sound risk management practices and in order to regulate access and maintain security of the institution's; Internet/intranet sites, Email, Corporate Systems, Corporate hardware, and privacy of users.

2.8.1 Social Media Governance

Social media is an enormous focus group of dissolute consumers offering up their thoughts for free (Wright & Hinson, 2010). As the use of social media by companies becomes vital, improving social media governance is key in many firms. Though social media involves legal issues, its development and management within a business is frequently motivated by opportunity rather than risk. This can leave in-house counsel fielding the consequences of decisions rather than making them (Kemp, 2015). Social media governance priority is among four critical pillars of social media (Linke & Zerfass, 2013). These four pillars are, Priority, People, Policy, Process.

The role of governance in technology adoption to education system has been found fundamental to all the stakeholders. According to Kapur (2019), the active support to social technology adoption is key in ruining of institutions both in class and for administration purposes. Thus, the spirit of technological promotion by the top management is an indication that efficiency through technology is guaranteed.

Chhikara (2015) also supports the idea of governance in education system to support innovations in science and technology. Chhikara (2015) provides that, a good governance in in a position to generate suitable policies that will promote innovation in technology. He further insists that, good governance supports implementation of innovative technologies that will aid service delivery in institutions. This argument is also supported by Murgor (2015) that governance is entitled into smooth running of universities that will help the institutions of higher learning widen their learning though use of ICT.

2.9 Social Media Exposure and Collaborative Learning

Social media harbours potential power in facilitating learning in colleges and universities through collaborative learning (Brown, 2012). Social media has several ways through which learners can collaborate such as content communities, collaborative projects, blogs, and social networking sites. The UNESCO policy as documented by Kommers (2011) supported use of social media and had a recommendation on classroom experimentation through social media learning.

Al-Rahmi et al. (2015) in their journal "The Role of Social Media for Collaborative Learning to Improve Academic Performance of Students and Researchers" provide key suggestions that, exposure and usage of social media is a key driver in determining the success of collaborative learning and academic performance in genal. The exposure in this sense refers to the frequency, access, and interest on social media in line with collaborative learning.

Shana (2012) did a study on social media usage among students. The study revealed that almost a third of the students had social media accounts that they used for academic purposes while the two thirds used social media for chats and making friends. Quan-Haase and Young (2010) on their study established that use of social media such as Facebook has a positive link with academic performance. This was after Paul et al. (2012) suggested negative effects of spending much time on Internet in relation to academic performance.

2.10 Conceptual Framework

The conceptual framework for this research is shown in Figure 5. The framework is centred on the key factors that this research considers critical to the integration of social media in collaborative learning based on our literature review. Popularly, Social media support infrastructure, social media support structure and social media governance are the key ingredients for the successful integration of social media for collaborative learning.

On social media support infrastructure, this includes the availability of computers in institutions or even the encouraged usage of Bring Your Own Device (BYOD) where computing infrastructure is a challenge. Other infrastructural resources include the availability of fast and reliable Internet connectivity, institution-based social Ethernets and supporting computer networks.

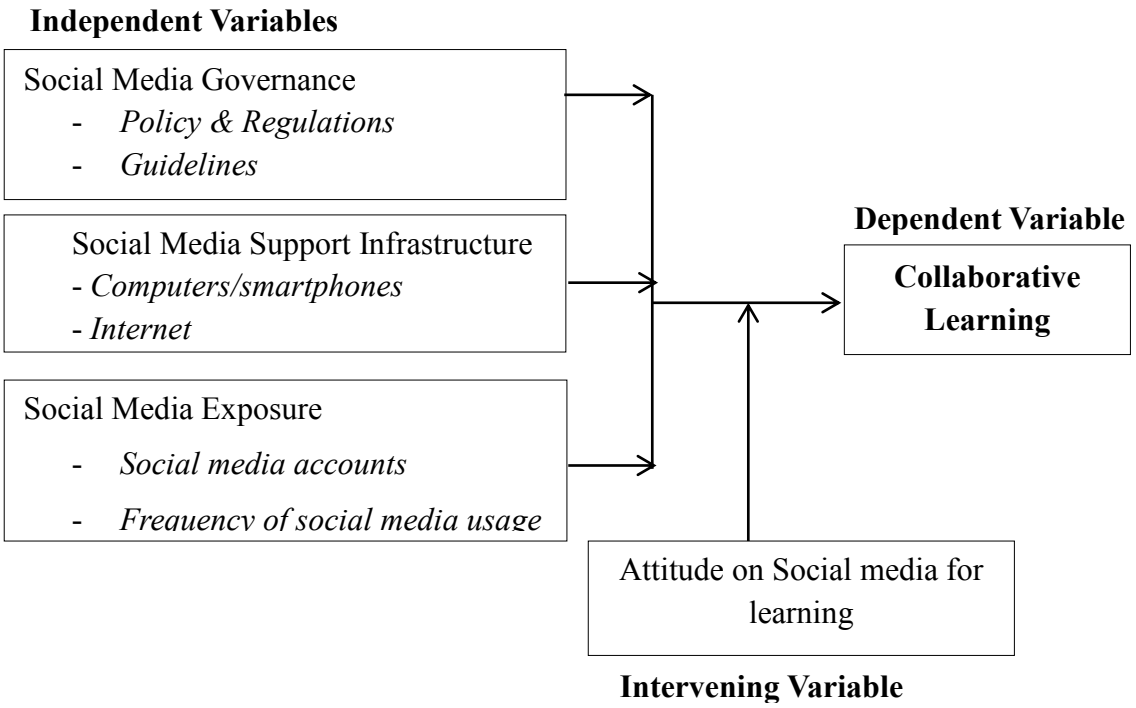
Social media support structure involves allowing students access to social networks using institution-based computer resources, the availability of social media support strategies and metrics to determine the influence of continued usage of social media to support learning; identifying the benefits as well as neutralizing the disadvantages and risks of social media adoption in institutions.

Social media governance involves every approach that must be put in place to govern access and usage of social media within the institutions. These measures may in cases restrict what can be accessed using institutional resources as well as what the institutions may define as essential in supporting learning activities hence limiting themselves to these sites. It may also involve mechanisms to identify digital devices

accessed via social networks within learning institutions and any policies regarding usage that may be put in place.

Figure 2.3

Conceptual Framework



2.11 The Positive Impact of Social Media in Education

According to Yates and Paquette (2011) Internet-driven learning has become an influential instrument in today's learning environment and its impact has been proven unquestionably positive on digital learners. It provides personalized yet collaborative learning capabilities as well as encouraging self-motivation. Alexa (2012) suggests that several opportunities for social media today lies in the capability to sift through social media data and identify market opportunities that are inherent in the predicting of behaviours and tastes/preferences of social media users. She suggests that for educationists, the benefits of social media integration into education practices lie in the

capability to customize the learning content especially for distance education students and the benefits that exist in bringing students located in several different geographical legions together into a single virtual community (Martin, 2015).

Social media presents an opportunity for learners and researchers to easily share their content with others. By eliciting topics of interests and providing content to users based on perceived interests, social media can enable contribution in research by parties that are mutually interested in given research areas hence delivering more accurate and representative findings. They continue to opine that social media promotes active learning by enabling students' easy access and communication to their peers and instructors. More, social media creates a social link between students by enabling them to discuss topics of interests in a free environment away from any roles that would dictate such meetings if they were to exist in a face to face environment. This has the potential to improving communication between students and between students and their tutors. Levin and Kojukhov (2013) discourses that social media for collaborative learning leads to improved student participation especially for students who could otherwise have been intimidated by the lecture-hall environment.

2.12 The Disadvantages of Using Social Media in Education

A study by DeDominicis (2013) tries to explain the effect of social media on student's performance. The study concludes that student's overall grades can be affected negatively by the usage of social media tools and viewing lots of sites. The study however fails to explain the basis of these conclusions and was highly criticized by Oh et al., (2015) for this. Another study by Ganis and Kohirkar (2015) was conducted to find out the relationship between social media usage and classroom performance. The results of the study showed that 63% of students who scored high grades spent less time

using the Internet and the social media sites. Those students who performed poorly, majority of them said that they spent additional time on Facebook and other social media sites and as a result this led to their dropping of performance. In addition, it was considered that some learners are not using the social media systems and the Internet as well as e-learning systems in proper ways, this was thus considered to have contributed in declining performance in academic work and the failure to achieve the intended objective of most learning systems.

Seaman and Tinti-kane (2013) opines that for social media to be effectively used in the classroom, universities certainly need to develop guidelines for the use of social media. In addition, instructors must practicality with social media technologies, protocol, and terms of use before presenting them into the classroom context. noted that using Social media is inherently troublesome to the education process as some of the students use it for other purposes other than for learning process during class time. Britl (2012) stressed this by reporting a belief among teachers that continuous use of social media disadvantaged their student's attention spans and hindered students' ability to write and communicate face to face.

2.13 Gaps in Literature

There is a wide acceptability of the adoption of social media globally as a tool for driving business performance, however, researchers remain divided on the inherent benefits of the adoption of social media in education practices (Anderson, 2013; Collin et al., 2011; Hall, 2014; Levin & Kojukhov, 2013). It is however clear that the potential for social media integration specifically in supporting collaborative learning has remained unexploited (Yildirim & Şimşek, 2015). This limited research in the integration process is driven largely by the existing divisions regarding the position of

social media in the school environment which has hindered the development of supportive integration frameworks (Productivity Commission, 2016).

There is no doubt about the fast-growing community of distance education students who are much reliant on the Internet for the delivery of content. With these developments, several universities have continued to build institutional platforms for delivery of content to their students. In some ways, these platforms have been described as “boring” by their users hence creating a negative attitude by the students. This has largely been because these students already have several networking sites with which they can compare them with.

Questions therefore remain on how best institutions of higher learning can be able to bring the public aspect of social media sites into their educational intranets/platforms to lighten them a little bit and encourage student participation via such sites. Even more, there have been questions about how public social media sites can be made more valuable to the education system, thus, predictive analytics has severally been discussed within literature as a capability that can be tapped into these sites to maximally benefit education institutions and students through social media sites.

Some educationalists have noted that social media is not made-up to be used in the classroom. Kirschner and Karpinski (2010) noted that using social media is intrinsically disruptive to the education process as some of the students use it for other purposes other than for learning process during class time. Castro-Romero (2015) emphasized this by reporting a perception among educationists, teachers, and school administration that frequent use of social media negatively affected learners’ attention and at the same time affected the ability of students and other social media users to effectively communicate with each other outside the realm of social media.

Researchers have pointed out the benefits that come with a guided integration of social media within the education system. However, the researchers have not given a framework that can be adopted to support successful integration of social media for collaborative learning. Therefore, this research proposed a framework that mitigates the factors that influence successful adoption and use of social media to support teaching and learning in institution of higher learning in Meru County.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the methods, tools, and instruments which the researcher used to collect data for analysis and presentation.

3.2 Research Philosophy

Choosing a philosophy is important because it helps in determining the general strategy of research to be implemented. Philosophy in research work exists in three paradigms which are interpretive, critical inquiry and positivity. This study embraced positive philosophy because quantitative research was used to explain social media integration into collaborative learning.

3.3 Location of the Study

This study was conducted in Meru County, targeting institutions of higher learning. The rational for choosing Meru County is, Meru is among the counties with many institutions of higher learning. Thus, forming a suitable location for conducting this study.

3.4 Research Design

The researcher employed descriptive survey research design. This design tries to find out sure facts concerning the current occurrence. According to Kothari (2004), descriptive survey uses the sample data in any investigation in which it is applied to define and describe what is existent or non-existence on the current status of a phenomena under studied. The survey design has been particularly useful in collecting

statistical information on the knowledge and attitude of lecturers and students towards adoption and usage of social media to support teaching and learning in the classroom. Using the descriptive research design, the researcher used descriptive quantitative approach in data collection and analysis. In this study, the fundamental emphasis is on the context and reflections, attained through the data collection procedure.

3.5 Study Population

The research was carried out in institutions of higher learning in Meru County (based on technical and teacher's training colleges). There was a total of 11 institutions of higher learning namely; Meru teachers' college, Egoji teacher's college, Meru technical training institute, Nkabune training institute, Kiirua technical training institute, Kenya Water Institute, United Africa College, Kenya Methodist University, Chuka University, Cooperative University College of Kenya and Kenya Medical Training College. The study population include lecturers and student leaders, whose total number was 150. Therefore, the target population was 150.

3.6 Sampling Procedure

It is important to sample out the target population to identify a representative sample that can be able to provide adequate evidence to support the objectives of the research. According Saunders et al. (2012), sampling can really be more perfect than studying the entire population because it permits researchers to have control over the subjects.

Krejcie and Morgan (1970) Table of sample size determination was used to obtain 108 sample size from the population of 150. Stratified sampling was also used to group the institution population into two (2) main categories; lecturers and students. From the

stratified sampling, lecturers were 17 while the students were 91. Random Sampling was employed to select the actual 108 respondents.

3.7 Instrumentation

This study collected data using a structured questionnaire. It was administered to all the Teachers and Students in colleges sampled from the population. For simplicity of filling the questions, the questionnaire used a Likert scale to measure different statements and assertions regarding social media and learning.

3.8 Methods of Data Collection

After the pilot study was complete and the necessary modifications made on the data collection tools, the researcher proceeded to collect data. Before data collection, permission was sought from the local security administrators as well as from the management of the target institutions. A list of possible respondents was set up by the researcher and the respondents identified and a brief introduction done to each of the respondents or in some cases groups of respondents. The respondents were then asked to sign the non-disclosure agreement form before proceeding to fill the questionnaire.

Once completed, the filled questionnaires were picked by the researcher and sorted out to identify any that had issues before the data was coded for analysis.

3.9 Operational Definition of Variables

The variables for this study are divided into two main categories which are: Dependent variable which is the collaborative learning (dependent variable) is influenced by the institutional governance, technological infrastructure and social media exposure (independent variable).

3.10 Validity and Reliability of Research Instruments

3.10.1 Pilot Study

A pilot study was conducted in Chuka University. The purpose of the study was to provide a trial run for data collection procedure and tools. The institution targeted in this case were purposively chosen by the researcher but did not form part of the final sample. The questionnaire was distributed to 18 respondents by the researcher and the filled questionnaires were then collected from the respondents. A total of 17 questionnaires were deemed acceptable and one was rejected. The data was then analysed and synthesized.

Based on the results of the pilot study analysis, the research instrument was modified where necessary to ensure that the questionnaire accurately and adequately measured the variables as expected by the researcher.

3.10.2 Validity of the Instrument

The validity of a research instrument is the degree to which the instrument; an experiment, test or any determining procedure measures what it is planned to measure. To ensure validity, a draft survey tool was developed from the variables identified by the research objectives, and then the researcher reviewed the instruments with peers and the supervisor before doing a pilot test.

3.10.3 Reliability of the Instruments

It is important before carrying out data collection to establish how reliable the data collection tools for the research are. This was done using the Cronbach alpha statistics. Cronbach alpha statistics is used to access the internal consistency of the data collection instrument. The coefficients of this tool range between 0 to 1. It is considered that a coefficient of a scale above 0.7 is acceptable and represents a strong correlation between the variable and the metrics of the variable (Heale & Twycross, 2015). The results of the Cronbach Alpha statistics are presented in Table 3.1.

Table 3.1

Reliability Results

Variable	**N of Items**	**Cronbach's Alpha**
Governance	6	0.720
Technological Infrastructure	6	0.835
Social Media Exposure	6	0.750
Collaborative Learning	5	0.860
Total/Average score	**17**	**0.790**

The reliability results for social media governance were 0.720 above the acceptable level. The Cronbach alpha statistics for Technological infrastructure was found to be 0.835. This was therefore considered to be a good measure for the variable as it indicated a strong internal coherency between the independent variable and the research questions.

The Cronbach alpha statistics for social media exposure was 0.750. This indicated a strong coherency between the variable being tested and the metric questions. Collaborative learning on the other hand had a Cronbach alpha coefficient of 0.860. In general, the overall number of items was 17 with an average Cronbach alpha of 0.790. this coefficient indicated that the questionnaire was reliable.

3.11 Methods Data Analysis

After the data collection, the data was coded and entered SPSS (Statistical Package for Social Sciences) version 22 for analysis. This also involved data cleaning to identify questionnaires that were incomplete or not properly filled. Thereafter, the data was coded and then analysed to provide meaningful statistics as per the expectations/criteria of the researcher using tables, totals, frequencies, graphs, charts and percentages.

Correlation and regression analysis were used to test the relations between the study variables. The regression model used was;

The regression model took the form of

$$Y=\alpha+\beta_1 X_1 +\beta_2 X_2+ \beta_3 X_3 + \varepsilon$$

Where,
Y (dependent variable) =Collaborative learning
α = Constant
β_1-β_3 = Regression coefficients
X_1 =Institutional governance
X_2 = Technological infrastructure
X_3 =Social media exposure
ε = Error term

Significance was gauged at 95% confidence level.

3.12 Ethical Consideration

A brief introduction was done to the participant on the importance of the research and assured of their right to withdraw at any given time from the data collection process and that participation in the research was fully voluntary. It was therefore considered important that the researcher and the respondents sign a non-disclosure agreement form to bind the researcher to protect the privacy of the respondents and to guarantee the specific purpose for which any data given by the respondents would be used for. Before starting the data collection, the researcher explained what she will be asking the respondents who will be involved and revealed to them the entire research instrument. This help not only in achieving informed consent, but also eased the mind of the research contributor, reducing the potential for distress, which is a significant basic norm of research principles.

Personal details about the respondents such as their name and contact details were also not gathered by the researcher. This was meant to ensure that no specific information on the questionnaire can be directly or indirectly linked to the respondent or used to single out any respondent. A copy of the NDA form is attached within the Appendices of this report.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

This chapter covers data analysis, and presentation of the data. The analysis and presentation were undertaken in line with the major objective, framework for integration of social media for collaborative learning in institutions of higher learning in Kenya.

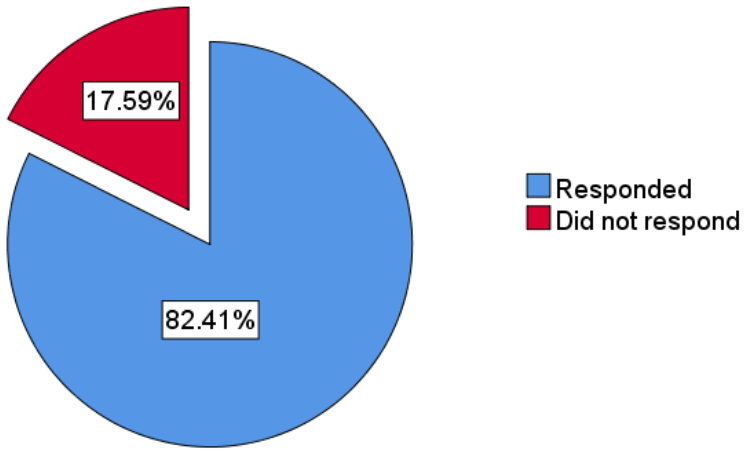
4.2 Demographic Data

4.2.1 Response Rate

The sample size of this study was 108. The researcher administered questionnaires to all the respondents and the response rate was as shown in figure 4.1.

Figure 4.1

Response Rate



Out of the 108 questionnaires, a total of 89 were fully completed while 19 were blank and other not full completed. This formed a response rate of 82.41%. The response rate was deemed adequate for analysis in line with Mugenda and Mugenda (2009)

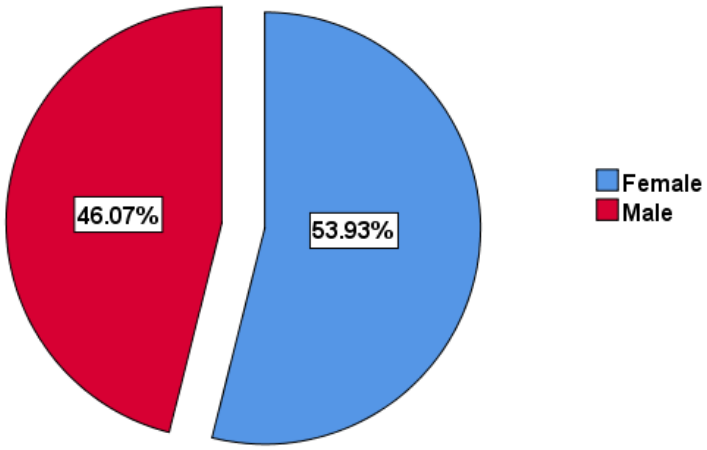
recommendation that a response rate of 50% and above is enough to analyse the study phenomenon.

4.2.2 Respondents Gender

A proportion of 53.93% of the respondents were female while male respondents averaged 46.07% as shown in figure 5. The representation of the two genders was very close in terms of percentages. Therefore, it was deduced that, there was fair representation of respondent's gender in this study.

Figure 4.2

Gender of the Respondents



4.2.3 Respondents Age

Majority of the respondents were aged 18-25 years as shown by 53.9%. A proportion of 21.3% represented respondents under the age category of 26-35 years while 18% represented those within the bracket of 36-45 years. Respondents aged 46 years and above were 6.7% of total respondents. Given that this study was conducted in institutions of higher learning, the age representation is fair since majority were students whose ages are between 18-35 years.

Table 4. 1

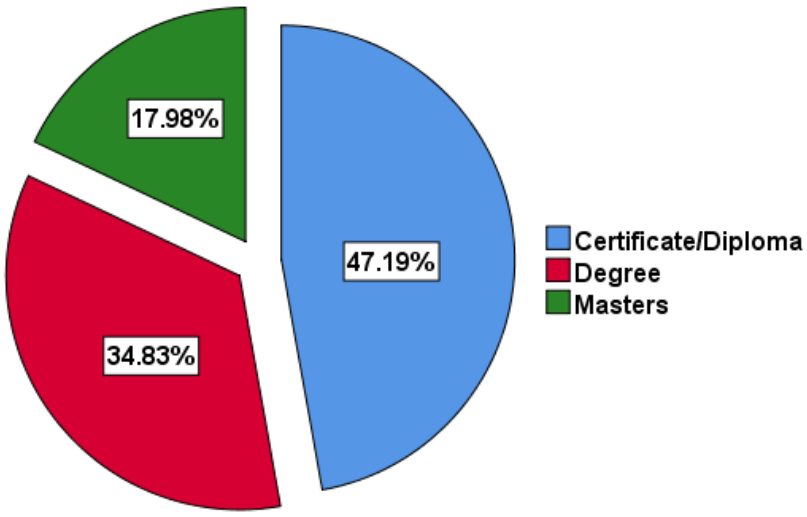
Respondent's Age

Age Category	Frequency	Percent
18-25 Years	48	53.9
26-35 Years	19	21.3
36-45 Years	16	18.0
46 Years and above	6	6.7
Total	**89**	**100.0**

4.2.4 Academic Qualification of the Respondents

Figure 4.3

Education Qualification



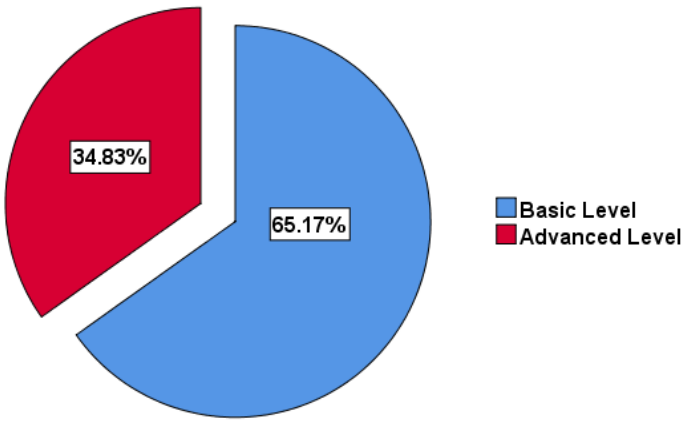
Analysis of academic qualification indicated that 47.19% were holders or undertaking certificate and diplomas while 34.83% were degree holders or students. Only 17.98% were master's holders or students. This analysis indicates that, several categories of

level of education were represented and that the respondents were knowledgeable enough to understand the study objective and research instrument.

4.2.5 Level of Skills in Computing

Figure 4.4

Level of Skills in Computing

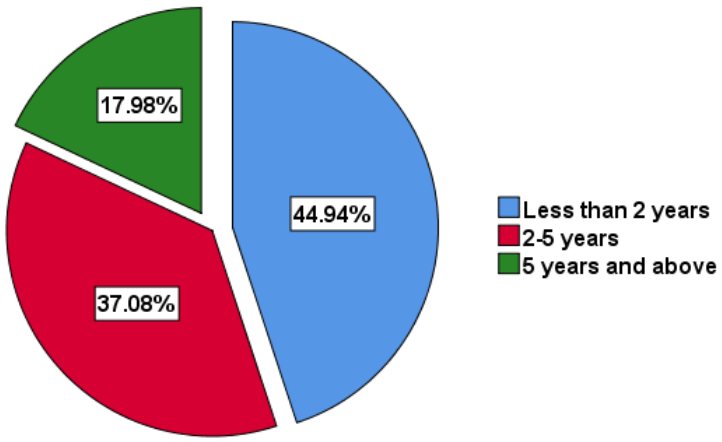


Respondents were requested to rate themselves as either in basic level or advanced level of computing. Majority of the respondent's equivalent to 65.17% were under the basic category while 34.83% rated themselves as advanced.

4.2.6 Experience in Computer Related Tasks/Duties

Figure 4.5

Experience in Computer Related Tasks/Duties



Apart from level of computing, respondents were also asked to indicate their experience in computer related tasks. Majority of the population being students, their experience was less than 2 years as shown by 44.94%. A proportion of 37.08% had 2-5-years'

experience while 17.98% indicated 5 years and above in computing tasks and duties. This analysis of computing experience implies that respondents in this study had knowledge on computer technologies hence they have the capacity to uptake social media as well as other technologies when used in interactive learning.

4.3 Institutional Governance and Framework for Social Media Integration

This subsection sought to understand the existing policies in institutions of higher learning, that govern usage of computer technologies, Internet and social media. The policies in place determine the level of success for the development, adoption, and implementation of the suggested framework.

In order to understand institutional polices and social media usage in collaborative learning, respondents were asked to express their level of agreeing on policy assertions. Five-point Likert scale was used where SD represented strongly disagree, D- disagree, N- neutral, A- agree and SA- strongly agree. The analysis was as shown in able 4.2.

Table 4. 2

Institutional governance and Framework for Social Media Integration

Statement	SD		D		N		A		SA		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
The institution allows access to social media sites using the institution's resources	12	13.5	11	12.4	18	20.2	33	37.1	15	16.9	89	100
The institution has a social media user policy	19	21.3	14	15.7	36	40.4	13	14.6	7	7.9	89	100
The institution has active social media accounts	5	5.6	6	6.7	64	71.9	9	10.1	5	5.6	89	100
There is a guide for users on the resources available from social networking sites that support learning	8	9.0	13	14.6	39	43.8	23	25.8	6	6.7	89	100
Lectures and administration in general encourage sharing learning content via social media	16	18.0	16	18.0	34	38.2	19	21.3	4	4.5	89	100
The institution limits what content can be accessed from social networking sites	6	6.7	17	19.1	40	44.9	18	20.2	8	9.0	89	100

On the assertion that the institution allows access to social media sites using the institution's resources, 37.1% agreed while 16.9% strongly agreed. A fifth of the respondents were neutral as 13.5% and 12.4% strongly disagreed and disagreed respectively. Going by the majority response, it was evident that, the institutions of higher learning allow access to social media sites using the institution's resources. Therefore, this indicates that, the governance will support integration of social media into collaborative learning.

To determine if the institution has a social media user policy, 40.4% were neutral on the statement, 21.3% strongly disagreed as 15.7% disagreed with the assertion. A rating of agree was received from 14.6% while 7.9% expressed a strongly agree rating. Therefore, it is not clear based on neutral respondent's, if institutions of higher learning have a social media user policy. In addition, the proportion of those in disagreement were more than those who agreed hence, social media user policy in most of the institutions is not in place. Therefore, this means that, the governance can develop can better support integration of social media and other technologies through the formulation of social media usage policies.

To a neutral or moderate extent, most of the institutions of higher learning have active social media accounts. This is based on 71.9% of the who expressed neutral opinion. Those in agreement with the assertion (A and SA) were 15.7% while cumulatively, 12.3% were in contrary based on those who disagreed and strongly disagreed. Availability of a guide for users on the resources available from social networking sites that support learning was agreed by 32.5% (cumulative of agreed strongly agree) and negated by 23.6% from those who disagreed and strongly disagreed. The majority however were neutral as shown by 43.8%. Having active social media accounts is an n indication that, adoption of social media into collaborative learning is possible since the respondents have the interest already on social media.

To establish social media usage spirit among the lectures and administration, 38.2% expressed neutral rating on the assertion that lectures and administration in general encourage sharing learning content via social media. Equal proportion of 18% strongly disagreed and disagreed on the statement while 21.3% agreed as 4.5% strongly agreed. This indicates that, moderately, in most of the institutions of higher learning lectures and administration in general rarely encourage sharing learning content via social

media. With the proportion that has been encouraging social media into learning, it is a clear indication that, once the framework for social media integration has been adopted, most of the respondents will adopt it, hence making the collaborative learning though social media a success.

Respondents tallying to 29.2% agreed that their institutions limit what content can be accessed from social networking sites. A proportion of 44.9% were neural while 25.8% were contrary to the statement. From the assertion, it can be deduced that, majority of the institutions control content shared over the Internet and social media in general mostly administered through firewalls, content filtrating and privacy control. Limiting contents to shared over social media a positive response to develop responsible people though social media integration and collaborative learning. This will support the responsible use of internet, which is against malicious and irresponsible Internet usage such as cyber bullying, cyber-attacks, and insecurity on the Internet.

The analysis on governance indicated that, institutions of higher learning have allowed access to social media sites using the institution's resources. It was also found that, these institutions have active social media accounts. This points out that there is possibility of supporting framework for social media integration into collaborative learning. On the contrary however, very few institutions have social media user policy as well as a guide for users on the resources available from social networking sites that support learning. In addition, administration support towards social media learning is minimal given that rarely do lecturers share learning content via social media to students.

4.4 Infrastructure and Social Media Integration in Learning

Implementation of framework for social media integration in collaborative learning requires proper infrastructure that will support the system and users. The infrastructure in this case refers to computer technologies that include computers, networks, and control measures on the usage.

The research sought to understand the existing computer networks and technologies in institutions of higher learning through a set of statement which were rated by respondent based on five-point Likert scale ranging from strongly disagree to strongly disagree. The responses were as tabulated in table 4.3.

Table 4. 3

Infrastructure and Social Media Integration in Learning

Statement	SD		D		N		A		SA		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
The institution has a reliable Internet connection	5	5.6	16	18.0	36	40.4	15	16.9	17	19.1	89	100
There are no firewalls that limit access to social media content within the institution's network infrastructure	7	7.9	11	12.4	37	41.6	19	21.3	15	16.9	89	100
The institution's computers are linked via local area networks	5	5.6	8	9.0	40	44.9	23	25.8	13	14.6	89	100
There is a clear social media support structure in the institution	13	14.6	25	28.1	33	37.1	13	14.6	5	5.6	89	100
Privacy of devices and users is guaranteed by the organizational information systems infrastructure	14	15.7	27	30.3	31	34.8	11	12.4	6	6.7	89	100
The institution has adequate computer resources	21	23.6	40	44.9	14	15.7	14	15.7	0	0.0	89	100

In a bid to establish availability of reliable Internet connection in institutions of higher learning, majority (40.4%) were neutral while cumulatively, 36% agreed and strongly agreed that the institution has a reliable Internet connection. On the contrary, 18% disagreed with the assertion while 5.6% strongly disagreed. Presence of firewalls was neutrally agreed by 41.6% as 21.3% agreed and 16.9% strongly agreed that there are no firewalls that limit access to social media content within the institution's network

infrastructure. Only 7.9% and 12.4% negated the absence of firewalls by strongly disagreeing and disagreeing respectively. Availability of reliable internet as indicated by the majority implies that, social media integration into collaborative learning is possible since it relies on the Internet.

Availability of local area network linkages was agreed upon by 25.8% a and strongly agreed by 14.6%. Neutral rating was received from 44.9% while 5.6% strongly disagreed and 9% disagreed that the institution's computers are linked via local area networks. On the presence of clear social media support structure in the institution 37.1% were neutral. However, cumulatively this assertion was negated by 42.7% from those who disagreed and strongly disagreed. Only 20.2% concurred with the assertion. Availability of local area networks indicates that the whole institution is connected and that, the administration can oversee how internet usage is being consumed in institutions. It also indicates capacity to support the framework for social media integration into collaborative learning.

A similar response with majority of the respondents being on the contrary was also found on the statement seeking to determine if privacy of devices and users is guaranteed by the organizational information systems infrastructure. Majority, 46%, were on the contrary (Strongly Disagree and Disagree) with 34.8% opting neutral stand. Those in agreement with the statement were 12.4% and 6.7% by expressing agree and strongly agree.

On the other hand, 44.9% disagreed and 23.6% strongly disagreed that the institution has adequate computer resources. A proportion of 15.7% were neutral while 15.7% agreed with the assertion. From this statement, it is evident that, institutions of higher learning do not have adequate computer resources.

In general, most of the institutions were found to have reliable Internet connection and linkages to social media. However, availability of social media support structure, privacy of devices and users provision as well as adequate computer resources were found to be at minimal levels. This means that framework for social media integration in collaborative learning can be undertaken, since other gadgets, preferably smartphones can be used in supporting the framework, provided there is secure and reliable Internet, coupled with proper policies, guidelines and technological support.

4.5 Social Media Exposure and Collaborative Learning

4.5.1 Social Media Accounts in Possession

Table 4. 4

Social Media Accounts in Possession

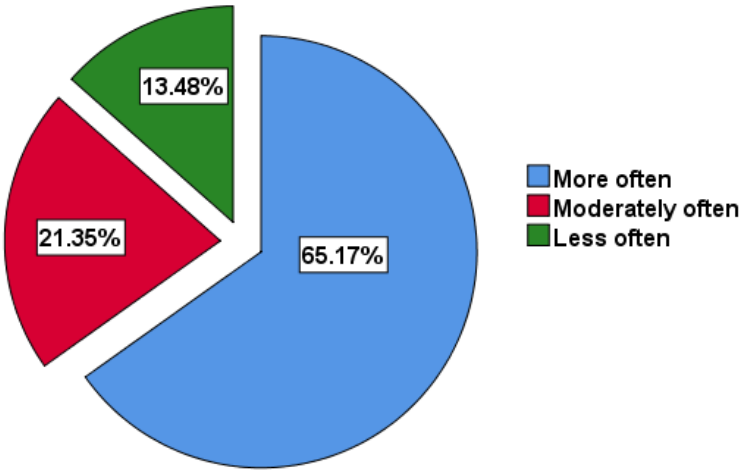
Social Media accounts	Frequency	Percent
Two	10	11.2
Three	38	42.7
Four and above	41	46.1
Total	**89**	**100.0**

Respondents were asked to indicate the number of social media accounts they have and name them. The analysis indicated that, majority 46.1% had four and above accounts while 42.7% had three accounts. Those with only two social media accounts were 11.2%. Most of the social media accounts used by respondents included, Facebook, Twitter, Instagram, WhatsApp, and LinkedIn. Therefore, there are quite several social media platforms that can be used in institutions of higher learning, to support collaborative and interactive learning.

4.5.2 Frequency of Social Media Usage

Figure 4.6

Frequency of Social Media Usage



The researcher also sought to determine how often the respondent's access the social media sites, regardless of whether in collaborative learning or other social activities. The statistics indicated that 65.17% use these sites more often, 21.35% indicate moderate usage while 13.48% use them less often. Given that 65.17% use these sites more often, it implies that, developing a framework for social media integration in collaborative learning could be a success based on the interest on social media.

4.5.3 Social Media Exposure/Usage and Collaborative Learning

In order to ascertain the level of exposure/ social media usage and collaborative learning, the researcher presented several statements to be rated based on five-point Likert scale of agreeing. The responses were as captured in table 4.5.

Table 4. 5

Social Media Usage and Collaborative Learning

Statement	SD		D		N		A		SA		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
We have formed groups in social media that help us in understanding deeply	4	4.5	10	11.2	23	25.8	39	43.8	13	14.6	89	100
I often use social media for social chats and not anything academic	3	3.4	4	4.5	34	38.2	28	31.5	20	22.5	89	100
I have shared learning content through social media with other students in other colleges severally	19	21.3	22	24.7	28	31.5	14	15.7	6	6.7	89	100
Our lecturers sometimes share learning content through the social media	20	22.5	37	41.6	17	19.1	15	16.9	0	0.0	89	100
Social media has more irresponsible and unverified content for learners to use in learning	5	5.6	11	12.4	44	49.4	22	24.7	7	7.9	89	100
The institution creates awareness on social media usage in learning	21	23.6	42	47.2	26	29.2	0	0.0	0	0.0	89	100

In relation to collaborative learning, 43.8% agreed that they have formed groups in social media that help them in understanding deeply. A proportion of 14.6% strongly agreed as 25.8% were neutral. Only 11.2% disagreed and 4.5% strongly disagreed with the statement. With majority agreeing to have social media groups for learning, a contrast was also evident on social media usage and exposure on the statement that the

respondents often use social media for social chats and not anything academic. This was agreed and strongly agreed by 31.5% and 22.5% respectively, with 38.2% expressing neutral opinion. Those with contrary opinion were the minority as shown by 4.5% and 3.4% of those who disagreed and strongly disagreed respectively. Formation of social media groups and the ability to use the social media whether in education or on social basis is a clear indicator, that, there is interest in social media and an opportunity, that can be tapped in academic institutions to support collaborative learning.

Majority of the respondents negated sharing learning content through social media with other students in other colleges severally by disagreeing and strongly disagreeing with a cumulative representation of 46%. With neutral stand over the statement were 31.5%. Only 22.4% concurred with the assertion.

While positivity has been expressed on social media integration into learning, still majority of respondents have the feeling that social media has more irresponsible and unverified content for learners to use in learning. This was inferred from the majority response of those who were neutral, agreed and strongly agreed (49.4%, 24.7% and 7.9%). Only 18% were contrary to the assertion. The feeling for irresponsible use of social media can be moderated by the governance in institutions of higher learning to be more productive. The understanding of ills of social media indicates that the respondents have a glimpse of how social media works and that, they can be guided to exploit the positive side of social media win interactive learning.

On creating awareness on social media usage in relation to collaborative learning, none of the respondents agreed that the institution creates awareness on social media usage in learning. Majority, equivalent to 47.2% disagreed while 23.6% strongly disagreed.

Respondents with neutral opinion were 29.2%. Creation of awareness is paramount to understanding how social media can be used in learning. Therefore, well laid out policies and guidelines are likely to create awareness hence make the implementation of the proposed framework success.

Descriptive statistics on social media exposure presents mixed reaction on how respondents use social media for. Majority acknowledged having social media groups on academic basis. However, the major happenings on these groups was found to be social and not anything academic. There is underlying potential that integrating social media in collaborative learning could result to good academic performance and more interest on areas of study. Therefore, level of exposure of the respondents on social media usage regardless of whether academic can be rated high.

4.6 Collaborative Learning

Collaborative learning is an approach in educational system, where learners get educational materials and content from other groups as way to reinforce the formal structured learning. Collaborative learning has been found to be resourceful as learners get information from different sources that build them socially, academically, economically, and other facets of the society. It aims at developing all-round students that are prepared to handle real-life situation right after graduation. As the dependent variable in this study, the researcher sought to ascertain the respondents understanding of collaborative learning, its potential and the contribution of social media towards it. This was done through set of statements presented to the respondents for rating using five-point Likert scale as shown in table 4.6.

Table 4. 6

Collaborative Learning

Statement	SD		D		N		A		SA		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Social media when integrated into learning can produce better academic performance through collaborative learning	3	3.4	7	7.9	27	30.3	31	34.8	21	23.6	89	100
Social media integration into learning has a potential of developing oral communication, leadership skills and self-management among the students	2	2.2	4	4.5	33	37.1	37	41.6	13	14.6	89	100
Collaborative learning through social media integration develops all-round students than exclusive structured learning	0	0.0	0	0.0	26	29.2	48	53.9	15	16.9	89	100
Through social media integration into learning, learners understand real life social and employment states while in colleges	4	4.5	6	6.7	28	31.5	43	48.3	8	9.0	89	100
Social media integration into learning gives learners an opportunity to build self-esteem and be more responsible	5	5.6	5	5.6	27	30.3	40	44.9	12	13.5	89	100

A proportion of 34.8% and 23.6% agreed and strongly agreed that social media when integrated into learning can produce better academic performance through collaborative learning. Only 11.2% were on the contrary as 30.3% expressed a neutral stand. Similar findings were evident on the assertion that social media integration into learning has a potential of developing oral communication, leadership skills and self-management

among the students. This assertion was agreed upon by 56.2% and rated neutral by 37.1%. Only 6.7% were against the assertion.

There was no any disagreement on the assertion that collaborative learning through social media integration develops all-round students than exclusive structured learning. Almost a third (29.2%) were neutral while 53.9% agreed as 16.9% strongly agreed on the contribution of collaborative learning to developing all-round learners.

As per the majority rating, 57.3% agreed that through social media integration into learning, learners understand real life social and employment states while in colleges. With contrary opinion were 11.2% while 31.5% were neutral. On the other hand, 58.4% agreed that social media integration into learning gives learners an opportunity to build self-esteem and be more responsible. A percentage of 11.2 however negated the assertion while 30.3% were neutral.

The respondents view on the benefits of collaborative learning in institutions higher education implies that, respondents support collaborative learning. This can be much more effective, if it is linked with many institutions for sharing content. The potential of collaborative learning can therefore be done through integration of social media in learning, to benefit many learners.

4.7 Inferential Statistics

The inferential statistics included correlation analysis and regression analysis. These analyses find relationship between the variables of framework for social media integration and collaborative learning. The significance of these relationships was gauged at 95% confidence level.

4.7.1 Correlation Analysis

The researcher employed Pearson correlation analysis where the correlation coefficient was used to determine association between study variables at 95% confidence level as shown in table 4.7.

Table 4. 7

Correlation Analysis

		Institutional Governance	Infrastructure	Social Media Exposure	Collaborative Learning
Institutional Governance	Pearson Correlation	1			
	Sig. (2-tailed)				
	N	89			
Infrastructure	Pearson Correlation	.718**	1		
	Sig. (2-tailed)	.000			
	N	89	89		
Social Media Exposure	Pearson Correlation	.820**	.862**	1	
	Sig. (2-tailed)	.000	.000		
	N	89	89	89	
Collaborative Learning	Pearson Correlation	.831**	.730**	.864**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	89	89	89	89

***. Correlation is significant at the 0.01 level (2-tailed).*

Institutional governance had a strong correlation with infrastructure as indicated by correlation coefficient of 0.718 and significance level of 0.00. This indicated that the correlation was significant. Social Media Exposure had significant and positive correlations with institutional governance and infrastructure as shown by coefficient and p values (r =0.820, p value = 0.00) and (0.862, p value = 0.000) respectively.

Collaborative learning had positive and significant with institutional governance (r = 0.831, p value = 0.00), infrastructure (r = 0.730, p value = 0.00) and social media exposure (r = 0.864, p value = 0.00).

4.7.2 Regression Analysis

Regression analysis was employed to determine if there is significant relationship between institutional governance, technological infrastructure, and social media exposure with collaborative learning.

Table 4. 8

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.968[a]	.938	.936	.21411

a. Predictors: (Constant), Social Media Exposure, Institutional governance, Infrastructure

Model summary in regression analysis is also referred to as the results of goodness fit. The coefficient of determination (R square) was 0.938. This implies 93.8% of the variations in collaborative learning is contributed by framework for social media integration. The value of R was 0.968 indicating very strong correlation between the independent and dependent variables.

Table 4. 9

Overall significance of the Model

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.206	3	.069	12.783	.000[b]
	Residual	62.254	85	.732		
	Total	62.460	88			

a. Dependent Variable: Collaborative Learning

b. Predictors: (Constant), Social Media Exposure, Institutional governance, Infrastructure

Overall model significance entails analysis of variance, which describes significance of the overall model. From the results, the F statistic was 12.783. The *P value* was 0.00 <0.05 indicating that the model for this study was significant at 95% confidence level. Hence the model can be used to predict collaborative learning performance through Framework for social media integration variables.

Table 4. 10

Regression Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	**Std. Error**	**Beta**	**t**	**Sig.**
1	(Constant)	3.760	.638		5.894	.000
	Institutional governance	.357	.053	.140	2.960	.003
	Infrastructure	.675	.080	.065	2.946	.045
	Social Media Exposure	.728	.071	.032	5.397	.000

a. Dependent Variable: Collaborative Learning

The constant for the regression model was positive (r =3.760) and significant at 95% confidence level (P value = 0.000<0.05). Institutional governance had a positive coefficient of 0.357 significant at 95% confidence level (p-value = 0.003<0.05). This means that, an increment in formulation and implementation of sound institutional governance will result to increased usage and benefit of collaborative learning.

Further analysis of regression coefficients indicated that technological infrastructure has a positive and significant relationship with collaborative learning (r = 0.675; p value = 0.045<0.05). therefore, availability of technological resources that include reliable Internet, computer resources and sound policies would lead to effective implementation of framework for social media integration hence effective collaborative learning.

On the other hand, social media exposure had the highest contribution with coefficient of 0.728 significant at 95% confidence level (p value = 0.000). Therefore, increased exposure is likely to contribute to positive outcomes of framework for social media integration which in return will foster effective collaborative learning.

4.7.3 Fitting of The Regression Model

The regression model took the form of

$$Y=\alpha+\beta_1 X_1 +\beta_2 X_2+ \beta_3 X_3 + \varepsilon$$

Where,
Y (dependent variable) =Collaborative learning
α = Constant
β_1-β_3 = Regression coefficients
X_1 =Institutional governance
X_2 = Technological infrastructure
X_3 =Social media exposure
ε = Error term
based on the significant variables, the fitted model became

$$Y= 3.76 +0.357X_1 +0.675X_2+ 0.728 X_{3+} \varepsilon$$

4.8 Discussion

Robyn (2015) in his book on "Collaborative Learning: Developments in Research and Practice" describes collaborative learning as a pedagogical practice that ensures learning and socialisation among students. Through collaborative learning, students learn through an array of formal and informal settings in colleges and the bigger community.

Harasim (2012) on online collaborative learning points out that, use of collaborative techniques has been of benefit to some academic fields, notably computer science and electronic commerce. In these fields, learners benefit a lot on learner - learner

interaction, with students working asynchronously in groups and with minimal traditional instructions being provided by the course facilitator.

Therefore, this study does not propose adoption of collaborative learning over formal/structured learning in institutions of higher learning, but proposes adoption of a framework as a structure, that will integrate social media to promote collaborative learning, which in turn will reinforce the formal education. Harasim (2012) further indicates that, collaborative learning prepares learners for real life experience while in college. It has the potential of producing all-round learners, equipping them with self-esteem, better communication skills and leadership skills as well.

Institutional governance/policy is a key determinant of adoption of information systems in institutions of higher learning. According to Macharia and Nyakwende (2009), institutions of higher learning are responsible for the adoption of the latest technology, which is paramount in developing skilled human resource in respective areas of specialization. For the adoption of any system, the administration, and the whole sector in general, should have policies that govern, promote, and encourage usage of such systems in the institutions.

Designing and adoption of framework for social media integration in collaborative learning is supposed to ride on existing policies on technology adoption and usage. These policies should therefore be favourable for users to reap the best benefits possible. The suggested framework aims to enrich the existing structured learning in institutions of higher learning and therefore, sound policies must exist to ensure no misuse or inappropriate access is granted. This is in support of the findings and discussions by Kapur (2019) and Chhikara (2015).

The inferential statistics established that, institutional governance has positive correlation and positive relationship with collaborative learning. This means that, formulating favourable policies towards computer technologies will lead to positive support for the proposed framework, hence successful adoption, and implementation of collaborative learning. There findings are in line with Murgor (2015), that sound governance can develop policies and supporting the policies which promote innovation and ICT usage.

Framework for social media integration in collaborative learning is a structure that must run on some resources which include reliable Internet connection, computer resources, applications, intranets and secure systems. Therefore, technological infrastructure is key in adopting, implementing, and supporting such a framework. Descriptive analysis established that, in most of the institutions of higher learning, there is availability of Internet connection. The Technology Adoption Model (TAM) has key components that determines the success of adopting and using system, just like the suggested framework for social media integration in collaborative learning. These components include, perceived ease of use, attitude towards use and behavioural intention to use. Linking these components to social media exposure, the level of exposure determines the perceived ease of use and built attitude towards the technology.

The regression analysis unearthed a positive and significant relationship between infrastructure and collaborative learning. Therefore, institutions with the key technological equipment's are likely to make collaborative learning via social media a success. The findings of this study are in line with the findings of Bariu (2020), and Chun and Tsai (2015) that, availability of infrastructure helps understanding of new ideas and uptake of courses.

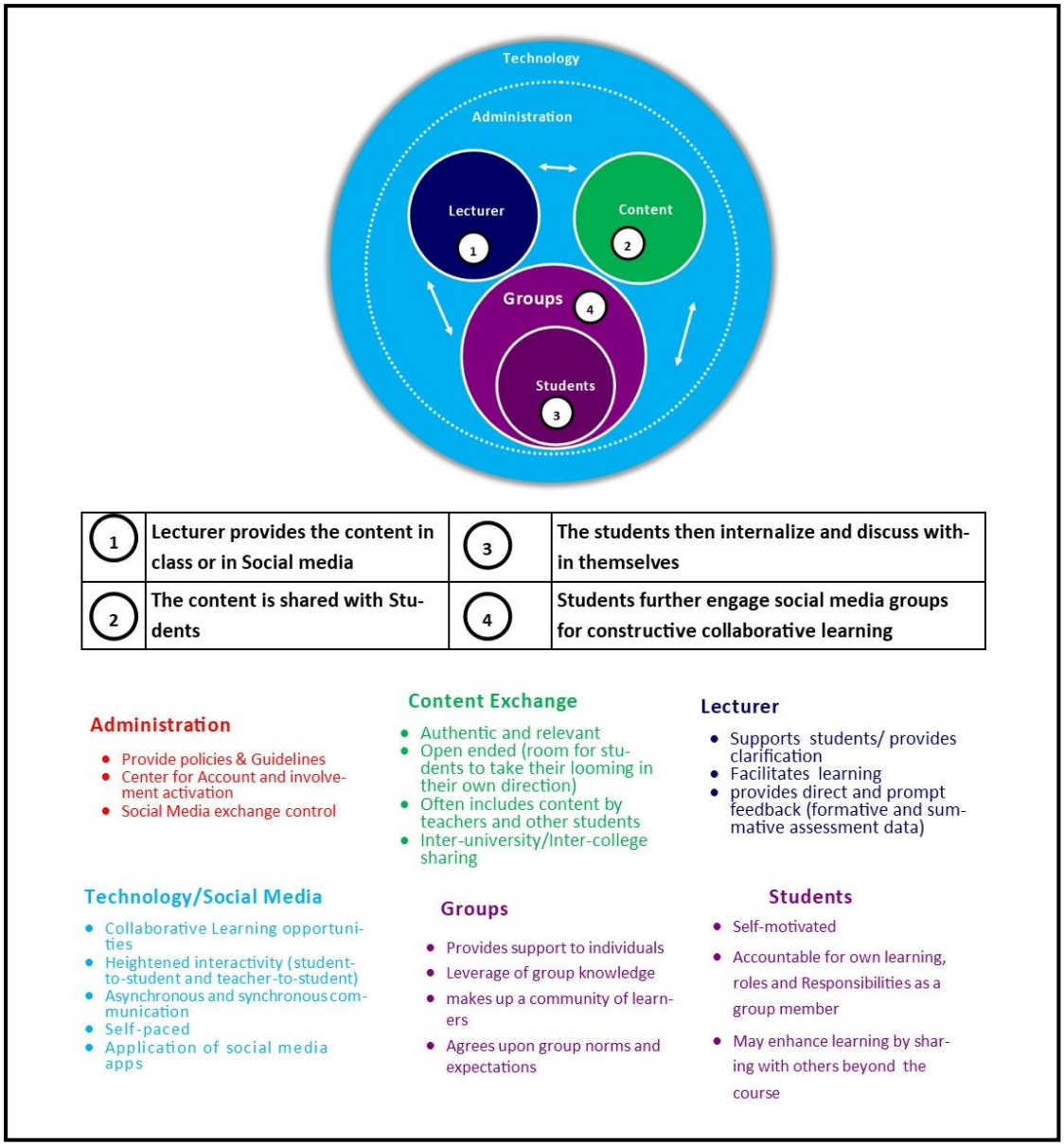
The descriptive statistics established that majority of the respondents have more than three social media accounts. In addition, majority held that they use these accounts most frequently, indicating that, frequent use of social media creates interest and attitude which also makes integration of these sites easy to use hence successful implementation and adoption of the framework.

Inferential statistics found direct relationship between social media exposure/usage with collaborative learning. The significant relationship implies that, more exposure on social media usage can lead to effective collaborative learning, signalling a likelihood of positive outcome in the adoption of the framework for social media integration in collaborative learning.

4.9 Proposed Framework

Figure 4.7

Proposed Framework



The proposed framework as presented in in figure 4.7 indicates key pillars of the framework in line with the research objectives. The first objective of institutional governance is a component in the framework referred to as administration. The governance is responsible for formulating policies and guidelines regarding social media usage in collaborative learning. The governance also acts to moderate the content exchanged and other groups that are involved in the content exchange process.

Infrastructure as the second objective and variable has been utilised in the framework as the technology, that is central in the entire framework. Technology here entails the Internet, ICT gadgets and social media accounts. Availability of this infrastructure supports each group at its place to ensure success in collaborative learning.

Social media exposure as the third objective and independent variable entails usage of social media. This has been captured through the items involved in the framework notably; lecturers, students and groups. Students form groups using social media where lectures are also involved. The interaction of all these components have an input and output which is content exchange.

Content to be exchanged can be from lecturers to students or groups, as well as from groups to groups, and from students to groups. The formation of the groups and content exchange in this perspective is not limited to an institution but can include groups and student from other learning institutions. Application of discussion invitations via groups is also included in content exchange and technology.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter covers summary of the findings and provides conclusion and recommendation based on the research findings. The summary, conclusion and recommendation have been undertaken in line with the major objective of this study; framework for social media integration in collaborative learning.

5.2 Summary

The response rate for this research was deemed adequate for analysis of framework for social media integration in collaborative learning. Majority of the respondents were females represented. Majority of the respondents were aged 18-25 years. A fifth of the respondents represented respondents under the age category of 26-35 years. Analysis of academic qualification indicated that half of the respondents were holders or undertaking certificate and diplomas while a third were degree holders or students. Two thirds of the respondents rated themselves as basic users while a third rated themselves as advanced users in computer skills.

Apart from level of computing, majority of the population being students, their experience was less than 2 years. Three eighths had 2-5-years' experience while a sixth indicated 5 years and above in computing tasks and duties.

5.2.1 Institutional Governance and Framework for Social Media Integration

Analysis on descriptive on institutional governance in relation to framework for social media integration indicated that the institution allows access to social media sites using the institution's resources as two thirds of there respondents agreed and strongly

agreed. It was also found that there is moderate availability of social media user policy based on those who were neutral on the statement.

To a neutral or moderate extent, most of the institutions of higher learning have active social media accounts. This was based on three quarters of the who expressed neutral opinion. Those in agreement with the assertion were less than a fifth of the respondents. Availability of a guide for users on the resources available from social networking sites that support learning was agreed by a third and negated by a quarter from those who disagreed and strongly disagreed. Institutional governance had a positive and significant relationship with collaborative learning.

5.2.2 Technological Infrastructure and Social Media Integration in Learning

Technological infrastructure refers to physical and intangible resources expected to support framework for social media integration in collaborative learning. The statistics indicated that; majority of the institutions of higher learning have reliable Internet connection based. Presence of firewalls was neutrally agreed. A third of the respondents agreed that there are no firewalls that limit access to social media content within the institution's network infrastructure.

Availability of local area network linkages was agreed upon by a third of the respondents. On the presence of clear social media support structure in the institution a third were neutral. Majority of the respondents negated that privacy of devices and users is guaranteed by the organizational information systems infrastructure. On the other hand, more than half of the respondents negated that the institution has adequate computer resources. Inferential statistics unearthed positive and significant relationship with collaborative learning.

5.2.3 Social Media Exposure and Collaborative Learning

Majority of the respondents indicated that they have more than three social media accounts. Of all the respondents, two thirds indicated that they use social media often. In relation to collaborative learning, almost half of the respondents agreed that they have formed groups in social media that help them in understanding deeply. With majority agreeing to have social media groups for learning, a contrast was also evident on social media usage and exposure on the statement that the respondents often use social media for social chats and not anything academic.

Almost half of the respondents negated sharing learning content through social media with other students in other colleges severally. On creating awareness on social media usage in relation to collaborative learning, none of the respondents agreed that the institution creates awareness on social media usage in learning. Correlation analysis found positive and significant association between social media exposure and collaborative learning. Regression analysis confirmed positive and significant relationship between social media exposure and collaborative learning.

5.3 Conclusion

5.3.1 Institutional Governance and Framework for Social Media Integration

Institutional governance includes the administration and policies in place to govern usage of social media in institutions of higher learning. The analysis indicated that, the existing policies in place on general usage of Internet and not specific to social media usage. This means that, there are no guidelines on social media usage in general other than the guidelines and policies that govern use of information systems in these institutions. Regression results that indicate positive relationship of institutional governance with collaborate learning implies that; the variable is important since

removing its coefficient reduces collaborative learning holding all other factors constant. Therefore, this study concludes that, institutional governance is a key component in collaborative learning and in the proposed framework.

5.3.2 Technological Infrastructure and Social Media Integration in Learning

The state of infrastructure in institutions of higher learning, based on the institutional investment are moderate. However, the researcher also looked at the passion of smartphones which in general provide a good infrastructure to support the framework. In this case, the researcher concludes that the existing technological structures in institutions of higher learning have the capability of supporting framework for social media integration in collaborative learning. This is inferred from the availability of reliable Internet connection, the allowed free use of social media as well as some available computer resources. From the regression results, the study concludes that there is positive relationship between technological infrastructure and collaborative learning.

5.3.3 Social Media Exposure and Collaborative Learning

Exposure builds interest which in return determines the success of an information system. It was found that, majority of the respondents have a good knowledge, experience, and interest on social media usage. It is in line with these findings that this study concludes that, most of the respondents are users of social media on news and social chats but not more on collaborative learning. The study also concludes that there is a positive and significant relationship between social media exposure, usage, and collaborative learning.

5.4 Recommendations

This study aimed at proposing a study framework for social media integration in collaborative learning. This framework to meet the threshold of adoption must ride on key components that support technology.

The study established that there are no specific policies governing social media usage in institutions of higher learning. This study recommends that, the administration should formulate key policies that create interest in technological learning, which also favours use of social media in learning. On the institutional governance, the administration should come up with awareness programs that support students to seek more information, indulge into research and discussion through social media.

Availability of Internet in institutions of higher learning is not the only resources needed to support framework for social media integration in collaborative learning. This study recommends institutions of higher learning to have key technological resources such as personnel, computer resources, secure networks and proper and well configured connections that guarantee privacy while protecting intellectual property.

There is a general feeling that many respondents have interests on social media and use social media more often for social gains. The institutions of higher learning can tap the potential in this interest and support framework social media integration by promoting use of social media in learning, delivering content and providing challenge to learners on how they can enrich their learning though social media. This can be a great milestone also to support distance learning and online learning by engaging students on discussions through the framework, that allows response and support through social media accounts.

5.5 Recommendations for Further Research

This study proposed framework for social media integration in collaborative learning with key focus on governance, technological infrastructure and social media exposure. Further research can be undertaken including other variables such as challenges on social media usage in institutions of higher learning as well as challenges facing the adoption of information systems in colleges and universities.

This research was done in institutions of higher learning in Meru county. A similar research can be done in other counties to validate the findings of this study.

REFERENCES

Ahmed, R. (2016). Social Media Integration in Secondary Education In Pakistan. *Journal of Education and Educational Development*, 3(1), 1-74. https://doi.org/10.22555/joeed.v3i1.712.

Al-Rahmi, W. M., Othman, M. S., & Yusuf, L. M. (2015). The role of social media for collaborative learning to improve academic performance of students and researchers in Malaysian higher education. *International Review of Research in Open and Distance Learning*, 16(4), 177–204. https://doi.org/10.19173/irrodl.v16i4.2326

Alvarez, I., & Marialexa, O., S. (2013). Learning in Social Networks: Rationale and Ideas for Its Implementation in Higher Education. *Education Sciences,* 3(3), 314–325. https://doi.org/10.3390/educsci3030314

Amandu, G., Muliira, J. & Fronda, D. (2013). Using moodle e-learning platform to foster student self-directed learning: Experiences with utilization of the software in undergraduate nursing courses in a Middle Eastern university. *Procedia - Social and Behavioural Sciences,* 93(1), 677 – 683. https://doi.org/10.1016/j.sbspro.2013.09.260

Anderson, S. (2013). *How to create social media guidelines for your school.* https://files.eric.ed.gov/fulltext/ED539396.pdf

Avis, W. R. (2016). *The role of online social media in countering violent extremism in East Africa*. Wiley and sons

Awa, H. O., Ukoha, O., & Emecheta, B. C. (2016). Using T-O-E theoretical framework to study the adoption of ERP solution. *Cogent Business & Management*, *3*(1), 1196571. https://doi.org/10.1080/23311975.2016.1196571

Ayman, B., (2013). Pervasiveness of data driven decision making in Kenyan Public Secondary schools: Case of Nairobi County. *International Journal of Education Management and Administration (IJEMA),* 1(1), 1-10, doi: 10.12785/ijlms/010101

Baccarella, C., Scheiner, C., Wagner, T., & Voigt, K. (2016). Communicating high-tech products - a comparison between print advertisements of automotive premium and standard brands. *International Journal of Technology Marketing*, 11(24), 1-10. doi:10.1504/IJTMKT.2016.073369.

Bariu, T. N. (2020). Status of ICT Infrastructure Used in Teaching and Learning in Secondary Schools in Meru County, Kenya. *European Journal of Interactive Multimedia and Education*, 1(1), 1-9. https://doi.org/10.30935/ejimed/8283

Blankenship, M. (2011). How Social Media Can and Should Impact Higher Education. *Education Digest* 76(7), 39–42. https://scholar.google.com/scholar_lookup?title=How%20social%20media%20can%20and%20should%20impact%20higher%20education&journal=Education%20Digest%3A%20Essential%20Readings%20Condensed%20for%20Quick%20Review&volume=76&issue=7&pages=39-42&publication_year=2011&author=Blankenship%2CM

Bloxx (2013). *Empowering Learning with BYOD (first).* BLOXX international ltd.

Bozanta, A., & Mardikyan, S. (2017). The Effects of Social Media Use on Collaborative Learning: A Case of Turkey. *Turkish Online Journal of Distance Education*, 18(1), 96-110. https://doi.org/10.17718/tojde.285719

Brackin, R.C., Jackson, M.J., Leyshon, A., & Morley, J.G.(2019) Taming Disruption? Pervasive Data Analytics, Uncertainty and Policy Intervention in Disruptive Technology and its Geographic Spread. *International Journal of* Geo *Information,* 8(1), 1- 34. https://doi.org/10.3390/ijgi8010034

Bradley, K. S., & Bradley, J. (2015). Graduate students' perceptions of online learning. *Higher Education Journal,* 27(1), 1–13. https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwiax7iT_uXsAhWFShUIHS8nCLUQFjAAegQIAhAC&url=https%3A%2F%2Ffiles.eric.ed.gov%2Ffulltext%2FEJ1056187.pdf&usg=AOvVaw2NilOiAo2yijdbaWA3FrUK

Bralić, A. & Divjak, B. (2018). Integrating MOOCs in traditionally taught courses: achieving learning outcomes with blended learning. *International Journal of*

Educational Technology in Higher Education. 15(2),11-13. https://educationaltechnologyjournal.springeropen.com/articles/10.1186/s41239-017-0085-7

Brick, B. (2012). The role of social networking sites for language learning in UK higher education. *International Journal of Computer-Assisted Language Learning and Teaching*, 2(3), 35–53. https://doi.org/10.4018/ijcallt.2012070103

Britl, M. (2012, July 26). Social media for schools: a guide to Twitter, Facebook and Pinterest. *The Guardian.* https://www.theguardian.com/teacher-network/2012/jul/26/social-media-teacher-guide.

Brown, S. (2010). From VLEs to Learning webs: the implication of Web 2.0 for learning and teaching. *Interactive Learning Environments,* 18(1), 1-10. http://dx.doi.org/10.1080/10494820802102158983.

Cadag, C. P. (2017). Student Services and their Influence to Student Development. *Asia Pacific Journal of Multidisciplinary Research,* 5(53), 63–70. http://www.apjmr.com/wp-content/uploads/2017/08/APJMR-2017.5.3.2.09.pdf

Castro-Romero, O. (2015). *Social Media as Learning Tool in Higher Education: The case of Mexico and South Korea*. Sinéctica.

Chee, M., T., & Jon, M., W. (2005). Designing and Evaluating E-Learning in Higher Education: A Review and Recommendations. *Journal of Leadership & Organizational Studies,* 11(2), 10-17. http://www.academia.edu/2517544/Designing_and_evaluating_e-learning_in_higher_education_A_review_and_recommendations

Chhikara, B. (2015). Good Governance: Role of science, Technology and Innovations. *Integrated Research Advances*, 2(1), 22-30. https://www.researchgate.net/publication/279964291_Good_Governance_Role_of_science_technology_and_Innovations

Chris, V. (2019). Reinforcing attitudes in a gate watching news era: Individual-level antecedents to sharing fact-checks on social media. *Communication Monographs* 86 (1), 112-132. https://doi.org/10.1080/03637751.2018.1521984

Chun, L., & Tsai, C. (2015). The Role of ICT Infrastructure in Its Application to Classrooms: A Large-Scale Survey for Middle and Primary Schools in China. *Journal of educational Technology & Society* 18(2):249-261. https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwi2z8LWgObsAhUJVBUIHazHDO0QFjAAegQIARAC&url=https%3A%2F%2Feric.ed.gov%2F%3Fid%3DEJ1070046&usg=AOvVaw3FJYcBtUeOdNLKaYYgJXLR

Cisco Systems Inc. (2014). *Cisco Enterprise Mobility Solution: Device Freedom Without Compromising the IT Network*., http://www.cisco.com/c/en/us/td/docs/solutions/Enterprise/Borderless_Networks/Unified_Access/byodwp.pdf

Collin, P., Rahilly, K., Richardson, I., & Third, A. (2011). *Literature Review: The Benefits of Social Networking Services,* from http://www.fya.org.au/wp-content/uploads/2010/07/The-Benefits-of-Social-Networking-Services.pdf

DeDominicis, B. (2013). Personnel Performance Evaluation Systems in Non-Profit Academic Multinational Institutions: The American University in Bulgaria and The Catholic University of Korea. *International Journal of Management Education*, 12(4), 26-39. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3408212

Delello, J. A., McWhorter, R. R., & Camp, K. M. (2015). Using social media as a tool for learning: A multi-disciplinary study. I*nternational Journal on E-Learning: Corporate, Government, Healthcare, and Higher Education,* 14(2), 163–180. https://www.learntechlib.org/primary/p/41291/.

Deloitte. (2012). *The digital grapevine: Social media and the role of Internal Audit*. Deloitte Development LLC

Dhawan, V., & Zanini, N. (2014). Big Data and Social Media. Research Matters: *A Cambridge Assessment Publication*, (18), 36–41. https://www.cambridgeassessment.org.uk/Images/465808-big-data-and-social-media-analytics.pdf

Dörfel, L., & Beuthner, K. (2016). *Pocket Guide – Social Intranet*. http://social-intranet.net/pocket-guide-social-intranet-jetzt-herunterladen

Dunn, L. (2012). Teaching in Higher Education: Can Social Media Enhance the Learning Experience? *Interdisciplinary Science Education, Technologies and Learning - the University of Glasgow School of Education*, 2(4), 12-20. https://www.gla.ac.uk/media/media_276225_en.pdf

Eckerson, W. (2007). Extending the Value of Your Data Warehousing Investment. *Advances*, 1(1), 1–36. https://link.springer.com/content/pdf/bbm%3A978-3-8349-8145-5%2F1.pdf

Economist Intelligence Unit (2008). *The future of higher education: How technology will shape learning.* http://graphics.eiu.com/upload/the%20future%20of%20universities.pdf

Etlinger, S., & Li, C. (2011). *A framework for social analytics*. Altimeter Group.

Falloon, G. (2020). From digital literacy to digital competence: the teacher digital competency (TDC) framework. *Educational Technology Research and Development*, 1(1), 1-24. *https://doi.org/10.1007/s11423-020-09767-4*

Ganis, M., & Kohirkar, A. (2015). *Social media analytics: techniques and insights for extracting business value out of social media*. IBM Press.

GSMA Association. (2014). *Understanding the Internet of Things (IoT*). GSM Association

Hall, S. J., (2014). *How Higher Education Institutions Utilize Social Media*. [Honors Program Theses, Georgia Southern University]. https://digitalcommons.georgiasouthern.edu/honors-theses/132

Harasim, L. (2012) *Learning Theory and Online Technologies.* Routledge

Heale, R., & Twycross, A. (2015). Validity and reliability in quantitative research. *Evidence-Based Nursing*, 18 (1), 66-67. *https://www.researchgate.net/publication/280840011_Validity_and_reliability_in_quantitative_research*

Health and Safety Executive (2010). *Overview of HSE digital communication strategy.* https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwiA2N_QvejsAhXSWxUIHbfNCZwQFjAAegQIAxAC&url=https%3A%2F%2Fhse.ie%2Feng%2Fstaff%2FResources%2Fsocialmedia%2FDigitalCommunicationsStrategy.pdf&usg=AOvVaw1MsypDJ0ip46zOI_POIDHU

Henderson, M., Snyder, I., & Beale, D. (2013). Social media for collaborative learning: *A review of school literature*, 28(2), 10-23. https://www.researchgate.net/publication/262262950_Social_media_for_collaborative_learning_A_review_of_school_literature

Ilaria, L., Ounnas, A., Pau, R., Massey, E., Kinnunen, P., Lewthwaite, S., & Sarkar, C. (2007). The role of social networks in students' learning experiences. *SIGCSE Bulletin*, 39(1), 224-237. doi: 10.1145/1345375.1345442

Iqbal, S., & Qureshi, I. A. (2013). M-Learning Adoption: A Perspective from a Developing Country. *The International Review of Research in Open and Distance Learning*, 13(3), 148–164. doi: 10.19173/irrodl.v13i3.1152

Jairak, K., Praneetpolgrang, P., & Mekhabunchakij, K. (2009). *An acceptance of mobile learning for higher education students in Thailand.* SAGE

Josefsson, P. (2013). *Higher education meets private use of social media technologies*. Cengage Learning.

Kagan, S. (1994). *Cooperative Learning.* Resources for Teachers, Inc.

Kalasi, M. R. (2014). The Impact of Social Networking on New Age Teaching and Learning: An Overview. *Journal of Education & Social Policy*, 1(1), 23–28. https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwir2Nn7jubsAhXDQhUIHWVkCrEQFjAAegQIBBAC&url=http%3A%2F%2Fjespnet.com%2Fjournals%2FVol_1_No_1_June_2014%2F5.pdf&usg=AOvVaw35Yv7EW4mto_dJj4E17Bsx

Kamindo, A. (2016). *Social and Economic Causes of Terrorism in Kenya: A Case Study of Eastleigh Estate, Nairobi County.* [Masters Thesis, University of Nairobi] http://hdl.handle.net/11295/100019

Kane, R. T., Shaw, M., Pang, S., Salley, W., & Snider, J. B. (2015). Relationships among Faculty Training, Faculty Degree, Faculty Longevity, and Student Satisfaction in Online Higher Education. *Online Journal of Distance Learning Administration*, 18(4), 1–14. https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwiSg-GtkebsAhUJT8AKHa2oDr0QFjAAegQIARAC&url=https%3A%2F%2Feric.ed.gov%2F%3Fid%3DEJ1085168&usg=AOvVaw37wo2rWkiUhw-C8xXXcY3C

Kapur, R. (2019). Use of Technology in School Governance and Administration. *Journal of Education and Practice,* 1(1), 1-20. https://www.researchgate.net/publication/333310924_Use_of_Technology_in_School_Governance_and_Administration

Kemp. (2015). Social media governance A guide for in-house counsel. *Informatics,* 2(10, 17-32.https://www.mondaq.com/uk/social-media/177008/social-media-governance-tips-for-in-house-counsel

Kevin, N. M., & Kibaara, D. (2016). Dark data: Business Analytical tools and Facilities for illuminating dark data. *Science & Technology,* 4(4), 1–10. https://www.academia.edu/25338922/Dark_data_Business_Analytical_tools_and_Facilities_for_illuminating_dark_data

Kimani, A. (2016). Barriers to the Adoption of E- Learning in Kenyan Schools: A Review Study, *International Journal of Education Management & Administration* 1(I), 34–45. www.ijster.org/journals/ijema

Kirchhoff, L., & Stanoevska-Slabeva, K. (2008). Using social network analysis to enhance information retrieval systems. *Social Network,* 1(1),1–21. https://www.researchgate.net/publication/227995891_Using_social_network_analysis_to_enhance_information_retrieval_systems

Kirschner. P., & Karpinski, B. (2010). Facebook® and academic performance. *Computer Human Behavior*, 26(1), 1237–1245. doi:10.1016/j.chb.2010.03.024.

Kommers, P. (2011*) Social Media for Learning by Means of ICT*. UNESCO Institute for Information Technologies in Education.

Kothari, C. R. (2004). *Research methodology methods & techniques*. New Age International (P) Ltd.

Krejcie, R.V., & Morgan, D.W., (1970). Determining Sample Size for Research Activities. *Educational and Psychological Measurement,* 30(3), 607-610. doi:10.1177/001316447003000308

Kruger. (2010). *Social Media and the New Academic Environment: Pedagogical Challenges.* IGI Global.

Kumar, V., & Nanda, P. (2019). Social media in higher education: A framework for continuous engagement. *International Journal of Information and Communication Technology Education*, 15(1), 109–120. doi: 10.4018/IJICTE.2019010108

Kundishora, S. (2010). *The Role of Information and Communication Technology ICT) in Enhancing Local Economic Development and Poverty Reduction.* Zimbabwe Academic and Research Network. https://doi.org/10.1007/978-0-387-35695-2

Lai, E. R. (2011). *Collaboration: A Literature Review Research Report.* Wiley & Sons.

Levin, I., & Kojukhov, A. (2013). Personalization of Learning Environments in a Post-Industrial Class: Social Media in Higher Education, Teaching in Web. *Social Networks*, 1(2), 105–123. doi: 10.4018/978-1-4666-2970-7.ch006

Lin, H., Tov, W., & Qiu, L. (2014). Emotional disclosure on social networking sites: The role of network structure and psychological needs. *Computers in Human Behaviour*, 41(1), 342–350. https://doi.org/10.1016/j.chb.2014.09.045

Linke, A., & Zerfass, A. (2013). Social media governance: Regulatory frameworks for successful online communications. *Journal of Communication Management*, 17(3), 270–286. doi: 10.1108/JCOM-09-2011-0050

Lundgren, L., Strandh, K., & Johansson, C. (2012). The practices of the social intranets - Usage, Benefits and success factors. *Journal of Technology*, 3(10), 41-67. http://www.diva-portal.org/smash/get/diva2:908402/FULLTEXT01.pdf

Ma, Q., & Liu, L. (2011). The Technology Acceptance Model. *Journal of Organizational and End User Computing*, 16(1), 59–72. doi: 10.4018/joeuc.2004010104

Macharia, J.& Nyakwende, E. (2009). Factors affecting the adoption and diffusion of Internet in higher educational institutions in Kenya. *Journal of Language, Technology & Entrepreneurship in Africa*. 1(1), 4-11. doi:10.4314/jolte.v1i2.41754.

Macnamara, J. (2011). *Gaps, risks and opportunities - Social Media Strategy and Governance*. Australian Centre for Public Communication.

Mafenya, P. N. (2016). A Study of Students' Experiences of Formative and Summative Assessment in Open Distance Learning*: Insights from Meta-synthesis*, 15(1), 1-53. https://doi.org/10.1080/09751122.2016.11890563

Maina, M. K. (2015). Adoption Determinants of E-learning Management System in Institutions of Higher Learning in Kenya: A Case of Selected Universities in Nairobi Metropolitan Department of Management Science Department of Management Science. *Informatics*, 6(2), 233–248. http://scholar.google.com/scholar_lookup?title=Adoption%20determinants%20of%20E-learning%20management%20system%20in%20institutions%20of%20higher%20learning%20in%20Kenya%3A%20a%20case%20of%20selected%20universities%20in%20Nairobi%20Metropolitan&author=MK.%20Maina&author=DM.%20Nzuki&journal=International%20Journal%20of%20Business%20and%20Social%20Science&volume=6&issue=2&pages=233-248&publication_year=2015

Manyika, J., Chui, M., Bughin, J., Dobbs, R., Bisson, P., & Marrs. (2013). *Disruptive technologies: Advances that will transform life, business, and the global economy*. McKinsey Global Insitute, https://doi.org/10.1016/J.ENG.2017.05.015

Martin, G. (2015). Why Social Media Can and Is Changing Education. *Learning, Media and Technology*, 41(1), 1-25. http://georgecouros.ca/blog/archives/1860

Matt, R. (2012 November 1). Technology Is Changing How Students Learn. *The New York Times*. https://archive.nwp.org/cs/public/print/resource/3985

Mattern, F., & Floerkemeier, C. (2010). From the Internet of Computers to the Internet of Things. In: Sachs K., Petrov I., Guerrero P. (eds) *From Active Data Management to Event-Based Systems and More. Lecture Notes in Computer Science,* (Vol 6462., pp 242-259) Springer. https://doi.org/10.1007/978-3-642-17226-7_15

McGrath, C. & Freed, E. (2012). *Social intranets & employee engagement: An HR solution for meaningful morale building. Open Road*. http://www.thoughtfarmer.com/blog/2012/02/07/white-paper-social-intranets-employeeengagement.

Mergel, I. (2016). Insights on Managing and Sharing Knowledge Internally. *Insights on Managing and Sharing*, 37(1), 74-96. https://www.researchgate.net/publication/311707497_The_Social_Intranet_Insights_on_Managing_and_Sharing_Knowledge_Internally

Merriam-Webster. (2019.). *Social media. In Merriam-Webster.com dictionary*. https://www.merriam-webster.com/dictionary/social%20media

Ministry of Education. (2012). *A Policy Framework for Education. Aligning Education and Training to the Constitution of Kenya (2010) and Kenya Vision 2030 and Beyond*. Government Printers.

Molla, A. (2008, December 3-8). *GITAM : A Model for the Adoption of Green IT.* [Conference session] 19th Australasian Conference on Information Systems, University of Canterbury, Christchurch, New Zealand https://aisel.aisnet.org/cgi/viewcontent.cgi?article=1074&context=acis2008

Mondahl, M., & Razmerita, L. (2014). Social media, Collaboration and Social Learning – a Case-study of Foreign Language Learning. *Social Learning*, 12(4), 339–352. https://eric.ed.gov/?id=EJ1035665

Moore, J. L., Dickson-Deane, C., & Galyen, K. (2011). Internet and Higher Education e-Learning, online learning, and distance learning environments: Are they the

same? *The Internet and Higher Education*, 14(2), 129–135. doi: 10.1016/j.iheduc.2010.10.001

Moran, M., Jeff S., & Hester T., (2011). *Teaching, Learning, and Sharing: How Today's Higher Education Faculty Use Social Media*. Babson Survey Research Group.

Mugenda, O. M. & Mugenda, A. G. (2009). *Reading in Research Methods: Quantitative and Qualitative Approaches.* African Centre for Technology Studies.

Murgor, T., (2015). Challenges Facing Adoption of Information Communication Technology in African Universities. *Journal of Education and Practice,* 6(25), 30-62. https://files.eric.ed.gov/fulltext/EJ1078515.pdf

Nassuora, A. B. (2012). Students Acceptance of Mobile Learning for Higher Education in Saudi Arabia. *American Academic & Scholarly Research Journal,* 4(2), 8-12. http://naturalspublishing.com/files/published/5z8b9f97ju9k98.pdf

Obar, J. & Wildman, S. (2015). Social media definition and the governance challenge: An introduction to the special issue. *Telecommunications Policy*, 39(9), 745-750. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2647377

Oh, C., Sasser, S., & Almahmoud, S. (2015). Social media analytics framework: The case of twitter and super bowl ads. *Journal of Information Technology Management*, 26(1), 1-16. https://pdfs.semanticscholar.org/344b/2750066c411d0b3a9ac18a67a41268f0e2d2.pdf

Oyedemi, O.A. (2015). *ICT and Effective School Management: Administrators' Perspective.*http://www.iaeng.org/publication/WCE2015/WCE2015_pp249-252.pdf

Paterson, K., & Fargo, W. (2013). Social Media Analytics and IEEE Intelligent Systems. *Networking*, 1(1), 1–8. doi: *10.1109/MIS.2010.151*

Paul, J., Baker, H., & Cochran, J. (2012). Effect of Online Social Networking on Student Academic Performance. *Computers in Human Behavior*, 28 (1), 2117–2127. 10.1016/j.chb.2012.06.016.

Pitsoe, V. J., & Maila, M. W. (2012). Rethinking Continuing Professional Teacher Development within the Open Distance Learning framework: Conceptualising the notion of ODL. *Journal of education*, 1(1), 17–23. doi: 10.20533/ijtie.2047.0533.2012.0003

Pletikosa C., I., Dubach S. E., & Michahelles, F. (2013). Evaluation framework for social media brand presence. *Social Network Analysis and Mining*, 3(4), 1325–1349. DOI: 10.1007/s13278-013-0131-y

Politano, A. L. (2001). Salvaging Information Engineering Techniques in the Data Warehouse Environment. *Journal of Education*, 4(2), 36-49. https://www.questia.com/library/journal/1G1-205270116/salvaging-information-engineering-techniques-in-the

Price Water Coopers (2014). *Harnessing your social media opportunity*. https://www.pwc.co.uk/audit-assurance/assets/pwc-social-media-governance.pdf

Productivity Commission. (2016). *Digital Disruption: What do governments need to do? In Commission Research Paper*. http://www.pc.gov.au/research/completed/digital-disruption/digital-disruption-research-paper.pdf

Quan-Haase, A., & Young, A. L. (2010). Uses and gratifications of social media: A comparison of facebook and instant messaging. *Bulletin of Science, Technology & Society*, 30(5),350-361. https://doi:10.1177/0270467610380009

Rajalampi, M. (2011). The role of the intranet in enhancing communication and knowledge sharing in a multinational company: Create, store, retrieve, transfer, use and share information. *Journal of Technology,* 3(1), 10-25. http://epub.lib.aalto.fi/en/ethesis/pdf/12590/hse_ethesis_12590.pdf

Raspopovic, M., Cvetanovic, S., Medan, I., & Ljubojevic, D. (2017). The effects of integrating social learning environment with online learning. *International Review of Research in Open and Distance Learning*, 18(1), 141–160. https://www.erudit.org/fr/revues/irrodl/2017-v18-n1-irrodl05016/1066182ar.pdf

Reed, Z. A. (2014). *Collaborative learning in the classroom Paper submitted as Partial Fulfilment of Master Teacher Program*. United States Military Academy

Robyn, M. (2015). *Collaborative Learning: Developments in Research and Practice*. Nova Science Publishers. https://books.google.co.ke/books/about/Collaborative_Learning.html?id=bEpQrgEACAAJ&redir_esc=y

Saunders, M., Lewis, P. & Thornhill, A. (2012). *Research Methods for Business Students* (6th ed.) Pearson Education Limited.

Seaman, J., & Tinti-Kane, H. (2013). *Social media for teaching and learning.* Babson Survey Research Group.

Seedat Y., Roodt S., & Mwapwele S.D. (2019). How South African University Information Systems Students Are Using Social Media. In: Nielsen P., Kimaro H. (Eds.), *Information and Communication Technologies for Development. Strengthening Southern-Driven Cooperation as a Catalyst for ICT4D. ICT4D 2019* (pp. 12-53). IFIP Advances in Information and Communication Technology.

Selwyn, N. (2012). Social Media in Higher Education. *The Europa of World Learning*, 9(1), 18-25. https://www.researchgate.net/publication/331286961_The_Impact_of_Social_Media_on_Students'_Education

Shana, L.B. (2012). *The influence of social networking sites on students' academic performance in Malaysia*. http//utechacademic.edu.shanleebrown.

Shankar, A. (2013). *Analytics and Fusion for Distributed Big Data: Emerging needs as Big Compute and Big Data analytics converge*. Cengage Learning.

Springer. (2015). *Exploring Collaborative Learning: Theoretical and Conceptual Perspectives. In investigating Chinese, HE EFL classrooms using collaborative learning to enhance learning.* Springer Group.

Statista, (2020). Number of smartphone users worldwide from 2014 to 2020 (in billions). *In Statista - The Statistics Portal*. https://www-

statista.com.db03.linccweb.org/statistics/330695/number-of-smartphone-users-worldwide/students-who-were-employed/.

Suryawanshi, P. V., & Suryawanshi, P. D. (2015). Fundamentals of E-Learning Models: *A Review*, 2(1), 107–120. https://www.semanticscholar.org/paper/E%E2%80%90learning-developments-and-experiences-Alexander/50988a2113680dc901ce21fe2b2a33254f3c5b9b

Tarus, J., Gichoya, D., & Muumbo, A. (2015). *Challenges of Implementing E-Learning in Kenya: A Case of Kenyan Public Universities*. http://www.irrodl.org/index.php/irrodl/index. 16. 10.19173/irrodl.v16i1.1816

Thomas, T. D., Singh, L., & Gaffar, K. (2013). The utility of the UTAUT model in explaining mobile learning adoption in higher education in Guyana. *International Journal of Education and Development Using Information and Communication Technology (IJEDICT)*, 9(3), 71–85. https://www.researchgate.net/publication/259479186_The_Utility_of_the_UTAUT_Model_in_Explaining_Mobile_Learning_Adoption_in_Higher_Education_in_Guyana

Umezuruike, C., & Onwodi, G. (2015). Bring Your Own Device in Education: A Review of Challenges. IJISET. *International Journal of Innovative Science, Engineering & Technology*, 2(9), 351–354. https://www.researchgate.net/publication/318921194_Bring_Your_Own_Device_in_Education_A_Review_of_Challenges

United Nations Educational, Scientific and Cultural Organization (2013). *Global Media and Information Literacy Assessment Framework: Country Readiness and Competencies*. UNESCO.

Unternehmen, W. (2010). *Social Media Governance.* https://www.ffpr.de/2010/08/25/social-media-governance-2010/

Valos, M. J., Habibi, F. H., Casidy, R., Driesener, C. B., & Maplestone, V. L. (2016). Exploring the integration of social media within integrated marketing. *Marketing Intelligence and Planning*, 34(1), 19–40. http://dro.deakin.edu.au/view/DU:30081191

Venkatesh, V., Morris, M. G., Hall, M., Davis, G. B., Davis, F. D., & Walton, S. M. (2003). User Acceptance of Information Technology: Toward A Unified View 1. *MIS Quarterly*, 27(3), 425–478. doi: 10.2307/30036540

Vlachopoulos, D., & Makri, A. (2017). *The effect of games and simulations on higher education: A systematic literature review.* Wiley & Sons. https://doi.org/10.1186/s41239-017-0062-1

Wang, K. & Zhu, C. (2019). MOOC-based flipped learning in higher education: students' participation, experience and learning performance. *International Journal of Educational Technology in Higher Education,* 16(33). 1-18 doi: 10.1186/s41239-019-0163-0

Ward, S. (2011). *Ethics and the Media: An Introduction*. Cambridge University Press.

Wellman, B. (2001). *Computer networks as social networks. Soxial Networks,* 2(5), 2031–2034. https://www.ncbi.nlm.nih.gov/pubmed/11557877

Wright, D., K., & Hinson, M. (2010). An analysis of new communications media use in public relations: results of a five-year trend study. *Public Relations Journal*, 4 (2), 1-6. www.prsa.org/Intelligence/PRJournal/Spring_10.

Yates, D., & Paquette, S. (2011). Emergency knowledge management and social media technologies: A case study of the 2010 Haitian earthquake. *International Journal of Information Management*, 31(1), 6–13. doi: 10.1016/j.ijinfomgt.2010.10.001

Yildirim, N., & Şimşek, K. (2015, June 14*). Challenges in open innovation for ICT companies in technology development zones* [Conference session]. IAMOT 2015 - 24th International Association for Management of Technology Conference: Technology, Innovation and Management for Sustainable Growth, Proceedings, Cape Town, South Africa. https://www.researchgate.net/publication/282705318_CHALLENGES_IN_OPEN_INNOVATION_FOR_ICT_COMPANIES_IN_TECHNOLOGY_DEVELOPMENT_ZONES

APPENDICES

APPENDIX I: NACOSTI PERMIT

THIS IS TO CERTIFY THAT:
MISS. JOYCE WAITHIRA KAMAU
of KENYA METHODIST UNIVERSITY, 46-60200 MERU,has been permitted to conduct research in *Meru County*

on the topic: *FRAMEWORK FOR ADOPTION OF SOCIAL MEDIA TO SUPPORT TEACHING AND LEARNING IN INSTITUTION OF HIGHER LEARNING*

for the period ending:
30th May,2017

Permit No : NACOSTI/P/16/75321/11048
Date Of Issue : 8th June,2016
Fee Recieved :Ksh 1000

.....
Applicant's Signature

.....
Director General
National Commission for Science, Technology & Innovation

CONDITIONS

1. You must report to the County Commissioner and the County Education Officer of the area before embarking on your research. Failure to do that may lead to the cancellation of your permit
2. Government Officers will not be interviewed without prior appointment.
3. No questionnaire will be used unless it has been approved.
4. Excavation, filming and collection of biological specimens are subject to further permission from the relevant Government Ministries.
5. You are required to submit at least two(2) hard copies and one(1) soft copy of your final report.
6. The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice

REPUBLIC OF KENYA

National Commission for Science, Technology and Innovation

RESEARCH CLEARANCE PERMIT

Serial No. A 9433

CONDITIONS: see back page

APPENDIX II: LETTER OF AUTHORIZATION

KENYA METHODIST UNIVERSITY

P. O. Box 267 Meru - 60200, Kenya
Tel: 254-064-30301/31229/30367/31171
Fax: 254-64-30162
Email: info@kemu.ac.ke

11th March, 2016

Commission Secretary,
National Commission for Science, Technology and Innovations,
P.O. Box 30623-00100,
NAIROBI.

Dear sir/ Madam,

RE: Joyce Waithira Kamau (MCS-3-0588-2/2014)

This is to confirm that the above named is a bona fide students of Kenya Methodist University, Department of Computer Information Systems undertaking a Master Degree in Computer Information Systems. She is conducting a research on, "Framework for the Adoption of Social Media to Support Teaching and Learning in Institutions of Higher Learning in Meru County."

We confirm that the thesis proposal has been reviewed and approved by the Department and the Scientific Ethical Review Committee (SERC).

In this regard, we are requesting your office to issue a permit to enable her collect data for her research.

Any assistance accorded to her will be appreciated.

Thank you.

Dr. John Muchiri, PHD.
Dean, Research Development and Postgraduate Studies

APPENDIX III: NON-DISCLOSURE AGREEMENT

This is to confirm that I, agree to participate in this research as a respondent with the assurance that:

1. My personal details shall remain private and not released to the public either directly or indirectly in any publication related to this research.

2. My identity shall remain anonymous throughout the research.

3. I shall not reveal any personal details in this research including my name, address, identification numbers and any other details that can identify me as a participant.

4. I offer to be a respondent on my own free will without being coerced or threatened to do so in any manner.

Respondent's Sign: …… Date: ……

Respondent

I, **Joyce Kamau**, as *the* **researcher** do promise to abide by the above conditions regarding the privacy of the respondent and will therefore take any responsibility for any harm caused by the breach of any of the afore stated conditions.

Name…….. Date…….. Sign……

Researcher

APPENDIX IV: QUESTIONNAIRE

SECTION A: DEMOGRAPHIC DATA OF THE RESPONDENT

1. Respondent Gender
   - Male ☐
   - Female ☐

2. Respondent Age
   - 18-25 years ☐
   - 26-35 years ☐
   - 36-45 years ☐
   - 46 years and above ☐

3. Level of education
   - College diploma/certificate ☐
   - Degree ☐
   - Masters and above ☐

4. level of skills in computing
   - Basic level ☐
   - Advanced level ☐

5. Experience in computer related tasks/duties
   - Less than 2 years ☐
   - 2 to 5 years ☐
   - 5 years and above ☐

SECTION B: GOVERNANCE AND SOCIAL MEDIA INTEGRATION INTO LEARNING

6. Please indicate by ticking on the appropriate space the extent at which you agree or disagree in each of the following statements relating to governance and social media usage within your institution

Statement		SD	D	N	A	SA
i.	The institution allows access to social media sites using the institution's resources					
ii.	The institution has a social media user policy					
iii.	The institution has active social media accounts					
iv.	There is a guide for users on the resources available from social networking sites that support learning					
v.	Lectures and administration in general encourage sharing learning content via social media					
vi.	The institution limits what content can be accessed from social networking sites					

SECTION C: INFRASTRUCTURE AND SOCIAL MEDIA INTEGRATION IN LEARNING

7. Please indicate by ticking on the appropriate space the extent to which you agree or disagree in each of the following statements relating to the institution's infrastructure and social media integration into learning

No	Statement	SD	D	N	A	SA
i.	The institution has a reliable internet connection					
ii.	There are no firewalls that limit access to social media content within the institution's network infrastructure					
iii.	The institution's computers are linked via local area networks					
iv.	There is a clear social media support structure in the institution					
v.	Privacy of devices and users is guaranteed by the organizational information systems infrastructure					
vi.	The institution has adequate computer resources					

SECTION D: LEVEL OF SOCIAL MEDIA USAGE IN LEARNING

8. How many social media accounts do you have and which are they?

   ---

9. How often do you use social media for learning?
   a) More often
   b) Moderately often
   c) Less often
   d) Not at all
10. To what extent do you agree with the following statements of social media usage/exposure and collaborative learning

Social media usage/exposure and Collaborative Learning		**SD**	**D**	**N**	**A**	**SA**
i.	We have formed groups in social media that help us in understanding deeply					
ii.	I often use social media for social chats and not anything academic					
iii.	I have shared learning content through social media with other students in other colleges severally					
iv.	Our lecturers sometimes share learning content through the social media					
v.	Social media has more irresponsible and unverified content for learners to use in learning					
vi.	The institution creates awareness on social media usage in learning					

SECTION E: SOCIAL MEDIA INTEGRATION AND COLLABORATIVE LEARNING

11. Using strongly agree, agree, neutral, agree and disagree, please rate the extent to which you agree with the following assertions

Social media integration and collaborative learning		**SD**	**D**	**N**	**A**	**SA**
i.	Social Media when integrated into learning can produce better academic performance through collaborative learning					
ii.	Social Media integration into learning has a potential of developing oral communication, leadership skills and self-management among the students					
iii.	Collaborative learning through social media integration develops all-round students than structured learning					
iv.	Through social media integration into learning, learners understand real life social and employment states while in colleges					
v.	Social media integration into learning gives learners an opportunity to build self-esteem and be more responsible					

Thank you for your participation