

**MOBILE PHONES AS A SUPPLEMENTARY ACADEMIC INFORMATION  
RESOURCE FOR COLLEGE STUDENTS IN NAIROBI: THE CASE OF  
UWS SAMAJ COLLEGE**

**BY**

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## DECLARATION

I declare that this thesis is my original work and has not been presented in any other forum or submitted for the award of a degree in any other university.

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This thesis has been presented for examination with my approval as university supervisor

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**SCHOOL OF JOURNALISM**

Date \_\_\_\_\_

## **DEDICATION**

I would like to dedicate this work to my mother Jacklyn who was my inspiration throughout my education and gave me the best foundation, character and taught me to value education from early in life. To the lovely people in my life, Mark, Jason and Jesse for their ardent support in whichever way and giving me the inspiration to push on even when things were thick. Their sacrifices made this possible.

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## ABSTRACT

Mobile phones are ever-present among college students and are frequently used in accessing learning resources among college students. This study using Koole (2006) Frame model and Davis's (1986) Technology Acceptance Model sought to investigate the extent of the utilization of mobile phones as a supplementary academic information resource for college students of UWS Samaj College in Nairobi in Kenya. The study was guided by the following objectives: the extent to which students are using mobile phones to access learning materials, how students are using mobile phone services to access learning materials and the kind of academic information accessed via mobile phones to enhance learning process among students in UWS Samaj College. Reviewed literature indicates that mobile phones are gradually supporting learners in accessing academic information in many areas. However, the use of mobile phone as a supplementary academic information resource can only be conceived by higher learning institutions in relation to the institutional rules and policy. Establishing the extent to which mobile phones are used as a supplementary academic resource and the kind of academic content accessed will help in informing the higher learning institutions and policy makers. This study adopted an explorative research design using census method where by in-depth interviews, observations, and questionnaires were used. The data collected from a sample comprising 150 students, five lectures and one administrator was analysed using mixed method (both quantitative and qualitative approaches). A total of 156 respondents participated in the study. Quantitative data was analysed descriptively by use of Statistical Package for Social Sciences (SPSS) while qualitative data was analysed using content analysis. The analysed quantitative data was presented using frequency distribution tables and figures while analysed qualitative data was presented by description and narration. Findings showed that the lecturers, students and administrators had phones that were used depending on their needs. The presence of cell phones presents a host of options and challenges for today's students. Cell phones are undeniably convenient, helpful tools for study and can be a hurtful source of distraction depending on the attitude and use pattern of a student. However, utilisation was done informally since mobile phones have not been integrated in learning in most higher education learning institutions. The study recommended that mobile phones should be formally integrated in the entire education system but guided by a well formulated policy.

## ACRONYMS AND ABBREVIATIONS

<b>CAGR</b>	Compound Annual Growth Rate
<b>CNN</b>	News Network
<b>ECAR</b>	EDUCAUSE Center for Analysis and Research
<b>GPA</b>	Grade Point Average
<b>ICT</b>	Information Communication and Technology
<b>M4Ed4Dev</b>	Mobile for Education for Development
<b>MMS</b>	Multi Media Service
<b>NGOs</b>	Non-Governmental Organizations
<b>PBL</b>	Project Based Learning
<b>PDA</b> s	Personal Digital Assistance
<b>SMS</b>	Short Message Service
<b>SPSS</b>	Statistical Package for Social Sciences
<b>SUA</b>	Sokoine University of Agriculture
<b>UNESCO</b>	United Nations Educational Scientific and Cultural Organization
<b>UWS</b>	University of Western Sydney

## DEFINITION OF KEY TERMS

**Effective use** refers to proper utilisation of a device in order to produce intended results.

**Enhancing** refers to using of mobile phone to improve communication between learners and course providers in learning programmes.

**Learner support services** refers to strategies which empower learners to establish and fulfil their learning.

**Measures** actions intended to achieve or deal with something.

**Mobile devices** are devices that are small, autonomous and enough to be carried around for assessing content, which can be stored locally on the device or can be reached through interconnection

**Mobile learning** is part of the wider ecosystem of eLearning which comprises all forms of electronically supported learning and teaching resources that are not in a fixed infrastructure and having a limited distribution.

**Mobile phone** refers to electronic gadget used for communication between course instructors and learners; for this paper a smart phone.

**Multimedia messaging service** is a standard way to send messages that include multimedia content to and from mobile phones.

**Smartphone features:** Touch Screen, QWERTY, External Display, Internet Cable, WIFI, Camera, Audio recorder, Video recorder, Office Productivity Software, Ability to Install Applications among others.

**Social media** refers to websites and applications that enable users to create and share content or to participate in social networking.

**Text message** refers to short message in the form of text sent using mobile phone device

**Utilisation** skill of using mobile phone devices to deliver information in education programmes.

**Voice call** refers to verbal communication with someone by phone

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# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of the Study

The use of mobile phones to support education has two clear rationales. First it can be used to provide administrative and academic backing, and consequently reduce what Cavus, Bicen and Akçil (2008) terms transactional distance, which is one of the key limitations learners face especially distance learners. Second, learners can enjoy the portability convenience aspect of mobile phones hence learn wherever they are.

In Europe, mobile learning is budding. Students are using mobile phones for various purposes which include amusement, education and work. In India, the use of mobile technology services in supporting distance education was launched in 1995. The acceptance of mobile phones at first, continued to be very slow in India, reason being the high costs of purchasing and using mobile phones and poor infrastructure. However, complimentary government policies and the drop in mobile charges, led to sudden growth of mobile phone conveniences in India.

Mobile phones have shortcomings such as small screen size, short battery life and irregular network access (Keegan, 2010). In spite this, mobile based learning has been opened up by current global developments the shortcomings notwithstanding. Learning delivered or reinforced mainly by mobile devices such as personal digital assistants (PDAs) and smart phones (Traxler 2010, Okunbor and Guy, 2012) has been very quickly increasing due to the fact that it allows learners to access academic content anywhere, any time. The mobile phone is being used for short messages alerts supporting learners in various learner support

activities like, registration, fee submission, assignment submission, examination dates among others.

The attention of the international development community has also been grasped by the use of mobile technology. The US Agency for International Development and Stanford University in 2011 held a discussion, m4Ed4Dev (Mobile for Education for Development), intended to sightsee the use of mobile devices for education in developing countries, and in 2014 the United Nations Educational Scientific and Cultural Organisation (UNESCO) published *Turning on mobile learning: In Africa and the Middle East*. The second annual Mobile Learning Week was also held by UNESCO. This was a five-day conference intended to investigate the influence mobile learning might have on its Education for All goals (Masika et al., 2015).

From 2013 to 2014, McGraw-Hill Education and Hanover Research noted that, the percentage of college campuses students using mobile devices such as smart-phones and tablets to study rose to an unparalleled 81 percent. The growth of smartphone usage in studying outstripping both laptops and tablets, is the cause of the increase in mobile devices for studying (Armitage, 2015). Factors that make mobile learning more attractive to students include convenience, interactivity, flexibility and engagement, (Seilhamer, Chen, and Sugar, 2013).

Trifonova and Ronchetti (2003) defines mobile learning (M- learning) an “e-learning through mobile computational devices.” This could entail all mobile gadgets that are small, conveniently portable to be carried around with us and self-sufficient such as digital cell phones, Personal Digital Assistance (PDA), tablets and IPOD. This mobile device can be very useful and helpful for us in various ways. For instance, interaction with people, through

voice and the exchange of written messages as well as moving and still images. In addition, mobile devices assist us in assessing content and locally storing it on the device or accessing the content through interconnection.

Although M-Learning could be categorized under eLearning (comprises all forms of electronically supported teaching and learning), the difference comes in its ability to enable the user to access content anywhere, anytime. This is a crucial characteristic of m-learning that takes academic resources to learners who may otherwise have missed that opportunity in traditional learning environments like a classroom. It also provides a personal as well as practical learning. Naismith et al., (2004) observe that the future technology developers and teachers have a great responsibility to ensure that the learning experience for students is highly mobile, learner-centred, mutual and lasting.

Studies show that people with high computer efficiency, engaged more actively in activities related to computers. Hence Students' computer self- efficiency coupled with attitudes are the main factors which determined mobile learning success among students (Isman and Celikli, 2009). Psychological factors such as perceptions toward computers as helpful and self-directed tools and computer anxiety affected m-learning (Barbeite and Weiss, 2004; Kao and Tsai, 2009).

Wylie (2015) posited that Mobile learning tools enable a more flexible approach to learning to both teachers and students. Mobile learning ensures students use this technology anywhere else other than only in the classroom. The phone can be used to search particular topics and complete activities individually or in groups. University library resources and databases can also be accessed by learners virtually anywhere giving them an upper hand as opposed to accessing via a computer or fixed place. Mobile devices enable learners to consume, explore

and contribute in the production of content through the features found in the devices (Dahlstrom, 2012). Hence the learning experience of college students is renovated also influencing their learning predilections in whichever setup.

M-Learning, is a complementary method of instructions and learning process that has facilitated changes in the learning method that in turn has affected educational outcomes. New learning theories characterise this method (m-learning) as being effective for learning as it is seen to be able to improve performance in academics as it continues to develop rapidly. For example, modern “smart-phones” provide to students similar or even more enhanced proficiencies as an internet-connected computer with immediacy. Some of these functions include; online information retrieval, file sharing, and interacting with tutors and fellow students (Bull and McCormick, 2012; Tao and Yeh, 2013).

Mobile learning devices have the academic potential to enhance the students ‘process of learning. Mobile devices engage and motivate students to learn hence improved academic performances. According to the McGraw-Hill Education and Hanover Research report; 77 percent of students surveyed reported that technology usage improved their scores, while 48 percent said use of mobile devices to study enabled them to save time (Armitage, 2015).

Despite their being rules against using mobile phones during class time, research suggests that college students often use them (Tindell and Bohlander, 2012). On the other hand, research points out that cell phones can become a serious distraction that interferes with learning in classrooms. According to a University of New Hampshire study, students are tempted to often check their phones during lessons and as shown in the "Faculty Focus" reports this habit of using cell phone during class hinders students from excelling academically and distracts other students in class from learning. However, with this



knowledge student still continue to use mobile phones during lessons by texting when the tutor is writing on the board, when tackling group activities or during any class time activity (Morgan, 2015).

As postulated by Morgan (2015), the copious expediencies of using mobile phones such as easy access to calculators, calendars, dictionaries among other features contribute to the rise in their usage. This is despite "The Atlantic" reporting to the contrary, that they affect students' cognitive thinking abilities, makes them dependent on the phone as an information quick fix gadget and shortens students' attention span causing them to struggle reading long academic materials as they are used to reading social network posting. In addition, becoming reliant on the phone as a swift fix for information can prevent their acquisition of spontaneous thinking ability necessary in work situations.

Penetration of mobile phone in the African continent is elevated. This is compounded by the much lower prices of mobile devices such as phones and personal digital assistants (PDAs) like palmtop computers (ipads, Tablets) compared to desktop computers; this provides a cheaper means of communication. In Africa, the mobile technology has progressed as a windfall for distance education (DE) where learners do not attend traditional classroom setups to access academic resources yet expect to get academic and personal assistance as well as guidance and administrative support like the other students who attend conventional classroom setups (Dharankar, 2008).

Today, Africa is the fastest growing and second largest mobile phone market in the world leaving the education system under pressure to cope with the exponential growth. Although in some countries like Botswana, Gabon and Namibia mobile subscriptions are more than the denizens, mobile penetration is still the lowest in Africa compared of any market though

plenty more growth is expected. Africa has made history for the first time in the continent because its people are connected this being reflected by the over 620 million mobile subscriptions. The connections provide a chance for education (Vosloo, 2009). According to Communications Commission of Kenya - Annual Report 2012 – 2013), Kenya has mobile phone penetration of about 75% while Sub-Saharan Africa has a mobile phone penetration of about 65%. These connections offer a good opportunity for the education system to thrive with studies indicating that smart phones dominate the market currently. Africa is a boon for technology firms that are eyeing Africa. In 2010, Microsoft smart-phone built by the Chinese manufacturer Huawei specifically had the African market in mind in its release; Google chairman Eric Schmidt too had the same foresight when he declared Kenyan capital Nairobi a “serious tech hub” after a sub-Saharan African cities tour. Already the city is home to a Nokia Research Centre exclusively devoted to “understanding the needs of the African mobile phone user”. With the advancement of mobile technology and its affordability, it is likely to become the main technology adopted by learners for communication, dissemination of academic information and assessment. Mobile phones could offer a solution to one of Africa’s main challenges: high dropout rates (Parr, 2013).

## **1.2. Problem Statement**

Access of learning materials through mobile devices by students in higher learning institutions is on the increase. This is despite the fact it is happening informally since most institutions have not made policies that would promote this activity to take place in a formalised way-in this case as a supplementary academic information resource. Despite majority of students in possession of phones that support many applications, mobile phones have not been integrated in learning in most higher education learning institutions.

Access of learning materials through mobile devices offers an alternative learning process away from the traditional form of education where students have books for access of learning materials. Access to learning resources via mobile devices facilitates personalised learning in that it responds to variety and diversity in the learning process. This facilitates for flexible learning through enabling learning during the class hour and outside class environment.

Previous studies investigating accessibility of learning materials via mobile phones have focused on student motivations, perceptions, and attitudes towards the devices as well as the effect mobile phone has on academics but few have addressed use of mobile phones as a supplementary academic information resource. Rare mobile learning support and scanty research on how mobile devices can be integrated in teaching and learning with support from faculty informs the need for more research on strategies and practices that will encourage effective use of mobile devices as a supplementary academic information resource.

Despite the availability of various mobile devices being at the students' disposal, it is common to find most of them using their phones compared to the other mobile devices which raises the question as to whether they mostly access learning materials and if so, to what extent, how and what kind of learning information do they access using mobile phones. It has been observed that they access learning materials using this device but lack of sufficient documentation showing the extent to which students access academic information through mobile phones informs this study. In this context, this study will seek to find out the extent to which students use mobile phones as a supplementary academic information resource in the context of students of UWS Samaj College in Nairobi.

### **1.3 Objectives**

This study's objectives were:

- i. To explore the extent to which students use mobile phones to access learning materials.
- ii. To probe how learners, use mobile phone to access learning materials at UWS Samaj College.
- iii. To find out the kind of information accessed by lectures and students through mobile phones to enhance learning in UWS Samaj College.

### **1.4 Research Questions**

This research sought to find out the use of mobile phones to access academic information as a supplementary resource by UWS Samaj College students. The key questions of this investigation are:

- i. What is the extent to which students use mobile phone to access academic information?
- ii. How do students use mobile phones to access learning materials?
- iii. What kind of information is accessed by lectures and students via mobile phone to enhance learning?

### **1.5 Significance of the Study**

This investigation will provide handy information to the students on effective utilisation of mobile devices as a form of increasing access to academic materials and nurturing good study habits. The study will also help the college administrators elucidate future guidelines of faculty development by ensuring instructors acquire knowledge of innovative technological devices and assimilate them into the curriculum with thorough enablement and valuation

stratagems, and also be able to back the m-learning practices among learners. To the instructors in the learning institutions, this study will help them provide proficient development coaching on novel technologies across content areas and incorporate mobile tools into learning and the plan of learning resources that can be retrieved via mobile phones.

This study intends to provide valuable understanding of how mobile learning can be integrated into the curriculum, thus helping in advising Ministry of Education, Science and Technology, Ministry of Information and Technology, NGOs, Telecommunication operators and Mobile phone manufacturers on restructuring of higher education including curriculum designing and devising interventions that will improve accessibility of learning materials via mobile phones. The researcher expects that the information gathered will be used for publication and also as a baseline for future research.

### **1.6 Justification of the Study**

Mobile learning epitomises more than a sheer period of technological appeal: it is lucidly acknowledged as the fourth generation of the electronic learning environment (Salmon, 2004), where ‘the worth of using mobile skills in the process of learning and teaching seems to be both obvious and unavoidable’ (Wagner, 2005). Owing to the existing spur towards m- learning and the rise in mobile phones usage reaching the point of being pervasive characterized by: firstly, additional wireless networks, services, and devices than ever before; secondly, the demand by consumers for better mobile experiences than ever experienced before; and thirdly, the need for ‘anytime, anywhere’ links more than ever before; informs the need for this study. Educators also need to adjust from the role of conveying knowledge to steering learners hence the need for this study. In addition, mobile learning products and

services market is growing at an alarming rate and revenues accrued keep on defying the economic recession trends all over poses a need for this study.

### **1.7 Study Scope and Limitation**

The study was carried out among students in UWS Samaj College with regards to use of mobile phones as a supplementary academic information resource for college students. In addition, the study focused on: the extent to which mobile phones are used to access learning information, how students use mobile telephone services to access learning materials and the kind of academic information accessed via mobile phones to enhance learning process among students in UWS Samaj College. The study did not focus on mobile technology *per se*, but relatively on how it is used in and beyond the classroom setting. While research at a specific college may advance insight into the predilections of today's students, it may be restrictive in its generalizability. The findings may only reflect the college in which the participants are located.

### **1.8 Conclusion**

This chapter seeks to find out the objectives and questions that would help fill the gap that has not been explored much and that is showing the extent to which students access learning materials using mobile phones so as to inform future higher education developments.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Overview**

This chapter reviews literature that relate to: the extent to which students access academic information via mobile phones, how students and lectures use mobile phones as a supplementary resource to access academic information and the kind of information conveyed and received through mobile phones by lecturers and students in UWS Samaj College. The review takes cognizance of the studies done in developing countries in Africa and developed countries such as in United States of America, countries in Europe and in Asia.

##### **2.1.1 Use of Mobile Devices in Accessing Academic Information by Students**

In an assessment conducted among students in the College of Health sciences, University of Nairobi by Masika et al., (2015) on the utilisation and challenges of mobile learning technology, out of which 88% were found to own and to be in use of a smart device in aiding their learning. Among the challenges included poor internet connectivity, limited space in the gadget and inadequate technological know-how in navigating the applications. In conclusion, it was found that the acceptance of mobile learning by medical students was good and should be incorporated in their learning.

In an evaluation on project based learning conducted in 3 private schools in Nigeria among 750 students, result indicated that a significant percentage of student were in possession of a mobile phone, Utulu (2012). The findings further showed that the phones were put in use for connecting to the internet, information access, information sharing and interactions. Of

significance, the responses showed that mobiles phones can be instrumental in enhancing PBL in higher institutions.

In a study done by Kafyulilo (2011) on learners' and tutors' perceptions on utilization of mobile devices for distance and also open learning in Tanzania established that both tutors and in-service teachers had not learned to use mobile phones. While tutors showed positive interest for uptake of mobile phones if adequately trained, the teachers on the other hand were hesitant to adopt mobile phones in teaching. Consequently, mobile phone were found to be the most available and hi-tech device both at the school and university level in promoting teaching and learning. Students and teachers also noted that they are more eager to study by way of a mobile phone; mobile phones interest students in learning; use of mobile phones can simplify learning; mobile phones can help students to learn beyond a classroom; through a mobile phone learners can learn after classroom hours; mobile phones can help students to answer difficult questions; mobile phone use is not time consuming; and studying by way of mobile phones make learners comfortable to learn by using a mobile phone.

In a study conducted at the Ha'il University in Saudi Arabia, sought to find out students' views towards use of mobile phone technology. A majority of the respondents (93.9%) mentioned that the idea was brilliant; that they found the experience in use of mobile technology to be good (81.8 %); use of the technology was valuable in expanding knowledge in the field of their study (45.4%); that they felt motivated to learn (66.6 %); while other respondents 93.9% said that it enhanced communication with their peers. The results, in summary showed the perception towards the use of mobile phone technology in Institutions of Higher education to be good, Hussein and Nassuora (2012).



Yang (2012) evaluate the attitudes among second year students in using mobile m-learning in finish work that were given for English under the guidance of the instructor. Findings suggested a majority of learners had good attitude towards the technology of mobile and also had the drive to learn.

Kinash et al., (2012) in inquiring if blackboard mobile learning had apparent modification to learning. The authors demonstrated that students made use of their mobile devices in classroom set up to access the web for study either by of the institution web, or via email and also through Face book postings. The findings showed high rates of agreement that use of iPads was a motivation to learning. It was the intention of this study to establish the extent to which mobile phones are used to access academic information and how this academic information is accessed among students in UWS Samaj College as envisaged in the first research objective.

## **2.2 Academic Information Accessed via Mobile Phones to Enhance Learning**

### **2.2.1 Mobile phone as a learner support device**

A mobile phone is an electronic device for mobile communication. Beside use for voice, it encompasses other services like Multimedia Messaging Service (MMS) for sending and receiving images, rich text, e-mail, packet switching for access to the Internet, Short Message Service (SMS) for text messaging, audio, photos and video and Enhanced Messaging Services (EMS) exist in the modern phones. The features also allow for integration of audio, text, Video, pictures and animation. We should start by considering how dissimilar mobile learning is from other technologies used in teaching and learning for us to comprehend how mobile tools can be adopted in teaching and learning (Laurillard, 2007). The one advantage of using mobile technologies is its spontaneity, intimate, versatile and pervasive nature.

Mobile learning supports intellectual environment that promotes interaction of learners with content and with their tutors. (Koole, 2009). Sharpes (2005) posits that mobile learning is better understood by its context than the content under study. The ability to accommodate learning anywhere any time, is the most important element of mobile technologies, according to Kukulsa-Hulme and Traxler (2005). This offers learners power to interact and learn together. Naturally, mobile learning ascribes to the student-centred approach owing to its ability to link people wherever they are.

According to Laurillard (2007), mobile learning support and enhances peer collaboration among learners and hence more likely to share their work with each other. In the distance education context, social interaction relays to the socio-emotional feature of group founding and group intricacies (Kreijns, Kirschner & Jochems, 2003). This attribute is supported in mobile learning by a community of learners committed to collaborate. How to connect mobile technological features to enhance student learning is the question. Yousuf (2007) established that learning can improve through learners sharing of academic content, tutors and supporting staff via mobile learning. One of the major benefits of this technology is the fact that it can be put to use anytime, anywhere and is easily accessible by many people.

### **2.3 Utilization of text messages in enhancing learning**

The Short Messaging feature (SMS) made available in Mobile phones could be efficiently utilized as a tool to enhance teaching-learning process. Kadirire (2005) illustrated that SMS can be used in learning institution and in trade for group discussions. It has been found to be relatively easy to use.

In a study among 58 Makerere University students on use of short message services (SMS) in conveying resource to university students in distance learning, Mbarika and Mbarika (2006)

ascertained that a majority (96.6%) possessed mobile phones suggesting high potential to enhance communication among students and instructors.

Caudill (2007) suggested three probable ways of sharing information through SMS, one whereby the institution sends information regarding their programme, the other is the learner asking for information that they require, and last one whereby the student is actively involved engaging with the learning environment.

Young, (2007) resolved that, students while in their internship and separated by distance, the SMS text messaging offers the most suitable technology to resolve the issues to support and lower the feelings of isolation that come with distance.

In study carried out in Makerere University, Uganda by Kajumbula (2009) to find out what learners preferred to receive through SMS, the suggested information included the following; the results, information on tests, time for exams and the respective venues as well as course work details. Other information mentioned was on course units to be covered, schedule for class work, fees structures, updates, answers to questions on subject matter and new textbooks.

From these rejoinders, it is clear that the kind of information required covers crucial areas in the life of a learner. This corroborates the findings in the Philippines where students, especially in modes of education like open learning and distance education that have less face-to-face and traditional classroom contact, use SMS and email to foster collaboration and learning. According to Pabico (2003), the use of messaging has become an essential element of communication and a vital feature of teaching and learning. Most people with phones are ready to make use of them for learning purposes as well (Yerushalmy and Oshrat, 2004; Broddason, 2006).

Mobile devices offer easily accessible technology that instructors can make use of to support learners in their academic pursuit. SMS being attractive among learners, it presents a perfect opportunity to explore avenues of using SMS for teaching and learning (Ng'ambi 2005).

Mobile backing has the likelihood of improving learners' success rate of and increase the quality of learning proficiency. Administrators and instructors alike observed that SMS communication can improve and support academic and administrative support to students. For instance, it is possible for learners to follow up on missing marks, important dates for lecturers and examination among others which enhances the use of communication among academic staff and students as Briggs and Smith (2001) also emphasized.

SMS platform provides opportunity for one-on-one teaching/learning interaction since learners can study materials at their disposal and then send text messages to their tutors who can then respond on the concerns raised by students. One tutor commented that; SMS can be used to remind students on deadlines for school related work and promote interaction among tutors, between tutors and administrators, between administrators and students, and among both students and administrators (Kajumbula, 2006).

According Traxler and Riordan (2003) Short Message Service (SMS) is a less expensive and a highly dependable as a means communication. This is especially so where the communication is short and precise. Other than SMS, voice mail and pre-recorded MP3 files can also be used to support student learning.

Mobile SMS service allows students communication on exam results, date for registration and status among others, Ramos (2006).

Findings from summative evaluations of the SMS initiative at Open University Malaysia conducted by Tina, Mansor, and Norziati (2011) have shown beside availing critical

information about the course work, the SMSes kept the learners focused and engaged in the period of the learning process.

Consequently, the messages enabled learn to take place anytime and anywhere hence managing their studies well (Singh, 2010). The start of every new semester, over 95% of the learners involved expressed interest to have other courses be availed via mobile learning. This study investigated the use of mobile phone as a supplementary academic information resource by college students and lectures of UWS Samaj college, Nairobi, Kenya.

#### **2.4 Utilization of email in enhancing learning**

Email has been utilized to support a various instructional contexts and is among the many online resources for learning used to support asynchronous learning (occurring at different times modes). Among the strengths of email comprise being easy to utilise, effectiveness and cost effectiveness, and affordability. However, the use of email for academic purpose is low. Based on examination of tutors mail messages by Alexander (2002), half of the messages were the only that had course related content. They suggested for extra studies on instructing strategies with an aim of harnessing the potential strengths for use of email for learning and instruction.

De Montes and Gonzales (2000) in a study on utilization of email an online course for secondary school teachers, it was established that email allowed the instructor to offer support and to uphold relationships with learners.

Grünberg and Armellini (2004) in their investigation, established that email was frequently utilized for sharing and not for requesting information and subsequently that the exchange bordered more on private than public ones.

A study was conducted by Clingerman and Bernard (2004) on utilisation of email as an additional management methodology for practicum subject in counselling college. Students' messages sent to tutors every week were examined. The messages sent via email by students were established to be personal in nature. In conclusion, as per the study was that email encouraged closeness between instructors and students which was attributed to "a sense of safety psychologically". The researchers report, concluded that the learner's attentiveness and engagement was increased through use of email.

In an analysis by Overbaugh (2002) on patterns of communication through use of email and electronic lists were established as being effective for communication with groups.

In a research on e-mentoring by Harris and Jones (1999), it was found among the benefit of emails was its ability to encourage social interactions than one on one would allow.

Brown and Dexter (2002) in a program meant to improve fifth and sixth graders skills in writing through conversation via mail established that interpersonal skills for learners became better beside the skills in writing. Boxie (2004) in a project between high school students and pre-service teachers that entailed writing and monitoring electronically, it established that students' attitude towards school work positively increased.

In a research on communication through the use of email by Davenport's (2006), that partnered second graders together with pre-service teachers, it indicated the students' skills in writing did improve and exuded confidence. The teachers' know-how in teaching how to write was found to also have improved.

Among the strengths associated with use of email including the contribution to academic accomplishment as per researchers include frequent support for individual needs; offers a context that is learner-centred, the teachings are resolute and targeted; exchange of resources

and information (Cook-Sather and Mawr, 2007), brings about psychological comfort; closeness with the other communicator, improves expression for idea that are personal in nature, personal thoughts and feelings; provides opportunity for non-formal conversation; (Davenport, 2006), enhances interpersonal skills growth; collegiality; promote sensitivity to other awareness attitudes; helps one grasp perspectives in other insights; promotes intimacy (Cook-Sather and Mawr, 2007), promotes attentiveness to details as well as creative thinking; (Boxie, 2004).

Accordingly, access of email through the mobile phone may be considered in this context as an alternative strategy for instructional efficiency in education as in further settings. The studies drawn attention to have centred on the dissemination of course-related information or assignments by email rather than focus on the conceptual basis and utilization on learning results. There has been less focus on examination on the particular elements of email communication that add to increase of learner support. This study therefore will seek to examine the degree to which emails are used to access academic information.

## **2.5 Utilization of voice call in enhancing learning**

In a study investigating utilization of phone call communication in Virtual High Schools in Malaysia conducted by Marley (2012), teachers that interrogated mentioned that faced difficulty in trying to communicate to students using phone due to the fact that majority of students responded poorly to phone-call with a mere 20% of the students responding to the calls. In the research, the tutors gave more data regarding their regular forms of communication. Teachers choice in communicating vary based on the aim of the communication according to LaPointe and Reisetter (2008). Additionally, they suggest that teachers may use personal phone calls to establish contact with struggling students in order to

ascertain concerns that may be preventing these learner's success. Teachers prefer phone calls because they can address majority of their students fleetingly.

Adedoja, Adelore, Egbokhare and Oluleye (2013) posit that students call frantically because of frustration with matters ranging from inability to login to other technical issues such as navigating the web, network connectivity among others. Therefore, there is need to support use of phones to make calls in learning.

## **2.6 Utilization of social media in enhancing learner support**

Recently, there has there has been a speedy growth in the use of social networking tools such as Facebook and social media in general, mainly for social, recreational, and entertainment purposes (Smith, Salaway, and Caruso, 2009). A majority of educators are of the opinion that these tools offer new avenues for learning and opportunities that learners can utilise to interact their peers and tutors as well.

With the documented rates of drop out in distance learning (Rovai, 2003; Woodley, 2004), these platforms may be of special interest for distance education institutions in addressing the concern (Sweet, 1986). Since most distance students are adults (Rovai, 2003), not much is known regarding their experience in use of social media for learning or reaching out to their peers.

According to McClatchey (2006) the Web has completely been altered, moving away from what has been known to be an information repository to a more social environment where users are also participating in developing content (Bruns, 2008). The social media has been on the path to growth with applications in social, gaming, media, business, and education contexts. Currently, facebook happens to the second most visited site just after Google) in North America (Alexa, 2011) and claims over 750 million members (Facebook, 2011).



As the technology advances, the delivery of mobile learning also gets revolutionized and the resultant is that learners do not need to be near learning providers. However, critics still hold the view that face to face is still more effective as a mode of delivery. Surveys on mobile distance learning courses have shown that there is always lack social interaction emanating from mobile learning which tends to make learners feel secluded due to being cut off from direct engagement, lack of direction, insufficient guidance and support that come from the learning provider.

## **2.7 Review Summary**

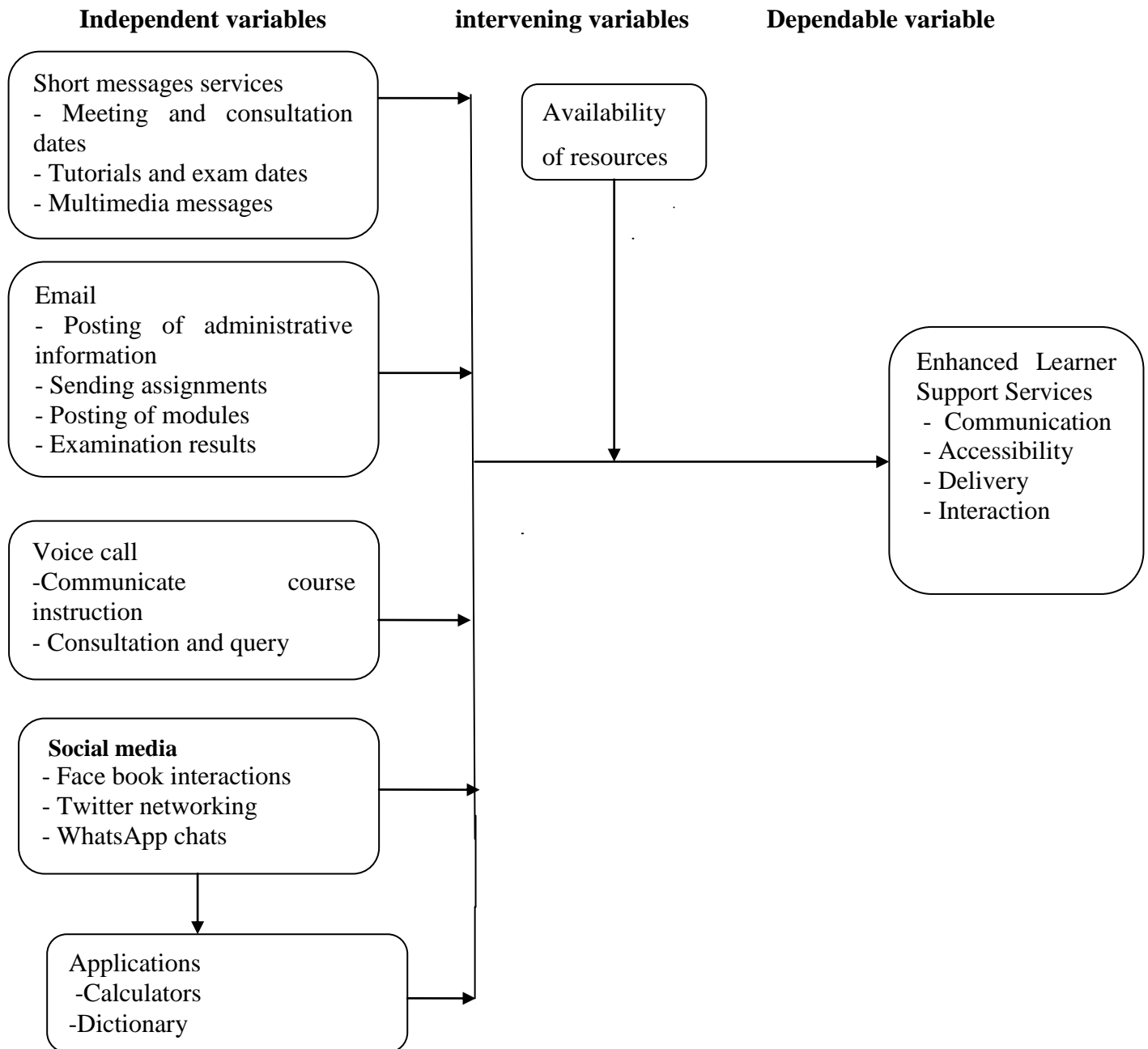
From the reviewed literature, studies show that mobile learning is increasingly popular among students irrespective of the courses enrolled. A majority of students have mobile phones that they use for accessing the internet, sharing resources, communication, and interaction. In addition, a number of students use their devices for learning. A ranging number of impediments curtailed students from effectively using these devices for learning. Studies reviewed in connection to ownership of mobile devices only concentrated on students in their final years and in private universities. A gap here arises in that little has been done to address the views of college students who are pursuing diplomas as opposed to the views of those in higher learning institutions. This study intends to incorporate learners in middle level colleges pursuing diplomas. In addition, the study intends to use exploratory research design in order to determine the level of usage of mobile devices in accessing learning materials among the students.

On the attitude towards the use of mobile learning, studies have revealed that students have a positive attitude towards mobile learning irrespective of whether it is a requirement in the courses. On the contribution of learning materials via mobile devices in promoting new

learning outcomes; studies indicate mixed signals in terms of the implications arising due to increased cell phone use among students to access learning materials. In addition, most of these studies were conducted outside Africa. A gap here arises in that there is need to determine if these contributions are replicated or different among students in learning institutions in Africa and Kenya to be specific. On the interventions put in place to access learning materials via mobile devices and improve learning outcomes among students, this study seeks to identify the constraints with the sole aim of designing appropriate interventions in line with the mobile devices owned by students, level of technology among students and tutors and the content in the curriculum being implemented in the college.

## 2.8 Conceptual Framework

Conceptual framework shows the relationship between the variables. Figure 2.1 shows this the relationship between independent, intervening and dependent variables.



**Figure 2.1: Conceptual Framework**

## **2.9 Theoretical Framework**

### **2.9.1 Technology Acceptance Theories**

The theory of Technology acceptance can be utilised to measure and scale students' behavioural intents and institute the issues which most positively impact students' prospect to accept new technologies such as m-learning (Apostolou et al., 2009). Several information technology acceptance theories have been recommended and used to explain the acceptance technology behaviour and its antecedents (Van Schaik, 2009). Some of them include the Planned Behaviour theory advanced by Ajzen (1985) and derived from the social psychology, the other is the Technology Acceptance Model (TAM). The others include the Technology Organization and Environment framework as well as and Diffusion on Innovation theory by (Rogers, 1995). These models have gained acceptance and have been used in various studies investigating technology adoption practices; particularly in Western developed countries (Davie&Graff, 2005; Huang et al., 2007).

### **2.9.2 The FRAME Model**

In the FRAME model, utilisation of mobile experiences is seen as existing within a framework of information. Learners use and make information collectively and individually. The interaction with information is facilitated through technology. It is through the intricacies of this kind of communication that information becomes expressive and handy. Features of mobile learning devices which include the social, personal and technical are considered the FRAME model (Koole, 2006).

However, the FRAME model highlights the function of technology yonder simply a relic of “cultural-historic” development. The mobile device is an active constituent in equal footing to learning and social processes in this model. It also places more emphasis on

constructivism: rational denotes the “the main source knowledge is reason and that reality is not discovered but constructed” (Smith and Ragan, 1999). The FRAME model defines a kind of learning in which students may move within different physical and virtual locations and thereby participate and interact with other people, information, or systems anywhere, anytime.

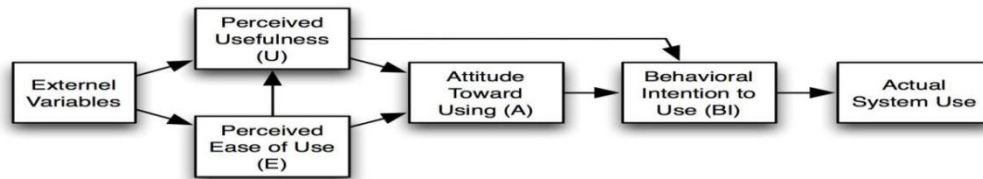
This theory is best suited for this study for it shows the interconnections that exist especially when students are furnished with a mobile device, that can be used to access a web page, access audio or video tutorials, send a query via text message to a friend, or phone an expert for guidance. Their attitudes towards using these gadgets in accessing learning materials, the contributions of these devices and interventions in place all affect effective utilization of these devices.

### **2.9.3 Theory of Reasoned Action**

This study’s framework is founded on Davis’s (1986) Technology Acceptance Model (TAM), that makes use of the Theory of Reasoned Action (TRA). TRA proposes that an individual’s attitude toward behaviour is predisposed by his/her dogmas. Particularly, this model deals with the suitability of an information tool, envisaging acceptability of the tool and adjustments to be made, if vital, for acceptability. TRA dons that acceptability is primarily determined by two factors: Perceived Usefulness (PU) and Perceived Ease of Use (PEU). PU described as the level to which one believes that the use of a system/tool will progress his/her performance, while PEU refers to the level to which one supposes the use of a tool/system will be uncomplicated or require minimum effort. TRA posits that the attitude of a person, Davis (1986) is not the only factor that governs ones use of new technology, as

the impact the tool or system will have on his/her performance is also substantial. The main aspects in the Technology Acceptance Model are illustrated in Figure 2.2.

**Figure 2.2: The TAM Relationship between Perceived Usefulness, Perceived Ease of Use and Actual Use (Davis, 1986)**



Numerous studies have been undertaken using the TAM model as advanced by Davis (1986). The model has been criticized to be incomplete due to failure to account for social influence adoption, acceptance in use of a novel systems (Misiolok et al 2002; Malhotra and Galletta, 1999). It is critical to have this in consideration as human beings are strongly influenced the environment they are in socially. Still, other studies have utilised the concepts of PEU, individual norms and PU (mentors, peers influence, instructors) to expound technology acceptance and usage for an array of instructional systems including online learning.

Mun and Yujong (2003) for a period of 2 months, learners were allowed to interact with application for Microsoft. After the trial period that lasted for 2 weeks they established that the student satisfaction, self-confidence, and learning goal placement ensured the actual use and acceptance of the system. Shen et al (2006) researched on the extent to which subjective norms influence and shape the perception of learners towards the use of different course delivery modes. Their results showed that the influence of lecturers made significant impact on the PU of the learner's, while mentors' influence was weighty for PEU.

This result suggests the importance of the instructor's role in shaping learners' impressions of the value of using a course delivery system. Miller, Rainer and Corley (2003) established that PEU and PU had a significant positive relationship with the amount of time students spend on a course. They also noted that both are significant factors for envisaging intention to use the technology. Sumak, Hericko, Pusnik and Polamcic (2011) found that the use of Moodle, a learning management system, by learners depended on behavioural intentions and attitude, and PU was the strongest and most important prognosticator of attitude.

This study uses Davis's (2006) TAM model as an analytical framework to examine how students at UWS Samaj College perceive the utilization of mobile phone use in enhancing learning Davis's (1986). Technology Acceptance Model can be applied to the prediction of learners' acceptance of using mobile phone applications such as email, phone application, Short Messaging, voice call, phone applications and social media as a promoting learning.

## **2.10 Conclusion**

With the penetration of mobile phones even in the most remote areas and the many features found in the phones enabling multiple functions that various institutions have embraced, makes it difficult for the establishments offering education to be left behind. The present global growth have unlocked up mobile based learning in spite of its shortcomings in terms of small screen size, battery life that is short and uneven network access (Keegan, 2010). "Smart-phones" provide students with direct, portable access to many of the same education-enhancing capabilities as an internet-connected computer, such as online information retrieval, file sharing, and interacting with professors and fellow students (Bull and

McCormick, 2012; Tao and Yeh, 2013). Morgan (2015), a smart phone has many advantages, including easy access to perform calculations, access to dictionaries among other tools. This describes why most students are accessing learning materials using this gadget.



## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Overview**

This chapter attempts to discuss the research design that was used to achieve the objectives of this study. It also discusses the description of the study area, population, sample size, sampling techniques, methods of data collection and procedure for data analysis.

#### **3.2 Research Design**

This study used exploratory design which is mostly used when a researcher intends to explore, describe and report the way things are in the setting of the study without manipulation (Jwan, 2010). This design is both qualitative and quantitative (mixed method) in its approach and it tackles a specified research question from any relevant approach, where appropriate making use of preceding research and/or more than one type of fact-finding viewpoint. This design is particularly useful since it seeks to identify important variables to study quantitatively such as the extent to which mobile phones are used as a supplementary academic information resource, how students, lecturer's and academic staff access learning materials using mobile devices and what kind of academic information is accessed by tutors and students to enhance learning and its implications in promoting new learning outcomes. It will also help to generalize qualitative results to diverse groups; and to investigate a phenomenon in penetration and assess the pervasiveness of its scopes.

#### **3.3 Site of the Study**

It is a contemporary, vibrant and multi-racial, co-educational learning institution called Shree Cutchi Leva Patel Samaj Australian College Centre situated in Nairobi West in Kenya. It is a

branch of Shree Cutchi Leva Patel Samaj School. The college offers an inexpensive university foundation studies program for admission into UWS College (University of Western Sydney). Courses offered include diploma in business management examined by Association of Business Executives (ABE). The Diploma in Business Management begins at Level 4, and one can progress to Higher Diploma at Level 5, Level 6 is the Graduate Diploma or Graduate Integrated Diploma and after that to ABE's Level 7 Postgraduate Diploma. The centre also offers foundation courses in Science/Engineering, Business, Information Technology/Computing and Nursing/Health Science. The target group for this college entails those who have gone through the 8-4-4 system up to form four, aged around 17-19, and those from the IGCSE British Curriculum (Year 11) aged 16 years or above. This institution was ideal for the study because it is multiracial and representing majority of the college students in terms of age in that there were no mature entrants hence generalization as this being what is happening in other colleges would be idyllic.

### **3.4 Study Method**

A case study method was employed in this study. A case study involves an exploration of an event, activity or individuals over a period of time through detailed extensive data collection from numerous sources of material in context (Ogula, 2002). The case under study was UWS Samaj College with regards to use of mobile phones as a supplementary academic information resource.

### **3.5 Target Population**

The target population of the study was the students of UWS Samaj College who are pursuing Diplomas in ABE Business Management from level 4, 5 and 6. There are also students pursuing foundation courses in Science/Engineering, Business, Information

Technology/Computing and Nursing/Health Science. There are a total of 150 students pursuing courses in the institute. The study also targeted Heads of Departments and administrators including the principal of the college.

**Table 3.1: Categorization of the Population Size of the Respondents**

Category of population	Population Size
Students pursuing foundation courses	92
Students in ABE level 4	22
Students in ABE level 5	16
Students in ABE level 6	20
Heads of Departments	5
Principal	1
<b>Total</b>	<b>156</b>

### 3.6 Sample Size and Sampling Techniques

There are a total of 150 students pursuing the ABE diplomas in Business management offered at UWS Samaj College. There are 22 students pursuing courses under ABE level 4; 16 in level 5 and 20 in level 6. In total there are 58 students pursuing ABE diploma courses across the three levels. The college also has a total of 92 students enrolled in the foundation courses in the institute. The college has five Heads of Departments and one principal. Therefore, the sample comprised of 100% of all the students in the college. Census method of data collection was used whereby a total number of 150 students took part in the study. The college principal and Heads of Departments were selected purposively due to their instrumental role in the administration of the college. This is summarized as follows:

## Respondents

The sample consisted of the following categories of respondents;

- i. Principal – 1
- ii. Heads of Departments – 5
- iii. Students – 150 (ABE diploma level at three levels and the foundation courses).

**Table 3.2: Targeted Population and the Sample Size of the Respondents**

Category of Respondents	Targeted population	Sample size
Students	150	150
Heads of Departments	5	5
Principal	1	1
Total respondents	156	156

### 3.7 Research Instruments

The study used observation, questionnaires and interview schedules for data collection from the respondents. A questionnaire is a carefully crafted tool (written, typed or printed) for collecting data straight from people (Ogula, 2002). Data from the students was collected using questionnaires. Both open and close ended type of questions were used in the questionnaire by the researcher. This instrument enables the researcher to reach a huge number of respondents who are literate. For the resolve of getting specific information, close ended questions were used by providing the respondents with all conceivable alternatives from which the respondents choose the answer that best depicts their situation. The open ended questions gave the respondents a chance to think beyond the scope of the researcher and by so doing the researcher got more useful information. (see appendix two)

Face to face interviews were conducted among the principal and Heads of Departments (see appendix three). An interview is an exchange whereby one person; the interviewer pursues rejoinders for a specific purpose from another person, interviewee (Ogula, 2002).

### **3.8 Data Collection Procedures**

Data collection tools are those devices that stipulate and actualise the process of the data collection process (Macnee and McCabe, 2008). According to Mugenda and Mugenda (2003), data collection techniques that can be used are varied and they include; observation, interviews and questionnaires. Primary data was collected in this study through the use of a structured questionnaire (see appendix II). The questionnaire was structured according to the objectives of the study seeking to obtain information on three broad areas: the extent to which mobile phones were used as a supplementary academic resource, how students were using mobile phones to access academic information and what kind of academic related messages is accessed by students via mobile phones. Observation and the interviews (see appendix III) which were self-administered and took 20 minutes were used.

### **3.9 Data analysis Procedures**

Quantitative data collected was coded, entered into a computer software, data cleaning was carried out to ascertain if coding has been done appropriately before being analyzed by use of descriptive statistics and presented in frequency tables, charts and graphs. Qualitative data was analyzed using content analysis based on participants' information on the objectives of the study. Content analysis involves observation and detailed description of objects, items, or things that comprise the sample. A unit of analysis is decided about which descriptive and explanatory statements are to be made.

### **3.10 Instruments' Validity and Reliability**

#### **3.10.1 Validity of the Instruments**

To increase the validity of instruments used, expert advice was sought from the supervisors and other tutors from the School of Journalism from University of Nairobi, who critically examined the items of the instruments to make sure that all the questions reflected the three objectives of the study and their professional advice, formed a basis for the adjustment and upgrading of the questionnaires.

#### **3.10.2 Reliability of the Instruments**

The reliability of the instruments was tested by the researcher who used the test-retest method during the pilot study. The questionnaire was administered to the students in Kenya Institute of Freight and Commercial Management situated in Nairobi. The researcher administered the same tool to the same students after a week. To test the dependability of the study methods and to perfect the questionnaire conceptions and wording, the test retest was done. A reliability coefficient of about 0.7 was considered ideal for reliability of the instruments. This helped to find out if the wording is flawless and if all the questions were understood similarly by the respondents.

### **3.11 Ethical Considerations**

The researcher ensured that ethical considerations are upheld while conducting the research and also in the management of data. After presenting the project to a panel of examiners, University of Nairobi wrote a letter of authorization on behalf of the researcher (see appendix IV) and issued a certificate of field work (see appendix V). The researcher then sought clearance from the administration of the UWS Samaj College in Nairobi before data was

collected. The researcher visited the respondents for an introduction and also sought permission before the interview was conducted. The true purpose of the study was explained before getting their informed consent to collect the data. The researcher ensured subject identity and privacy of the participants was upheld by using codes and not names on the questionnaire. The researcher also respected the subject's freedom to participate. On an agreed date; the research instruments of the study were administered to the students by the researcher with the help of Heads of Departments. The information that was obtained from the respondents in the process of the whole research was kept confidential. The project was presented to a panel of examiners; passed, after making the recommended corrections a certificate of corrections was issued (see appendix VI). It also passed the plagiarism test (see appendix VIII) and finally a signed declaration of originality form attached (see appendix VII)

### **3.12 Conclusion**

In this chapter, the research design that was used to achieve the objectives of this study has been discussed comprehensively. It also gives the description of the study area, population, sample size, sampling techniques, data collection methods and procedure for data analysis. Ethical considerations have been explored in this chapter as well as validity and reliability of the instruments used in this exercise.

## CHAPTER FOUR

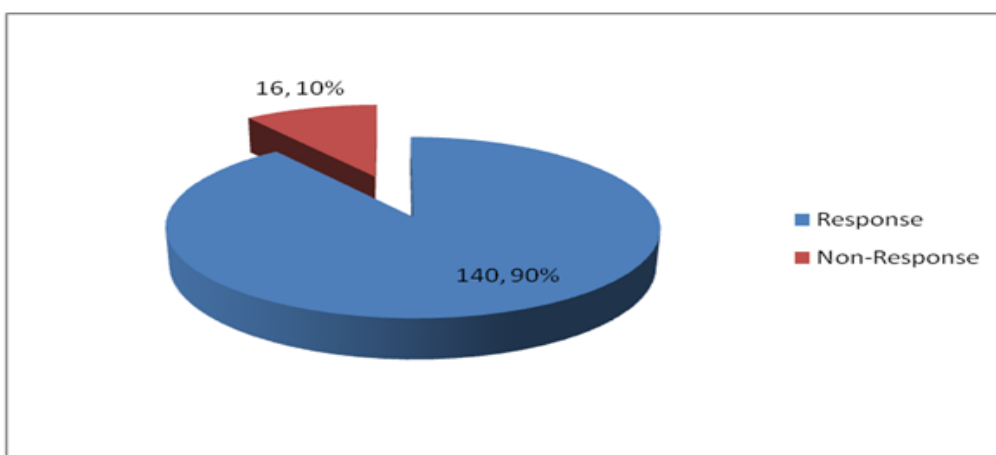
### DATA ANALYSIS AND PRESENTATION

#### 4.1 Overview

The chapter presents an analysis of data that was collected, interpretation and discussion of the findings. Presentations of the results are on tables and figures where appropriate. The choice of presentation depends on the best suitable method that will have a first impression on the reader giving clear indication of the data being presented. The results are presented according to the research objectives and the chapter is organized according to the themes derived from the research questions. The response rate and the demographic characteristics of the study respondents are also given as a background to the analysis part.

#### 4.2 Response Rate

The section gives the findings on the response rate achieved in the study. This shows the level of achievement the researcher obtained in the study process of data collection from the targeted respondents. The findings are as presented in Figure 4.1;



**Figure 4.1 Response Rate**



Findings as shown in the figure indicate that the study realized a response rate of 90%. This is following the researcher efforts where out of the targeted 156 respondents, 140 were able to give reliable responses that can be used in the study whereas 16 were not able to give reliable responses. This was a good achievement in the study as the findings can be generalized with a good representation in the sample.

#### 4.3 Students' Demographic

**Table 4.1 Demographic Characteristics of the Students**

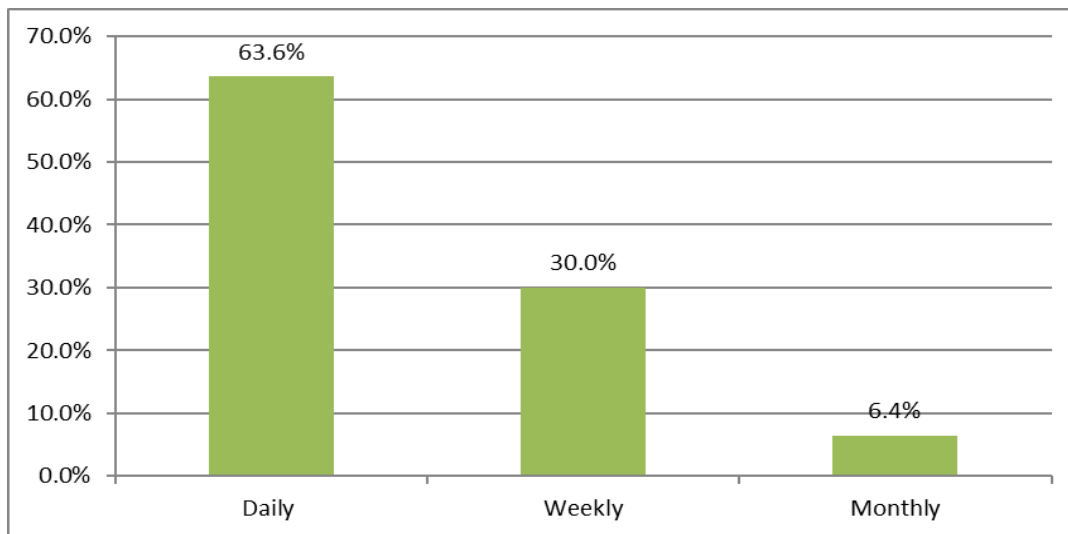
		Frequency	Percent
Gender	Male	63	45
	Female	77	55
Age	16 – 18	119	85
	19- 21	21	15
Course	ABE	52	37.9
	Foundation	88	62.9
Nationality	Kenyan	99	70.7
	Foreigner	41	29.3

Findings as presented in Table 4.1 illustrate that, majority of the students (55%) who participated in the study were female. The male students represented 45% of the respondents. Majority of the respondents (85%) were aged between 16 – 18 years whereas 15% were aged between 19 – 21 years. The table also shows that, majority of the students (62.9%) who took part in the study were Foundation students whereas the least (37.1%) were the ABE students. 70.7% were of Kenyan nationality and 29.3% were foreign students who participated in the study.

#### 4.4 The extent to which mobile phone is used to access academic information.

The first objective of the study sought to investigate the extent to which students use mobile phone to access learning materials at UWS Samaj College. This section presents the findings on the extent of mobile phone usage among students to access learning materials.

**Figure 4.2 Frequency of communicating/sharing academic materials**



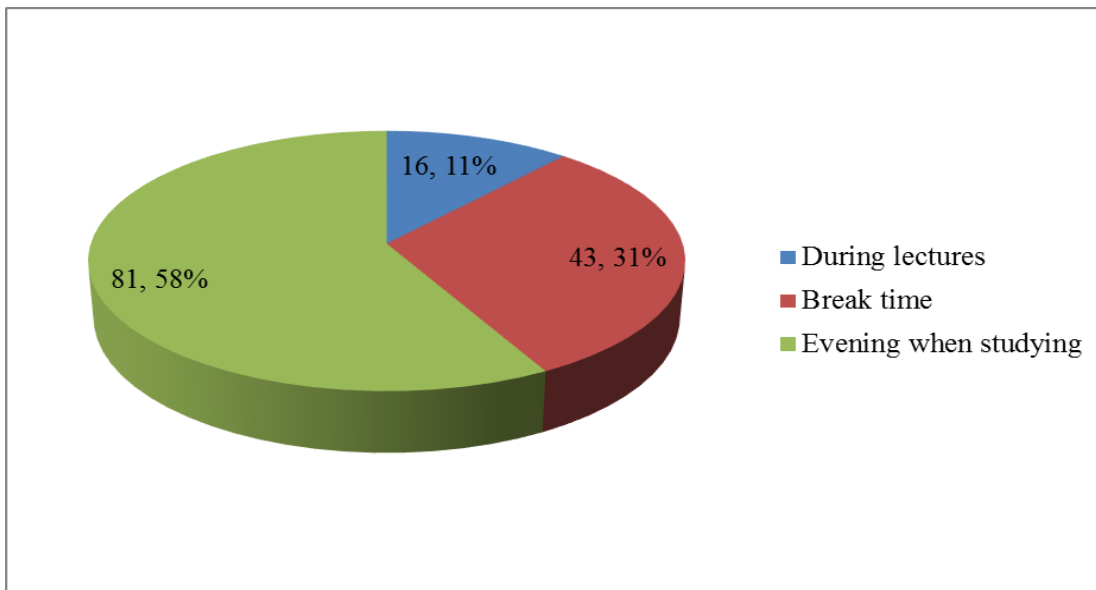
According to the findings as presented in Figure 4.2, majority of the students (63.6%) used mobile phones to communicate/share academic materials with classmates. 30% communicated / shared materials weekly and the least (6.4%) used their mobile phones to communicate/share academic materials on a monthly basis.

This shows a more frequent use of mobile phones in communicating /sharing academic materials among the students on a daily basis. This could be attributed to the fact that mobile phone ascribes to the student-centred approach because of its ability to connect people whenever and wherever they are. It offers learning that is intimate, spontaneous, pervasive and versatile besides the portability aspect. Convenience, flexibility, engagement, and interactivity are all factors that make mobile learning more attractive to students (Seilhamer,

Chen, and Sugar, 2013). The mobile phone meets these qualities as it enables them to access numerous services.

The study established that a mobile phone was the most accessible technological tool in learning by students in this learning institution mobile phones can help students to learn beyond a classroom; through a mobile phone students can learn after classroom hours; mobile phones can help students to answer difficult questions; mobile phones can replace computer and other learning technologies; the use of a mobile phone saves time; and students feel comfortable to learn by using a mobile phone

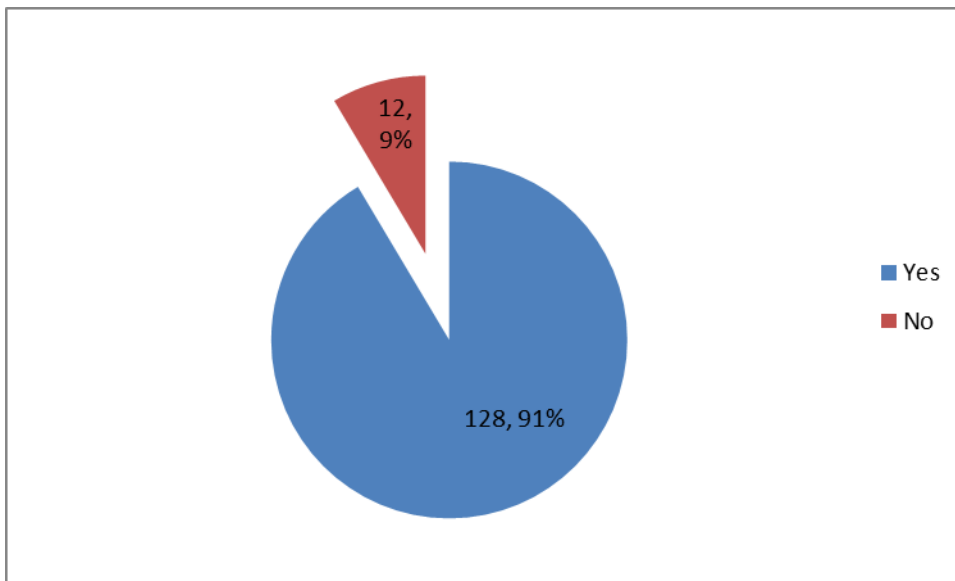
**Figure 4.3 Access of Academic Content on Mobile Phones**



As shown in the Figure, majority of the respondents (58%) reported that they majorly used their mobile phones for accessing academic content during the evening when studying. 31% used their mobile phones for content access during break time and 11% during the lecture periods while in their classes.

From the findings, students mostly accessed academic information outside formal learning time; this proves how convenience, flexibility, engagement, and interactivity are all factors that make mobile learning more attractive to students (Seilhamer, Chen, and Sugar, 2013). Students were not restricted to the traditional program of only getting learning information from a classroom setup, the mobile phone breaks this barrier.

**Figure 4.4 Access of learning materials / instructions from teachers**



Findings in the Figure show that, majority of the students (91%) who participated in the study received learning materials and instructions from their teachers through the mobile phones. However, 9% of the students did not receive such information/ content from their teachers.

The findings show that mobile phone is an integral element in disseminating academic information in this institution and both tutors and students acknowledge this and that is why mobile phones are being used immensely to access academic information. The 9%, those who did not receive such information; could be because of compatibility issue, attitude and perceptions of the parents and/or the students.

#### 4.4.1 Utilization of text messages in enhancing learning

This section presents the results on the extent of usage of text messages in enhancing learning by the students. The students ranked their regularity of receiving SMS (text message) on the type of information shown from the lecturers or the Department in a scale of 1 to 5 where 1 is the least frequency and 5 is the highest frequency of use. The data was then analysed through means and standard deviation giving the statistics on the average level of utilization of text messages in learning. The means therefore shows the frequency of use in a scale ranging from 1 – 5 where a mean of 1.0 – 1.9 is the least frequency (never), 2.0 – 2.9 is sometimes, 3.0 – 3.9 is always, 4.0 – 4.9 is frequent and a mean value above 4.9 is a very frequently extent of usage. The findings are as presented in Table 4.2

**Table 4.2 Utilization of text messages in enhancing learning**

	Mean	Std. Deviation
You receive SMS regarding important dates and venues from your lecturers or department?	4.54	.704
You are sent results through SMS	4.07	.252
Your receive SMS on tutorial schedules	4.81	.874
You receive SMS regarding study guides for various courses	4.31	.832
You receive SMS regarding meeting times with research supervisors	4.22	.658
You receive SMS regarding missing marks from your lecturers	4.42	.489
You receive SMS giving reminders about deadlines for submitting assignments from your lecturers	4.12	.621

According to the findings, students had a frequent use of text messages regarding important dates and venues which they received from the lecturers or department. This is as indicated by a mean of 4.54 with a standard deviation of 0.704 indicating a frequent extent of usage. The students also regularly receive results through SMS according to the findings which showed a mean of 4.07. Further, the table shows a more frequent use of text messages as the students reported that they received SMS on tutorial schedules (mean = 4.81; std. dev. = 0.874). Students as well receive SMS regarding study guides for various courses on a regular basis as indicated by a mean of 4.31.

From the table also, the respondents reported that students received SMS regarding meeting times with research supervisors in the school. This had a mean of 4.22 with a standard deviation of 0.658 showing a frequent usage. Further, students had a frequent utilization of SMS regarding missing marks from the lecturers (mean = 4.42; std. dev. = 0.489). Findings also show that the students received SMS giving reminders about deadlines for submitting assignments from the lecturers.

From the findings, SMS is a common way of accessing /sharing academic information. SMS communication can enhance both academic and administrative support to students. Students can know, for example, whether their marks are missing, the dates for tutorials, face-to-face sessions and examinations, and the venues and meeting times with research supervisors, which clearly enhances the utilization of communication between students and staff as Briggs and Smith (2001) also emphasized.

#### 4.4.2 Utilization of email in enhancing learning

The section presents the results regarding the utilization of email in enhancing learning in the school. This shows the extent of utilization as indicated by the responses given on a 5 –point likert scale based on the students’ extent of utilization. The results are as presented in Table 4.3

**Table 4.3 Utilization of email in enhancing learning**

	Mean	Std. Deviation
You receive e-mail on your phone regarding important dates and venues from your lecturers or department	4.17	.730
You receive examination results through e-mail on your phone	4.52	.951
Your receive e-mail on tutorial schedules through your phone	4.66	.476
You receive e-mail on your phone regarding study guides for various courses	4.64	.269
You receive e-mail on your phone regarding meeting times with research supervisors?	2.75	.656
You receive email regarding meeting times with research supervisors?	4.85	.845
You receive email regarding missing marks from your lecturers	3.66	.672
You receive email giving reminders about deadlines for submitting assignments from your lecturers	4.39	.439

Findings as presented in Table 4.3 illustrate that the students had a frequent use of emails through which they receive e-mail on their phones regarding important dates and venues from their lecturers or department. This is as shown by a mean of 4.17 with a standard deviation of 0.730 indicating a frequent extent of use. With a mean of 4.52, the respondents reported that students received examination results through e-mail on the mobile phones frequently.

According to the findings also, students received e-mails on tutorial schedules through their mobile phones frequently as the mean of 4.66 indicates. Students also frequently receive e-mail on their mobile phones regarding study guides for various courses (mean = 4.64; std. dev. = 0.269).

According to the findings as presented in the table also, the students rarely receive e-mail on their mobile phones regarding meeting times with research supervisors. This is as shown by a mean of 2.75 with a standard deviation of 0.656. The table also shows that; the students always receive email regarding missing marks from the lecturers as indicated by a mean of 3.66 with a standard deviation of 0.672. Findings as well illustrate that the students frequently receive email giving them reminders about deadlines for submitting assignments from the lecturers (mean = 4.39; std. dev. = 0.439).

The students rarely receive e-mail on their mobile phones regarding meeting times with research supervisors, this is as shown by a mean of 2.75 with a standard deviation of 0.656. This could be attributed to the spontaneous nature of the academic information being shared hence other means that are easy/basic or commonly used like SMS would be more ideal in this case. Nonetheless, the findings show that use of email to access academic related information was at a high level. Thus email via phone may be considered in this context as a reusable motivational object that is scalable in terms of instructional efficiency in education as in other contexts.

#### **4.4.3 Utilization of voice call in enhancing learning**

This section presents the study results seeking to determine the students' regularity of receiving phone calls on the type of information shown from the lecturers or the Department.



The findings as presented in Table 4.4 give the means and standard deviation results on the frequency of use.

**Table 4.4 Utilization of voice call in enhancing learning**

	Mean	Std. Deviation
You receive phone calls from the department regarding important dates and venues from your lecturers or department	4.23	.624
You receive phone calls from the department informing you of your examination results	4.42	.672
You receive phone calls from your lecturers informing you of tutorial schedules	4.70	.130
You receive phone calls from your lecturers regarding study guides for various courses from your lecturers	4.11	.862
You receive phone calls regarding meeting times with research supervisors	4.51	.751
You receive phone call regarding missing marks from your lecturers	4.62	.646
You receive phone call giving reminders about deadlines for submitting assignments from your lecturers	4.66	.638

Findings as shown in the table indicates that the students regularly receive phone calls from the departments regarding important dates and venues as shown by the mean of 4.23 with a standard deviation of 0.624. The respondents also reported that students regularly receive phone calls from the department informing them of the examination results (mean = 4.42; std. dev. = 0.672). According to the findings also, the students received phone calls from the lecturers informing them of tutorial schedules on a regular basis (mean = 4.70; std. dev. = 0.130).

From the table also, the students reported that they regularly receive phone calls from the lecturers regarding study guides for various course. This obtained a mean of 4.11 with a standard deviation of 0.862. Students as well receive phone calls regarding meeting times with research supervisors on a regular basis (mean = 4.51; std. dev. = 0.751). Through the use of mobile phones, students receive regular calls giving them reminders about deadlines for submitting assignments. This is as indicated by the mean of 4.66 and a standard deviation of 0.638 indicating that the mobile phones were regularly used by the students to communicate through phone calls to different personnel in the school.

From the findings, the regular use of voice calls could be attributed to the immediacy (in terms of feedback) and interactivity as well as Students may call frantically because they are frustrated with matters ranging from inability to login to other technical issues such as navigating the web, network connectivity and inability to partake quizzes.

#### **4.4.4 Utilization of social media in enhancing learning**

Findings under this section present the results on the extent of social media usage in enhancing learning in the college. The results show information about the students' use of social media (Facebook, Twitter, WhatsApp) among others in interacting with the lecturers and course mates. As well, the section presents the results on the students' attitude and perceptions on the utilization of social media through mobile phone as a supplementary academic information resource.

**Table 4.5 Most Popular Social Media Network Used**

	<b>Frequency</b>	<b>Percent</b>
Facebook	102	72.9
Twitter	8	5.7
WhatsApp	24	17.1
MySpace	6	4.3
<b>Total</b>	<b>140</b>	<b>100.0</b>

According to the findings, facebook was the most popular social media network used by the students for learning. This was used by 72.9% of the students whereas 17.1% used whatsapp for the sharing of learning information. 5.7% used twitter for the learning and the least (4.3%) used MySpace to share academic information with their course mates and the lecturers.

The aspect of being able to chat and interact in groups could have the reason as to why facebook and whatsapp were the most popular social media network used by the students for learning.

**Table 4.6 Using social media in enhancing learning**

	<b>Frequency</b>	<b>Percent</b>
Social networking and socialization	31	22.1
Photo and video sharing	6	4.3
Notes sharing	51	36.4
Chatting	42	30.0
Wall posting	8	5.7
Tagging	2	1.4
<b>Total</b>	<b>140</b>	<b>100.0</b>

Findings in Table 4.6 illustrate that most of the students (36.4%) preferred notes sharing through social media in enhancing learning. 30% preferred chatting through the social media,

22.1% preferred social networking and socialization and 5.7% preferred wall posting when on social media. 4.3% of the students who participated in the study preferred photo and video sharing through social media whereas the least (1.4%) preferred tagging on social media. This shows that the students did not always use social media for academic purposes rather they had other socializing uses.

**Table 4.7 Utilization of social media to enhance learning**

	Mean	Std. Deviation
You use your phone to network with your lecturers	4.68	.469
You use your phone to see video lectures or notes	1.34	.474
You share ideas through social media on your phone	4.00	.162
You chat with lecturers on various course issues on social media through your phone?	4.32	.469
You use the social media through your phone to connect with other learners (course mates)	4.50	.461
You use the social media through your phone to post educative information	4.34	.642

According to the findings, students utilized social media through their mobile phones to network with lecturers regularly. This is as shown by a mean of 4.68 with a standard deviation of 0.469 indicating that the social networking in the school was frequent among the students and the lecturers. The students disagreed that they received video lectures or notes through the social media. This is as indicated by a mean of 1.34 with a standard deviation of 0.474. From the table also, the respondents reported that students regularly share ideas through social media on the mobile phones (mean = 4.00; std. dev. = 0.162). The study findings as well show that the students regularly chat with lecturers on various course issues on social media through the mobile phones (mean = 4.32; std. dev. = 0.469). Further, the students regularly use the social media through the mobile phones to connect with other learners (course mates) as indicated by a mean of 4.50 with a standard deviation of 0.461. It

is also clear from the table that students regularly use social media through the mobile phones to post educative information (mean = 4.34; std. dev. = 0.642).

The use of social networking has been growing exponentially with applications in social, gaming, media, business, and education contexts. For example, Facebook is now the second most frequented site (just after Google) in North America (Alexa, 2011) and claims over 750 million members (Facebook, 2011).

#### **4.5 How mobile phone is used to access learning materials**

The second objective of the study sought to investigate how students are using mobile phone to access learning materials at UWS Samaj College. This section presents the findings on mobile phone usage among students to access learning materials. The findings are based on the responses given by the students on how they have been able to utilize mobile phones in learning.

**Table 4.8 Elements of self-directed learning via mobile phones**

	Frequency	Percent
Spelling	76	54.3
Pronunciation	62	44.3
Vocabulary	69	49.3
Arithmetic like Sudoku	27	19.3
Making notes	38	27.1
Photographing	24	17.1

Findings as presented in Table 4.8 illustrate that, mobile phones were used in self-directed learning in the school for various purposes. From the table, mobile phones were mostly used for spelling checks. This was reported by 54.3% of the respondents. 49.3% of the students

used mobile phones in vocabulary learning, 44.3% used the mobile phones to learn on pronunciation, 27.1% in making notes and 19.3% for arithmetic such as Sudoku whereas the least usage was in photographing which was reported by 17.1% of the students.

These findings imply that students tended to use mobile phones for activities that are directly linked to academics such as spelling checks, vocabulary learning and pronunciation as postulated, a smart phone offers numerous conveniences, including easy access to calculators, dictionaries and other tools, Morgan (2015).

#### **4.6 Kind of messages accessed by lectures and students through mobile phones to enhance learning**

The study's second objective sought to establish the kind of messages accessed by the lectures and students through the mobile phones to enhance learning. This section gives the findings on the kind of information accessed in learning. These are as presented in Table 4.9

**Table 4.9 Kind of messages accessed by lectures and students via mobile phones**

	Frequency	Percent
Posting of administrative information	118	84.3
Sending assignments	110	78.6
Posting of modules	86	61.4
Examination results	102	72.9
Meeting and consultation dates	88	62.9
Tutorials and exam dates	96	68.6
Communicate course instruction	63	45.0
Consultation and query	48	34.3

Table 4.9 gives the study results on the kind of messages accesses by the lectures and students via the mobile phones in the learning. According to the findings, mobile phones

were majorly used in the college to communicate administration information (84.3%). The use of mobile phones to send and receive assignments was the second most activity reported by 78.6% of the students. Sending examination reports was also a frequent activity conducted through the mobile phones as reported by 72.9% of the respondents followed by sending the tutorial and examination dates which was reported by 68.6% of the respondents.

Other information send through the mobile phones included; meeting and consultation dates (62.9%), posting of lesson modules (61.4%) and communicating course instructions (45%) whereas the least information received through the mobile phones was consultation and queries which was reported by 34.3% of the students who participated in the study.

This shows that mobile learning is increasingly popular among students irrespective of the courses enrolled. A significant percentage of the students use their mobile phones for communication, interactions, getting information, consultation and queries, examination results, browsing the internet, and sharing knowledge. In addition, a number of students use their devices for learning.

#### **4.7 Interview Results**

The section presents the findings on the responses given by the principal and the H.o.Ds in the study. Interviews were conducted with these personnel as the key informants to the study. The section gives majorly the qualitative results that were obtained from the interviews conducted.

#### **4.7.1 communicating academic related information to students**

Findings showed that all the respondents in the category of the H.o.Ds and the college principal communicated academic information to the students through mobile telephones. The findings showed that the communication between the students in the school through mobile phones was allowed. In a discussion with one of the H.o.ds, the following was obtained;

*“We encourage students to use mobile phones responsibly. We understand that the students might take a lot of time on mobile phones affecting their study time. However, the school staffs have been encouraging the students to utilize the devices to obtain more academic resources for their studies through their mobile phones.”*

In another discussion the respondent added that;

*“The institution appreciates the contribution of technology in learning. It is our responsibility to offer quality and modern teaching service towards creation of competent human resource in respective fields. We therefore encourage students to use their mobile phones to stream resources that help them grow in their fields and get into the world’s level in terms of skills acquired through learning since the technology allows students connect and share resources.”*

The respondents also appreciated the use of mobile phones in learning as they felt that mobile learning is a more informative device in education. The Hods however reported that students did not fully utilize the mobile learning in their studies as even with the availability of numerous materials, the students were more concerned on socializing through their mobile phones.



#### 4.7.2 Students' Use of Mobile Phones in Learning

Table 4.10 shows the undertakings by the students in their mobile phones. This shows the usage of mobile phones in learning according to the teachers' views.

**Table 4.10 Students' Usage of Mobile Phones in Learning**

	Frequency	Percent
Upload information	5	83.3
Download information from the internet	6	100.0
Share academic resources	6	100.0
Record information	6	100.0
Store files	6	100.0
Listen to educational materials	4	66.7
Consult	3	50.0
Get assignments	6	100.0
Getting pictures of educational materials	3	50.0
Complete assignments	4	66.7
Calculate	5	83.3
Reminders/book appointments	3	50.0

According to the findings, all the respondents agreed that students used their mobile phones for downloading information from the internet, sharing academic resources, recording information, storing files, as well as receiving and sending assignments. 83.3% of the respondents reported that the students used mobile phones for uploading information and to solve problems in mathematics. 66.7% reported that the students used the mobile phones in learning to listen to educational material and to complete assignments. The least usage reported in the students were the usage of mobile phones in consultations, getting pictures of educational materials and as a reminder for appointments.

On the students' attitude, the study findings showed that student attitude affected their extent of utilizing mobile phones in learning. According to the response given by one of the respondents;

*“Students decide on what best they want to do during their free time. We however encourage them to utilize the available resources for the benefit of their learning. Despite this, some students don't utilize their phones in learning due to the perception that learning resources are available in the school library. Some students also think that all the information required should be given from the tutor and therefore do not go further to make further studies as recommended.”*

The findings shows that the student attitude has affected learning outcomes as expected since failure to utilize their mobile in learning results to them committing their time to other activities that are not useful in their academics. According to one of the respondents;

*“Students in our school are friendlier to the teaching staff and majority adheres to the lecture guidelines. However, some students are found to not understand the meaning of learning and what is expected from them for them to better perform in their areas. Though orientation is given to the students on their contact and the expected input, some students have the attitude that they should be taught everything in the course content within the planned time which affects their learning activities.”*

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

#### **5.1 Overview**

The purpose of the study was to investigate the use of mobile phones as a supplementary academic information resource for college students. This section presents a summary of findings and conclusions drawn from the study. The chapter offers recommendations as well as areas for further study to advance mobile phone usage in learning.

#### **5.2 Summary of the Findings**

The case study presented pertinent contextual information about the existing situation of learners, owning mobile phones and its use for learning purposes.

The findings divulge that mobile learning offer college students novel and stimulating learning prospects. Teachers also noted that students are interested to learn by using a mobile phone; mobile phones can make students more involved in learning; use of mobile phones can simplify learning. This technology is likely to develop due to the ever evolving technology and have a much greater effect on learning at college level. This study revealed that mobile learning is popular and likely to increase among students due to the increasing knowledge on mobile learning platform.

Mobile phone technologies support majority of the students' learning. Text messages, research, emails, social networks and scientific calculator or dictionary were the most commonly used features. However, not all the students used the mobile phone technology in learning according to the school management even though it would be useful for students to be encouraged to use this powerful technology as a learning tool. Reasons for this was mostly

attributed to lack of compatible devices or restrictive parents who perceived a mobile phone as a distractor. Mobile phones can be used to observe learning demonstrations and gain a basic understanding of difficult ideas.

Students at UWS Samaj, who used mobile phones in learning, did so mostly to send SMS and participate in social networks in socializing as well as make phone calls. Some students used their phones to read academic information, online books and articles which were of benefit to their learning.

Findings also showed that the students used short messages and call technologies regularly. Majority of the students appreciated that mobile phones have a boundless potential for educational purposes. These technologies assisted students in being more prepared before classes as well as supplementing and reinforcing material beyond the classroom. Mobile technologies helped in providing students with a better awareness of ideas they would have found challenging to absorb.

### **5.3 Conclusions**

Findings of the study carried out at UWS Samaj college, revealed that majority of the population, 91% owned smart phones which they extensively used to access academic information. The study found that mobile phones were used for teaching and learning purposes among both teaching staff and students hence it is a very crucial device for study. Despite this generalization, the usage of mobile phone applications for teaching and learning differed among respondents. All teaching staff and students mentioned to use text messages, emails and calls while few mentioned to have used some advanced learning applications.

Improved academic performance and experience was attributed to use of mobile phone

technologies more frequently. This technology makes it easier to have access to information that can be read any time and everywhere which could be the reason for the improved academic performance. In this case, students have easy access to academic information just at the click of a button.

Students using emails at UWS samaj, found it supportive in their learning at the same time acting as a channel for supporting various learning styles. Student perception on mobile learning however affects the level of the technology utilisation in learning and therefore the perceived benefits are lacking in the non-users.

These findings indicate that mobile phone is a learner support tool that is not being utilized formally as it has not been integrated into the learning program. This study supports the Davis's (1986) Technology Acceptance Model (TAM), which makes use of the Theory of Reasoned Action (TRA). TRA assumes that acceptability is primarily determined by two factors: Perceived Usefulness (PU) and Perceived Ease of Use (PEU). PU can be described as the degree to which an individual believes that the use of a system/tool will improve his/her performance, while PEU refers to the degree to which an individual believes the use of a tool/system will be effortless or require minimum effort. Thus, it is these principles that are clearly found by this study. It is improper to ignore the usefulness of mobile phones in enhancing learning. Exploring best practices in mobile learning is somehow curtailed by lack of its incorporation into the education program.

## **5.4 Recommendations**

From the findings of the study, the following recommendations have been derived:

The study recommends that administration of Samaj, higher learning institutions in conjunction with policy makers and researchers should develop communication policy for utilization of mobile phones as a supplementary academic information resource. The policy should integrate mobile phones in the learning process. Tools to be used include SMS, Email, Voice Calls and Social Media.

Students should participate actively not just to be receptive in the learning process and have interest in using mobile phone technologies to improve educational experiences. Students should be encouraged by their lecturers to make more use of the common applications that they use for academic purposes; such includes SMS, voice call, whatsapp and email for group discussions, share images through Bluetooth for explaining scientific concepts and processes, use videoconferencing for face-to-face group discussions, read eBooks and download scientific materials from the internet.

There is need also to engage students effectively and meaningfully, by providing course content and other learning materials online, so that students get the opportunity to download this information onto their phones in order to access it at any time or anyplace promptly. This will reinforce information that have already been taught in class.

Lecturers can also formulate automatic alerts to their students on important information, such as quiz dates, additional required readings as well as links to helpful websites. These mobile phone technologies will go a long way in supporting students learning, therefore increasing their academic performance in the long run.

## **5.5 Suggestions for Further Research**

The following recommendations for further study are made:

1. This study to be replicated in finding out students, lecturers and administrators readiness for pedagogical usage of mobile phone technology as a supplementary academic information resource.
2. A study can also be carried out to explore to what extent this readiness is affected by the lecturers, students and administrators' acceptance of mobile phone tool as a supplementary academic information resource.
3. A researcher can also investigate challenges encountered in the implementation of mobile phone services to enhance learning.

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## APPENDIX I: INTRODUCTION LETTER

TO WHOM IT MAY CONCERN

Dear Sir/Madam.

I am a Master of Arts student pursuing a degree of Communication studies at University of Nairobi. I am carrying out a research project on **‘Use of Mobile Phones as a Supplementary Academic Information Resource for College Students in Nairobi’**. Your participation in this study is voluntary and the information that you will provide is strictly for academic purposes and no one will be victimized for participating in this study. Please read the instruments provided before filling in your responses. The participants should be rest assured that the information they provide will be treated with the confidentiality that it deserves.

Yours faithfully,

Evelyne Nyokabi

Student University of Nairobi.

## Appendix II: Questionnaire for Students

This questionnaire seeks to gather information on the use of mobile phone as a supplementary academic information resource by UWS Samaj College students. Kindly tick (✓) in the appropriate boxes. We thus urge you to be as candid as possible.

### DEMOGRAPHICS

Sex	Age
1. Male 2. Female	1. Below 16 years 2. 16 – 18 3. 19- 21 4. 22- 25 5. Above 25
Course	Nationality
1. ABE 2. Foundation	1. Kenyan  2. Foreigner

### SECTION A: Information.

1. Do you own a hand phone? Yes No

2. Does your phone have applications which enable you to access the Internet?

Yes No

3. Do you access course content via your mobile phone? Yes No

If yes

What common activities do you use your phone for in accessing learning materials?

Making phone calls ( )

Sending SMSes ( )

Surfing the Internet

Sending and checking e-mails ( )

Downloading educational information from the internet ( )

Sharing academic resources ( )

Recording information during lectures or discussions ( )

Use memory card for storage of information received from lecturers ( )

Social networking with course mates ( )

All the above ( )

Others

(specify.....)



4.	What elements of self-directed learning via mobile phones do you engage in that are in line with your curriculum/course work?	<input type="checkbox"/> 1. Spelling <input type="checkbox"/> 2. Pronunciation <input type="checkbox"/> 3. Vocabulary <input type="checkbox"/> 4. Arithmetic like Sudoku <input type="checkbox"/> 5. Making notes <input type="checkbox"/> 6. Photographing
5	How often do you communicate/share academic materials with your classmates via mobile phone?	<input type="checkbox"/> 1. Daily <input type="checkbox"/> 2. Weekly <input type="checkbox"/> 3. Monthly
6	When do you mostly access academic content on your phone?	<input type="checkbox"/> 1. During lectures <input type="checkbox"/> 2. Break time <input type="checkbox"/> 3. Evening when studying
7	Do you receive learning materials or instructions from your teachers via mobile phone?	<input type="checkbox"/> 1. Yes <input type="checkbox"/> 2. No
8	Which course(s) do you receive learning materials via mobile phone?	<input type="checkbox"/> 1. Foundation <input type="checkbox"/> 2. ABE <input type="checkbox"/> 3. ACCA

**SECTION A: How students are using mobile phones to access learning materials. Utilization of text messages in enhancing learning.**

For each of the following statements seeking to determine your regularity of receiving SMS (text message) on the type of information shown from your lecturers or the Department, give your responses by ticking in the correct box after each question their responses using the following scale: Never (**N**), Always (**A**), Sometimes (**S**), Rarely (**R**), and Very Frequently (**VF**).

1. You receive SMS regarding important dates and venues from your lecturers or department?	<input type="checkbox"/> 1. N <input type="checkbox"/> 2.A <input type="checkbox"/> 3.S <input type="checkbox"/> 4.R <input type="checkbox"/> 5. VF
2. You are sent results through SMS	<input type="checkbox"/> 1. N <input type="checkbox"/> 2.A <input type="checkbox"/> 3.S <input type="checkbox"/> 4.R <input type="checkbox"/> 5. VF
3. Your receive SMS on tutorial schedules	<input type="checkbox"/> 1. N <input type="checkbox"/> 2.A <input type="checkbox"/> 3.S <input type="checkbox"/> 4.R <input type="checkbox"/> 5. VF
4. You receive SMS regarding study guides for various courses	<input type="checkbox"/> 1. N <input type="checkbox"/> 2.A <input type="checkbox"/> 3.S

	<input type="checkbox"/> 4.R <input type="checkbox"/> 5. VF
5. You receive SMS regarding meeting times with research supervisors	<input type="checkbox"/> 1.N <input type="checkbox"/> 2.A <input type="checkbox"/> 3.S <input type="checkbox"/> 4.R <input type="checkbox"/> 5. VF
6. You receive SMS regarding missing marks from your lecturers	<input type="checkbox"/> 1. N <input type="checkbox"/> 2.A <input type="checkbox"/> 3.S <input type="checkbox"/> 4.R <input type="checkbox"/> 5. VF
7. You receive SMS giving reminders about deadlines for submitting assignments from your lecturers	<input type="checkbox"/> 1. N <input type="checkbox"/> 2.A <input type="checkbox"/> 3.S <input type="checkbox"/> 4.R <input type="checkbox"/> 5. VF
<p><b>Utilization of email in enhancing learning</b></p> <p>For each of the following statements seeking to determine your regularity of receiving email on the type of information shown from your lecturers or the Department, give your responses by ticking in the correct box after each question. Rate the responses using the following scale: Never (<b>N</b>), Always (<b>A</b>), Sometimes (<b>S</b>), Rarely (<b>R</b>), and Very Frequently (<b>VF</b>).</p>	
1. You receive e-mail on your phone regarding important dates and venues from your lecturers or department	<input type="checkbox"/> 1. N <input type="checkbox"/> 2.A <input type="checkbox"/> 3.S <input type="checkbox"/> 4.R <input type="checkbox"/> 5. VF
2. You receive examination results through e-mail on your phone	<input type="checkbox"/> 1. N <input type="checkbox"/> 2.A <input type="checkbox"/> 3.S <input type="checkbox"/> 4.R <input type="checkbox"/> 5. VF
3. Your receive e-mail on tutorial schedules through your phone	<input type="checkbox"/> 1. N <input type="checkbox"/> 2.A <input type="checkbox"/> 3.S <input type="checkbox"/> 4.R <input type="checkbox"/> 5. VF
4. You receive e-mail on your phone regarding study guides for various courses	<input type="checkbox"/> 1. N <input type="checkbox"/> 2.A <input type="checkbox"/> 3.S <input type="checkbox"/> 4.R <input type="checkbox"/> 5. VF
5. You receive e-mail on your phone regarding meeting times with research supervisors?	<input type="checkbox"/> 1. N <input type="checkbox"/> 2.A

	<input type="checkbox"/> 3.S <input type="checkbox"/> 4.R <input type="checkbox"/> 5. VF
6. You receive email regarding meeting times with research supervisors?	<input type="checkbox"/> 1. N <input type="checkbox"/> 2.A <input type="checkbox"/> 3.S <input type="checkbox"/> 4.R <input type="checkbox"/> 5. VF
8. You receive email regarding missing marks from your lecturers	<input type="checkbox"/> 1. N <input type="checkbox"/> 2.A <input type="checkbox"/> 3.S <input type="checkbox"/> 4.R <input type="checkbox"/> 5. VF
9. You receive email giving reminders about deadlines for submitting assignments from your lecturers	<input type="checkbox"/> 1. N <input type="checkbox"/> 2.A <input type="checkbox"/> 3.S <input type="checkbox"/> 4.R <input type="checkbox"/> 5. VF
<b>Utilization of voice call in enhancing learning</b> For each of the following statements seeking to determine your regularity of receiving phone call on the type of information shown from your lecturers or the Department, give your responses by ticking in the correct box after each question their responses using the following scale: Never ( <b>N</b> ), Always ( <b>A</b> ), Sometimes ( <b>S</b> ), Rarely ( <b>R</b> ), and Very Frequently ( <b>VF</b> ).	
1. You receive phone calls from the department regarding important dates and venues from your lecturers or department	<input type="checkbox"/> 1. N <input type="checkbox"/> 2.A <input type="checkbox"/> 3.S <input type="checkbox"/> 4.R <input type="checkbox"/> 5. VF
2. You receive phone calls from the department informing you of your examination results	<input type="checkbox"/> 1. N <input type="checkbox"/> 2.A <input type="checkbox"/> 3.S <input type="checkbox"/> 4.R <input type="checkbox"/> 5. VF
3. You receive phone calls from your lecturers informing you of tutorial schedules	<input type="checkbox"/> 1. N <input type="checkbox"/> 2.A <input type="checkbox"/> 3.S <input type="checkbox"/> 4.R <input type="checkbox"/> 5. VF
4. You receive phone calls from your lecturers regarding study guides for various courses from your lecturers	<input type="checkbox"/> 1. N <input type="checkbox"/> 2.A <input type="checkbox"/> 3.S <input type="checkbox"/> 4.R <input type="checkbox"/> 5. VF
5. You receive phone calls regarding meeting times with research supervisors	<input type="checkbox"/> 1. N <input type="checkbox"/> 2.A <input type="checkbox"/> 3.S <input type="checkbox"/> 4.R

	[ ] 5. VF
6. You receive phone call regarding missing marks from your lecturers	[ ] 1. N [ ] 2.A [ ] 3.S [ ] 4.R [ ] 5. VF
7. You receive phone call giving reminders about deadlines for submitting assignments from your lecturers	[ ] 1. N [ ] 2.A [ ] 3.S [ ] 4.R [ ] 5. VF
<b>Utilization of social media in enhancing learning</b>	
In this section the researcher is interested in getting information about your use of social media ( <i>Facebook, Twitter, WhatsApp</i> ) among others in interacting with your lecturers and course mates and also seeks your attitude and perceptions on the utilization of social media through your phone as a supplementary academic information resource. (indicate by ticking)	
1. Which is your most popular social network avenue for accessing academic information?	<i>Facebook Twitter WhatsApp BBM MXit MySpace Too LinkedIn None</i>
2. What do you prefer using the social media for in enhancing your learning?	Social networking and socialization Photo and video sharing Notes sharing Chatting Archive received and sent information Wall posting Tagging Nothing
Below are some tasks you use social media to enhance learning through your phone. For each of the statements seeking to determine your regularity of using social media on the activities shown, give your responses by ticking in the correct box after each question. Give responses using the following scale: Never ( <b>N</b> ), Always ( <b>A</b> ), Sometimes ( <b>S</b> ), Rarely ( <b>R</b> ), and Very Frequently ( <b>VF</b> ).	
1. You use your phone to network with your lecturers	[ ] 1. N [ ] 2.A [ ] 3.S [ ] 4.R [ ] 5. VF
2. You use your phone to see video lectures or notes	[ ] 1. N [ ] 2.A [ ] 3.S [ ] 4.R [ ] 5. VF

3. You share ideas through social media on your phone?	<input type="checkbox"/> 1. N <input type="checkbox"/> 2.A <input type="checkbox"/> 3.S <input type="checkbox"/> 4.R <input type="checkbox"/> 5. VF
4. You chat with lecturers on various course issues on social media through your phone?	<input type="checkbox"/> 1. N <input type="checkbox"/> 2.A <input type="checkbox"/> 3.S <input type="checkbox"/> 4.R <input type="checkbox"/> 5. VF
5. You use the social media through your phone to connect with other learners (course mates)	<input type="checkbox"/> 1. N <input type="checkbox"/> 2.A <input type="checkbox"/> 3.S <input type="checkbox"/> 4.R <input type="checkbox"/> 5. VF
6. You use the social media through your phone to post educative information	<input type="checkbox"/> 1. N <input type="checkbox"/> 2.A <input type="checkbox"/> 3.S <input type="checkbox"/> 4.R <input type="checkbox"/> 5. VF

**Section B: The kind of messages accessed by lectures and students via mobile phones to enhance learning in UWS Samaj College.** (indicate by ticking)

-Posting of administrative information	
- Sending assignments	
- Posting of modules	
- Examination results	
-Meeting and consultation dates	
- Tutorials and exam dates	
- Multimedia messages	

-Communicate course instruction	
- Consultation and query	
Others (specify)	

**Thank you.**

**APPENDIX III: INTERVIEW GUIDE WITH KEY RESPONDENTS: PRINCIPAL AND H.O.DS OF THE COLLEGE**

1. a) Do you communicate academic related information to students. Yes ( ) No ( )

b) Do you allow students to communicate to you academic related information via mobile phones? Yes ( ) No ( )

Why? (Probe whether it is a preferred choice)

.....

.....

.....

.....

2. What is your understanding about mobile learning?

.....

.....

3. Do students perform the following operations in relation to learning using their mobile phones?

	<b>Operations</b>	<b>Tick (√)</b>
a.	Upload information	
b.	Download information from the internet	
c.	Share academic resources	
d.	Record information	
e.	Store files	
f.	Listen to educational materials	
g.	Consult	

h.	Get assignments	
i.	Getting pictures of educational materials	
j.	Complete assignments	
k.	Calculate	
l.	Reminders/book appointments	
m.	Any other (Specify .....	

4. What is the students' attitude towards the access of academic materials using mobile devices?

.....  
.....

5. Are tutors involved in guiding students using M-learning in accessing academic materials in college?

.....  
.....  
.....

6. What are the implications of using mobile learning in promoting learning outcomes in the colleges? (Probe the extent to which students use these devices, whether these devices are a destructor or aid learning, probe the effect on students' scores in assignments, projects and examinations)

.....  
.....  
.....  
.....  
.....  
.....  
.....

**Thank you**



## APPENDIX IV: AUTHORIZATION LETTER



**UNIVERSITY OF NAIROBI  
COLLEGE OF HUMANITIES & SOCIAL SCIENCES  
SCHOOL OF JOURNALISM & MASS COMMUNICATION**

Telegram: Journalism Varsity Nairobi  
Telephone: 254-02-334244, 332986, 226451 Ext. 28080, 28061  
Director's Office: 254-02-229168 (Direct Line)  
Telex: 22095 Fax: 254-02-229168  
Email: [director-sol@uonbi.ac.ke](mailto:director-sol@uonbi.ac.ke)

P.O. Box 30197  
Nairobi  
Kenya

OUR REF:  
YOUR REF:

DATE: August 7, 2015

**TO WHOM IT MAY CONCERN**

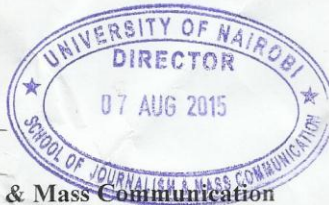
**RE: NYOKABI, Everlyne- K50/69292/2011**

This is to confirm that the above named is a bona fide student of the University of Nairobi's School of Journalism and Mass Communication registered for Master of Arts degree in Communication Studies.

Ms. Everlyne has completed her course work and is currently going to collect data for her research project leading to a Master of Arts Degree in Communication Studies.

Any assistance accorded to her will be highly appreciated.

**Ndung'u wa Munywe**  
Assistant Registrar  
School of Journalism & Mass Communication



NwM/dm

**APPENDIX V: CERTIFICATE OF FIELD WORK**



**UNIVERSITY OF NAIROBI  
COLLEGE OF HUMANITIES & SOCIAL SCIENCES  
SCHOOL OF JOURNALISM & MASS COMMUNICATION**

Telegram: Journalism Varsity Nairobi  
Telephone: 254-02-3318262, Ext. 28080, 28061  
Director's Office: 254-02-2314201 (Direct Line)  
Telex: 22095 Fax: 254-02-245566  
Email: [director-soj@uonbi.ac.ke](mailto:director-soj@uonbi.ac.ke)

P.O. Box 30197-00100  
Nairobi, GPO  
Kenya

**REF: CERTIFICATE OF FIELD WORK**

This is to certify that all corrections proposed at the Board of Examiners' meeting held on 5/8/16 in respect of M.A/Ph.D final Project/Thesis defence have been effected to my/our satisfaction and the student can be allowed to proceed for field work.

Reg. No: KSO/69292/2011

Name: EVERLYNE NYOKABI

Title: USE OF MOBILE PHONES AS A SUPPLEMENTARY

ACADEMIC INFORMATION RESOURCE FOR COLLEGE STUDENTS IN NAIROBI.

Dr Samuel Sirangi  
SUPERVISOR

Sirangi  
SIGNATURE

9/8/2016  
DATE

Dr Samuel Sirangi  
ASSOCIATE DIRECTOR

Sirangi  
SIGNATURE

9/8/2016  
DATE

Dr. Ndetei Ndetei  
DIRECTOR

Ndetei  
SIGNATURE/STAMP

9.8.2016  
DATE



**APPENDIX VI: CERTIFICATE OF CORRECTIONS**



**UNIVERSITY OF NAIROBI  
COLLEGE OF HUMANITIES & SOCIAL SCIENCES  
SCHOOL OF JOURNALISM & MASS COMMUNICATION**

Telegram: Journalism Varsity Nairobi  
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Email: [director-soi@uonbi.ac.ke](mailto:director-soi@uonbi.ac.ke)

P.O. Box 30197-00100  
Nairobi, GPO  
Kenya

REF: CERTIFICATE OF CORRECTIONS

This is to certify that all corrections proposed at the Board of Examiners meeting held on 1/11/16 in respect of M.A/PhD. Project/Thesis Proposal defence have been effected to my/our satisfaction and the project can now be prepared for binding.

Reg. No: K50/b9292/2011

Name: Everdyne Nyerabi

Title: Mobile phones as a supplementary academic information resource for college students

Dr Samuel Sirungi  
SUPERVISOR

[Signature]  
SIGNATURE

10/11/2016  
DATE

Dr Samuel Sirungi  
ASSOCIATE DIRECTOR

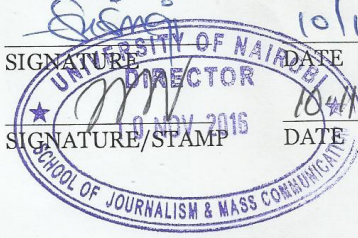
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10/11/2016  
DATE

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DIRECTOR

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10/11/2016  
DATE



## APPENDIX VII: DECLARATION OF ORIGINALITY FORM

### UNIVERSITY OF NAIROBI

#### Declaration of Originality Form

This form must be completed and signed for all works submitted to the University for examination.

Name of Student Everlyne Nyorabi

Registration Number K50/69292/2011

College Humanities and Social Sciences

Faculty/School/Institute School of Journalism

Department Journalism and Mass Comm.

Course Name Communication Studies

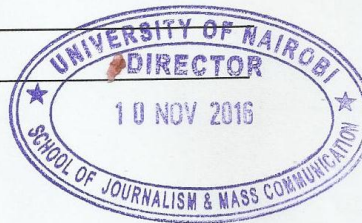
Title of the work Mobile phones as a supplementary academic information Resource for college Students.

#### DECLARATION

1. I understand what Plagiarism is and I am aware of the University's policy in this regard
2. I declare that this thesis (Thesis, project, essay, assignment, paper, report, etc) is my original work and has not been submitted elsewhere for examination, award of a degree or publication. Where other people's work, or my own work has been used, this has properly been acknowledged and referenced in accordance with the University of Nairobi's requirements.
3. I have not sought or used the services of any professional agencies to produce this work
4. I have not allowed, and shall not allow anyone to copy my work with the intention of passing it off as his/her own work
5. I understand that any false claim in respect of this work shall result in disciplinary action, in accordance with University Plagiarism Policy.

Signature Nyorabi

Date 10.11.16





## APPENDIX VIII: PLAGIARISM REPORT

11/10/2016

Turnitin Originality Report

### Turnitin Originality Report

MOBILE PHONES AS A SUPPLEMENTARY ACADEMIC INFORMATION RESOURCE FOR COLLEGE STUDENTS IN NAIROBI: THE CASE OF UWS SAMAJ COLLEGE by Nyokabi 3 Everlyne  
K50/69292/2011

From Mass media and Technology (MA Communication theory)

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ChanMin Kim. "Using email to enable e3 (effective, efficient, and engaging) learning". Distance Education. 08/2008

