LEARNER PERCEPTION OF PRINT INSTRUCTIONAL MEDIUM AND PARTICIPATION IN BACHELOR OF EDUCATION (ARTS) BY DISTANCE LEARNING: UNIVERSITY OF NAIROBI, KENYA

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DECLARATION

This thesis is my original work and has not been presented for an award in any other university.

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This work is dedicated to my late parents; Mary Hallowe and Raphael Otieno in recognition of a firm foundation they laid in my life in the spiritual and education realm that have enabled me to come this far in my studies.

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TABLE OF CONTENTS

Content **Page**

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS AND ACRONYMS

AVU	African Virtual University
B.Ed (Arts)	Bachelor of Education Arts
COL	Commonwealth of Learning
CATs	Continuous Assessment Tests
DEC	Distance education Council
ICT	Information Communication Technology
IGNOU	Indhira Gandhi National University
KESSP	Kenya Education Sector Support Program
MBA	Masters in Business Administration
NUC	National Universities of Nigeria
ODL	Open and Distance Learning
PAC	Planning, Administration and Curriculum
PIM	Print instructional medium
SCDE	School of Continuing and Distance Education
SIMS	Self Instructional materials
UNISA	University of South Africa

ABSTRACT

This study undertook to establish Learner perception of Print Instructional Medium and Participation in Bachelor of Education (Arts) by Distance learning: University of Nairobi, Kenya. Kenya has witnessed an increase in demand for higher education. This demand has led to the growth of Open and Distance learning institutions. These institutions act as a stop gap to fill the need for higher education by the populace since the traditional mainstream institutions are not able to cope with the high demand. Distance learning originated from Europe as correspondence courses at Pitman and the London University. It later spread to America and the rest of the world. The aim has always been to avail education to as many people as possible who need it. The University of Nairobi has been the leader in Open and Distance learning (OdeL) in Kenya. Its activities date back to 1953 when the first department of extramural studies was founded in Makerere with a resident tutor for Kenya. Distance learning relies on a media for purposes of delivering content to the learner. The media act as the instructor. This study focused on print instructional medium in the form of study units since it is the most commonly used in the delivery of distance learning at the University of Nairobi. The target population was 547 parts six students registered at the School of Continuing and Distance Education. The sample size was 231 who were randomly selected for the study. The study also targeted 11 full time and 15 part time lecturers and 1 distribution officer from the printing shop. The total sample was 256. The study was guided by six objectives which were: to establish influence of content of print instructional medium on learner participation in distance learning, to determine the influence design of print instructional medium on learner participation in distance learning, to examine the influence of availability of print instructional medium on learner participation in distance learning, to assess combined influence of content, design and availability of print instructional medium on learner participation in distance learning, to determine the moderating influence of learner characteristics on participation in distance learning and to assess the moderating influence of learner support services on participation in distance learning. The study adopted mixed method approach. Mixed method approach was deemed suitable for the study because the data collected were both qualitative and quantitative in nature. Research instruments used included questionnaires, interview guide, content analysis guide and document analysis guide. Data collected were analyzed using descriptive statistics such as means, percentages and standard deviations whereas inferential statistics used to test hypothesis were chi- square, regression, Pearson's correlation and ANOVA. The study was set at 95% confidence level and the decision to accept or reject the null hypothesis was based at 0.05 levels of significance. The result on learner perception of content show that 80% of the respondents agreed that content influences their participation in distance learning. The hypothesis which stated that content of print instructional medium has no influence on learner participation in distance learning was rejected since ($F = 9.629$, $P<0.05$ at 0.002). Results on influence of design on learner participation reveals that 83.1% of the respondents agreed that design of study units influences their participation in distance learning. The hypothesis which stated that design of study units has no influence on learner participation in distance learning was rejected since $F=10.495$, $P<0.05$ 002. Findings on availability of study units show that 79% perceive study units as very important for their study but they would participate

whether they are available for them or not. We failed to reject the hypothesis which stated that learner perception of availability of study units has no influence on learner participation since the results show that F=0.828, P>0.05 at 0.364. Results on learner support services show that they do moderate learner participation in distance learning since 80% of the respondents view them as very important component of their participation in the program. The hypothesis which stated that learner support services have no influence on learner participation was therefore rejected since F=5.244, P<0.05 at 0.000. Multiple regressions done on the variables of the study revealed that learner support services were the most important for learner participation in distance learning. The conclusion made was that Print instructional medium used in the delivery of distance learning at the University of Nairobi influences learner participation in distance learning. There is therefore need to review the content of study units since the content is not up to date. There is also need to make icons in the study units relevant to the learners since they form an important aspect of print instructional design. Farther policy makers should address the issue of availability of study units. They should be made available on time so that learners have adequate time to interact with them as they participate in the program.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Kenya has witnessed rapid expansion in the institutions of higher learning in the recent past. This has come about as a result of growing demand for higher education. The increased demand has led to the growth of Open and Distance Learning (ODL) institutions which act as a stop gap to fill demands that traditional educational institutions are not able to fill. According to Nyerere, Gravenir and Mse (2012), distance learning is increasingly becoming popular because of its flexibility and learner friendly approach. In this mode of education, learners fit their program of learning at appropriate time that suits their needs hence the popularity. As more and more institutions adopt Open and Distance Learning, there is need to ensure that the main stakeholders who are the learners participate in learning and get quality education for money paid. Distance learning is a mode of education that depends on a medium for delivery. The medium chosen should be designed in such a way that it meets requirements of a distance learning mode of education. There are several media that are being used in the delivery of distance learning as pointed out by Melton (2002) and Potashnic and Casper (1998). These include text books, study guides, modules, work books, study units among others. This study however focused on Planning, Administration and Curriculum (PAC) study units used in distance learning program at the University of Nairobi. Specifically study units were studied in terms of content, design and availability and the influence they have on learner participation in distance learning.

1.1.1 The concept of distance learning

Distance learning is not a new concept. It has been in use since 1850's when both Pitman and the London University started correspondence courses Mboroki (2011). During that time postal services were used to relay reading materials to learners in far flung areas that could not support a proper school. The last half of the twentieth century has however witnessed rapid growth of communication technologies used in distance education. From

initial correspondence courses distance learning has moved to embrace other technologies creating a great impact in distance learning. In the United States of America, a confluence of dramatic changes such as economy, technological innovations and historic international developments such as the end of the cold war propelled distance education from its peripheral position to the centre of attention in various institutions (Saba, 2003). It is the use of varied technologies that have greatly influenced the definition of distance learning over the years.

Due to evolutionary nature of distance learning, the definition of the concept has often assumed the stage or status in which it is taking place (Karani, 2004). There are four generations of delivery technologies that have defined and redefined distance learning. The first generation is basically correspondence. The second generation is multimedia approach and includes print, audio tape/ cassette, videotape/cassette; computer based learning and interactive video (disk and tape). The third generation is the teleconferencing model and the delivery technologies involve audio teleconferencing, video teleconferencing, audio-graphic communication and broadcast TV/radio with audio conferencing. The fourth generation is the flexible learning model. It involves interactive multi-media, internet based resources and computer mediated communication. Karani (2004) noted that the generations are not necessarily linear, mutually exclusive of each other. A provider of distance learning can operate across more than one generation in a given program. Most universities offering distance learning do operate across all the four generations; University of Nairobi is no exception.

Scholars have defined distance learning in various ways, for example, Holmberg(1990) defines distance learning as a system that covers various forms of study which are not under the continuous immediate supervision of tutors present with their students or on the same premises but which never the less, benefit from the planning , guidance and tuition of a tutorial organization. Definition of Holmberg may not be suitable for this study since it leaves out delivery mode which is a key element in distance learning. This study will adopt Williams (2002) cited in Mboroki (2011), definition of distance learning as a learning occurring in different places from teaching in which the instructor and students

are separated. It requires specialized techniques in course design, instructional techniques and different types of technology such as printed materials, video materials, and online materials to provide contact between instructor and students to enhance two way communications. Successful delivery of distance learning depends on the suitability of delivery mode chosen. In developing countries distance learning providers have continued to rely on print as the main mode even though other media have been incorporated, (Magaji and Adelabu, 2012). The choice of medium in developing countries is commonly based on cost benefits considerations. These include the number of students enrolled, the size of the curriculum, the number of years in which courses are offered without change, the level of student support, working practice and so on. (Magaji, *et al,* 2012) observed that application of some technology to distance learning especially e-learning is cost effective in the long run when a sizeable number of students per program are achieved. In the short run however it is practical to apply partial application due to economic constraints in developing economies. In Kenya, the increase in adoption of distance learning may be attributed to missed opportunities earlier in life, the need for upward mobility in career prospects and current job demands that leave little room for conventional learning institutions offering full time learning. The need to expand education in higher institutions to more learners has been captured in Kenya Education Sector Support Program 2000 – 2010 (KESSP)). One way of doing this was to establish a national centre for Open Learning and Distance Education (OL&DE).The objective was to expand access to many disadvantaged learners (Primary School Sector Infrastructure Investment Program). The Kenya's Master Plan on Education and Training (2007) formulated a policy to develop new technology aimed at delivering distance education. Encouraged by the success of African Virtual University (AVU) unit at Kenyatta University, the government of Kenya proposed "to build on these experiences and efforts which have great potentials for developing human resources" Master Plan on Education and Training (2005).

University of Nairobi is in a developing economy and still relies heavily on print to deliver distance learning. It is for this reason that print instructional medium was chosen for the study. Although it is not the only medium used in the Bachelor of Education

(Arts) program by the distance learning, the use is still quite significant and therefore the need to study learners perception of the medium and whether it influences their participation in distance learning.

1.1.2 Content of print instructional medium

Print medium is one of the oldest technologies used in the delivery of distance learning. Print refers to mechanical and electronic publishing. The term print usually includes graphic, pictures as well as words. Together, they make a very versatile medium for learning and instruction. Print instructional medium is any device with instructional content that is used for teaching purpose. Despite the existence of various modes of delivery to choose from, distance learning providers in developed and developing countries have continued to use print medium in the delivery of distance learning Hamweette (2012) and Gbenoba (2012). A study carried out at Britain's Open University in the 80s found out that learner participation in distance learning depended on the medium chosen as well as the learner's mind set. For example, distance learners only watched television program designed for distance learning when they were integrated with the print materials that had been designed for their personal study. Where there was no such integration, learners viewed television purely as an entertainment gadget (Johnstone 1987). A study carried out at a West African university found out that print is the most commonly used medium in the delivery of distance learning, (Osei, 2012). It is used in the form of study units or modules. Study units refer to standardized self-contained segment that constitute an educational course or training program, Gasper (2013). The print character is to enable the learner to study with minimum face-to-face contact with the teacher. The University of Nairobi was the first public university in Kenya to offer distance learning in 1953 (Mboroki, 2007). The program relies on printed study units and minimum face-to-face support for delivering distance education. The printed study unit is expected to serve as distance education teacher (Bowa, 2002). To do this, the study unit should be designed in such a way that the content is relevant to the curriculum, the design meets the internationally acceptable best practice and they should be available to learners.

The importance of the content of print instructional medium cannot be taken for granted. This is because there is an increase in the number of learners opting for distance education, (Wood, 2004). Content of print medium determines the level of competence of the learner. It is therefore important to look into the nature of the content used in the delivery of distance learning and how the learner perceives it. The content of print instructional medium was looked at in terms of scope, relevance to the curriculum and currency of information. Success of distance learning depends largely on interpretation of the print material by the end user who in this case is the learner, (Wood, 2004). To ensure quality, South Africa Institute of Distance Education (2003) suggested that print medium should be revised periodically in line with current trends and from feedback obtained from students. Like any instructional material, the level of treatment of content, its accuracy and authenticity must be in line with the best practice recognized internationally. This need becomes even more urgent with distance learners who are separated from the tutors and have to learn on their own from the instructional materials provided.

The University of Nairobi is a leading institution in East Africa in the Provision of distance learning. The institution relies heavily on the use of print to deliver content to the learners. There was, therefore, need to study learner perception of content of print instructional medium used in the delivery of Bachelor of Education (Arts) program by distance learning and to establish its influence on learner participation in distance learning.

1.1.3 Design of print instructional medium

Instructional design refers to systematic and reflective process of translating principles of learning and instruction into plans for instructional materials, activities, information sources and evaluation. From this definition, there should be a deliberate effort made in designing print instructional content. Design of print instructional medium includes but not restricted to interactivity, that is, in-text questions, self-assessment exercises and tuition marked assignments. It should also include explanation of technical terms. These terms should be introduced gradually before new terms are stated. Visualization for

example maps, real photographs, diagrams and symbols should be included to attract the attention of the learner and to sustain interest. A study done at a West African University reveals that most print instructional medium have been written like textbooks (Gbenoba, 2012). According to Commonwealth Distance Learning Council, print instructional medium used in distance learning differ from textbooks. They should be designed with a distance learner in mind. This is because distance learners do not have immediate feedback for concepts they cannot understand unless they are clearly stated in the text being read.

1.1.4 Availability of print instructional medium

In distance learning, media is the bridge between the learner and the instructor. Since its inception, distance learning institutions have endeavored to ensure that materials meant for instruction reach the learner on time. For example, when Sir Isaac Pitman founded correspondence college in England in the mid 1840s, the college took advantage of the then new rural free delivery of mail to deliver course materials to the students (De Salvo, 2002) cited in Tait (2002). The course materials delivered were in print form. Over the years distance learning providers have incorporated other technologies in what is commonly referred to as generations of delivery technologies in distance learning. The first generation technologies used to deliver instructional materials were print, radio and television. The second generations were audiocassettes, television, videocassettes, fax and print. The third generation technologies included desktop videoconferencing, two-way interactive real time audio and video web-based media etc. The aim of using various technologies has always been to make education more accessible by making learning materials available and within easy reach. Effectiveness of a distance learning program is influenced by availability of learning materials and the way the instrument of delivery is managed delivered and evaluated (The Association of Advanced Collegiate Schools of Business (AACSB) 2007). In developing countries, competing interests often mean that budgets are tailor-made to go to what is considered the most urgent. In education, competing academic and administrative assignments may push production of print instructional materials to the periphery (AACSB, 2007).

At the University of Nairobi Bachelor of Education (Arts) program by distance learning learners are provided with study units for home study. These units are developed in house and are supposed to be distributed at the beginning of a semester. Apart from occasional meeting that take place between the learners in the regional centers, the learners also have scheduled face- to- face support in April, August and December where they have opportunity to interact with fellow students and to have face- to- face tuition to clarify concepts they may not have understood during home study. This study had sought to establish the influence of availability study units on learner participation in distance learning program at the University of Nairobi. Being the main delivery tool used in the program, it was felt that it is important to establish the influence it has on learner participation in distance learning.

1.1.5 Learner support services in distance learning

Trait (2003) defines learner support services as those services that are designed to help individual students learn from the teaching materials. The history of learner support can be traced to University Correspondence College founded by William Briggs in 1887 (Tait, 2003). Briggs provided pioneering learner support to those studying with the University of London at a distance. Briggs College provided correspondence tuition scheme by post along with face -to -face day and evening teaching in London and Cambridge. The support also included short residential schools and the production and sale of specially written texts to help students (De Salvo,2002) cited in Tait (2003). The importance of learner support in distance learning cannot be taken for granted. For example, the failures of world's first exclusive distance teaching university, that is, the University of South Africa (UNISA) was attributed to inadequate learner support among other short comings (Nonyongo). When this was corrected in post apartheid era, UNISA witnessed tremendous growth. The success of Open University of the United Kingdom established in 1969 is attributed to the integration of a range of learning and teaching media with student support system.

Usum (2004) puts learner support into two categories. The first category is academic which include tutorial and guidance and counseling services. The second category is administrative function and includes enrolment, admission and registration, record keeping, information provision and delivery of study materials. Lee (2003) assert that distance learners have become sophisticated, diversified and demanding than ever before and they expect a lot more than a well designed learning material. More importantly, the competition among distance learning providers is such that if an institution fails to satisfy the students, it may lose them to its competitors.

The University of Nairobi offers an array of support to its distance learners both administrative and academic. This study singled out two important areas in learner support, that is, face- to- face tuition and counseling. The University offers face -to -face tuition support in the months of April, August and December. Learners are given introduction tuition at the beginning of a semester and two revision tuitions before they sit for examinations at the end of a semester. Face- to- face support is important from an emotional and social perspective. It creates a feeling of belonging for students who do not have traditional clues in the campus (Usun, 2004). The students also have the opportunity to discuss course content in between meetings (Young, Garnham and Kaleta, 2002) cited in Koohang and Durante (2003). The role of the teacher during face- to- face support is equally important since they explain to the learner concepts that they have not understood during home study. According to Usun (2004), when learners were asked the factors that played a significant role in aiding their learning in distance learning program, they cited the teacher. When they were asked significant barriers to their learning experience, they named the teacher. The conclusion was that the teacher in an interactive distance learning system can either make or break the system. This study therefore sought to establish the influence of face -to -face support on learner participation in distance learning at the University of Nairobi.

Due to the nature of distance learning process, students need to take considerable responsibility in managing their own learning (AACSB, 2007). Guidance and counseling may come in handy to support those who may experience challenges in the course of

their study. At the University of Nairobi counseling services are available to learners through resident lecturers based at regional centers but during residential sessions offered in the months of April, August and December they may approach administrators for such help when required. The study aimed at establishing the influence of counseling on learner participation in distance learning offered at the University of Nairobi.

1.1.6 Learner characteristics

Although the focus of the study was print instructional medium, the moderating effect of learner characteristics was also be looked at. According to Enri (2012) studies indicate that there are demographic and personality similarities among many distance learners that may provide the basic description of a typical distance learner. The print instructional medium may be right in terms of content, design and may be issued on time but the characteristic of the individual learner may affect how each one of them manipulate study content and participate in distance learning.

Most studies indicate that distance learners tend to be on average older than students in campus- based program, Enri (2012) and Ngumi and Mwaniki (2009). Most of the learners are aged 40 years and above. These studies also indicate that most distance learners tend to be female at about 60 to 77 percent. Most of them also hold full time jobs. Several studies reveal that 90% of students in distance learning program hold fulltime jobs, Enri (2012). Similarly most of them are married with responsibilities. This means that they are often juggling family, job and coursework. Since distance learners are mature students, their motivation to join the program also tend to be similar. For example, most of them hope for promotions and upward mobility in the job market, Kimani, Kara, Njagi and Ruinge (2012), Ngumi and Mwaniki (2012) and Enri (2012). Such students are often motivated to join the program because they lead a busy life and they need to fit their course work into study schedules convenient to them. The mode of instruction itself is motivating to them because they can read and learn in a flexible manner using their own study schedule.

Since distance learners have unique characteristics such as age, marital status, job expectations and motivating factors, this study focused on these characteristics to ascertain their moderating effect on learner participation in the Bachelor of Education (Arts) program by distance learning.

1.1.7 Learner participation

The term participation means to take part in or be actively involved in something. Learning has been described as an active process. In distance learning, learner participation in the process of acquiring knowledge is necessary for to the success of the program. The separation between the learners and the instructors can only be bridged when the learner is an active participant in the process of acquiring knowledge. Denren (2005) asserts that instructional designers must be aware of the fact that the learners are not in the presence of a live audience. This means that the isolation may interfere with the proper flow of learning and hinder participation. While student participation is not a direct measure of learning, it is necessary in order for dialogue to take place and result into learning. This is because learning objectives can only be achieved through active involvement of the learner. In this study, learner participation included class attendance (during face to face support), writing assignments, sitting for continuous assessment tests and examinations.

1.2 Statement of the Problem

Distance learning is a mode of education that requires a medium to bridge the gap between the learner and the instructor. Print is one of the many media that are used for purposes of delivering distance learning content. At the University of Nairobi, print is used in the form of study units. Study units are standardized self contained segment that constitute an educational course or training program (Gasper, 2013). There are specific rules that have been generally agreed upon that apply to the manner in which print used in distance learning are designed (Danarajan, 2002). The learners are expected to learn 80% of total course objectives on their own (Bowa, 2008), (Hamweet, 2012). It therefore means that the scope of the study units ought to cover adequate information needed in the study area. The design is expected to be interactive and to flow from simple to complex

concepts. It should have icons and clearly stated objectives for each topic presented. Since the learners are expected to do the bulk of the work on their own, study units should be available for them at the right time. This would enable them to have adequate exposure while doing assignments as well as when they are preparing for continuous assessment tests and examinations.

Planning, Administration and Curriculum (PAC) are some of the core units studied in distance learning program at the University of Nairobi. A careful look at the cited study units reveal that they were developed in the 80s and have been reprinted over the years without much change in the content. According to Imran, Nadiien and Mohammad (2008), the course content must be up to date, incorporating the latest research in theoretical concepts and empirical studies. This is also in agreement with SAIDE (2003) that recommends that print medium should be renewed periodically in line with current trends and from feedback obtained from students. This study therefore sought to establish learner perception of PAC study units used in distance learning at the University of Nairobi in terms of scope, currency, accuracy and relevance and whether it has influence in learner perception in distance learning.

Recent studies have focused mainly of ICT and its application in various areas at the University of Nairobi. For example, Aseey (2008), Mbwesa (2011), and Ochogo (2013) have all studied one aspect or the other of ICT and its application at the university. Little attention has been given to the use of print as a delivery mode in distance learning in the recent past yet at the University of Nairobi, its application is still quite significant especially in the delivery of Bachelor of Education (Arts) program by distance learning. Secondly University of Nairobi has attracted a significant number of students pursuing Bachelor of Education by distance learning. It is important to establish how they perceive print medium used in the delivery of the program. Moreover, it is the oldest public university in Kenya and was the first to start distance learning in the fifties, Mboroki, (2007). As a leading public institution it is important to know how the stakeholders who are the learners perceive their main delivery mode of learning. Since no study has focused specifically on print medium in recent past this study was meant to bridge this

gap. The study aimed at establishing the influence of learner perception of content of print instruction medium on participation in distance learning. Since it was not possible to study all study units used in the program, Planning, Administration and Curriculum (PAC) study units were chosen for this study. PAC units were chosen because they are core units that all students in the Bachelor of education (Arts) program are expected to study. Part six students were purposively sampled because they have stayed longer in the program and have used PAC study units from part one through to six.

1.3 Purpose of the Study

The purpose of the study was to establish influence of learner perception of print instructional medium, Learner characteristics, Learner Support Services and Participation in Bachelor of Education (Arts) by Distance learning of the University of Nairobi. The study laid emphasis on learner perception of content, design and availability of print instructional medium used for delivery as well as moderating influence of learner characteristics and learner support services and weather they have influence on learner participation in the program.

1.4 Objectives of the study

The study was guided by the following objectives:

1. To establish the influence of content of print instructional medium on participation in distance learning.
2. To determine the influence of design of print instructional medium on participation in distance learning.
3. To examine the influence of availability of print instructional medium on participation in distance learning.
4. To assess the combined influence of learner perception of content, design and availability of print instructional medium on participation in distance learning.
5. To establish how learner characteristics moderate the relationship between learner perception of print instructional medium and participation in distance learning.

6. To assess how learner support services moderate the relationship between learner perception of print instructional medium and learner participation in distance learning.

1.5 Research Questions

1. To what extent does learner perception of content of print instructional medium influence participation in distance learning?
2. How does learner perception of design of print instructional medium influence participation program by distance learning?
3. In what way does learner perception of availability of print instructional medium influence participation in distance learning?
4. To what extent does learner perception of content, design and availability of print instructional medium influence participation in distance learning?
5. How do learner characteristics moderate the relationship between learner perception of print instructional medium and participation in distance learning?
6. To what extent do moderating role of learner support services influence participation in distance learning?

1.6 Hypotheses of the study

The study tested the following hypotheses:

$H_0$1 Learner perception of content of Print instructional medium has no influence on participation in distance learning.

$H_0$2 Learner perception of design of Print instructional medium has no influence on participation in distance learning

$H_0$3 Learner perception of availability of print instructional medium has no influence on participation in distance learning.

$H_0$4 Content, design and availability of print instructional medium have no influence on learner participation in distance learning.

$H_0$5 Learner characteristics have no influence on participation in distance learning.

$H_0$6 Learner support services have no influence on learner participation in distance learning.

1.7 Significance of the Study

It is hoped that policy makers would find the findings of this study useful since in line with vision 2030, training of human resource to move Kenya to a middle income nation is a concern of policy makers. Distance learning has attracted many Kenyans in the job market and quality training is therefore important. The way distance learners perceive the main medium used in the delivery of learning is of importance since it may have an impact on their training and how they are perceived in the job market. It is also hoped that university managers may find the findings of the study useful and improve on the depth and currency of the content used in the delivery of distance learning. This would improve on the competence of their products to contribute to the development of the country. The study may also be of significance to university management to review the training of distance learning providers especially media developers to give quality service and enhance participation of learners in distance learning programs.

1.8 Assumptions of the Study

This study had two main assumptions. First, that learner perception of print instructional medium was likely to influence their participation in distance learning. It was hoped that respondents were honest and gave a true picture of how they perceive content, design and availability of print instructional medium and whether it influences their participation in distance learning in the Bed (Arts) program of the University of Nairobi. The second assumption was that learners gave honest responses regarding personal characteristics that influenced their participation in the program.

1.9 Limitations of the Study

There are certain limitations that affected the study. Print is not the only medium used in the delivery of distance learning at the University of Nairobi. There is face to face tuition that is normally conducted during school holidays. This plays a role in learner participation in distance learning. Learners may also have access to other sources such as the internet which may influence the study. Since print in the form of study units is the main medium used in the delivery of distance learning at the University of Nairobi and majority of the learners rely on it to access information, all factors were made constant

and no other media was referred to or mentioned to the respondents. Print medium therefore gave a true picture of influence on learner participation in the program. Another limitation in the study was the nature of the learners. Distance learners are in session only three times in a year. When they are not in session, they are geographically scattered throughout the country. This posed a challenge especially in the data collection stage. However the researcher made use of school holiday to administer the instrument used in data collection to capture the required number of respondents. School holidays were ideal since the learners had converged in one place for residential sessions and therefore they could be reached easily.

1.10 Delimitation of the Study

The study was delimited to The University of Nairobi, Bachelor of Education (Arts) program by distance learning. With a population of over four thousand students, the number was considered representative enough to give a clear picture of the expected outcome of the study. The University of Nairobi was also chosen because it has the oldest distance learning Program in the country dating from 1950s (Mboroki, 2007) and relies mostly on print instructional medium to deliver distance learning. Other universities in Kenya and in the region have benchmarked at the university and therefore it was deemed important to establish how other stakeholders who are the learners perceive the main medium of instruction.

The study was also delimited to Part six students who are in their final year of study. The Bachelor of Education (Arts) students are organized into parts. Part one is the point of entry and they proceed through to part six which is the final year. Part six learners were chosen because they have stayed longest in the program and have utilized many study units used in the delivery of distance learning program. Further, the study is delimited to Planning, Administration and Curriculum (PAC) study units. PAC study units have been chosen because they constitute core units that are done by all students. Since it is not feasible to study all educational units due to time and financial constraints, PAC units were chosen since all students in part six had used them and therefore were in a position to give fair response to research questions.

1.11 Definition of significant terms used in the study

Availability of print instructional medium This is timely access of study materials used in distance learning.

Content of print instructional medium Refers to the scope, accuracy, currency and relevance of information contained in the study unit.

Design of print instructional medium Refers to planned activities, information, evaluation, language and layout of the study units.

Distance learning: In this study, distance learning means learning occurring in Different places from teaching in which the instructor and learners are separated. It requires special techniques in course design, instructional techniques and different types of technology such as printed materials

Learner characteristics: In this study the term is used to refer to personal Circumstances of the learner that is likely to influence Participation in distance learning such as age, gender, marital status and employment status

Learner participation: Refers to taking an active part in the learning Process through doing assignments, attending revision sessions and taking part in assessments.

Learner perception of print instructional medium It is the cognitive impression that that the learner has towards print instructional medium used in distance learning program

Learner support services	Refers to activities which are provided to aid teaching, learning and social needs in distance education such as revision tuition and counseling
Print Instructional Medium:	Standardized self contained study units used in the delivery of distance learning.

1.12 Organization of the Study

This study is organized into five chapters. Chapter deals with the introduction to the study and its various components like background of the study, statement of the problem, research objectives and questions, research hypothesis, significance of the study, limitations and delimitations of the study and finally definition of significant terms used in the study. Chapter two deals with literature review regarding print instructional medium and its components such as content, design and availability. It also covers learner characteristics, face to face tuition and the moderating influence of learner support services. It also has both theoretical as well as conceptual framework of the study. Chapter three dealt with research methodology and covered study design, target population, sample size and methods of data collection, validity and reliability of instruments, data collection procedure, data analysis techniques and methodologies employed in testing various hypotheses. Chapter four deals deal with data analysis, presentation and interpretation. Chapter five covers summaries of findings, discussions, draws conclusions and makes recommendations for further studies.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter reviews literature related print instructional medium and learner participation in distance learning. Literature review captured learner perception of content of print instructional medium, learner perception of design of print instructional medium, learner perception of availability of print instructional medium, influence of learner characteristics on participation in distance learning and influence of learner support services on participation in distance learning. The chapter also has conceptual framework and theoretical basis of the study.

2.2 The Concept of Print Instructional Medium

Instructional media are all forms of information carriers which can be used to record, store, preserve, transmit or retrieve information for purposes of teaching and learning, (Onsanya,2004). Educators have long recognized the intrinsic value of instructional medium in the teaching and learning process. Instructional media are vital for encouraging and facilitating students' learning. Secondly, subject content can be more carefully selected and organized. Instructional medium can also be standardized to enable learners with varying degree of abilities to receive the same message and their individual differences catered for.

There is a profusion of instructional media which can be used in the delivery of distance learning. Types of print instructional medium include real objects and models, printed text for example books, handouts, worksheets etc., printed visuals which include pictures, photos, drawings, charts and graphs, display boards such as chalkboards, bulletin, multi-purpose interactive white whiteboards, overhead projectors, slides and films which include tape, disc and voice, video and film such as tape and disc, television, computer software and the web. Instructional medium can be classified in terms of durable and non durable medium. Durable materials are those that last for very long time, for example,

computer, projectors, television, radio etc. Non-durable medium have a short life span and cannot be stored for a long time. Such medium include pictorial and graphic presentations such as posters, maps, charts, projected pictures such as film strips, motion pictures (Adekola,2010). Instructional medium increases the rate of learning by the learners, makes learning to be real and permanent and saves teacher's time which would have been wasted on oral presentation. Instructional medium also promotes learner participation in learning activities and helps the learner and the teacher to overcome physical difficulties in teaching and learning.

Although technologies abound from which to choose from, distance learning providers have continued to use print as a single most preferred medium for delivery of distance learning, Dhanarajan (1996). It is this dominance of print as an instructional medium that formed the basis of this study.

For purposes of delivery, distance education providers utilize print in the form of study units. Study units sometimes called modules are a standardized or self contained segment which constitutes an educational course or training program. It is a unit of instruction with relatively low student to teacher ratio in which a single topic or a small section of a broad topic is studied for a given period of time (Houghton, 2000). The use of print medium in the form of study units improves the learners' opportunities to master a subject. This is because a well planned module teaches concepts in a logical order like building blocks. In an educational module, students focus on specific skills and are given opportunities to continue to improve them. This is because in distance learning, learners learn at a pace they are comfortable with. The way learners perceive an instructional medium may go a long way in influencing the success of such a learner. According to Mbwesa (2011), people's perception influences their behavior, reactions and attitudes towards a specific phenomenon. It also influences the way one looks at things and in turn he or she would form an opinion and attitude towards the stimuli.

2.3 Content of Print Instructional medium and learner participation

According to Peters (2001), distance learning is learning by reading printed materials in the form of text books, manuals and lecture notes. Although new technologies abound and are used in distance learning, print by far remains the most commonly utilized mode in developing as well as developed countries, Melton, (2002), Potashnic and Capper (1998). The importance of print instructional medium cannot be taken for granted given the high number of educational institutions which rely on them for delivery of distance learning. What goes into and constitute the content of printed material used for instruction should meet the requirements of the curriculum. The instructional materials should carry out all that is done in the conventional institutions. They should guide, motivate, intrigue, expound, explain, provoke, remind, ask questions, discuss alternative answers, appraise learners' progress and give appropriate remedial or enrichment help to the learner (Rowntree, 1986). The level of treatment of content, accuracy of content and authenticity of content must be in line with the requirements of the curriculum. To ensure quality, South African Institute of Distance Education (2003) suggested that modules be reviewed periodically in line with current trends and from feedback obtained from students. The success of distance learning depends largely on interpretation and communication of print medium to the end user (Wood, 2004).

According to Lubero (2004), distance learning is learner centered and therefore print instructional materials should be constructed in such a way that the instructions are clear, content adequate and the language learner friendly. Studies carried out in parts of Africa indicate that learners have issues with print instructional medium used in delivery of distance learning. A study done by Ofoba and Awe (2011) on Perception of Academics on Quality Assurance of Academic Program aimed at finding out level of awareness, extent of compliance and viability of the program. Both qualitative and quantitative data collection techniques were used. The findings were that majority of academics were aware of quality assurance measures but a number of them had doubts whether there was constant review, revision or update of modules. The study concluded that some academics doubted the competency of those who wrote the study materials. The study suggested that there was need to establish quality assurance committee for each school.

Such a committee would coordinate implementation of recommended internal quality assurance policies. Even though the current study is not focusing on perception of academics, it does, however concern itself with the influence of learners perception of the print medium in terms of content, design and availability and whether these variables have a role in learner participation in Bachelor of Education (Arts) program of the University of Nairobi.

Kolimba, Kigadye and Reuben *(*2012) in the study title The Quest for Quality Assurance in Open and Distance Learning Practice in Tanzania found that most of institutions offering distance learning had put in place structures for assessing quality. The study recognized areas where quality assurance was mandatory in the provision of ODEL. Study materials were recognized as one area of importance especially in terms of content's alignment to the curriculum. Kolimba et al, (2012) gives a significant contribution to this study in terms of content however the current study would go beyond content to cover design and availability and the role of learner characteristics in participation in distance learning.

The University of Nairobi Bachelor of Education (Arts) program by distance learning relies heavily on print instructional medium as a delivery tool. Learners are issued with study materials at the beginning of every semester for their home study (Bowa, 2010). These study materials which are in printed form are supposed to act as the teacher during the entire period of the study. To do this, study units must adequately cover the intended content of the course outline and must have depth that ensures adequacy in the knowledge content required for a degree level of qualification. This study intends to interrogate level of treatment of content vis-à-vis the syllabus intended to be covered by the learners to ascertain accuracy and adequacy of the content.

2.3.1 Relevance of Print Instructional Medium and participation in distance learning

Relevance has got to do with affinity to the course objectives. For instructional material to be considered relevant it must be in agreement with course objectives derived from the

spirit of the curriculum. Estleither (2003) as cited in Jonson (2004) suggests six principles of "good instruction" as standards to evaluate instructional materials. According to him, in order to check the relevance of instructional materials, learners should ask questions like; is the language clear? Is the level of content right? Are the activities at the right level? Are there self-assessment exercises? Is the progress tests relevant to the material learnt? These are important questions with regard to relevance of instructional print medium. A study carried out at University of Zambia, Institute of distance education found out that the content covered during face-to-face instructions were different from materials contained in the print instructional medium. Different interpretations were given for this anomaly. It was suggested that either the instruction material was not complete or it was not self-contained. If this was the case, then it was a violation of distance learning quality standards. The scenario could also mean that the tutor was not happy with the materials as presented in the instructional medium. The interpretation could be carried further to mean that the tutors taught what they wanted and did not necessarily follow the course syllabus as prescribed by the university.

A study carried out by Kimani et al (2012) suggested that the reasons why learners rated print medium poorly was because they were recycled with no updated content. In this study, 73.5% of learners had issues with the content of distance learning instructional materials. They were rated between fair and "very bad." Similarly, the learners complained that the print materials issued for study were outdated and gave foreign examples.

When the main medium of delivery of a program has serious issues of concern such as outdated content, gaps in the content, deviation from the intended curriculum content, it poses a serious threat to the quality of the program and competence of its graduates. This study aims at looking into the content of the print instructional medium used in the delivery of distance learning at the University of Nairobi so as to find out whether it has any role in learner participation in distance learning.

2.4 Print Instructional design and participation in distance learning

Instructional design refers to the systematic and reflective process of translating principles of learning and instruction into plans for instructional materials, activities, information resources and evaluation (Darticial and Tillman, 2005). Designing print instructional medium is an important aspect in course development process in a distance learning program. Print medium remains the most common pedagogical tool in open and distance learning mode. Distance Education Council (DEC) of New Delhi, India, states categorically that distance learning study units differ from text books or articles in journals. The instructional materials should be self-explanatory, self-evaluating and self-learning. According to DEC, the concepts should eliminate the teacher propelled learning and enthrone the learner friendly regime (Indira Gandhi National Open University (IGNOU)), (1989). Designers should have distance learners in mind as they embark on design of print instructional medium. Pre-instructional planning stage should incorporate principles such as stimulus variation, feedback, reinforcement, learner's participation.

Design of print instructional medium used in the delivery of distance learning covers instructional materials, pacing of content and readability. The general layout should be appealing to the eye. The examiners Rating Form for subject specialists of Degree Programs of Distance Learning and Training (DETC), accredited handbook (2004) covers criteria for print medium instruction design. One of the criterions is that the design should have clearly designed and simply stated objectives. Secondly, the content should be broken into manageable parts. The third criterion is that the course materials should be clearly written and stated. The layout and format should be appealing to the user. Dhanaraja (1996), instructional design should have certain characteristics. For example, knowledge of target audience, appropriate sequence and segmentation, interactivity feedback, motivation and formal and informal assessment and administration requirements.

Lack of interactivity in the instruction medium has led most distance learning institutions to operate as part-time learning centers (Gbenoba, 2012). The increased need for contact hours is a testimony that learners need a dose of interactivity missing in the instructional

units. The print medium used for instruction should be designed in such as way that there is proper interactivity if they are to act the "teacher" to the distance learners. From the onset, there should be collaboration between an instructional designer and the subject specialist. The subject specialist should be regarded as the expert in the subject matter and his or her views should be respected and encouraged. The instructional designer should act as "surrogate learners" and ask the kind of questions a distance learner would ask when using the instruction medium, Dhanaraja (1996). Instructional materials should be designed in such a way that they encourage active learning in the absence of the teacher. Issues raised by Gbenoba (2012) need further investigation in the context of The University of Nairobi to ascertain whether the design of print instructional medium used in delivery of distance learning have a role in learner participation.

In designing instructional medium, the multi-stage theory of human learning provides a rich array of possibilities. It suggests that an effective instruction must involve much more than simply presenting stimuli to the learner. Gagne and Briggs cited in Johnstone (1989) identified nine different activities which they refer to as events of instruction. The first event is gaining the attention of the learner. This is done by presenting stimulus to appeal to the learner's interest or curiosity. This may be done through questions, a challenge, a demonstration or a sharp change in the visual scene. The second event is informing the learner of the objective. The learner should be in a position to know when the objective of the lesson has been achieved. The third event is to stimulate recall. The learner should be in a position to apply previously learnt content to the new concept being introduced. The fourth event involves presenting the new stimulus to be learnt. In step five, the learner should be provided with the learning guidance that is, being directed by prompts, hints or questions towards objectives. The sixth event is eliciting performance. Having arrived at the objective, the learner must be challenged to show that he or she can do the task by use of example or a problem. The seventh event is providing feedback. This is done by making the learner aware of his or her performance. The eighth event involves assessment of performance. The instructor ensures that the learner has accomplished the objective. Finally, the ninth event is enhancing retention and transfer. This calls for practice especially with varied tasks requiring the same skill that have been

the objective of the lesson. Since in distance learning learner independence is crucial, the design of instructional medium ought to be interactive.

2.5 Availability of print instructional medium and learner participation in distance learning

University of Nairobi produces study units used in distance learning in-house. Each study unit provides specialized study material meant for self learning. Ideally, study units are supposed to be availed to the learner at the beginning of each semester. Availability of learning materials in distance mode of education is crucial for the successes of the program. Availability means that the instruction materials should be available to be issued to the learners at the beginning of every semester. Being the main mode of delivery, no meaningful study can take place in the absence of print medium instruction materials. Studies have shown that students are not getting study materials in time and this has led to some degree of dissatisfaction among them. A study carried out by Nyerere, Gravenir and Mse (2012) indicates that students were not being issued with study materials in time. Learners had to travel to the main centers to be issued with study materials. Most distance learners are adults with several responsibilities, Rambo and Odundo (2011) and movement from one point to another may cause a lot of inconveniences and hence dissatisfaction. This may act as a deterrent factor among the learners. In the same study, the teaching staff also reported inadequate materials used in the program. A report by Kimani et *al* (2012) also indicates that instructional units were not issued on time to students studying by distance learning. Some were issued after continuous assessment tests were done while others were issued mid-semester. Some students felt that they were paying for what they had not properly utilized. Rising from these findings, this study intends to investigate the practice of the University of Nairobi distance learning program with the aim of establishing whether availability of print medium instructional materials influences learner participation in distance learning.

2.6 Influence of learner Characteristics and Participation in Distance Learning

Most students in distance learning mode are adult learners with a distribution of 48.7 per cent being male and 51.3 per cent being female, Ngumi and Mwaniki (2009). Most of

them are employed, have families or stable relationships and responsibilities that come with adult life. Going back to school upsets the above equilibrium and hence the need for adjustment. The aspiring students need to structure their life in order to fit back into school environment and at the same time continue with their normal activities and professions. According to Deverthelyi (1995) quoted in Ngumi (2009), adjustments of individuals into such a system may be affected by situation factors, personality traits, cultural background, gender-role orientation, among others. Since most of distance learners are professionals, they are expected to do assignments, read and prepare for exams during working hours. This increases their workload hence the stress levels increases. When this is not handled appropriately, it may impact on the learner participation in the distance learning program.

There are implications for the learner undergoing distance learning, Sharma (2005). Since most distance learners are adults with either responsibilities, they want to learn with minimum frustrations. Most of them also have limits to the amount of knowledge they can absorb at any given time, have among them different pace of learning, prefer a structure to facilitate their study or training program and all want to experience success in their understanding (Sharma,2005).

Schooling and especially for an adult has financial implications. Most participants in distance learning programs are middle-income earners. They are required either to use their savings or take loans to pay tuition fees and meet other costs such as maintenance while at the university. Most universities have become very strict with regard to fees payment and students who don't clear fees may not be allowed to sit for their examinations. Coupled with other family obligations, financial stress may hamper academic achievement when the students fail to prepare well in advance for it.

Pursuit of education for an adult sometimes implies separation from family. A learner needs to prepare for these changes since they may have to compromise their quality time with their families which may lead to stress. Counseling may come in handy to help such learners through learner-support services offered by most universities. It is imperative

that such a learner seeks these services so that the stress or conflict arising from such a separation does not interfere with their academic performance (Sharma, 2012).

Most students have no idea what a degree program and specifically distance learning entails until they have enrolled into one. As a result, they blindly enroll into a program and later realize that they are unable to cope financially, workloads, complex subject matter, time constraints and separation from families, Ngumi and Mwaniki (2009). It is with such findings in mind that this study intends to find out the influence of learner characteristics on learner participation in the B.Ed. (Arts) program of The University of Nairobi. Findings on learner characteristic will be important to the study since the instructional material may be right in terms of content, design and availability but if the learner has personal challenges then meaningful participation may be hindered.

2.7 Learner support services and participation in distance learning

Learner support services refer to entire range of methods and strategies employed in the presentation and delivery of courses aimed at assisting and enabling learners to learn. It enables learners to comprehend fully, assimilate and master the skills and knowledge needed to achieve success in their studies (SAID, 1999) cited in (Bowa, 2008). Distance learners experience a number of challenges in the course of their studies. Some of them have not been to a learning environment for a long time and therefore going back to study may pose challenges that need to be overcome in order for them to realize their goals. To minimize the effects of these challenges, many institutions offering distance learning have learner support services as part of package in distance learning. In this study, two types of support services would be looked at as crucial in influencing learner participation in distance learning at the University of Nairobi. Face to face tutorials and counseling are important components of distance learning delivery at the University of Nairobi.

In as much as distance learning is increasingly becoming technology based, scholars have stressed the need to incorporate face to face interaction with the tutor. According to Perrton (2010), no set of materials however carefully designed can effectively teach

every learner equally effectively. Face to face has pedagogical value as well as social value to distance learners. This is because learning is a social process that arises and is imbedded in social structures and systems of value Peraton (2010). Face to face contact has proved it worth in maintaining learner interest, promoting dialogue and crucially, for teacher education, in allowing for supervision of teaching. Tutorials by distance learning providers are meant to give intellectual support to distance learners. They do so in the understanding that it is the media that is suppose to teach. The primary task of a tutor is to facilitate learning, Rowntree (1994). The tutor clarifies concepts, explore issues with the learner and comment or grade assignments given to the learner.

A study carried out by Nyerere, Gravenir and Mse (2012), on Kenyan universities offering distance learning found out that institutions rely heavily on teaching staff to facilitate residential program. They are assisted by staff hired on part time basis to run tutorials.

At the University of Nairobi, for example, residential sessions are arranged during school holidays in April, August and December to assist learners in clarifying concepts learnt in the print instructional medium. Lecturers from the headquarters (Kikuyu campus) also visit them during their home study to offer any support services that they may require. Such forums act as contact points between the learners and their tutors. Counseling services are also available to them during such sessions. According to Sharma (2005) quoted in Aseey (2008) visits to distance learners are crucial because they increase interaction between students and tutors and offer numerous opportunities to students so that they can develop critical thinking and problem solving skills. These help in enhancing individual understanding of issues through multiple perspectives. Face to face contact done over school holidays is meant to cover 20% of the time that a learner is expected to spend studying a course unit. The remaining 80% is home study, Bowa (2008). Even though the focus of this study is on learner perception of print instructional medium used in distance learning, the moderating influence of learner support services have been recognized as an important aspect of distance learning.

2.8 A Summary of knowledge Gaps filled by the Study

To conclude literature review, the following summary provides knowledge gaps to be fitted by the study. A study by Ngumi and Mwaniki (2009) focused on Psychological preparedness of distance learners: Implications on achievement among school-based undergraduate students in Kenya. Findings of the study were that most students had no idea what a degree program entails until they had enrolled in one; they had adjustment problems and stress and majority failed to achieve optimum academic performance they expected. The research gap to be filled by this study is whether distance learners are influenced by their unique characteristics as they pursue their degree program.

A study carried out by Nyerere, Gravenir and Awe (2012) was based on Delivery of Open Distance and E-learning in Kenya. The findings were that only 32 per cent of tutors of distance learning had any formal training in distance education. The rest were trained to handle conventional education. The study also established that 90.8 per cent of those who participated in the program were dissatisfied with delivery and organization of the program. The study did not interrogate print medium which is the main medium of delivery of distance learning and how it influences learner participation. This is the gap that the study intends to fill.

A study done by Kimani *et al* (2012) focused on students' experiences and perceptions of Masters of Business Administration program offered through Distance Education at Kenyatta University, Kenya. The findings were that the program had high quality instructors, but they were very few resulting in work pressure. There were administrative challenges resulting in poor co-ordination leading to delay in examination results and poor record keeping. Opportunity for out of class interaction was also low at 79.4 per cent while 85.1 per cent of respondents reported poor supply of study materials. This study would determine whether some of these findings can be replicated for The University of Nairobi B.Ed.(Arts) program by distance learning.

A study carried out by Hamweet (2012) at the University of Zambia focused on quality assurance in modules at the Institute Distance Education. The findings were that the students agreed that the modules were of fair quality in terms of readability. There were however a problem with the diagrams and presentations of the tables which the respondents claimed were not properly done. Another finding of the study which may be useful to this study was that the modules only covered 80 per cent of the course outline and that the content was of low caliber. This study intends to not only find out the content and design but also whether they influence learner participation in distance learning.

Research done by Gbenoba (2012) focused on the quest for increased interactivity in the print instructional resources of ODL instructions in Africa: Writing the study units of NOUN print course materials. This study only dealt with the interactivity in the print medium used as instructional material in the delivery of distance learning. The gap the study intends to fill goes beyond interactivity to look into the content, relevance and availability and whether they influence learner participation in distance learning. Table 2.1 gives a summary of literature review and the study gaps that were filled by the current study.

Table 2.1: Summary of knowledge gaps

Independent Variable	Author (year)	Title of the study	Findings	Knowledge gaps
Content of study units	Nyerere, Gravenir and Awe (2012)	Delivery of Open Distance and E-learning in Kenya	Delivery of ODL faces both economic and infrastructure challenges.	The study focused on specifically on the content of print as delivery medium in distance learning program of the University of Nairobi
Design of study units	Gbenoba F.E (2012)	Quest for increased interactivity in the print instructional resources of ODL institutions in Africa: writing the study units of NOUN print course materials.	Inadequate interactivity in print course materials.	The study looks at design of study units holistically and includes interactivity, self assessment exercises, icons and statement of statement of objectives.
Availability of study units	Nzuki P.K (2012)	Relationship between perceived quality dimension and growth in distance education: The case of external degree program of the University of Nairobi, Kenya	Availability of study materials did not meet stakeholder's expectations.	The study sought to establish whether availability has influence of learner participation in distance learning.
Learner characteristics	Ngumi. O and Mwaniki (2009)	Psychological preparedness of distance learners.	Distance learners are not psychologically prepared for distance learning and this affects their performance	The study focuses specifically on the influence of marital obligations and employment obligations on learner participation in distance learning.
Learner support services	Bowa, O. (2008)	The influence of learner support services on academic performance of distance learners	Learner support have a considerable influence on academic performance of distance learners	This study focused on the influence of learner support in the whole process of learning, class attendance, writing assignments, taking part in CATs and examinations.

2.9 Theoretical Basis of the Study

The study is grounded on two main theories. The first theory is guided didactic theory by Borge Holmberg. The theory lays emphasis on learner independence in the course of learning a factor that print instructional medium is intended to fulfill. The other theory is Brunner's Instrumental conceptualism. According to Brunner learning does not just happen but is made to happen by the learners themselves.

2. 9.1 Holmberg Didactic Theory

The study is grounded on Holmberg's theory of guided didactic conversation. According to Saba (2003), leading theorists of distance learning such as Borje Holmberg, Charles A. Wedemeyer and Michael G. Moore put the learner and his or her interaction with the others at the centre of education process. The centrality of the learner is one of the distinguishing features of distance education. According to Holmberg, the only important thing in education is learning by individual students. Holmberg's guided didactic theory is based on humanist philosophy that highly values students' independence and autonomy. It sees learning as a two way communication between the medium of instruction and the learner. The theory implies that distance education instruction materials should be constructed in such a way that they resemble guided conversation. The theory is suitable to this study because print instructional materials used in the delivery of distance learning are meant to be a two-way communication tool. They should be designed in such a way that there is active interaction between the print and the learner. Its effectiveness would enhance learner participation by actively engaging the learner in the study. The instructiveness would enhance independence of the learner in Holmberg's theory hence the choice.

Figure 1: Guided Didactic Conversation

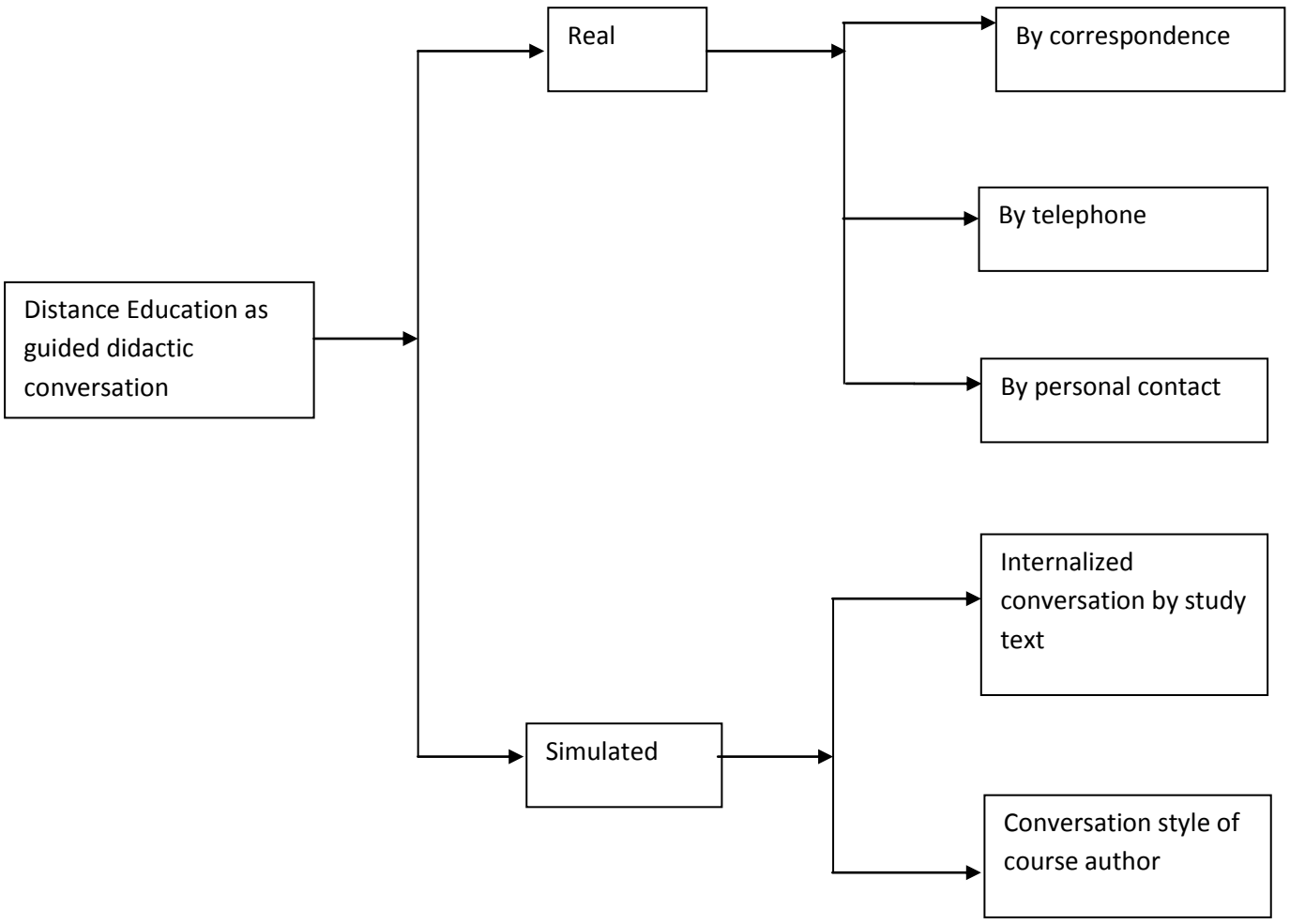

Fig. 1. Source: Distance Education study module

2.10 Instrumental Conceptualism

This study is also grounded on Brunner's theory of instrumental conceptualism. Brunner sees learning as an active process in which the learner infers principles and rules and tests them out, Fontana (1995). According to this theory, learning is not something that happens to individuals but something which they themselves make happen by the manner in which they handle incoming information and put it to use. Brunner recognizes learning as having three main cognitive processes. The first process is the acquisition of information; the second is transformation or manipulation of the acquired information into a form that is suitable for dealing with the task at hand. The third process is testing the adequacy of this information. Brunner identifies three important variables that should be considered when planning a learning activity. These include the nature of the learner, the nature of the knowledge to be learnt and the nature of the learning process. Nature of the learner otherwise interpreted in this study as learner characteristics, the nature of material to be learnt as presented in the print instructional medium and the nature of learning process, that is, distance learning.

Brunner's theory of conceptual conceptualism is relevant to this study because in distance learning, learner participation in the process of learning is crucial since learning is supposed to take place through individual manipulation of content presented to them through the medium. The PIM contains the information which the learner is supposed to handle in order to learn. This can be referred to as the first process of Brunner's theory of acquisition of information. By reading the content of PIM and attempting in-text questions provided in the instructional medium, the learner goes into the second process of testing and handling information to perform a task at hand. Finally the process of testing and handling information is done through participation in tests and exams. According to Woolfolk (2004) knowledge is the outcome of learning and for the learner to be an active participant in the learning process he or she should be engaged with the PIM provided for this purpose. A study by Recht and Leslie (1998) quoted in Woolfolk (2004) suggest that the importance of knowledge is to understand and remember new information. The ability to recall the learnt information form part of learner participation

when they take part in interim and terminal assessments. The results will show whether learning indeed took place or not.

The illustration bellow summarizes the relationship between Bruner's theory of instrumental conceptualism and the influence of print medium on learner participation in distance learning

Acquisition of information ⟷ Reading content of print media

Manipulation of information ⟷ conceptualizing the read information

Testing the adequacy of information ⟷ Participation in CAT's and terminal assessment

The success or failure of the learner may be determined by the intervening variable like learner characteristic or moderating variable like face- to- face tutorial given to support the distance learner.

2.11 Conceptual Framework

The study is based on the concept that print medium is the main mode of delivery of distance learning in developing countries. It is because of this fact that the content of the print instructional materials should have adequate coverage, it should be current, and that should be reviewed from time to time and should contain accurate information. Since distance learning instructional materials differ from textbooks, the design in terms of layout, sequence, statement of objectives and interactivity is equally important. Indictors of a good design therefore include in-text questions, visualization through icons, self-assessment and clearly stated objectives. It is believed that all these should enhance learner participation in distance learning. Moreover, the instructional materials should be readily available to the learner at the beginning of every semester in order to enhance participation. Learner participation is confirmed when the learner is able attend revision tuitions, do assignments, take part in assessments and complete a semester. It is also noted that learner characteristics may play a role in participation even when the medium of instruction is well designed or not.

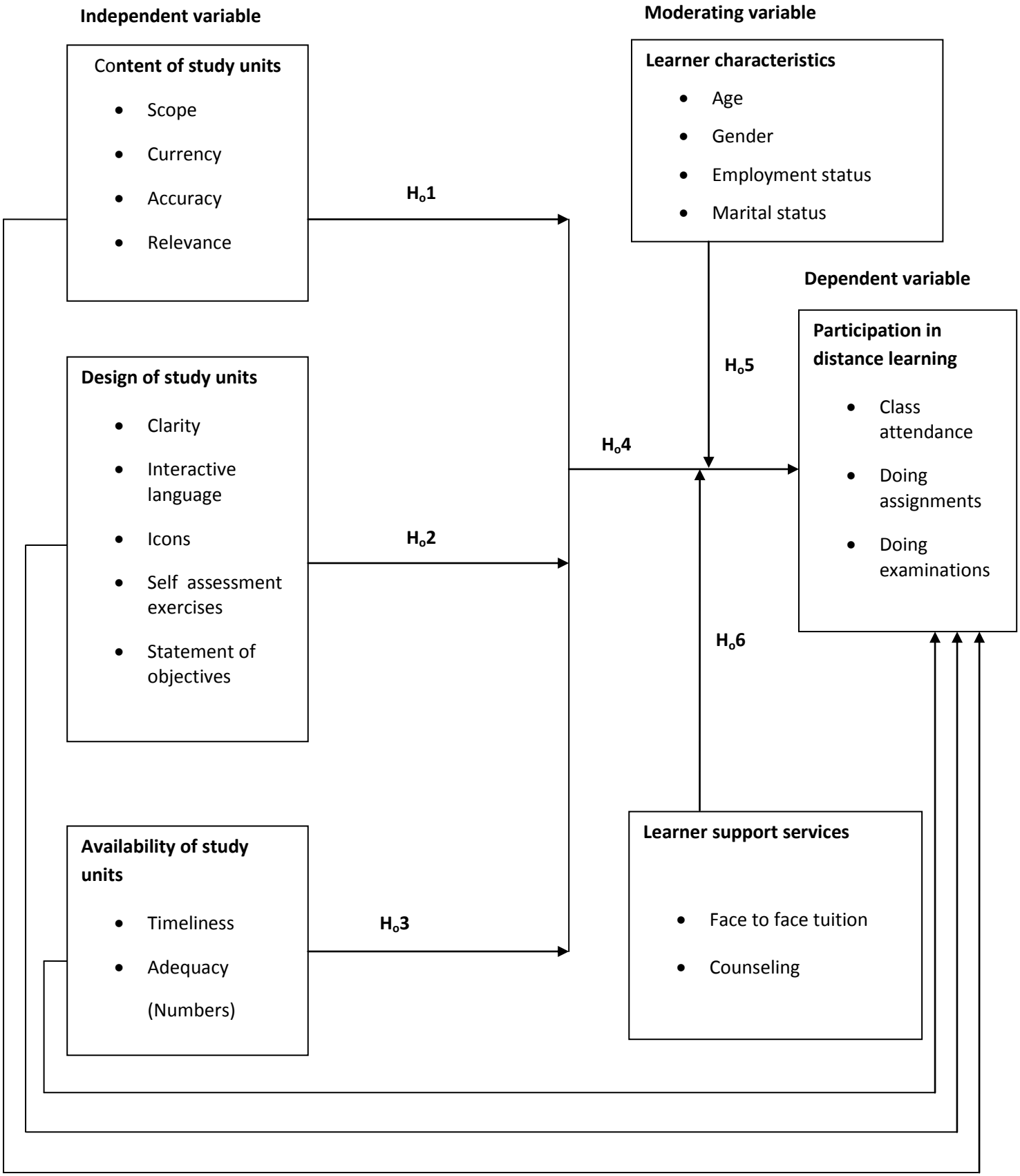

Figure 2: Conceptual Framework of Learner perception of print instructional medium and participation in distance learning

From the illustration on figure two, content, design and availability of print instructional medium influence learner participation in distance learning. However, the extent of participation may also be influenced by the moderating effect of learner characteristics such as age, gender, employment status as well as marital status. Learner support services offered by institutions offering distance learning such as limited face to face tuition and counseling may also influence the extent of learner participation.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents methodology that was followed to meet the objectives of the study. It involved establishing research philosophy, research design, target population, sampling and sampling procedure, research instruments, validity and reliability of the instruments, methods of data analysis, operational definitions of variables and ethical issues.

3.2 Research philosophy

The study was based on philosophy of pragmatism. Pragmatism is a philosophical movement which states that an ideology or a proposition is true if it works satisfactorily. It is a reasonable and logical way of doing things or thinking about problems and dealing with specific situations instead of ideas and theories (Mackenzie and Knipe, 2006). Pragmatism is pluralist in nature in that it recognizes that there is more than one sound way of doing things. In this study, learner perception of print instructional medium was studied. Since learners are human beings with individual characteristics, the way they perceive print medium would be unique to individual learners. Some may perceive it positively while others may have opposite opinion. Pragmatists believe that the way an individual perceives a phenomenon determines the way he or she reacts to it. In line with this study, the way a learner perceives print instructional medium may influence his or her participation in distance learning. Since the design of the study was mixed method approach, pragmatism was deemed suitable because it provides the underlying philosophical framework for mixed method approach. There is another aspect of the pragmatic philosophy which emphasizes the use of mixed methods approach where it enables the use of qualitative and quantitative approaches where appropriate. That aspect is important to this study because both approaches are used in data analysis.

3.2.1 Research Design

The study used mixed method approach, that is, qualitative and quantitative paradigms. This is a class of research where a researcher mixes or combines quantitative methods with qualitative approaches in one single study. Mixed method approach enables a researcher to collect data using strategies, approaches and methods in such a way that the resulting mixture or combination results into complementary strengths and no overlapping weaknesses (Johnson and Onwuegenbuzie, 2004). Mixed method was suitable for the study because the data to be collected were both qualitative and quantitative. The qualitative data described learner perception of content, design and availability of study units used in Bachelor of Education (Arts) program of the University of Nairobi while the quantitative data used to test hypotheses were obtained from learner participation records in the examinations department. The method was also found suitable because it provided for triangulation that sought convergence and corroboration of results from questionnaires and document analysis guide. Qualitative technique was intended to provide detailed description of variables under study while quantitative technique provided hard data needed to test hypothesis.

3.3 Target population

The study targeted students in the Bachelor of education (Arts) program in the School of Continuing and Distance Education, Department of Educational Studies. The study also targeted twenty six full time and part time lecturers who teach planning, administration and curriculum (PAC) units in the department as well as staff in the printing and distribution office. Students in the department are organized into six semesters also known as parts. At the point of entry they join part one and progress through to part six which is the final year. The study focused on part six students only. Part six students were purposively sampled because they were in their final stages of study, had utilized print study units targeted in the study and could therefore respond effectively to questions raised in the questionnaire. With a population of 547 students the number was considered viable for the purposes of the study. Full time and part time lectures were targeted because they are direct service providers who teach PAC study units in the program. They have made references to target units and could therefore give useful information

needed for the study. PAC study units were purposively sampled. While there are other core units such as Psychology (PSY) and foundation units (BEF) PAC units were selected for this study because it was not possible to study all the study units used in the program. Besides, PAC units include distance education which is an area of interest in the study. The study also targeted one officer from the printing shop since the department is in charge of distribution of print study units to the learners. Target population comprised of 547 students, 11 full time lecturers, 15 part time lecturers and one full time staff from printing and distribution office. These figures were obtained from the department of educational studies. This brought the total population to 574.

3.3.1 Sample size

Sampling is a process of selecting a number of individuals or objects from a population such that the selected group contains elements representative of the characteristics found in the entire group (Kombo and Tromp, 2009). Sampling is important in research because it assists in quality control (Kasomo, 2006). Since it was not possible to study the entire population due to time and financial constraints, appropriate sample size was necessary.

To calculate sample size, a formula provided by Cooper and Emory (1995) was used.

Sample size $n = \frac{N}{1 + N(e)^2}$

Where n =sample size =target population

e = Acceptable margin of error at 5% (STD value 0.05)

Table 3.1: Population and Sample Size

Population component	Population size	Ratio chosen $n = \frac{N}{1 + N(e)^2}$	Sample Size
Part six students	547	$n = \frac{547}{1 + 547(0.05)^2}$	231
Full time lecturers	11	$n = \frac{11}{1 + 11(0.05)^2}$	10
Part time lecturers	15	$n = \frac{15}{1 + 15(0.05)^2}$	14
Distribution staff	1	_	1
Total sample size			**256**

The sample size obtained after calculations had 231 part six students, 10 full time lecturers 14 part time lecturers and one officer in charge of distribution of study units. The total sample size was 256.

3.3.2 Sampling procedure

Sampling techniques adopted were both probability and non probability approaches. Probability sampling is a technique in which every item in the population has an equal chance of being selected. Non probability which is also known as purposive sampling was done on part six students. Part six students were chosen because they had stayed longest in the program and had used all the PAC units being studied. Since the population of part six students were 547 and the sample size required was 231, simple random sampling was done to give equal chance to every individual in the group to take part in the study. This was done by listing down all the part six students by registration. Registration numbers were then placed in a container and any registration number picked was listed for the study. This was done until the required sample size was achieved. Stratified sampling was done on the lecturers to get the views of both full time and part time lecturers. PAC lecturers were chosen because they are direct service providers who do introduction, continuing and revision tuition to distance learners in the program. They therefore had the required information needed for the study. Out of the many educational study units, for example, Foundations (BEF) and Psychology (PSY), PAC was chosen since it was not possible to study all the core units in the program due to financial and time constraints. Purposive sampling was done on one senior staff from the printing shop. Even though there were two officers responsible for distribution, one was fairly new in the job and did not have adequate information on how the program runs. The officer chosen is in charge of release and distribution print instructional units and therefore had vital information required in the study.

3.4 Research Instruments

Research instruments for the study included questionnaires, interview guide, content analysis guide and document analysis guide. Questionnaires were administered to Bachelor of Education (Arts) students while interview guide was used on full time tutors, part time tutors and staff in the printing and distribution office. Content analysis guide (appendix E) was used to analyze PAC instructional materials used in the delivery of distance learning and document analysis guide (Appendix F) was used to collect data on

class attendance, writing assignments and writing examinations. All research tools were developed by the researcher.

3.4.1 Questionnaires

A questionnaire is a carefully designed instrument for collecting data directly from people (Best et al, 2002). Questionnaires were chosen because information needed had to come from a large number of respondents. In a descriptive study, questionnaires are also suitable because results tend to be more dependable and reliable since the respondents have time to give a well thought out answer, Kothari (2004).In this study, questionnaires were divided into sections: Section one solicited data about learner characteristics as well as personal details of the respondents. Section two had sub-sections on independent variables, that is, content, design and availability respectively. Section three items on learner participation which is a dependent variable in the study and section four was designed to collect data on learner perception of support services. The questionnaires had close-ended likert scale- type questions rated to the scale of 5 – 1. Each variable also had one question that required the respondent to indicate on a scale of 0 to 100 percent the extent to which they perceived the variable as influencing their participation in distance learning. Scaling was done on each item in the questionnaire and score of individual response was assigned a place in the scale. The scale chosen for this study ranged from 5 to 1 and included: strongly agree (1), agree (2), undecided (3), disagree (4) and strongly disagree (5).

3. 4.2 Interview Guide

Interview involves oral or vocal questioning. The technique involves face to face interaction between individuals leading to self-report. Interview was used on lecturers and a staff in the printing and distribution office. Interview was suitable for the study since the lecturers and distribution staffs are direct service providers and have firsthand experience in handling print instructional materials used in the program. Moreover the number of lecturers did not meet the threshold for questionnaire which requires a minimum of thirty respondents. Interview was used purposely to triangulate responses from other instruments administered.

3.4.3 Content Analysis Guide

Content analysis guide is a research technique for making inferences by systematically and objectively identifying specified characteristics within text. The researcher developed a guide that captured basic components required for distance learning instructional medium. This guide was meant to ease analysis of PAC study units by focusing on content and design of the study units. Currency of content was determined by year of publication or review. Scope was determined by Blooms taxonomy whereas accuracy was done by subject expert. Design of print instructional medium was looked at in terms of statement of objectives, presence of icons, interactive language, summaries and suggestion of books for references.

3.4.4 Document Analysis Guide

This method involves deriving information by carefully studying written documents or visual information from sources called documents, Kasomo (2006). In this study, class attendance registers, assignments documents as well as examination attendance registers were analyzed with the aim of ascertaining learner participation. Sample of document analysis guide (appendix F) has been provided.

3.4.5 Validity of Research Instruments

Validity concerns itself with establishing whether the instrument is measuring what it is supposed to measure (Orodho, 2004). To ensure validity, a pilot study was carried out on a section of the respondents. This was done to weed out any ambiguous questions that might have been included in the research instruments. A total of 23 questionnaires were administered to part six students for this purpose. Mugenda and Mugenda (2003) recommend 1% to 10% of the sample for pilot testing in descriptive studies. These learners were then excluded from the study so that they don't influence the results in any way. This was done by noting down their registration numbers. When the revised questionnaires were administered the already marked ones were excluded from the final analysis. Content validity was also done through expert judgment. This involved a team of university of Nairobi professionals who have successfully used similar instruments in their work. They have also been involved in judging the suitability of research

instruments in similar studies at doctorate level. They looked into the questions against objectives to ensure that they were capable of soliciting answers required for the study. According to Mutahi (2000) expert judgment is recommended especially for content validity.

3.4.6 Instrument Reliability

To test the reliability of research instrument, the researcher employed split-half methods. This method treats the two halves of a measure as alternative forms. Spearman's rank order correlation formula was used to test reliability of the two halves. An odd-even split in which the odd numbered items form one half of the test and the even-numbered items forms the other half would be used. This ensured that each of half contained an equal number of items from the beginning, middle and end of the original test. Spearman's co-efficient of correlation formula used is as illustrated.

$$r = \left\{\frac{6 \in di^2}{n(n^2-1)}\right\}$$

Where d_i = difference between ranks with pair of the two variables.

n = number of pairs of observation

The co-efficient of +1 would mean perfect correlation while (r=0) relationship would mean a weak relationship, Dooley (2004).

The questionnaire was found to be reliable with a reliability test index of 81 percent. As recommended by Churchill (1979) quoted in Nzuki (2012), Cronbach alpha was computed for each indicator as illustrated on table 3.2

Table 3.2 Summary of Reliability Test

Item Statistics			
	Cronbach Alpha	Cronbach's Alpha Based on Standardized Items	N
Learners participation	0.801	0.800	154
Content of study	0.940	0.940	150
Design of study units	0.929	0.930	146
Availability of study units	0.905	0.905	153
Content design and availability of study units	0.921	0.927	147
Learners support services	0.845	0.850	144
Leaner's characteristics	0.621	0.650	150

Based on the Cronbach alpha test results summarized in table 3.2, learner participation which had 154 items, had a reliability coefficient of 0.801, Content of study units had 150 items with a reliability 0.940, design of study units had 146 items with a reliability co efficient of 0.929, availability of study units had 153 items with a reliability co efficient 0.905, print content, design and availability of study units had 147 items with a reliability co efficient of 0.921, learners support service also had 144 items with a reliability co efficient of 0.845,while learners characteristics had 150 items with a reliability co efficient of 0.621

3.5 Data Collection Procedure

The researcher applied for a research permit from the Ministry of Education. While this was in progress, the researcher notified the department of educational studies of the intention to use of their residential centers for data collection. Primary data from questionnaires for students was collected through centre co-coordinators when the

respondents were in residential session while interview for part time, full time and staff in the printing and distribution office were done directly by the researcher.

Secondary data was obtained from the records office by the researcher. These included published materials specifically class attendance register, examination attendance register and Continuous Assessment Tests (CAT) attendance register. PAC instructional units used for delivering distance learning were obtained from the printing shop.

3.6 Data Analysis Techniques

Data analysis is the research component that enables the researcher to make decisions that would be considerate scientifically reasoned as opposed to decisions based merely on intuition (Munyoki and Mulwa 2012). It is the process of scientifically searching and arranging interview transcript, field notes and questionnaire results with the aim of increasing understanding, (Orodho, 2004). Data analysis followed seven stage conceptualization of the mixed methods data analysis process as recommended by (Onwuegbuzie and Teddlie 2003). This was done through data reduction that is, reducing the dimensionality of the quantitative data via thematic analysis, and through qualitative data via descriptive statistics, exploratory factor analysis and cluster analysis. Stage two involved data display which was done by describing quantitative data using matrices sand lists and quantitative data using tables. Stage three involved data transformation where by quantitative data was converted to narrative data that could be analyzed qualitatively and qualitative data converted to numerical codes (likert- scale) that could be presented statistically. Stage four involved data correlation where by quantitative data was correlated with qualitative data. This was followed by stage five where data consolidation was done by combining qualitative and quantitative data to create data sets. The sixth stage was data comparison which involved comparing data from qualitative and quantitative sources. The seventh and final stage was data integration. This was done to create coherence that led to interpretation.

Each of the six objectives of the study had questions arranged in likert scale ranging from 5 to 1 and respondents were expected to respond to pre determined responses in order from Strongly Agree(5), Agree (4), Undecided (3), Disagree (2) and Strongly Disagree (1). Frequencies of responses were then obtained and percentages computed. These were used in descriptive statistics. Each variable also had a scale question where respondents were suppose to indicate their perception of a given variable. The scale ranged from 0 to 100 percent. This was used for inferential statistics such as correlation, regression and ANOVA. The hypotheses were tested at 0.05 level of significance as recommended in most social science studies (Lodico, Spaulding, Voegtle, 2010). Table 3.3 gives a summary of objectives, corresponding hypothesis and the type of test done for each hypothesis.

Table 3.3: Test of hypotheses

Hypothesis was tested at significance level of 0.05 as shown on Table 3.3

	Objectives	**Hypothesis**	**Types of analysis**
1	To establish the influence of learner perception of content of print medium on participation in distance learning	Ho1: learner perception of content of print instructional medium has no influence on participation in distance learning	Chi-square Pearson Correlation coefficient analysis ANOVA Regression
2	To determine the influence of learner perception of design of print instructional medium on participation in distance learning	Ho2: learner perception of design of print instructional medium has no influence on participation in distance learning	Chi-square Pearson Correlation coefficient analysis ANOVA Regression
3	To examine the influence of learner perception of availability of print instructional medium on participation in distance learning	Ho3: learner perception of availability of print instructional medium has no influence on participation in distance learning	Chi-square Pearson correlation coefficient analysis ANOVA Regression
4	To assess the combined influence of learner perception of content, design and availability of print instructional medium on learner participation in distance learning	Ho4: print content, design and availability has no influence on learner participation in distance learning	Chi-square ANOVA

5	To establish how learner characteristics moderate the relationship between learner perception of print instructional medium and participation in distance learning.	Ho5: learner characteristics have no influence on participation in distance learning	Chi-square ANOVA
6	To assess how learner support services moderate the relationship between learner perception of print instructional medium and learner participation in distance learning.	Ho6 Learner support services have no influence on participation in distance learning.	Chi-square ANOVA

3.7 Operational definition of variables

Variables in the study were measured using indicators. Indicators for content included scope, currency, accuracy and relevance. Indicators for design were layout, in-text questions, icons, self-assessment exercises, statement of objectives and clarity. Availability was indicated by adequacy of print instructional medium and timeliness in issuance. Indicators for learner characteristic were age, gender, marital status and employment status. For independent variable, scaling was done on a level of one to five and each response noted. Learner participation was indicated by class attendance, doing assignments and doing examinations. For dependent variable, that is, learner participation, documents analyzed included class attendance register, assignment records and examination attendance records. Table 3.5 gives a summary of how each variable was measured and the data collection tool that was used to collect data to answer research questions.

Table 3.4 Operational definition of variables

Objectives of the study	Variables	Indicators	Measuring scale	Data collection methods	Types of analysis
To establish the influence of learner perception of content of print instructional medium on participation in distance learning.	Content of print instructional medium	. Currency . Relevance . Scope Accuracy	Ordinal scale Interval scale	Questionnaires, interview guide and content analysis guide	Pearson correlation analysis ANOVA Regression
To establish the influence of learner perception of print instructional design on participation in distance learning.	Design of print instructional medium	. Clarity . In-text questions .Statement of objectives Layout	Ordinal scale Interval scale	Questionnaires, interview guide and content analysis guide	Pearson Correlation analysis ANOVA
To determine the influence of learner perception of availability of print instructional medium on participation in distance learning.	Availability of print instructional medium	.Timeliness .Adequacy (numbers)	Ordinal scale	Questionnaires and interview guide	Pearson Correlation analysis ANOVA
To establish the combined influence of content, design and availability of print instructional medium on learner participation in distance learning	Content, design and availability	Currency, relevance, scope, accuracy, clarity, in-text questions, statement of objectives, layout. Timeliness and adequacy	Interval scale Ordinal scale	Questionnaires, interview guide and content analysis guide	ANOVA
To establish the moderating influence of learner characteristics on participation in distance learning	Learner characteristics	Age Gender	Nominal scale Ordinal scale Interval scale	Questionnaires	ANOVA

		Employment status Marital status			
To establish moderating influence of learner support services on participation in distance learning	Learner support services	Counseling Face to face tuition	Ordinal scale	Questionnaires and interview guide	ANOVA
Dependent variable	Learner participation	Tuition attendance Doing assignments Doing cats and examinations	Ordinal scale Interval scale	Document analysis	ANOVA

3.8 Ethical issues

Ethics has been defined as that branch of philosophy which deals with one's conduct and serves as a guide to one's behavior. In this study, ethical issues were considered. Permit was sought from the relevant government ministry as required by law that any one intending to carry out research in the country should obtain a permit. There was also a letter addressed to the respondents requesting them to participate in the study. The letter assured them of confidentiality of any information given. Identity and privacy of individuals was protected especially during face to face interview by concealing it and instructing questionnaire respondents not to write their names anywhere in the questionnaire.

CHAPTER FOUR
DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

In this chapter, a qualitative and quantitative analysis of content, design, availability, learner characteristics and learner support services and their influence on learner participation in distance learning degree program of the University of Nairobi has been presented. Content analysis on selected study units used in the program has also been presented and included Environmental education (PAC 102), Curriculum development (PAC 202), Education and development (PAC303) and Distance learning (PAC311).

The study aimed at establishing the influence of print instructional medium on learner participation in distance learning. The print instructional medium selected was study unit a term used by the University to refer to print instructional materials used in the program. Questionnaire was used to collect data from student respondents. Questionnaire was divided into six sections. Sections B1 focused on content of study units, section B2 design of study units, section B3, availability of study units, Section B4, learner characteristics, section B5, learner support services and section B6, and learner participation. The responses were captured in five- point likert scales ranging from strongly agree, agree, undecided, disagree and strongly disagree. Results were summarized into frequencies and percentages and were correlated with learner participation which was scaled from 0 to 100 points. Data was presented in two sections, namely: descriptive analysis which included learner perception of variables of the study, interview results from lecturers and staff from printing and distribution office and inferential statistics which included chi-square, correlation, regression and ANOVA. The decision to declare the existence of relationship was based on whether the calculated value is greater than the critical value obtained from a standard chi-square table. Further, p- pearsons correlation coefficient was used to determine the strength of the relationship while a one tailed leaner regression test was conducted to test the direction of the relationship. ANOVA was also done to determine variations within the indicators of the variable under the study. Hypotheses were tested at 0.05 levels of significance. If the

calculated value is less than the set level of significance the null hypothesis in question and the alternative accepted. The chapter concludes by providing multiple regression of content, design, availability, learner characteristics and learner support services on learner participation in distance learning.

4.2 Questionnaire return rate

Questionnaires were used to seek the respondents' perception on various attributes defining content, design and availability of print instructional medium. Information regarding influence of learner characteristics as well as learner support services was also sought. A total of 231 questionnaires were distributed. Out of these 174 questionnaires were dully filled and returned. This indicated a response rate of 75 percent. According to Dilliman (2000), 60 percent response rate in social sciences is considered adequate. Out of the ten full time lecturers targeted for interview six were available and were dully interviewed. Part time lecturers targeted were 14 and ten were available for interview. One staff in the printing shop was also interviewed as proposed.

4.3. Learner perception of content of print instructional medium and Participation in distance learning

Content of print instructional medium refers to the sum total of information contained in the study units that the learner is expected to learn in order to be considered competent in a given field of knowledge. Content has a bearing on competence of the learner. It was therefore important to establish learner perception of content since perception is often reflected in the behavior. In this study, content was looked at in terms of scope/depth meaning that the range covered and in a detailed way. Detailed content coverage enables the learner to have competence in their area of specialization. It was therefore important to know how learners perceive the main medium of delivery used in the program. Content was also looked at in terms of currency of knowledge. It is important to have content that reflects trends in the society and latest information in the subject area. It was also important to get learner perception on accuracy of content covered in the study units. Having exact or correct information is important more so in education since educators are charged with the responsibility of imparting knowledge to the next generation. It was

therefore important to establish learner perception of accuracy of information in the study units for this would give them confidence in their profession. Relevance of content was also looked at to establish if learners perceive information contained in the study unit to be applicable in their area of specialization. Usefulness of content to the learner is crucial since they are the end user of information in the study units.

In this section, the researcher sought the respondents' perception regarding the content of study unit. The respondents were expected to indicate the extent to which they agreed to the various statements that defined content variable. Responses were captured in a five point likerts scale (5= strongly agree, 4= agree, 3= undecided, 2= disagree and 1= strongly disagree) and the general level of acceptance was determined by calculating the frequencies and percentages for the various statements as per the responses and tabulated. Further a composite table of 2*2 where the responses of each question of the independent variable were cross analyzed with the indicators of the dependent variable was established.

4.3.1 Scope of study units and learner participation in assignments

Respondents were asked to indicate in a scale of one to five the extent to which they agree with the statement that content of study units is broad and enables them to do assignments. The responses were crossed - analyzed with the question which sought to establish the extent to which they refer to study units while doing assignment in the range of 0 to 100 percent. In the first category 0-25 consisting of learners who made least references to study units while doing assignments, 1 respondent strongly disagreed with the view that content of study units is broad and enables them to do assignments, 3 disagreed, 3 were undecided, 5 agreed and 1 strongly agreed. In the second category of 26-50 learners who made moderate reference to study units while doing assignments 1 respondent strongly disagree, with the view that content of study units is broad and enables them to do assignments, 8 disagreed, 4 were undecided, 30 agreed while 10 strongly agreed. In the third category ranging between 51-75consisting of learners who made above average reference to study units while doing assignments 7 respondents strongly disagreed, with the notion that content of study units is broad and enables them

to do assignments, 1 disagreed, 4 were undecided, 26 agreed and 20 strongly agreed. In the fourth category ranging between 76-100 consisting of learners who made extensive reference to study units while doing assignments ,4 of the respondents strongly disagree with the notion that study units is broad and enables them to do assignments, 1 disagreed,4 were undecided, 28 agreed and 14 strongly agreed. It can thus be concluded that majority of the respondents 134 (77%) fell between agree and strongly agree.

4.3.2 Scope of study units and learner participation in continuous assessment tests (CATs)

To establish learner participation in CATs (Dependent variable) and whether or not the content of the study unit was fairly broad to enable them participate for CATs, an assessment was made on learner perception of breadth/scope of content of study units measured on a five point likert scale and their level of participation in CATs measured in categorized percentage points. In the first category of 0-25cconsisting of learners who made the least references to study units while preparing for CATs, 2 respondents strongly disagreed, 7 disagreed 1 was undecided, 9 agreed while 6 strongly agreed. In the second category 26-50,consisting of learners who made moderate references to study units while preparing for CATs, 1 respondent strongly disagree, 1 disagreed, 7 were undecided, 9 agreed while 1 strongly agreed. In the third category ranging between 51-75, consisting of respondents who made above average references while preparing for CATs, 3 respondents strongly disagreed,3 disagreed,7 were undecided,31 agreed and 24strongly agreed, in the fourth category ranging between 76-100 consisting of learners who made the most references to study units while preparing for CATs,7 of the respondents strongly disagreed,1 disagreed,5 were undecided,36 agreed and 13 strongly agreed. It can thus be concluded that majority of the respondents agreed that content was fairly broad and enables respondents to prepare for CATs as majority of the respondents 129(74%) fell in the category of agree and strongly agree.

4.3.3 Scope of study units and learner participation in examinations

An assessment was done on Examinations (Dependent variable) and whether or not the content of the study unit was fairly broad to enable respondents to prepare for

examinations. In the first category of 0-25consisting of respondents who made the least reference to study units while preparing for examinations, none of the respondents strongly disagreed and none disagreed, 1 was undecided, 5 agreed while 1 strongly agreed. In the second category of 26-50 consisting of learners who made moderate reference to study units while preparing for examinations, 1 respondent strongly disagreed, 3 disagreed, 3 were undecided, 13 agree while 5 strongly agreed. In the third category ranging from 51-75 consisted of respondents who made above average reference to study units while preparing for examinations, 4 respondents strongly disagreed, 1 disagreed, 7 were un decided, 31 agreed and 20 strongly agreed. The fourth category in the range of 76-100 consisting of respondents who made the most reference to study units while preparing for examinations, 8 of the respondents strongly disagreed, 1 disagreed, 8 were undecided, 38 agreed and 24 strongly agreed. It can thus be concluded that majority of the respondents agreed that content was fairly broad for examinations preparation as 137 (78%) fell in the category of agree and strongly agree, while majority were in the range of 51-100 percent as those who make references to study units for examinations purposes.

4.3.4 Scope of study units and learner preparation for examinations

Respondents were asked whether they are able to read the entire content of study units before examinations. In the first category, 88 respondents strongly disagreed, 60 disagreed, 2 were undecided, and 16 agreed 10 strongly agreed. Most respondents 148(85%) indicated that they are not able to read the entire content of study units before examinations.

4.3.5 Currency of content of study units and learner participation in assignments

Respondents were asked about their perception of currency of content of study units and whether currency influences their participation in assignment (Dependent variable). In the first category of 0-25, which consisted of respondents who made the least fererence to study units while doing assignments, 3 respondents strongly disagreed, 4 disagree, 2 were undecided, 5 agreed and 1 strongly agreed. In the second category of reference 26-50 consisting of respondents who made moderate reference to study units while doing

assignments, 2 respondents strongly disagreed, none disagreed, 2 were undecided, 6 agreed while 3 strongly agreed. In the third category ranging between 51-75 consisting of respondents who made above average reference to study units while doing assignments,8 respondents strongly disagreed,5 disagreed,2 were undecided,56 agreed and 34 strongly agreed, in the fourth category ranging between 76-100 consisted of respondents who made the most reference to study units while doing assignments,5 of the respondents strongly disagreed,5 disagreed,2 were undecided,24 agreed and 20 strongly agreed. It can thus be concluded that majority of the respondents agreed that content of study units carry current knowledge to enable them write assignments since 149(86%) fell in the category of agree and strongly agree and in the range of 76 to 100 percent as the rate at which they make references to study units.

4.3.6 Currency of content of study units and learner participation in continuous assessment tests

Respondents were asked about their perception of currency of study units and whether it influences their participation in CATs. In the first category of 0-25 consisting of learners who made least reference to study units while preparing for CATs, 2 respondents strongly disagreed, 2 disagreed, none were undecided, 7 agreed and 4 strongly agreed. In the second category of 26-50 consisting of respondents who made moderate reference to study units while preparing for CATs, 3 respondents strongly disagreed, 4 disagreed, 4 were undecided, 15 agreed while 4 strongly agreed. In the third category ranging from51-75 consisting respondents who made above average reference to study units while preparing for CATs, 15 respondents strongly disagreed, 8 disagreed, 5 were undecided, 42 agreed and 30 strongly agreed. In the fourth category ranging from76-100 consisting of learners who made the most reference to study units while preparing for CATs, 5 of the respondents strongly disagreed, 5 disagreed, 2 were undecided, 17 agreed and 10 strongly agreed. It can thus be concluded that majority of the respondents agreed that content of study units carry current knowledge to enable them prepare for CATs as 129(74%) fell in the category of agree and strongly agreed.

4.3.7 Currency of content of study units and learner participation in examinations

An assessment was done on examinations (Dependent variable) and whether or not the content of study units carries current Knowledge in the study area that enables the respondent to prepare for examinations. In the first category of 0-25 which consisted of respondents who made the least reference to study units while preparing for examinations, none of the respondents strongly disagreed, 4 disagree, 2 were undecided, none agreed and none strongly agreed. In the second category of 26-50 which consisted of respondents who made moderate response to study units while preparing for examinations, 1 respondent strongly disagree, 4 disagreed, 1 were undecided, 18 agreed while 12 strongly agreed. In the third category ranging from 51-75 which consisted of respondents who made above average reference to study units while preparing for examinations, 10 respondents strongly disagreed, 5 disagreed, and none were undecided, 45 agreed and 25 strongly agreed. In the fourth category ranging from 76-100consisting of respondents who made the most reference to study units while preparing for examinations, 8 of the respondents strongly disagreed, 4 disagreed, 6 were undecided, 15 agreed and 13 strongly agreed. It can thus be concluded that majority of the respondents agreed that content of study units carry current knowledge to enable them sit for examinations falling in the category of agree and strongly agree 128(74%).

4.3.8 Accuracy of content of study units and learner participation in assignments

Respondents were asked about their perception of accuracy of content of study units and whether they make reference to content when doing assignments (Dependent variable). In the first category 0-25 which consisted of respondents who made the least reference to study units while writing assignments, 1 respondent strongly disagreed, 1 disagreed, none were undecided, 3 agreed and 2 strongly agreed. In the second category of 26-50 which consisted of moderate respondents who made moderate reference to study units while writing assignments, 2 of the respondents strongly disagreed, 1 disagreed, 2 were undecided, 7 agreed while 2 strongly agreed. In the third category ranging from 51-75 consisting of respondents who made above average reference to study units whole writing assignments, 5 strongly disagreed,8 disagreed, 5 were undecided, 51 agreed and 30 strongly agreed. In the fourth category ranging from 76-100 consisting of respondents

who made the most reference to study units while writing assignments, 4 of the respondents strongly disagreed, 10 disagreed, 4 were undecided, 25 agreed and 11 strongly agreed. It can thus be concluded that majority of the respondents agreed that content of study units carry accurate knowledge to enable them do assignment. A total of 131 (75%) respondents agreed and strongly agreed with the statement that study units carry accurate information that enables them to do assignments.

4.3.9 Accuracy of content of study units and learner participation in continuous assessment tests

An assessment was done on CATs (Dependent variable) and whether or not the content of study units has accurate information that enables the respondent to prepare for CATs. In the first category 0-25 which consisted of respondents who make the least reference to study units while preparing for CATs, none of the respondents strongly disagreed, none disagreed, 5 were undecided, 6 agreed and 4 strongly agreed. In the second category of 26-50 which consist of respondents who made moderate reference to study units while preparing for CATs, 2 respondents strongly disagreed, 4 disagreed, 2 were undecided, 26 agree while 10 strongly agreed. In the third category ranging between 51-75 consisting of respondents who made above average reference to study units while preparing for CATs, none strongly disagreed, none disagreed, 10 were undecided, 17 agreed and 30 strongly agreed, in the fourth category ranging from 76-100 consisting of respondents who made the most reference to study units while preparing for CATs, 7 of the respondents strongly disagreed, none disagreed, 13 were undecided, 22 agreed and 5 strongly agreed. It can thus be concluded that majority of the respondents agreed that content of study units carry current knowledge to enable respondents sit for CATs. Majority of respondents 110(63%) refer to study units while preparing for CATs.

4.3.10 Accuracy of content of study units and learner participation in examinations

Respondent were asked whether they agree with the statement that content of study units has accurate information that enables them to prepare for examinations (Dependent variable). In the first category of 0-25 consisting of respondents who made the least reference to study units when preparing for examinations, no respondent strongly

disagreed, none disagreed, 5 were undecided, 6 agreed and 4 strongly agreed. In the second category 26-50 consisting of respondents who made moderate reference to study units while preparing for examinations, 2 respondents strongly disagree, 4 disagreed, 2 were undecided, 26 agreed while 11 strongly agreed. In the third category ranging between 51-75 consisting of respondents who made above average reference to study units while preparing for examinations, none of the respondents strongly disagreed, none disagreed,10 were undecided,17 agreed and 30 strongly agreed, in the fourth category ranging from 76-100 consisting of respondents who made the most reference to study units while preparing for examinations 7 of the respondents strongly disagreed, none disagreed,13 were undecided,22 agreed and 5 strongly agreed. It can thus be concluded that majority of the respondents agreed that content of study units carry current knowledge to enable respondents prepare for examinations at 110(73%).

4.3.11 Relevance of study units and learner participation in assignments

Respondents were asked about their perception of study units in terms of relevance and whether or not the content of the study units has relevant information that enables them to do assignments. In the first category 0-25, consisting of learners who thought the materials were low in relevance, there was no respondent who strongly disagreed with the notion that the materials enable them to do assignments, none disagreed, 2 were undecided, 19 agreed and 7 strongly agreed. In the second category of 26-50 consisted of learners who perceived materials to be moderate in relevance, none strongly disagreed that the materials enable the to do assignments, none disagreed, none were undecided, 20 agreed while 40 strongly agreed. In the third category ranging from 51-75 consisting of the learners who were of the view that the relevance of materials was above average, no respondent strongly disagreed that materials enable them to do assignments, none were undecided,26 agreed and 20 strongly agreed, in the fourth category ranging from 76-100,consisting of students who rated relevance of materials as high no respondent strongly disagreed that materials enabled them to do assignments, none disagreed, 7 were undecided,20 agreed and 20 strongly agreed. It can thus be concluded that majority of the respondents strongly agreed that content of the study units has accurate information that enables them to do assignments. Majority of respondents refer to study units while doing

assignments. They fell in the range of 51-100 percent and the highest frequencies were agreed and strongly agreed at 172(98.8%).

4.3.12 Relevance of study units and learner participation in continuous assessment tests

An assessment was done on CATs (Dependent variable) and whether or not the content of study unit has relevant information that enables respondents to prepare for CATs. In the first category of 0-25 which consisted of respondents who consider study units to be least relevant to their preparation for CATs, no respondent strongly disagreed, none disagreed, 2 were undecided, 6 agreed and 8 strongly agreed. In the second category 26-50, consisting of respondents who consider study units to be moderately relevant, 2 respondents strongly disagreed, none disagreed, none were undecided, 20 agreed while 18 strongly agreed. In the third category ranging between 51-75 consisting of respondents who perceive study units to be above average in terms of relevance, no respondent strongly disagreed, none disagreed, none were undecided, 34 agreed and 30 strongly agreed, in the fourth category ranging from 76-100 consisting of respondents who rated relevance of study units highly in enabling them to prepare for CATs, no respondent strongly disagreed, none disagreed, 7 were undecided,34 agreed and 20 strongly agreed. It can thus be concluded that majority of the respondents agreed that content of the study units has relevant information that enables respondents to prepare for CATs. Majority fell in the range of 76 to100 percent with agreed and strongly agreed having the highest frequency at 170(97.7%).

4.3.13 Relevance of study units and learner participation in examinations

Respondents were asked the extent to which they agree with the statement that study units carry relevant information that enables them to prepare for examinations. In the first category of 0-25 consisting of respondents who least consider relevance of content to be important for examinations preparation, 2 respondents strongly disagreed, none disagreed, none were undecided, 2 agreed and 2 strongly agreed. In the second category 26-50 consisting of respondents who perceive relevance of content to be of moderate importance for examinations preparations, no respondent strongly disagreed, none

disagreed, 2 were undecided, 28 agreed while 15 strongly agreed. In the third category ranging from 51-75 consisting of respondents who perceive relevance of content to be above average in terms of examinations preparations, none strongly disagreed with the statement that content of study units carry relevant information that enabled them to prepare for examinations, none disagreed, 7 were undecided, 58 agreed and 35 strongly agreed. In the fourth category ranging from 76-100 consisting of respondents who highly regard relevance of content of study units as important for preparations for examinations, no respondent strongly disagreed, none disagreed, none were undecided, 25 agreed and 8 strongly agreed. It can thus be concluded that majority of the respondents agreed that content of the study units have relevant information that enable respondents to prepare for examinations since 173(99%) fell in the category of agreed and strongly agreed.

4.3.14 Content of study units and learner participation in distance learning

Respondents were asked to indicate in a scale of 0 to 100 percent the extent to which they agree that content of study units helps them to participate in distance learning and the results were as presented on Table 4.1.

Table 4.1 content of study units and learner participation in distance learning

Content of study units(Responses)	Frequency	%
Strongly Agree	69	76-100
Agree	70	51-75
Disagree	20	26-50
Strongly Disagree	15	0-25
Total	174	100

The results on Table 4.1 show that majority of the respondents agreed that content of study units helps them to participate in distance learning since majority fell in the category of 51 to 100 percent at 139(80%). This means that respondents find content in the study units suitable for their participation in the program.

The researcher was also interested in finding out the relationship between content of study units and learner participation in distance learning. To do this a chi-square test was carried out and the results obtained as recorded on Table 4.2.

Table 4.2 Chi-square test for content of study units and learner participation in distance learning

	Value	Df	Asymptotic Significance (2-sided)
Chi-Square	111.754[a]	18	.000
Likelihood Ratio	81.979	18	.000
Linear-by-Linear Association	7.830	1	.005
N of Valid Cases	435		

a. 11 cells (39.3%) have expected count less than 5. The minimum expected count is .30.

From Table 4.2, the expected count less than 5 is >20% at 39.3%, meaning that the Chi square assumption of this question of the independent variable is violated. The Chi square had a value of 111.754, the degrees of freedom was 18 and the P-Value was 0.000<0.05 meaning that the model was significant. Thus observed frequencies were different from

expected ones and this suggests that content of study units has an influence on learner participation in distance learning.

Hypotheses test by regression -Content of the study and learner participation

The first objective of this study was to establish the influence of learner perception of content of print instructional medium on participation in distance learning. This objective informed; Ho1: Learner perception of content of print instructional medium has no influence on participation in distance learning. This hypothesis was tested by regressing content variable on learner participation guided by the equation $Y= \beta 0+\beta 1X$ where Y was the dependent variable (learner participation) and X the independent variable (Content of the study). The results are as presented on Table 4.3.

Table 4.3: Regression results for the influence of Content of the study on learner participation

Model	R	R Square	Adjusted Square	RStd. Error of the Estimate
1	.251[a]	.063	.057	.55790

From the model summary Table R (the regression which measures the relationship of variables) is 0.251 meaning that there is positive relationship between content of the study units and learner participation in distance learning. The overall regression model for content of the study units is statistically significant and can be used for prediction purposes at 5 % significance level, this further indicate that the independent variable used in this study (Content of Study units) is statistically significant in predicting the overall learner participation in distance learning. It can therefore be concluded that content of study units has influence on learner participation in distance learning.

Hypothesis test by ANOVA

Table 4.4: ANOVA results for content of the study units and learner participation in distance learning

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	2.997	1	2.997	9.629	.002[b]
	Residual	44.509	143	.311		
	Total	47.506	144			

a. Dependent Variable: On an interval scale of 0-100 points indicate the extent to which study units enables you to participate in Distance learning

b. Predictors: (Constant) Using an interval scale of 0 to 100 points categorized as 0-25,26-50.51-75 and 76-100, indicate the extent to which you agree that content of study unit helps you to participate in distance learning

The results presented in Table 4.4 show that learner participation was significant ($F = 9.629$, $p < 0.05$ at 0.002) meaning that $H_0$1: Learner perception of content of print instructional medium has no influence on participation in distance learning is rejected since F value fall far below the 0.05 significance level which had been set.

Table 4.5 Correlation of design of study units and learner participation in distance in distance learning

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.064	.294		7.011	.000
	On a scale of 0 to 100,indicate the Extent to which you agree that content of study units helps you to participate in distance learning	.110	.035	.251	3.103	.002

a. Dependent Variable: On a scale of 0-100 indicate the extent to which study units enable you to participate in Distance learning

From the Correlations table, Correlation Coefficient is 0.251 meaning that there is a weak but positive relationship between content of study units and learner participation in distance learning. R squared (the coefficient of determination) was 0.063 meaning that of the variation in learner participation 6.3 % was explained by variation in content of study units and 93.7% of the variations was explained by other factors such as learner characteristics.

4.3.15 lecturers' perception of content of study units

A total of sixteen lectures were interviewed and were to respond on four parameters of content of the study units, that is, **relevance** of content of the study units, **currency** of content of study units, **accuracy** of content of study units and **scope**. On relevance of the study units 12 (75%) of the lecturers noted that some aspects of the content of the study units were outdated and needed review. This was also corroborated with content analysis results that indicated lack of review of a number of PAC study units used in the program. All the lecturers interviewed agreed that content of study units were relevant but not current. One noted that "the content was relevant when it was written but not anymore". On scope/breadth of the study units 15 (94%) of the respondents agreed that the scope was broad enough but lacked depth. On Accuracy 8 (50%) of the respondents agreed that the content of study units were accurate while six (38%) disagreed. These disparities could be attributed to the fact that the lecturers teach different units and the degree of changes that have taken place regarding a given subject may be different. For example, where students were asked to indicate the study unit they were referring to, environmental studies and curriculum development were cited as the most outdated study units. This was also confirmed by content analysis that indicated that some study units were written in the 80s and have been reprinted over the years without change of content. It was further confirmed by interview results where by 15(94%) of the respondents suggested that study units needed to be reviewed urgently.

4.4. Print instructional design and learner participation in distance learning

The study sought to establish learner perception of design of study units. Design is an important aspect of print instructional medium used in distance learning since instructional material design act as the teacher in the absence of the teacher. Design translates principles of learning and instruction into plans for instructional materials, activities, information sources and evaluation. Material is suppose to be designed in such a way that is answers the questions that a learner may have in the process of reading, Clarity of concepts to be learnt is vital to the learner, the objectives should be clearly stated and icons should be present to direct the learner. Respondents were to indicate in a likert scale rated from 1 to5 the extent to which they agree that study units are designed is

such a way that enables them to participate in assignments, CATs, and examinations. The results obtained are document as follows:

4.4.1 Clarity of study units and learner participation in assignments

An assessment was done on clarity of study units and learner participation in writing assignments (Dependent variable). In the first category 0-25 consisting of respondents who least make reference to study units while doing assignments, none of the respondents strongly disagreed with the statement that study units are clearly written and enables them to write assignments, none disagreed, 9 were undecided, 11 agreed and 8 strongly agreed. In the second category 26-50 consisting of respondents who moderately make reference to study units while doing assignments 5 respondents strongly disagreed with the statement that study units are clearly written and enables them to write assignments, none disagreed, 10 were undecided, 10 agreed while 9 strongly agreed. In the third category ranging from 51-75 consisting of respondents who mostly make reference to study units while doing assignments, 5 strongly disagreed with the statement that study units are clearly written and enables them to do assignments, 1 disagreed, 5 were undecided, 25 agreed and 20 strongly agreed. In the fourth category ranging from 76-100 consisting of respondents who extensively make reference to study units while doing assignments, 6 of the respondents strongly disagreed, with the statement that study units are written in a clear manner that enables them to do assignments, none disagreed, 5 were undecided, 25 agreed and 20 strongly agreed. It can thus be concluded that majority of the respondents agreed that study units are written in a clear manner that enables them to do assignments.

4.4.2 Clarity of study units and learner participation in continuous assessment tests

Respondents were asked to indicate the extent to which they agreed that clarity of study units enables them to participate in CATs (Dependent variable). In the first category 0-25consisting of respondents who least make reference to study units while preparing for Cats, no respondent strongly disagreed with the statement that clarity of study units enabled them to participate in CATs, none disagreed, 2 were undecided, 10 agreed and 4 strongly agreed. In the second category 26-50 consisting of respondents who moderately

make reference to study units while preparing for CATs, 3 respondents strongly disagreed with the statement that study units are clearly written and enables them to prepare for CATs, none disagreed, none were undecided, 33 agreed while 8 strongly agreed. In the third category ranging from 51-75 consisting of respondents who make reference above average to study units while preparing for Cats, none of the respondents strongly disagreed with the notion that study units are clearly written and enables them to prepare for CATs, 6 disagreed,6 were undecided,50 agreed and 18 strongly agreed. In the fourth category ranging from 76-100 consisting of respondents who extensively make references to study units while preparing for CATs, 7 of the respondents strongly disagreed that study units are clearly written and enables them to prepare for CATs, none disagreed,4were undecided,10 agreed and 13 strongly agreed. The conclusion made was that majority of the respondents, 136(84%) agreed that study units are written in a clear manner that enables them to prepare for CATs.

4.4.3 Clarity of study units and learner participation in examinations

Respondent were asked to indicate the extent to which they agreed that study units are written in a clear manner and the extent to which study units assist them while preparing for examinations (Dependent variable). In the first category 0-25 consisting of respondents who least make reference to study units while preparing for examinations, no respondent strongly disagreed with the statement that study units are clearly written and enables them to prepare for examinations, none disagreed, none undecided, none agreed and 6 strongly agreed. In the second category of 26-50 consisting of respondents who moderately make reference to study units while preparing for examination, 9 respondents strongly disagreed with the statement that study units are written in a clear manner end enables them to prepare for examinations, 3 disagreed, 6 were undecided, 33 agreed while none strongly agreed. In the third category ranging from 51-75 consisting of respondents who make reference to study units above average, 5 respondents strongly disagreed that study units are written in a clear manner that end enables them to prepare for examinations, none disagreed, 10 were undecided,45 agreed and 30 strongly agreed. In the fourth category ranging from 76-100 consisting of respondents who extensively make reference to study units while preparing for examinations, no respondent strongly

disagreed with the statement that study units are written in a clear manner that enables him/her to prepare for examinations, none disagreed,3 were undecided,14 agreed and 10 strongly agreed. It can thus be concluded that, majority of the respondents agreed that study units are written in a clear manner that enables them to prepare for examinations since they fell of 51-100 category with 138(79%) agreeing that clarity of study units enables them to participate in examinations.

4.4.4 Interactivity of language used in study units and learner participation in assignments

Respondents were asked to indicate the extent to which they agreed that language used in the study unit is interactive and the extent to which study units enable the respondents to do assignments. In the first category 0-25 that had respondents who least refer to study units while doing assignments, 2 respondents strongly disagreed with the notion that study units have interactive language that enables them to do assignments, 5 disagree, none were undecided, 6 agreed and 3 strongly agreed. In the second category of 26-50 consisting of respondents who moderately make reference to study units while doing assignments, no respondent strongly disagreed with the statement that study units have interactive language that enables them to do assignments, 5 disagreed, 9 were undecided, 8 agreed while 1 strongly agreed. In the third category ranging from 51-75 consisting of respondents who mostly make reference to study units while doing assignments, no respondent strongly disagreed that study units have interactive language that enables them to do assignments, 5 disagreed, 3 were undecided, 29 agreed and 23 strongly agreed. In the fourth category ranging from 76-100 consisting of respondents who extensively make reference to study units while doing assignments, 3 of the respondents strongly disagreed that study units are written in clear manner that enables them to do assignments, 14 disagreed, 4 were undecided, 31 agreed and 23 strongly agreed. It can thus be concluded that majority of the respondents agreed that the language used in the study units is interactive and enables them to do assignments since majority fell in the 124(71%) frequency.

4.4.5 Interactivity of language in study units and learner participations in CATs

An assessment was made on CATs (Dependent variable) and the extent to which the language used in the study units is interactive to enable respondents to prepare for CATs. In the first category 0-25 consisting of respondents who make least reference to study units while preparing for CATs, no respondent strongly disagreed with the statement that language used in the study units is interactive and enables them to prepare for CATs, 2 disagree, and 1 was undecided, 11agreed and none strongly agreed. In the second category of 26-50 which had respondents who moderately make reference to study units while preparing for CATs, 6 respondents strongly disagreed with the notion that study units are clearly written and enables them to prepare for CATs, 5 disagreed, 3 were undecided, 21 agreed while 6 strongly agreed. In the third category ranging from 51-75 which had respondents who make reference to study units above average while preparing for CATs, none of the respondents strongly disagreed that study units have interactive language that enables them to prepare for CATs, 5 disagreed,7 were undecided, 62 agreed and 6 strongly agreed. In the fourth category ranging from 76-100 consisting of respondents who extensively make references to study units while preparing for CATs, 3 of the respondents strongly disagreed that study units have interactive language that enables them to prepare for CATs, 5 disagreed,4 were undecided,10 agreed and 3 strongly agreed. It can thus be concluded that, majority of the respondents 119(68%) agreed that the language used in the study units is interactive and enables the respondents to prepare for continuous assessments tests.

4.4.6 Interactivity of study units and learner participation in examinations

Respondents were asked about their perception on interactivity of language used in the study units and if they agree that language used enables them to prepare for examinations (Dependent variable). The first category of 0-25 consisting of respondents who least make reference to study units while preparing for examinations, 2 respondents strongly disagreed with the notion that study units are written in an interactive language and enables them to prepare for examinations, none disagreed, 1 was undecided, none agreed and 2 strongly agreed. In the second category 26-50 consisting of learners who make moderate reference to study units while preparing for examinations, 5 respondents

strongly disagree with the statement, 4 disagreed, none undecided, 33 agreed while 8 strongly agreed. In the third category ranging from 51-75 consisting of respondents who make reference to study units while preparing for examinations above average, no respondent strongly disagreed with the statement that study units are written in an interactive language that enables them to prepare for examinations, 4 disagreed,6 were undecided, 35 agreed and 25 strongly agreed. In the fourth category ranging from 76-100 consisting of respondents who make reference to study unit the most while preparing for examinations, 5 of the respondents strongly disagreed, with the notion that study units are written in an interactive language that enables them to prepare for examinations, 8 disagreed, 6 were undecided,20 agreed and 5 strongly agreed. It can thus be concluded that, majority of the respondents agreed that the language used in the study units is interactive to enable the respondents to prepare for examinations at 128(74%).

4.4.7 Presence of icons and learner participation in assignments

An assessment was done on the role of icons in the study units and the extent to which icons in the study units assist the respondents to understand the text better when doing assignments. In the first category of 0-25 consisting of respondents who least refer to study units while doing assignments, 12 respondents strongly disagreed with the statement that icons in the study units aids them while doing assignments, 6 disagreed, 1 was undecided, 14 agreed and 6 strongly agreed. In the second Category 26-50 consisting of respondents who make moderate reference to study units while doing assignments, 15 respondents strongly disagreed that icons in the study units assist them while doing assignments, 15 disagreed, 2 were undecided, 10 agreed while 8 strongly agreed. In the third category ranging from 51-75 consisting of members who make above average reference to study units while doing assignments, 10 of the respondents strongly disagreed, 35 disagreed,8 were undecided, 6 agreed and 6 strongly agreed. In the fourth category ranging from 76-100 consisting of respondents who make the most reference to study units while doing assignments, 7 respondents strongly disagreed with the notion that ions in the study units assist them while doing assignments, 17 disagreed,10 were undecided, none agreed and none strongly agreed. It can thus be concluded that learners do not find icons in the study units helpful. Majority fell in the category of 26 to 50

percent and those who disagreed and strongly disagreed were the highest in frequency at 117(67%).

4.4.8 Presence of icons in study units and learner participation in CATs

Respondents were asked whether icons in the study units enable them to participate in CATs (Dependent variable) and they responded as follows; first category of 0-25 consisting of respondents who make least reference to study units while preparing for CATs, 6 respondents strongly disagreed that icons in the study units helps them while preparing for CATs, 6 disagreed, 2 were undecided, 4 agreed and 2 strongly agreed. In the second category 26-50 consisting of respondents who make moderate reference to study units while preparing for CATs, 7 respondents strongly disagreed that icons in the study units helps them while preparing for CATs, 24 disagreed, 2 were undecided, 4 agree while 7 strongly agreed. In the third category ranging from 51-75 consisting of respondents who make reference to study units above average, 18 respondents strongly disagreed with the statement that icons in the study units assist them while preparing for CATs, 22 disagreed, 4 were undecided, 4 agreed and 2 strongly agreed, in the fourth category ranging from 76-100 consisting of respondents who make reference to study units extensively while preparing for CATs, 19 of the respondents strongly disagreed, with the notion that icons in the study units assist them while preparing for CATs, 27 disagreed,3 were undecided,5 agreed and 4 strongly agreed. It can thus be concluded that majority of the respondents were of the opinion that icons in the study units do not assist them much in understanding the text in the study units as majority fell in the category of disagree and strongly disagree at 129 (74%).

4.4.9 Presence of icons in study units and learner participation in examinations

An assessment was done between icons in study units and learner participation in examinations (Dependent variable). In the first category of 0-25, consisting of respondents who make the least reference to study units while preparing for examinations, 6 respondents strongly disagreed with the statement that icons in the study units assist them while preparing for examinations, 6 disagreed, 2 were undecided, 4 agreed and 2 strongly agreed. In the second Category 26-50 consisting of respondents

who make moderate reference to study units while preparing for examinations, 7 respondents strongly disagreed with the statement, 24 disagreed, 2 were undecided, 4 agreed while 7 strongly agreed. In the third category ranging from 51-75 consisting of respondents who make above average reference to study units while preparing for examinations, 18 of the respondents strongly disagreed that icons in the study units assist the while preparing or examinations, 22 disagreed,4 were undecided,4 agreed and 4 strongly agreed. In the fourth category ranging from 76-100 consisting of learners who make extensive reference to study units while preparing for examinations, 19 of the respondents strongly disagreed with the statement that icons in the study units assist them while preparing for examinations, 27 disagreed, 3 were undecided, 10 agreed and 5 strongly agreed. It can thus be concluded that majority of the respondents were of the opinion that the icons in the study units do not assist them in understanding the text better as majority 129(74%) of the respondents responded to between disagree and strongly disagree.

4.4.10 Presence of self assessment exercises in study units and learner participation in CATs and examinations

Respondents were requested to indicate the extent to which they agree with the statement that self assessment exercises in the study units assist them to prepare for CATs and examinations. In the first category of 0-25 consisting of respondents who make the least reference to study units while preparing for examinations, no respondent strongly disagreed with the statement that self assessment exercises assist them while preparing for examinations, none disagreed, 3 were undecided, 8 agreed and 4 strongly agreed. In the second category of 26-50 consisting of respondents who make moderate reference to study units, none of the respondents strongly disagreed with the notion that self assessment exercises assist them while preparing for CATs and examinations, none disagreed, 5 were undecided, 17 agreed while 5 strongly agreed. In the third category ranging from 51-75 consisting of respondents who make reference to study units above average, none of the respondents strongly disagreed with the statement that self assessment exercises assist them in preparing for CATSs and examinations, none disagreed, none were undecided,89 agreed and 28 strongly agreed. In the fourth

category ranging from 76-100 consisting of respondents who make extensive reference to study units while preparing for CATs and examinations, no respondent strongly disagreed that self assessment exercises helps them while preparing for CATs and examinations, none disagreed, none were undecided,10 agreed and 5 strongly agreed. It can thus be concluded that majority of the respondents were of the opinion that there are self-assessments exercises in the study units that enable them to revise for continuous assessments tests and examination as a big number of respondents agreed and strongly agreed in the frequency of 166(95%) with the majority agreeing that they refer to the study units for the purposes of handing CATs and examinations.

4.4.11 presence of objectives in study units and learner participation in assignments

An assessment was done on influence of objectives on learner participation in assignment (Dependent variable). In the first category of 0-25 consisting of respondents who least refer to study units while doing assignments, 3 respondents strongly disagreed with the notion that objectives in the study units assist them while writing assignments, 2 disagreed, 5 were undecided, 2 agreed and none strongly agreed. In the second category of 26-50 consisting of respondents who moderately make reference to study units while doing assignments, 5 respondents strongly disagreed with the statement that objectives in the study units assist them while doing assignments, 5 disagreed, none were undecided, 17 agreed while 7 strongly agreed. In the third category ranging from 51-75 consisting of respondents who make reference to study units above average while doing assignments, 3respondents strongly disagreed,3 were undecided,45 agreed and 29 strongly agreed, in the fourth category ranging from 76-100 consisting of respondents who make reference to study units extensively while doing assignments, no respondent strongly disagreed with the notion that objectives in the study units assist the while doing assignments, 3 disagreed, none were undecided, 39 agreed and 15 strongly agreed. It can thus be concluded that majority of the respondents 154(88%) were of the opinion that statement of objectives in the study units enable them to do assignments.

4.4.12 Presence of objectives and learner participation in CATs and examinations

Respondents were asked to indicate the extent to which they agree with the statement that objectives in the study units are clearly stated and enable them to prepare for CATs and examinations (Dependent variables). In the first category of 0-25 consisting of respondents who made least reference to study units while preparing for CATs and examinations, no respondent strongly disagreed with view that objectives in the study units are clearly stated and enabled them to prepare for CATs and examinations, none were undecided, 4 agreed and 2 strongly agreed. In the second category of 26-50 consisting of respondents who made moderate reference to study units while preparing for CATs and examinations, no respondent strongly disagreed with the notion that objectives in the study units are clearly stated and enable respondents to prepare for CATs and examinations, none were undecided, 10 agree while 15 strongly agreed. In the third category ranging from 51-75 consisting of respondents who made above average reference to study units while preparing for CATs and examinations, 6 respondents strongly disagreed, 3 were undecided, 75 agreed and 28 strongly agreed while in the fourth category ranging from 76-100 consisting of respondents who made the most reference to study units while preparing for CATs and examinations, 3 of the respondents strongly disagreed, none were undecided, 4 agreed and 34 strongly agreed. It can thus be concluded that majority of the respondents were of the opinion that statement of objectives in the study units are clear and enable me to prepare for continuous assessment tests and examination as a big number of respondents fell in the category of agreed and strongly agreed 172(99%).

4.4.13 Design of study units and learner participation in distance learning

Respondents were asked to indicate on a scale of 0 to 100 percent the extent to which they agreed that design of study units helps them to participate in distance learning and the results obtained are as indicated on Table 4.6.

Table 4.6 Suitability of design of study units and learner participation in distance learning

Design of study units (Response)	frequency	%
Strongly Agree	75	76-100
Agree	70	51-75
Disagree	22	26-50
Strongly Disagree	7	0-25
Total	174	100

From Table 4.7 majority of the respondents perceive design of study units to be suitable for their participation in distance learning since they formed 145(83%) out possible 174. This means that design of study units is an important aspect in learner participation in distance learning.

A chi-square test was done to determine the association between design of study units and learner participation in distance learning and results were as presented on Table 4.7.

Table 4.7 Chi-Square Tests for design of study units and learner participation

	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	79.978[a]	18	.000
Likelihood Ratio	54.632	18	.000
Linear-by-Linear Association	3.660	1	.056
N of Valid Cases	412		

From Table 4.7, the expected count less than 5 is >20% at 50 %, meaning that the Chi square assumption of this question of the independent variable is violated. The Chi square had a value of 79.978, the degrees of freedom was 18 and the P-Value was 0.000<0.05 meaning that the model was significant. The observed frequencies were different from expected ones and this suggests that design of study units has influence on learner participation in distance learning. It therefore means that design of study units has influence on learner participation in distance learning.

Hypotheses test for design of study units by regression

The second objective of the study was to determine the influence of learner Perception of design of print instructional medium on participation in distance learning. This objective formed the second hypothesis: Ho2: Learner perception of design of print instructional medium has no influence on participation in distance learning. This hypothesis was tested by regressing design of the study units on learner participation in distance learning guided by the equation $Y= \beta_0+\beta_1X$ where Y was the dependent variable (learner participation) and X the independent variable (Design of the study units).

Table 4.8: Regression results for the influence of Design of the study units on learner participation

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.266[a]	0.071	0.064	.56436

From the model summary Table 4.8, R (the regression which measures the relationship of variables) was 0.266 meaning that there was a positive relationship between design of study units and learner participation in distance learning. The overall regression model for design of the Study units is statistically significant and can be used for prediction purposes at 5% significance level. This further indicates that the independent variable used in this study (Design of Study units) is statistically significant in predicting overall

learner participation in distance learning. It therefore means that design of study units has an influence on learner participation in distance learning.

Table 4.9 ANOVA results for design of study units

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	3.343	1	3.343	10.495	.002[b]
	Residual	43.953	138	.319		
	Total	47.296	139			

a. Dependent Variable: On a scale of 0-100 indicate the extent to which study units enables you to participate in Distance learning

b. Predictors: (Constant), On a scale of 0 to 100, indicate the extent to which you agree that design of Study Units is suitable for studying in distance learning.

The results presented in Table 4.10 shows that the influence of design of the study units on learner participation was significant as $F = 10.495$, $p < 0.05$ at 0.002, meaning that H_o2: Learner perception of design of print instructional medium has no influence on participation in distance learning is rejected. 0.002 was far below the 0.05 level set for termination and therefore the alternative hypothesis is accepted that design of study units have influence on learner participation in distance learning.

Table 4.10 Correlation of design of study units and learner participation in distance learning

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	T	Sig.
1	(Constant)	1.709	.383		4.463	.000
	On a scale of 0-100 indicate the extent to which study units enables you to participate in Distance learning	.148	.046	.266	3.240	.002

a. Dependent Variable: On a scale of 0-100 indicate the extent to which study units enables you to participate in Distance learning

From the Correlations Table 4.10, Correlation Coefficient is 0.266 meaning that there was a weak but positive relationship between design of study units and learner participation in distance learning. R squared (the coefficient of determination) was 0.071 meaning that of the variation in learner participation 7.1% was explained by variation in design of study unit and 92.9% of the variations was explained by other factors such as learner support services given in the program.

Overall, regression results presented in Table 4.8 indicate that design of the study units has positive effect on earner participation in distance learning.

4.5. Availability of print instructional medium and learner participation in distance learning

Print is the main medium of instruction in the distance learning program at the University of Nairobi. Ideally, they are supposed to be distributed to the learners at the beginning of a semester. These are takeaway packages that are meant to self instruct the learner. The study sought to establish learner perception of timeliness of issue and

whether study units are available and its influence on learner participation in the in distance learning.

4.5.1 Timeliness of issue of study units and learner participation in assignments

An assessment was done on assignments (dependent variable) and the extent to which all study units are distributed at the beginning of every semester (timeliness). In the first category of 0-25 which consisted of respondents who make least reference to study units while doing assignments, 5 respondents strongly disagreed with the view that study units are distributed at the beginning of every semester, 3 disagreed, 1 was undecided, none agreed and none strongly agreed. In the second category of 26-50 consisting of respondents who moderately make references to study units while doing assignments, 2 respondents strongly disagreed with the statement that study units are distributed at the beginning of every semester, 3 disagreed, none were undecided, none agreed and none strongly agreed. In the third category ranging from 51-75 consisting of respondents who make reference to study units above average while doing assignments,25 respondents strongly disagreed with the statement that study units are distributed at the beginning of every semester, 26 disagreed, none were undecided, 18 agreed and 1 strongly agreed. In the fourth category ranging from 76-100 consisting of respondents who extensively make reference to study units while doing assignments, 28 of the respondents strongly disagreed that study units are distributed at the beginning of every semester, 25 disagreed, none were undecided, 20 agreed and 7 strongly agreed. It can thus be concluded that majority of the respondents were of the opinion that all study units were not distributed at the beginning of a semester as a big number of respondents disagreed and strongly disagreed at 117(67%) with the majority agreeing that they make reference to the study units for the purposes of assignments. It can be concluded that even though study units are not distributed at the beginning of the semester, learners somehow make reference to them while doing assignments by accessing them through other means.

4.5.2 Timeliness of issue of study units and learner participation in CATs

Respondents were asked to indicate whether study units are issued on time and if it enables them to prepare for CATs (Dependent variable). In the first category 0-25

consisting of respondents who made least reference to study units while preparing for CATs, 5 respondents strongly disagreed with the view that study units are issued on time and enables them to prepare for CATs, 3 disagree, 1 was undecided, none agreed and none strongly agreed. In the second category of 26-50 consisting of respondents who make moderate reference to study units while preparing for CATs, 2 respondents strongly disagree, that study units are issued on time, 3 disagreed, none were undecided, none agree while none strongly agreed. In the third category ranging from 51-75 consisting of respondents who make reference to study units above average while preparing for CATs, 25 respondents strongly disagreed, 26 disagreed, none was undecided,18 agreed and 1 strongly agreed, in the fourth category ranging from 76-100 consisting of respondents who make extensive reference to study units when preparing for CATs, 28 of the respondents strongly disagreed with the view that study units are issued at the beginning of the semester, 25 disagreed, none was undecided,20 agreed and 7 strongly agreed. It can thus be concluded that majority of the respondents were of the opinion that not all study units were not distributed at the beginning of each semester as a big number of respondents disagreed and strongly disagreed with the majority agreeing 117(67%) that they make reference to the study units for the purposes of CATs.

4.5.3 Timeliness of issue of study units and learner participation in examinations

Respondents were asked to indicate the extent to which they agree that study units are issued at the beginning of every semester and if it enables them to prepare for examinations (Dependent variable). In the first category 0-25 consisting of respondents who made the least reference to study units while preparing for examinations, 5 respondents strongly disagreed with the view that study units are issued on time and enables them to prepare for examinations, 3 disagree, 1 was undecided, none agreed and none strongly agreed. In the second category 26-50 consisting of respondents who make moderate reference to study units while preparing for examinations, 2 respondents strongly disagree, 3 disagreed, none were undecided, none agreed while none strongly agreed. In the third category ranging from 51-75 consisting of respondents who made above average reference to study units while preparing for examination, 25 respondents strongly disagreed with the notion that study units are issued at the beginning of the

semester and enables them to prepare for examinations, 26 disagreed, none was undecided,18 agreed and 1 strongly agreed. In the fourth category ranging from 76-100 consisting of respondents who make the most reference to study units while preparing for examination, 28 of the respondents strongly disagreed that study units are issued at the beginning of every semester, 25 disagreed, none was undecided,20 agreed and 7 strongly agreed. It can thus be concluded that majority of the respondents were of the opinion that all study units were not distributed at the beginning of each semester as a big number of respondents disagreed and strongly disagreed with the majority agreeing 117(67%) that they make reference to the study units for the purposes of examination preparations being in the range of 51-100. The respondents however agreed that they make reference to them while preparing for examinations.

4.5.4 Adequacy of study units and learner participation in assignments

Respondents were asked whether they agree with the statement that some study units are not available for distribution. In the first category 0-25 consisting of respondents who make least reference to study units while doing assignments, no respondent strongly disagreed with the view that some study units are not available for distribution, none disagreed, none undecided, 10 agreed and 5 strongly agreed. In the second Category 26-50 consisting of respondents who make moderate reference to study units while doing assignments no respondent strongly disagreed with the statement that some study units are not available for distribution, 5 disagreed, 3 were undecided, 31 agree while 21strongly agreed. In the third category ranging from 51-75, consisting of respondents who made above average reference to study units while doing assignment, 8 respondents strongly disagreed that some study units are not available for distributions, 9 disagreed, 3 were undecided, 30 agreed and 35 strongly agreed, in the fourth category ranging from 76-100 consisting of respondents who made extensive reference to study units while doing assignments, 5 of the respondents strongly disagreed with the notion that some study units are not available for distribution, 1 disagreed, none were undecided,6 agreed and 2 strongly agreed. It can thus be concluded that majority of the respondents were of the opinion that some study units are not available for distribution many respondents 150(86%) fell in the category of agree and strongly agree.

4.5.5 Adequacy of study units and learner participation in distance learning

An assessment was done on availability of study units and learner participation in assignments, CATs and examinations (Dependent variable) and the extent to which availability of the study units enable the respondents to do assignments, sit for continuous assessments tests and examinations. In the first category of 0-25 consisting of respondents who made the least reference to study units while doing assignments, preparing for CATs and examinations, 2 respondents strongly disagreed with the statement that availability of study units enables them to participate in distance learning, 8 disagreed, 4 were undecided, 10 agreed and 4 strongly agreed. In the second category of 26-50 consisting of respondents who made moderate reference to study units, 4 respondents strongly disagree that study units enables them to participate in distance learning, 4 disagreed, 2 were undecided, 10 did agree while 7 strongly agreed. In the third category ranging from 51-75 consisting of respondents who made above average reference to study units while participating in distance learning, 3 respondents strongly disagreed, none disagreed, 5 were undecided,60 agreed and 26 strongly agreed, in the fourth category ranging from 76-100 consisting of respondents who made extensive reference to study units while participating in assignments, CATs and examinations, none of the respondents strongly disagreed, none disagreed,4 were undecided,18 agreed and 3 strongly agreed. It can thus be concluded that majority of the respondents were of the opinion that availability of the study units enables them to do assignments, prepare for continuous assessments tests and examinations as most of the respondents agreed and strongly agreed 138(79%).

Table 4.11 Availability of study units and learner participation in distance learning

Adequacy of study units (Responses)	Frequency	%
Strongly Agree	80	76-100
Agree	75	51-75
Disagree	15	26-50
Strongly Disagree	4	0-15
Total	174	100

Results on Table 4.11 indicate that respondents value study units as an important component for participation in distance learning. A total of 155(89%) indicated that they perceive availability to be very important and that they make reference to them in the scale of 51 to 100 percent.

A chi-square test was done to determine the association between availability of study units and learner participation in distance learning and results obtained are illustrated on Table 4.12.

Table 4.12 Chi-square test for availability of study units and learner participation in distance learning

	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	99.335[a]	24	.000
Likelihood Ratio	98.629	24	.000
Linear-by-Linear Association	.647	1	.421
N of Valid Cases	436		

a. 16 cells (44.4%) have expected count less than 5. The minimum expected count is .03

From the Table 4.12, the expected count less than 5 is >20% at 44.4%, meaning that the Chi square assumption of this question of the independent variable is violated and thus

need for an alternative action. The Pearson Chi square had a value of 99.335[a], the degrees of freedom was 24 and the P-Value was 0.000<0.05 meaning that the model was significant. It means that availability of study units has influence on learner participation in distance learning since the observed frequencies are more than the expected ones suggesting that availability of study units does not influence learner participation in distance learning.

Hypotheses test by regressing availability of Study units and learner participation in distance learning.

The third objective of this study was to determine the influence of learner perception of availability of study units on participation in distance learning. This objective informed; **Hypothesis $H_0$3: Learner perception of availability of print instructional medium has no influence on participation in distance learning.** This hypothesis was tested by Correlating availability of the study units on learner participation, guided by the equation $Y= \beta0+\beta1X$ where Y was the dependent variable (learner participation) and X the independent variable (availability of the study units**).**

Table 4.13: Regression results for the influence of availability of the study on learner participation

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.05[a]	0.006	-.001	0.57704

Predictors: (Constant), on a scale of 0-100 point indicate the extent to which you agree that lack of study units may hinder your participation in distance learning

From the model summary Table R (the regression which measures the relationship of variables) is 0.075 meaning that there was a positive relationship between availability of the study units and learner participation in distance learning. The overall regression model for availability of the study units was statistically insignificant and therefore could not be used for prediction purposes at 5 % significance level, this further indicate that the independent variable used in this study (Availability of the Study units) was not

statistically significant in predicting the overall learner participation in distance learning. It therefore means that availability of study units does not influence learner participation in distance learning.

Table 4.14 ANOVA results for availability and learner participation in distance learning

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	.276	1	.276	0.828	0.364[b]
	Residual	48.614	146	.333		
	Total	48.890	147			

a. Dependent Variable: On a scale of 0-100 indicate the extent to which study units enables you to participate in Distance learning

b.Predictors: (Constant), In a scale of 0-100 indicate the extent to which you agree that lack of study units may hinder your participation in distance learning

The results presented in Table 4.16 show that the influence of availability of the study units on learner participation was not significant as F = 0.828, p >0.05 at 0.364, meaning that $H_0$3: learner perception on availability of study units has no influence on participation in distance is accepted and we therefore fail to reject the hypothesis. This means that learners may participate in distance learning even when they are not issued with study units.

Table 4.15 Correlation of availability study units and learner participation in distance learning

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.786	.188		14.788	.000
	In a scale of 0-100 indicate the extent to which you agree that lack of study units may hinder your participation in distance learning	.024	.026	.075	.910	.364

a. Dependent Variable: On a scale of 0-100 indicate the extent to which study units enables you to participate in Distance learning.

From the Correlations Table 4.15 Correlation Coefficient is 0.075 meaning that there was a weak but positive relationship between availability of the study units and learner participation in distance learning. The results on the influence of availability of study units on learner participation in distance learning indicate that availability of study units does not influence learner participation in the program. It farther shows that learners have other means of acquiring study units even when the university does not issue them.

4.6 Combined influence of content, design and availability of the study units and learner participation in distance learning

The researcher tested the combined influence of content, design and availability of study units on learner participation in distance learning and the results are as recorded on Table 4.16.

Table 4.16 Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	151.687[a]	18	.000
Likelihood Ratio	120.581	18	.000
Linear-by-Linear Association	51.465	1	.000
N of Valid Cases	422		

a. 13 cells (46.4%) have expected count less than 5. The minimum expected count is .06.

From the Table 4.16 the expected count less than 5 is >20% at 46.4%, meaning that the Chi square assumption of this question of the independent variable is violated and thus need for an alternative action. The Chi square had a value of 151.687[a], the degrees of freedom were 18 and the P-Value was 0.000 < 0.05 meaning that the model was significant. This means that content; design and availability of study units have influence on learner participation in distance learning. The observed frequencies were different from expected ones and this suggests that content, design and availability have influence

on learner participation in distance learning. The implication of this finding therefore is that study units have influence on learner participation in the program and should be availed to the learners on time.

The fourth objective of this study was to establish the combined influence of learner perception of content, design and availability of print instructional medium on learner participation in distance learning. This objective informed Hypothesis: Ho4: print content, design and availability of have no influence on learner participation in distance learning. This hypothesis was tested by analysis of the mean variances (ANOVA) between the learner participation and the print content, design and availability of the study units, where the dependent variable was learner participation and X1+X2+ X3 were the independent variables (Content, Design and Availability of the Study Units).Pearson Correlation was also used to test the strength of the relationship and the results are as presented on Table 4.17.

Table 4.17: ANOVA results for Content, Design and Availability of the study Units on learner participation in distance learning

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	16.203	6	2.700	11.199	.000
Within Groups	95.972	398	.241		
Total	112.175	404			

The results presented in Table 4.17 show that the influence of content, design and availability of the study units on learner participation was significant as $F = 1.825$, $p < 0.05$ at 0.000, meaning that $H_0 4$: content, design and availability has no influence on learner participation in learner in distance learning is rejected. The sum of squares between groups was 16.203 and the degree of freedom was 6 with a mean square of

2.7.Similarly the sum of squares within groups was 95.972 and the degrees of freedom was 398 with a mean square of 0.241.

Table 4.18 Correlations results for content, design and availability of study units on learner participation in distance learning

		In a scale of 0-100 indicate the extent to which you agree with the statement that Content, Design and availability of study units is important for participation in distance learning	On a scale of 0-100 indicate the extent to which study units enables you to participate in Distance learning
In a scale of 0-100 indicate the extent to which you agree with the statement that Content, Design and availability of study units is important for participation in distance learning	Pearson Correlation	1	.207*
	Sig. (1-tailed)		.000
	N	418	418
On a scale of 0-100 indicate the extent to which study units enables you to participate in Distance learning	Pearson Correlation	.207*	1
	Sig. (1-tailed)	.000	
	N	418	490

*. Correlation is significant at the 0.05 level (1-tailed).

From the correlations Table 4.18, correlation coefficient is 0.207 meaning that, there was weak but positive relationship between content, design and availability of the study units and Learner participation in distance learning.

4.7. Learner characteristics and participation in distance learning

Researchers have established that there are characteristics that are peculiar to distance learners. For example, most of them are older than learners in the traditional institutions of higher learning, they are adults with responsibilities most are employed or involved in income generating activities. In this study the researcher sought to establish the influence of family obligations and employment status of distance learners on learner participation in distance learning. The respondents were expected to respond to a yes or no answer to the questions posed. Farther respondent were to indicate the extent to which they agreed with various statements regarding their participation in distance learning. The frequency of responses were then captured in a five point likerts scale (5= strongly agree, 4= agree, 3= undecided, 2= disagree and1= strongly disagree) and the general level of acceptance was determined by calculating the frequencies and percentages for the various statements as per the responses and tabulated in respective order of means further a composite table of 2*2 where the responses of each question of the independent variable were cross analyzed with the variables of the dependent variable.

4.7.1 Marital status and learner participation distance learning

The respondents were classified into four groups: married, single, widowed and others. They were expected to respond to a yes or no with regard to their marital status. Table 4.19 provides a summary of the responses on marital status of respondents.

Table 4.19: Marital Status

		Frequency	Percent
Valid	Married	126	72.4%
	Single	46	26.4%
	Others	1	0.6%
	Total	173	99.4%
Missing	System	1	0.6%
Total		174	100.0%

Results on Table 4.19 show that most distance learners are married since out of 174 respondents, 126 (72.4%) are married. Single respondents accounted for a 26.4% which had a frequency of 46 while others accounted for 0 .6%.

4.7.2 Marital status and learner participation in assignments

An assessment was done on learner participation in assignments (Dependent variable) and the extent to which marital status influences their participation in distance learning. In the first category 0-25 consisting of respondents who made least references to study units while doing assignments, 1 of the respondents strongly disagreed with the statement that marital status influences his or her participation in assignment. 2 disagreed, none were undecided, 3 agreed and 2 strongly agreed. In the second category of 26-50 consisting of respondents who made moderate reference to study units while doing assignments, 3 strongly 'disagreed' that marital status influence their participation in assignments, 2 disagreed, 2 were undecided, 7 agree while 6 strongly agreed. In the third category ranging from 51-75 consisting of respondents who made above average reference to study units while doing assignments, 8 strongly disagreed with the notion that marital status influence their participation in distance learning, 7 disagreed, 1 were undecided,35 agreed and 10 strongly agreed, in the fourth category ranging from 76-100 consisting of respondents who made extensive reference to study units while doing assignments, 3 of the respondents strongly disagreed, 5 disagreed, 4 were undecided,15 agreed and 10 strongly agreed. It can thus be concluded that majority of the respondents were of the opinion that marital status hinder their participation in assignments. Most of them disagreed and strongly disagreed 88(70%) with the majority agreeing that they refer to the study units for the purposes of assignments being in the range of 51-100. This means that even though family obligations may be a challenge in distance learning, study units remains a reference point for learners when it comes to participation in assignments.

4.7.3 Marital status and learner participation in continuous assessment tests

An assessment was done on CAT (Dependent variable) and the extent to which marital status influence respondents participation in distance learning. In the first category of 0-25 consisting of respondents who made least reference to study units while preparing for CATs, none of the respondents strongly disagree with the notion that marital status influence their participation in distance learning, 1 disagreed, none were undecided, 5 agreed and none strongly agreed. In the second category of 26-50 consisting of respondents who made moderate reference to study units while preparing for CATs, 7 strongly disagreed with the view that marital status influence their participation in distance learning, 10 disagreed, none were undecided, 6 agreed while none strongly agreed. In the third category ranging from 51-75 consisting of respondents who made above average reference to study units while preparing for CATs, 28 strongly disagreed with the notion that marital status hinder their participation in distance learning, 15 disagreed, 4 were undecided,8 agreed and 5 strongly agreed. In the fourth category ranging from 76-100 consisting of respondents who made extensive reference to study units while preparing for CATs, 15 of the respondents strongly disagreed with the view that marital status hinder their participation in distance learning, 10 disagreed, 10 were undecided, none agreed and 2 strongly agreed. It can thus be concluded that majority of the respondents were of the opinion that marital status hinder respondents participation in CATs, as most of them disagreed and strongly disagreed 86(68%) with the majority agreeing that they refer to the study units for the purposes of CATs with the range being 51-100.

4.7.4 Marital status and learner participation in examinations

An assessment was done on examinations (Dependent variable) and the extent to which marital status does not hinder respondent's participation in distance learning. In the first category of 0-25 consisting of respondents who made least reference to study units while preparing for examinations, none of the respondents strongly disagreed with the statement that marital status hinders their participation in examinations, 1 disagreed, none were undecided, 5 agreed and none strongly agreed. In the second category of 26-50 consisting of respondents who made moderate reference to study units while preparing

for examinations, 7 strongly disagreed with the view that marital status hinders their participation in distance learning, 10 disagreed, none were undecided, 6 agreed while none strongly agreed. In the third category ranging from 51-75 consisting of respondents who made above average reference to study units, 28 strongly disagreed with the statement that marital status hinders their participation in distance learning, 15 disagreed, 4 were undecided, 8 agreed and 5 strongly agreed. In the fourth category ranging from 76-100 consisting of respondents who mostly make reference to study units while preparing for examinations, 15 of the respondents strongly disagreed that marital status hinders their participation in distance learning, 10 disagreed, 10 were undecided, none agreed and 2 strongly agreed. It can thus be concluded that majority of the respondents were of the opinion that marital obligations does hinder their participation in examinations, as most of them disagreed and strongly disagreed 86(68%) with the statement posed.

4.7.5 Employment status and learner participation in distance learning

In this section, respondents were requested to either select yes or no with regard to their employment status. The results were as presented on Table 4.20

Table 4.20 Employment status of respondents

Employment status		Frequency	Percent
Valid	Yes	136	78.2%
	No	37	21.3%
	Total	173	99.4%
Missing		1	
Total		174	100.0%

Those who responded with a "Yes" had the highest proportion of 136(78.2%) which represented a frequency of 136 while "No" had a frequency of 37 which was 21.3%. This means that most distance learners are in employment.

4.7.6 Job demands and learner participation in assignments

Respondents were asked the extent to which they are able to balance job demands (independent variable) and their participation in distance learning and the following results were obtained; in the first category of 0-25 consisting of respondents who made least reference to study units while doing assignments, 2 of the respondents strongly disagreed with the view that they are able to balance job demands with their participation in distance learning, none disagreed, 2 were undecided, 10 agreed and 7 strongly agreed. In the second category of 26-50 consisting of respondents who made moderate reference to study units while doing assignments, none strongly disagreed, 9 disagreed, none were undecided, 20 agreed while 11 strongly agreed. In the third category ranging from 51-75 consisting of respondents who made above average reference to study units while doing assignments, 3 strongly disagreed that they are able to balance job demands with their participation in distance learning, 10 disagreed, 3 were undecided, 20 agreed and 9 strongly agreed. In the fourth category ranging from 76-100 consisting of respondents who made extensive reference to study units while doing assignments, 3 of the respondents strongly disagreed, 3 disagreed, none were undecided, 8 agreed and 3 strongly agreed. It can thus be concluded that majority of the respondents were of the opinion that they are able to balance job demands with the studies in distance learning, as most of them agreed and strongly agreed 88(65%) with the majority agreeing that they refer to the study units for the purposes of assignments with the range being 51-100. Even though 59 percent of the respondents indicated that they are able to balance job demands with participation in distance learning, a significant number 67 (38%) felt that they are not able to balance their studies with job demands.

4.7.7 Job demands and learner participation in Continuous assessment tests.

An assessment was done on CATs (Dependent variable) and the extent to which a respondent is able to balance job demands with the studies in distance learning. In the first category of 0-25 consisting of respondents who made the least reference to study units while preparing for CATs, none of the respondents strongly disagreed with the view that he or she is able to balance job demands and participation in distance learning, 3

disagreed, none were undecided, 7 agreed and none strongly agreed. In the second category of 26-50 consisting of respondents who made moderate reference to study units while preparing for CATs, 4 strongly disagreed, 4 disagreed, 3 were undecided, 20 agreed while 9 strongly agreed. In the third category ranging from 51-75 consisting of respondents who made above average reference to study units while preparing for CATs, 3 strongly disagreed with the notion that they are able to balance job demands with their preparation for CATs, 8 disagreed, 0 were undecided, 20 agreed and 9 strongly agreed. In the fourth category ranging from 76-100 consisting of respondents who made extensive reference to study units while preparing for CATs, 4 of the respondents strongly disagreed, 3 disagreed, none undecided, 25 agreed and 1 strongly agreed. It can thus be concluded that majority of the respondents were of the opinion that they are able to balance job demands with the studies in distance learning, as most of them agreed and strongly agreed 91(67%) with the majority agreeing that they refer to the study units for the purposes of CATs.

4.7.8 Job demands and learner participation in examinations

An assessment was done on examinations (Dependent variable) and the extent to which a respondent is able to balance job demands with the studies in distance learning. In the first category of 0-25 consisting of respondents who made least reference to study units while preparing for examinations, 1 respondent strongly disagreed that he/she is able to balance job demands and preparation for examinations, 3 disagreed, none were undecided, 7 agreed and none strongly agreed. In the second category of 26-50 consisting of respondents who made moderate reference to study units while preparing for examinations, 4 strongly disagreed with the view that they are able to balance job demands with preparation for examinations, 4 disagreed, 3 were undecided, 20 agreed while 9 strongly agreed. In the third category ranging from 51-75 consisting of respondents who made above average reference to study units while preparing for examinations, 3 strongly disagreed with the statement that they are able to balance job demands with preparation for examinations, 9 disagreed, 0 were undecided,20 agreed and 9 strongly agreed. In the fourth category ranging from 76-100 consisting of respondents who made the most reference to study units while preparing for examinations, 4 of the

respondents strongly disagreed that they are able to balance job demands with preparation for examinations, 3 disagreed, 0 were undecided, 25 agreed and 1 strongly agreed. It can thus be concluded that majority of the respondents were of the opinion that they are able to balance job demands with preparation for examinations as most of them agreed and strongly agreed 91(67%) with the statement posed.

A chi-square test was done to determine the association between learner characteristics and learner participation in distance learning and the results obtained presented on Table 4.21.

Table 4. 21: Chi- square test for learner characteristics and learner participation in distance learning

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	124.904[a]	18	.000
Likelihood Ratio	110.609	18	.000
Linear-by-Linear Association	7.095	1	.008
N of Valid Cases	427		

a. 12 cells (42.9%) have expected count less than 5. The minimum expected count is .10.

From Table 4.21, the expected count less than 5 is >20% at 42.9%, meaning that the Chi square assumption of this question of the independent variable is violated and thus need for an alternative action. The Pearson Chi square had a value of 124.904[a], the degrees of freedom were 18 and the P-Value was 0.000<0.05 meaning that the model was significant. It therefore means that learner characteristics have influence on learner participation in distance learning. The observed frequencies were different from the expected ones suggesting that learner characteristics do have influence on their participation in distance learning.

4.7.9 ANOVA test for learner characteristics and learner participation in distance learning

The fifth objective of this study was to establish how learner characteristics moderate the relationship between learner perception of content of print instructional medium and participation in distance learning. This objective informed $H_0$5: learner characteristics have no influence on participation in distance learning. This hypothesis was tested by analysis of the mean variances (ANOVA) between the learner participation and the learner characteristics, where learner participation was the dependent variable and learner characteristics was the moderating variable

Table 4.22: Learner characteristics on learner participation in distance learning

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	8.397	6	1.400	4.929	.000
Within Groups	38.899	137	.284		
Total	47.296	143			

The results presented in Table 4.22 shows that the influence of learner characteristics on learner participation. Learner participation was significant as $F = 4.929$, $p < 0.05$ at 0.000, meaning that $H_0$5: learner characteristics have no influence on participation in distance learning is rejected. The sum of squares between groups was 8.397 and the degree of freedom was 6 with a mean square of 1.4.Similarly the sum of squares within groups was 38.899 and the degrees of freedom was 137 with a mean square of 0.284. This means that learner characteristics influence their participation in distance learning.

4.7.10 Correlation test for learner characteristics and participation in distance learning

Correlation test was done to test the strength of the relationship between learner characteristics and learner participation in distance learning and result are as illustrated on Table 4.23.

Table 4.23 Correlations result for learner characteristics and learner participation in distance learning

		On a scale of 0-100 indicate the extent to which study units enables you to participate in Distance learning	In a scale of 0-100 indicate the extent to which you agree with the statement that learner characteristics have no influence in your participation in distance earning
On a scale of 0-100 indicate the extent to which study units enables you to participate in Distance learning	Pearson Correlation	1	0.223*
	Sig. (1-tailed)		.004
	N	166	144
In a scale of 0-100 indicate the extent to which you agree with the statement that family obligations and job demands has no influence in your participation in distance earning	Pearson Correlation	0.223*	1
	Sig. (1-tailed)	.004	
	N	144	150

*. Correlation is significant at the 0.05 level (1-tailed).

From the correlations Table 4.23, correlation coefficient is 0.223 meaning that, there was a weak but positive relationship between learner characteristics and learner participation in distance learning. It means therefore that learner characteristics do influence participation in distance learning.

4.7.11 Learner Support Services and participation in distance learning

Learner support is an important component of distance learning mode of education. It enables learners to overcome distance challenges created as a result of separation between them and human instructors. The study sought to establish learner perception of support given in two main areas, face to face tuition and guidance and counseling and their influence on learner perception of print instructional medium and participation in distance learning.

4.7.12 Face to face tuition support and learner participation in assignments

Respondents were asked the extent to which they agree that face to face tuition support enables them to do assignments (Dependent variable). In the first category of 0-25 consisting of respondents who made the least reference to study units while doing assignments, none of the respondents strongly disagreed with the statement that face to face tuition enables them to do assignments, none disagreed, none were undecided, 3 agreed and 2 strongly agreed. In the second category of 26-50 consisting of respondents who made moderate reference to study units while doing assignments, 2 strongly disagreed that face to face tuition enables them to do assignments, none disagreed, none undecided, 5 agree while 2 strongly agreed. In the third category ranging from 51-75 consisting of respondents who made above average reference to study units while doing assignments, none strongly disagreed, 9 disagreed, none were undecided, 50 agreed and 34 strongly agreed, in the fourth category ranging from 76-100 consisting of respondents who made extensive reference to study units while doing assignments, none of the respondents strongly disagreed with the view that face to face tuition support enables them to do assignments, none disagreed, 4 were undecided, 32 agreed and 30 strongly agreed. It can thus be concluded that majority of the respondents were of the opinion that

the support given during face to face tuition enables them to do assignments with the majority falling in the agreeing and strongly agreeing category 148(85%).

4.7.13 Face to face tuition support and learner participation in CATs and examinations

Respondents were asked to indicate their perception of tuition with regard to preparation for CATs and examinations. In the first category of 0-25 consisting of respondents who least made reference to study units while preparing for CATs and examinations, 3 the respondents strongly disagreed with the statement that face to face tuition enables them to prepare for CATs and examinations, 4 disagreed, 3 were undecided, 7 agreed and 10 strongly agreed. In the second category of 26-50 consisting of respondents who moderately made reference to study units while preparing for CATs and examinations, 4 of the respondents strongly disagreed with the statement that face to face tuition enables them to prepare for CATs and examination, 8 disagreed, 3 were undecided, 29 agreed while 10 strongly agreed. In the third category ranging from 51-75 consisting of respondents who mostly make reference to study units while preparing for CATs and examinations, 6 of the respondents stated strongly disagree, 8 disagreed, 2 were undecided, 31 agreed and 20 strongly agreed, in the fourth category ranging from 76-100 consisting of respondents who extensively made reference to study units while preparing for CATs and examinations, 1 of the respondents strongly disagreed, with the view that face to face tuition enables them to prepare for CATs and examinations, 3 disagreed, none were undecided, 10 agreed and 3 strongly agreed. It can thus be concluded that majority of the respondents were of the opinion that revision tuition enables them to prepare for CATs and examinations 130 (75%).

4.7.14 Face to face tuition support and learner participation in distance learning

Respondents were asked the extent to which time allocated for face to face tuition is adequate and enables the respondents to revise, do assignments, and prepare for continuous assessment tests and examinations. In the first category 0-25 consisting of respondents who made least reference to study units while doing assignments, 1 of the respondents strongly disagreed with the statement that time allocated for face to face

tuition is adequate for revision, assignments and preparation for CATs and examinations, 7 disagreed, 2 were undecided, none agreed and none strongly agreed. In the second category of 26-50 consisting of respondents who made moderate reference to study units 6, of the respondents strongly disagree. That time allocated for tuition is adequate, 16 disagreed, none were undecided, 3 agreed while 2 strongly agreed. In the third category ranging from 51-75 consisting of respondents who made reference to study units above average, 25 of the respondents strongly disagreed that time allocated for tuition is adequate, 10 disagreed, none were undecided, 2 agreed and none strongly agreed, in the fourth category ranging from 76-100 consisting of respondents who made extensive reference to study units, 50 of the respondents strongly disagreed, 30 disagreed, none were undecided, 10 agreed and 10 strongly agreed. The conclusion made was that majority of the respondents 145(83%) were of the opinion that time allocated for face to face tuition was not adequate and does not enable the respondents to revise, do assignments, sit for continuous assessment tests and examinations.

4.7.15 Guidance and counseling and learner participation in assignments

Respondents were asked to indicate whether they seek guidance from their tutors on concepts they don't understand in study units and if at all such guidance influences their participation in doing assignments (Dependent variable). The responses were as follows; in the first category of 0-25 consisting of respondents who made least reference to study units while doing assignments, 4 of the respondents strongly disagreed with the notion that they seek guidance and counseling, 9 disagreed, 2 were undecided, 4 agreed and 4 strongly agreed. In the second category of 26-50 consisting of respondents who made moderate reference to study units while doing assignments, 20 of the respondents strongly disagreed with the view that they seek guidance and counseling, 15 disagreed, 3 were undecided, 8 agreed while 4 strongly agreed. In the third category ranging from 51-75 consisting of respondents who made above average reference to study units while doing assignments, 30 of the respondents stated strongly disagree with the view that the seek guidance and counseling from lecturers, 13 disagreed, 1 was undecided, 8 agreed and 8 strongly agreed. In the fourth category ranging from 76-100 consisting of respondents who made extensive reference to study units while doing assignments, 14 of

the respondents strongly disagreed with the view that they seek guidance from tutors, 6 disagreed, none were undecided, 8 agreed and 8 strongly agreed. It can thus be concluded that majority of the respondents were of the opinion that they don't seek guidance from tutors on concepts they don't understand in the study units as they responded to between strongly disagree and disagree 109 (63%).

4.7.16 Guidance and counseling and learner participation in CATs and examinations

Respondents were asked to state the extent to which they seek guidance from tutors on concepts they don't understand in the study units while preparing for CATs and examinations. The responses were as follows; in the first category of 0-25 consisting of respondents who made the least reference to study units while preparing for CATs and examinations, 4 of the respondents strongly disagreed with the view that they seek counseling for while preparing for CATs and examinations, 9 disagreed, 2 were undecided, 4 agreed and 4 strongly agreed. In the second category 26-50 consisting of respondents who made moderate reference to study units while preparing for CATs and examinations, 20 of the respondents strongly disagreed, 15 disagreed, 3 were undecided, 8 agreed while 4 strongly agreed. In the third category ranging from 51-75 which had respondents who made above average reference to study units while preparing for CATs and examinations, 30 of the respondents stated strongly disagreed with the view that they do seek guidance from tutors, 13 disagreed, 1 was undecided, 8 agreed and 8 strongly agreed, in the fourth category ranging from 76-100 consisting of respondents who extensively made reference to study units while preparing for CATs and examinations, 14 of the respondents strongly disagreed, 6 disagreed, none were undecided, 8 agreed and 8 strongly agreed. It can thus be concluded that majority of the respondents were of the opinion that they don't seek guidance from tutors on concepts they don't understand in the study units as they responded to between strongly disagree and disagree 109 (63%).

4.7.17 Learner support services and learner participation in distance learning

An assessment was made on importance of learner support services to learner participation in distance learning and results obtained were as follows; in the first category of 0-25 consisting of respondents who made least reference to study units while participating in distance learning, none of the respondents strongly disagreed with the notion that learner support is an important aspect in distance learning, none disagreed, 1 was undecided, 1 agreed and 4 strongly agreed. In the second category 26-50, 5 of the respondents strongly disagree, 4 disagreed, none were undecided, 19 agreed while 12 strongly agreed. In the third category ranging from 51-75, 6 of the respondents stated that they strongly disagreed, 7 disagreed, 4 were undecided, 39 agreed and 30 strongly agreed, in the fourth category ranging from 76-100, 2 of the respondents strongly disagreed, 3 disagreed, 2 were undecided, 20 agreed and 15 strongly agreed. It can thus be concluded that majority of the respondents were of the opinion that counseling is an important aspect in distance learning program, most of the responses indicated agree and strongly agree 140(80%).

4.7.18 Test of Hypotheses- learner support services and learner participation

The sixth objective of this study was to determine the moderating influence of learner support services on learner participation in distance learning. This objective informed Hypothesis $H_0$6: learner support services have no influence on participation in distance learning. This hypothesis was tested by ANOVA between learner participation and the learner support services where learner participation was the dependent variable and learner support services was the moderating variable. Pearson correlation was also used to test the strength of the relationship. Table 4.24 shows ANOVA results for the influence of learner support services on learner participation in distance learning.

Table 4. 24 ANOVA for learner support services and learner participation in distance learning

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	8.934	6	1.489	5.244	.000
Within Groups	37.197	131	.284		
Total	46.131	137			

Learner participation was significant as F = 5.244, p <0.05 at 0.000, meaning that $H_0$6: learner support services have no influence on learner participation in distance learning is rejected. The sum of squares between groups was 8.934 and the degree of freedom was 6 with a mean square of 1.489.Similarly the sum of squares within groups was 37.197 and the degrees of freedom was 131 with a mean square of 0.284. It therefore means that learner support services have strong influence on learner participation in distance learning.

Table 4.25 Correlations for learner support services and learner participation in distance learning.

		On a scale of 0-100 indicate the extent to which study units enable you to participate in Distance learning	On a scale of 0-100 indicate the extent to which you agree that learner support services are vital in learner participation in distance learning program
On a scale of 0-100 indicate the extent to which study units enables you to participate in Distance learning	Pearson Correlation	1	.314*
	Sig. (1-tailed)		.000
	N	166	138
On a scale of 0-100 indicate The extent to which you agree that face to face support is vital in learner participation in distance learning program	Pearson Correlation	.314*	1
	Sig. (1-tailed)	.000	
	N	138	144

*. Correlation is significant at the 0.05 level (1-tailed).

From the Correlations table 4.25. Correlation Coefficient is 0.314 meaning that, there was a weak positive relationship between learner support services of the study units and Learners participation.

4.8 Learner participation in assignments, continuous assessment tests and examinations

Document analysis was done on learner participation. A total of 174 respondents who had filled in the questionnaire and returned were cross analyzed with the departmental documents containing tuition attendance, assignment records, CATs attendance register and examinations attendance records and results obtained as presented on Table 4.26.

Table 4.26 Document analysis on learner participation

Learner Participation	Expected attendance	Actual attendance	Percent
Class attendance	174	172	98.8
Assignment collected	174	169	97.1
Participation in CATs	174	170	97.7
Participation in Examinations	174	171	98.2

The results on Table 4.26 show that there is a high level of participation in distance learning among the respondents. The scores were above 90 percent attendance in class, assignments, CATs and examinations. This confirms the results obtained from the questionnaires which indicated that learners perceive study units as vital for their participation in distance learning. From questionnaire results, respondents had indicated that they make references to study units for assignments, continuous assessment tests and examinations. In the scale of 0 to 100 percent, majority of respondents indicated above 50 percent referencing to study units.

4.8.1 Learner participation in assignments

To confirm learner participation in assignments document analysis was done on the actual number of respondents from the questionnaire who handed in their assignments and result obtained tabulated on Table 4.27. The discrepancy 0f 9.2 percent is most likely from those who did not respond to the question or those who were undecided.

Table 4.27: Learner participation in assignments

Responses		Frequency	Percent	Mean	Standard Deviation
	0-25	13	7.5	0.216	0.0698
	26-50	43	24.7	0.714	0.231
	51-75	59	33.9	0.980	0.317
	76-100	51	29.3	0.848	0.274
	Total	166	95.4		
Missing	System	8	4.6	0.133	0.157
Total		174	100.0	2.892	.9344

From the Table 4.27, 153(87.9%) between the range of 26-100 indicated that they do make references to the study units when doing their assignments while 8 respondents didn't respond. It therefore means that learners find study units vital for participation in assignments.

4.8.2 Learner participation in class attendance

Respondents were asked how often they attend tuition. The maximum number of tuition during residential sessions tends to be three and the minimum tends to be two. The results obtained were cross examined by attendance register obtained from departmental office and results on Table 4.28 obtained.

Table 4.28 Learner participation in class attendance

Responses		Frequency	Percent	Mean	Standard Deviation
	ONCE	9	5.2	0.125	0.031
	TWICE	73	42.0	1.017	0.252
	THRICE	76	43.7	1.059	0.262
	Total	158	90.8		
Missing	System	16	9.2	0.223	0.055
Total		174	100.0	2.424	0.6004

From the Table 4.28, most of the respondents (76) indicated that they attend revision tuition three times a 43.3%, while 73 of the respondents attend twice 42% while 9 respondents attend once a 5.2% while 16 respondents didn't respond. This shows that tuition attendance is important to respondents when it comes to preparation for CATs and examinations. This was confirmed by document analysis which indicated 98.8 percent tuition attendance during residential sessions.

4.9 Multiple regression models

To establish the relationship between Content, Design, Availability, learners support, learner characteristics and Leaner participation in distance learning a multiple regression model was used where Leaner participation was the dependent variable with Content, Design, and Availability of study units being the Independent variables, learners support, and learner characteristics being the moderating variables. The results obtained are presented on Table 4.29.

Table 4.29: Regression results for the influence of Content, Design, Availability, learners support, learner's characteristics on Leaner's participation

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.368[a]	.135	.088	.54776

a. Predictors: (Constant), On a scale of 0 to 100, indicate the Extent to which you agree with the statement that Family obligation and job demands has no influence in your participation in distance learning, On a scale of 0 to 100, points indicate the extent to which you agree that content of study units helps you to participate in distance learning, On a scale of 0 to 100, indicate the extent to which you agree that design of study units is suitable for studying in distance program, On a scale of 0 to 100 points, indicate the extent to which you agree that lack of Study Units may hinder your participation in distance learning, On a scale of 0 to 100 points, indicate the extent to which you agree with the statement that Content, design and availability of study units is important for participation in distance learning, On a scale of 0 to 100, indicate the extent to which you agree that face to face support is vital in learner participation in distance learning program.

From Table 4.29 R was 0.368 meaning that there was a positive relationship between Content, Design, Availability, learners support, learner characteristics and Leaner participation in distance learning. R squared was 0.135 meaning that 13.5% of leaner participation variations can be attributed to Content, Design, Availability, learners support and learner characteristics changes while 86.5% was due to other factors. This implies that the multiple regression model have some explanatory powers as 86.5% of the variations could not be explained.

Table 4.30 Analysis of Variance (ANOVA) Model for Content, Design, Availability, learners support, learner characteristics and Leaner participation

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.124	6	.854	2.846	.013[b]
	Residual	32.704	109	.300		
	Total	37.828	115			

a. Dependent Variable: On a scale of 0-100 indicate the extent to which study units enables you to participate in Distance learning

b. Predictors: (Constant), On an interval scale of 0 to 100 points, indicate the extent to which you agree with the statement that family obligation and job demands have no influence in your participation in distance learning, On an interval scale of 0 to 100 points, indicate the extent to which you agree that content of study units helps you to participate in distance learning, On an interval scale of 0 to 100 points indicate the extent to which you agree that design of study units is suitable for studying in distance program, On an interval scale of 0 to 100, points, indicate the extent to which you agree that lack of study units may hinder your participation in distance learning, On an interval scale of 0 to 100 points indicate the extent to which you agree with the statement that Content, design and availability of study units is important for participation in distance learning, On an interval scale of 0 to 100 points indicate the extent to which you agree that face to face support is vital in learner participation in distance learning program.

From Table 4.31, the results show that the model had an F ratio of 2.846 and the p value was 0.013< 0.05, implying that the F ration was also statistically significant, therefore the overall multiple regression model for Content, Design, Availability, learners support, learner characteristics and Leaner participation in distance learning was statistically significant and can be used for prediction purposes at 5 % significance level, this further indicate that the variables used in this study (Content, Design, Availability, learners support and learner characteristics) are statistically significant in predicting the overall leaner participation in distance learning. This implies that the variables in the study have influence in learner participation in distance learning.

Table 4.31 Correlation of Content, Design, Availability, Learner characteristics, Learner support services and Learner participation in distance learning

3 Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	T	Sig.
1	(Constant)	1.211	.523		2.316	.022
	On an interval scale of 0 to 100 points, indicate the extent to which you agree with the statement that Family obligation and job demands have no influence in your participation in distance learning	-.021	.059	-.042	-.356	.723
	On an interval scale of 0 to 100 points, indicate the Extent to which you agree that content of study units helps you to participate in distance learning	.038	.054	.084	.703	.483
	On an interval scale of 0 to 100 points indicate the extent to which you agree that design of study units is suitable for studying in distance learning	.044	.072	.073	.612	.542
	On an interval scale of 0 to 100 points indicate the extent to which you agree that lack of study units may hinder your participation in distance learning	-.017	.032	-.052	-.531	.597
	On an interval scale of 0 to 100 points, indicate the extent to which you agree with the statement that content, design and availability of study units are important for participation in distance learning	.034	.056	.074	.605	.546
	On an interval scale of 0 to 100 points indicate the extent to which you agree that face to face support is vital in learner participation in distance learning	.127	.047	.280	2.703	.008

From Table 4.31, the overall model of learner participation = 1.211 (Constant) + 0.127 (Learner Support). Thus beta was only found to be statistically significant for learner support (β=0.127, t= 2.703 and p=0.008< 5%). All the other variables could not be included in the overall model as their P values were found not be statistically significant at 5% level of margin of error. The Standardized Beta Coefficients give a measure of the contribution of each variable to the model. A large value indicates that a unit change in this predictor variable has a large effect on the criterion variable. The t and Sig (p) values give a rough indication of the impact of each predictor variable – a big absolute t value and small p value suggests that a predictor variable is having a large impact on the criterion variable. At 5% level of significance and 95% level of confidence (Learner Support), had a co efficient value of 0.127 thus it can be conclude that for this study

learner support services have the biggest impact on learner Participation in distance learning.

4.9.1 Content Analysis on selected PAC study units

Content analysis was done on selected print instructional medium used in the delivery of distance learning at the University of Nairobi. The aim was to corroborate questionnaire and interview results from respondents with expert judgment on the status of print instructional medium used in distance learning. Planning, Administration and Curriculum (PAC) study units selected were PAC 102(Environmental studies), PAC 202 (Curriculum development), PAC 303(Education and development) and PAC 311(Distance studies). Data was collected using content analysis guide which was designed to establish year of publication or review of a given study unit, design as per accepted design criteria of distance learning instructional medium and scope and depth of coverage of topics.

4.9.2 Environmental Education (PAC 102)

Content analysis results indicate that PAC 102 has no current content. This has also been confirmed by interview results from respondents. Result show that PAC 102 has no indication when it was first published. Year of reprint is indicated to have occurred more than ten years ago. The content does not capture current issues in education. In line with KICD (2013) policy issues in education, curriculum review should be done at least every five years so as to capture emerging issues in the society. Environmental education study unit currently used does not capture issues such as global warming, flooding, drought and pollution. Climate change is a matter of global concern that an educationists cannot afford to ignore. The results rate design of the unit as good. This also confirms the same results that were obtained from both questionnaires as well as interview.

4.9.3 Curriculum development (PAC 202)

In terms of currency of the unit, the mean was 3 which were below the overall mean of 3.3. This means that the respondent felt that the content was satisfactory. The respondent also felt that the content in terms of relevance was satisfactory with a mean of 3. In terms of broadness depth, layout, clarity of objectives, comprehensiveness of objectives,

sequence ranging from simple to complex, presence of learning activities, and presence of in-text questions, references for further reading and provision of end of lecture evaluation were good with a mean of 4. Generally all results from the instrument indicate that the design of study units are well presented and assist the learners in their participation in distance learning.

4.9.4 Education and development (PAC 102)

Currency of PAC 102 was satisfactory. The results from analysis show that it was last printed in 1997. The unit deals with education and development which is quiet an evolutionary area and calls for review. Relevance of content had poor rating. A fair section of the unit touches on historical development of Kenya's education system which is relevant but fails to reflect on the current development like Education Act 2005 and various commissions that have brought about changes in the education system and policy changes like free primary education, Education for All among others. Design was satisfactory rated.

4.9.5 Distance Learning (PAC 311)

Currency of content of distance learning unit had good rating whereas relevance had satisfactory rating. This is because the unit lacked content touching on latest technologies used in distance learning. Distance learning as a unit of study is quite evolutionary. The content should adequately capture concepts like e-learning and discuss latest delivery modes such as mobile phone learning, Open Education Resources (OERS) among others. The design was rated as good giving excellent spread of lectures, bullet numbering listing key concepts in the topics covered.

Overall results from content analysis of selected PAC study units indicate urgent need for review. Review is needed so that distance learners can get updated information in their area of specialization and make the competent educationists. Study units as currently presented does not offer this.

CHAPTER FIVE

SUMMARY OF FINDINGS, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The purpose of the study was to establish influence of learner perception of print instructional medium on learner participation in distance learning. Print is the main medium used in the delivery of distance learning at the University of Nairobi. This chapter presents summary of findings, discussions of findings, conclusion arrived at and recommendations for further action and research.

5.2 Summary of findings

The study had six objectives. Components of print medium were identified and formed the basis of objectives of the study. The first objective was to establish the influence of learner perception of content of print instructional medium on participation in distance learning. The indicators for content were scope/depth, currency, accuracy and relevance.

5.2.1 Content of print instructional medium and participation in distance learning.

This variable was tested using percentages, regression, correlation analysis and ANOVA. Results on scope showed that 77% of the respondents agreed that content was fairly broad and enabled them to participate in writing assignments. Respondents who agreed or strongly agreed made reference to study units in the range of 51 to 100 percent when doing assignments. On learner participation in Continuous Assessment Tests (CATs), 74% respondents perceive content to be broad and that it enables them to participate in CATs in the range of 51 to 100 percent. Regarding preparation for examinations, 78% of the respondents perceived content to be broad and enabled them to participate in examinations.

Results on currency showed that 86% of the respondents agreed that the content of the study units cover current issues in the subject area and enable them to participate in assignments. A total of 74% of the respondetnts perceived content to be current and enabled them to prepare for CATs and examinations respectively.

Regarding accuracy of study units, 75% of the respondents agreed and strongly agreed that study units have accurate information and they refer to them when doing assignments. A total of 63% of respondents regard study units as accurate and they make reference to them while preparing for CATs while 63% of the respondents agreed that the content has accurate information in the subject area that enables them to participate in examinations.

Regarding relevance of content, 98.8% fell between 'agreed' and 'strongly agreed' that they perceive study units to be relevant as reference when they are doing assignments. Learners indicated that they make reference to study units in the scale of 51 to 100 percent. For CATs and examinations 99% of the respondents perceive study units as relevant and they make references to them in the scale of 76 to 100 percent. In terms of scope, 95% of student respondents indicated that time allocated is not adequate for reading the study units. A total of 95% respondents also indicated that they are not able to read the entire content of study units within the stipulated time.

Results of regression analysis show that there is a positive relationship between content of study units and learner participation in distance learning as R was 0.251.Results of ANOVA test showed that coefficient of determination was significant since $F=9.629$, $P<0.05$ at 0.002. The hypothesis which stated that there is no relationship between content of print instructional medium and learner participation in distance learning was rejected. Correlation results showed a weak but positive relationship between content of study units and learner participation in distance learning. The correlation coefficient was 0.251 and coefficient of determination was 0.063. The results show that content of study units influence learner participation in distance learning and there is need to review it so as to improve the quality.

The content variable was triangulated with interview results from lecturers. A total of sixteen lecturers were interviewed on four parameters of the content of the study units. On scope of content, 94% of the respondents interviewed agreed that the scope was covering adequate information for the given level. On currency and relevance, all the lecturers agreed that the study units were relevant but not current. This was also corroborated by content analysis results that indicated that content have not been reviewed for a long. On accuracy, 50% of the respondents noted that the content of study units were accurate while 50% disagreed. This formed 50% split in the group. Overall results for content variable indicate that 80% of the respondents perceive it as being very important for learner participation in distance learning.

5.2.2 Design of print instructional medium and learner Participation in Distance Learning

This variable was also tested using percentages, correlation, regression analysis and ANOVA. On clarity of study units 73% of the respondents fell in the category of 'agreed' and 'strongly agreed' that study units are clearly written and enabled them to make references when doing assignments. These respondents indicated that they make reference in the scale of 76 to 100 Percent. With regard to CATs and examinations, 78% and 79% respectively perceive study units to be clear and enable them to prepare for them. This category fell in the scale of 51 to 100 percent.

On language interactivity 71% find interactivity useful to them as they do assignments and they indicated that they make reference to study units for assignments in the scale of 51 to 100 percent. A total of 68% agreed and strongly agreed that interactivity of language used in the study units aid them when preparing for CATs while 74% agreed and strongly agreed that language used in study units is interactive and enables them to prepare for examinations. Respondents indicated that they make reference to study units in the scale of 51 to 100 percent. Respondents strongly disagreed and others disagreed that presence of icons help them in participation in assignments, CATs and examinations at 67%, 74% and 74% respectively.

On self-assessment exercises 95% of the respondents agreed that the study units provide self-assessment exercises and they help them when preparing for CATs and examinations. A total 95% fell in the category of agreed and strongly agreed with 51 to 100 percent making references to study units while preparing for CATs and examinations.

On statement of objectives all respondents agreed that they have been provided with 88% agreeing and strongly agreeing that objectives assist them when doing assignments. Majority fell in the category of 51 to 100 percent reference, Presence of objectives was crucial for CATs and examinations preparations as 99% find them very useful. This category indicated that they make reference to study units in the scale 76 to 100 percent. Overall results of influence of design of study units on learner participation indicate that those who find design important were the majority. Results indicate that 83.1 percent of respondents view design of study units as very helpful for participation in distance learning. Out of the sixteen lecturers interviewed, fifteen agreed that the design was standard forming 93.7%. The results on design of study units also agree with that of content analysis which highly rated design of study units.

The second hypothesis which was learner perception of design of PIM has no influence on learner participation in distance learning. The hypothesis was tested by correlating design of study units with learner participation. A one tailed test was carried out. The results show that learner perception was significant (**F** = 10.495.P < 0.05 at 0.002). The null hypothesis was therefore rejected. It means that the design of study units have influence on learner participation in distance learning and therefore efforts should be made to improve the weak areas such as the use of icons to make them relevant to learners.

5.2.3 Availability of print instructional medium and learner participation in distance learning

To test this objective, the respondents were to respond to a five point likert scale ranging from strongly agreed (5) to strongly disagree (1). On timeliness of issue of study units, a total of 67% disagreed that study units are distributed on time. They are however, make references to them while doing assignments in the scale of 26 to 100 percent. With regard to CATs, and examinations, 67% respondents fell in the category of disagree and strongly disagree that study units are distributed on time. They however find them useful and refer to them at the rate of 51 to 100 percent. On adequacy of study units, 86% respondents agreed that study units are not available for distribution at the beginning of the semester but they are eventually distributed and they make reference to them when doing assignments in the scale of 51 to 100 percent. With regard to learner participation in CATs and examinations respondents, 79% of the respondents agreed and strongly agreed that they are available and they make references to them in the scale of 51 to 100 percent.

Interview results from staff in the print and distribution office confirm learner perception of delay in the distribution of study units. According to the staff interviewed this was partly due to procurement bottlenecks at policy level. Delay was also caused by transport hitches when students were in session and vehicles were not availed on time.

Overall results of availability indicate that respondents perceive availability of study units to be very important for their participation in distance learning. They find a way of accessing study units even when they are not provided directly by the university. Hypothesis test result by ANOVA show that $F=0.0828$, $P > 0.05$ at 0.364 meaning that the hypothesis which stated that availability of print instructional medium has no influence on learner participation in distance learning is true and we therefore we fail to reject the hypothesis.

5.2.4 Combined influence of print content, design and availability

The result shows that the influence of content, design and availability of the study units on learner participation was significant as F = 1.825, p <0.05 at 0.000, meaning that $H_0$4: content, design and availability has no influence on learner participation in learner in distance learning is rejected. This means that learners need study units to participate in distance learning and it does influence their participation in the program.

5.2.5 Learner characteristics and participation in distance learning

Through literature review, two typical distance learner characteristics were established. The study sought to establish how these characteristics influence learner participation in distance learning.

5.2.5.1 Marital status of respondents

The respondents were classified into four groups, of these married took the highest percentage of 72.4% which was a frequency of 126 respondents, single respondents accounted for a 26.4% which was a frequency of 46 respondents, others accounted for 0 .6% which was a 1 frequency while widowed had .6%. This means that most distance learners are married.

5.2.5.2 Marital status and learner participation in assignments

Result show that married marital status hinder learner participation in assignments. Out of 72.4% married respondents, 70% fell in the category of disagree and strongly disagree with the statement that marital status does not interfere with their participation in assignment. With regard to CATs and examinations, 68% felt that marital status interferes with their participation in the program. These results show that marital status influences learner participation in assignments, CATs and examinations even though respondents still find study units important as they make reference to them in the scale of 51 to 100 percent.

5.2.5.3 Employment status and learner participation in distance learning

The results indicate that out of 174 respondents who participated in the study, 78.2% are employed. Out of these 65% strongly agreed and agreed that they are able to balance job demands with their participation in assignments. A total of 67% respondents fell in the category of agree and strongly agree that they are able to balance job demands with their participation in CATs and examinations. This shows that while marital status poses challenge to respondents, they are able to manage job demands alongside their studies.

The ANOVA results for learner characteristics and participation in distance learning show that $F=4.929$, $P<0.05$ at 0.000. The hypothesis which stated that learner characteristics have no influence on learner participation in distance learning is rejected since the calculated value fell far below 0.05. Learner characteristics have influence on distance learning and therefore there is need to strengthen guidance and counseling to enable them participate meaning fully in distance learning.

5.2.6 Learner Support Services and Learner Participation in Distance Learning

It is a standard practice in distance learning institutions to offer support to the students. Two such support services were identified and tested to establish the role they play is learner participation in distance learning. The results yielded indicated that 85% of the respondents agreed and strongly agreed that face to face tuition as very important for learner participation in assignments. A total of 75% agreed that face to face tuition is important and helps them to understand concepts as they prepare for examinations. They indicated that they make references to study units in the scale of 51 to 100 percent. A total of 83% however felt that time allocated for tuition is not enough and would rather more time was allocated. When it comes to guidance and counseling, 63% indicated that it is important for participation in assignment, CATs and examinations. Respondents felt that guidance and counseling is important for distance learning as 80% agreed and strongly agreed. Overall results of learner support show that 80% of the respondents perceive it to be very important for their participation in distance learning.

The sixth hypothesis was that learner support services have no influence on participation in distance learning. The hypothesis was tested by means of ANOVA. The findings show that influences of learner support services was significant at ($F = 5.244$, $P < 0.05$ at 0.000). The null hypothesis was therefore rejected. Learner support services have a great influence on learner participation in distance learning. Learners should therefore be encouraged to seek guidance and counseling to enable them participates meaningfully in the program.

5.2.7 Discussion of findings

In this section, the findings of the study are discussed in relation to other studies. The discussion is based on the major themes of the study which were content, design, availability, learner characteristics and learner support services.

On the variable of content, the participants agreed that the content is broad and has depth. Some lecturers however were of the opinion that some sections needed to be relooked into to be given more depth. On currency of print instructional medium, the respondents indicated that the content is current. This perception differed with that of the lecturers and content analysis done on PAC study units. Both lecturers and analysis done on content indicated that some aspects of the content were out dated especially curriculum development unit and environmental studies. The lecturers were of the opinion that there was urgent need to review the study units. This finding agrees with that of Nzuki (2012) that materials were developed in 80s and have not been reviewed over the years. The findings also agree with that of Kimani et al (2012) that indicated that study units are recycled without being updated. According to Hanna (2010) "T*echnology is always the "fourth force" in the classroom. The other three forces being the content to be learnt, the teacher and the student."* The teacher in this study has indicated urgent need to review the content of study units, the student who are the recipients of knowledge may not be in a position to judge the currency of content being delivered to them yet content determines the knowledge level and competency of the learner. Underscoring the importance of content of study units in distance learning, Simonson, Smaldiro, Albright, and Zvacek, (2008) posit that *"Media are mere vehicles that deliver instruction but do not influence*

student achievement any more than a truck that delivers our groceries causes changes in nutrition. Only the content of the vehicle can influence achievement".

Writing for Turkish online journal, Imran et al (2008) underscores the importance of updated content of a distance learning program by indicating that the course content must be up to date, incorporating the latest research in theoretical concepts and empirical studies. The level of difficulty must be appropriate to the target group. Content designers should also keep in view socio-cultural beliefs and practices, values, trends and emerging issues in the society. It means therefore that for effective change (competence) to take place in the learner, content is important. The course materials which constitute the mainstay of distance education are crucial to the success of distance learning programs. This study has underscored the need to review content of print instructional medium used in delivering distance learning at the University of Nairobi. The content is adequate in terms of depth and breadth but need review to accommodate emerging issues in education. Notably, curriculum development and environmental studies units have been singled out to be in urgent need of review. To ensure quality of print instructional medium, South Africa Institute of distance education (2003) suggested that modules (study units) be reviewed periodically in line with current trends and from feedback obtained from students. This is also in line with standard practice of curriculum review of every five years (KICD Act 2014) recommended by Kenya Institute of Curriculum Development.

Concerning design of print instructional medium and learner participation, it can be noted that distance education material developers not only have to convey information to the students, but they also have to structure and control the process by which information is presented and assimilated by the students (Imran et al, 2008). This constitutes design process. Majority of the respondents agree that objectives, self assessment exercises and interactive language used in the study units are appropriate to their study. However, majority did not agree that icons in the study units are of help. Icons are like sign posts in distance learning materials. This is because instructional design is meant to translate principles of learning and instruction into plans for instructional materials, activities,

information resources and evaluation (Dartrician and Tillman, 2005). Icons direct the learner to specific activity or task at hand. This means therefore that they are an integral part of design in distance learning instructional material. As pointed out by Gbenoba (2012) in his study, distance learning instructional materials are not textbooks and should not be written as textbooks. They should be designed in such a way that there is a two way communication between the learner and the instructional material. Lack of interactivity in most distance learning was the cause of the increased demand for more time for face to face interaction by distance learners (Gbenoba, 2012). In this study, however, learners find the way the study units have been designed helpful. It is an indication that course designers at the University of Nairobi have the necessary expertise.

As to whether learner perception of availability and timeliness of issue of study materials influence learner participation, the results showed existence of a weak relationship between availability of study units and participation in distance learning. This may be explained by findings of a study done by Mboroki (2007) which revealed that learners somehow got study units by other means for example, they borrowed from their classmates or from former students or photocopied from those who had already received their copies. Learners took positive action to remedy the situation of delay in issuance of study units and inadequacy. According to the staff in the distribution office, the delay in distribution of study materials may not be entirely blamed on the administration of the University of Nairobi. Policy issues exist that study materials are only given to those who have fully paid college fees. Those who pay late can only receive them after payment. On timeliness of issue, interview results indicate that there are bottlenecks with regard to transport arrangement to residential centers. Sometimes transport is not availed on time to facilitate transportation of study materials hence the delay. This finding concurs with that of Kimani et al (2012), Nzuki (2012), Nyerere et al (2012) and Mbwesa (2013) that also revealed the same on availability of study units. Kimani et al (2012), for example, quotes a respondent saying

"*The materials are insufficient. I am forced to make photocopies from other students despite having paid all the fees."*

Another respondent from the same study noted that

"*It is very unfair to receive modules after sitting for the continuous assessment tests or a few days to final exams."*

On his part, Nzuki (2012) made a conclusion regarding study materials that the provision does not meet the expectation of the learners yet it is an aspect of quality in distance learning. A study done by Nyerere et al (2012) reveals that there exists a disparity in material distribution. Those in urban centers who have no problem with infrastructure like the road and communication network accessed materials early enough and had adequate time to study them while those in far flung areas received materials late and had little time to study, thus disadvantaging them. Findings by Moore (2007) cited in Mbwesa (2013) posits that

"Distance *is more of a pedagogical phenomenon rather than a function of geographical separation which exists both in face-to-face classes as well as distance classes*."

Moore (2007) further states that learners of varying degrees have ability to construct personal learning plans, find needed resources and evaluate their own learning progress. This may explain the reasons why as much as learners may complain about delay in issuance and inadequacy of study units; they still participated by doing assignments, CATs and examinations. A study done by Okonkwo (2012) cited competing academic and administrative assignments to be some of the reasons for delay in course material development at the National Open University of Nigeria since materials are developed in-house. Nevertheless, for distance learning to be effective, there should be a deliberate effort to avail study materials to the learners at the right time. Since learners are expected to spend 80% of their learning time on their own while face- to- face contact only covers the remaining 20%. When study materials are not available, learners would demand more time with the tutors, time which may not be available due to the distance nature of the program. This may in the long run lower quality of distance learning and help to give fodder to distance learning critics regarding quality.

Findings on combined influence of print content, design and availability of study units on learner participation in distance learning also need further explanation. From the findings 84% of respondents refer to study units to do their assignments as well as to prepare for continuous assessment tests. This makes it vital for participation in distance learning.

Sixty eight percent of respondents also refer to study units while preparing for examinations. The 20% disparity between assignments and CATs and examinations preparation could be explained by face to face tuition and other sources available to the students. A study by Hamweete (2012) reveals disparity between what is taught during face to face tuition and the content of study units issued for home study. The conclusion made was that either the study units were incomplete or they were not self contained. This is contrary to the definition by Gasper (2013) that study units as standardized self contained segment that constitutes an educational course or training program. It is therefore imperative that the print medium used for delivery of distance learning be of international best practice to enable the learner get standard reference material as they get prepared as professionals. It is the combined nature of the print in terms of content, design and being available in a timely manner that would enable the learner to make such preparations.

Findings on influence of learner characteristics on learner participation in distance learning also need further discussion. Various studies have confirmed the notion that there are certain characteristics that are peculiar to distance learners. The assertion that majority of distance learners are older than regular on-campus students, are in steady employment and are in marital relationships have been confirmed in this study. This study also confirms that learner characteristics influence their participation in distance learning. Responsibilities such as employment and family obligations in one way or another interfere with the study schedule of distance learners. A study by Ngumi and Mwaniki (2009), Mboroki (2007), Sharma (2005confirm characteristics of distance learners. According to Ngumi and Mwaniki (2009), going back to school affects family equilibrium and requires an individual to do a lot of adjustments. In this study respondents indicated that family obligations normally interfere with their participation in distance learning. As suggested by Sharma (2005), such learners could benefit from guidance and counseling to help them cope with their situation.

Findings on learner support services have revealed that learners rate highly the support they get from face to face tuition and it does influence their participation in distance learning. A total of 97% of respondents were of the opinion that time allocated for face to face tuition was not adequate. Findings by Mboroki (2007) indicated that class attendance by distance learners was at 84.7%. This confirms the importance that distance learners attach to learner support services. Guidance and counseling support was also rated highly by the learners. Majority felt that it is an important aspect of distance learning. Few however indicated that they normally seek this service from their lecturers or administrators. A study done by Bowa (2010) indicated that learner support services contribute immensely to academic performance of the learner. It is therefore imperative that relevant people seek to establish why learners rate this service highly but only a few seek to make use of it. According to Ngumi and Mwaniki (2009) adult learners have unique challenges that come as a result of added responsibilities. It is important that guidance and counseling services be strengthened so that learners with challenges are assisted to enable them participate in the program.

5.3 Learner Participation

The researcher also sought to establish the extent to which learners refer to study units while preparing for assignments, Cats and examinations. A total of 95.4% of learners refer to study units while doing assignments. This had a mean of 2.89 and a standard deviation of 0.934. A study unit is a vital factor for assignments in distance learning. To prepare for CATs, a total of 93% of respondents refer to study units while 94.2% agree that examinations do come from the content of study units. This variable was further evaluated by means of document analysis guide. From the analysis, tuition attendance assignments CATs and examinations had over 90% attendance. Appendix (F) gives the summary of total attendance and participation.

5.4 Conclusions

This study had set out to establish the influence of learner perception of print instructional medium on participation in distance learning. Data was collected from part six students in the distance learning program as well as from their tutors. The study

showed that content of print instructional medium has a significant influence on learner participation in distance learning. The study also revealed that content of PAC has enough scope and depth that enabled the learner to be competent in the field of education. Content also enables the learner to acquire relevant knowledge in the field. The information in the content, however, is not current. PAC study units need to be reviewed to make them current and accurate since a lot of changes have taken place in the education sector both locally and internationally since the study units were developed. Some of these changes are not captured in the study units. The course content should be up to date, incorporating the latest research in theoretical concepts and empirical studies. It is only when this is done that the competence of distance learners in the program can be assured.

Learners find the way study units have been designed helpful. It is an indication that course designers have the necessary expertise and are well versed in their area of specialization. Besides, design of study units enables learners to read through the content effectively before they do their assignments, prepare for continuous assessment tests and examinations. There is need to improve on the icons used in the design since icons are an important component of print instructional design and acts as sign posts to the learners in the course of the study.

The study has revealed that not all study units are issued to learners at the beginning of the semester. Moreover, the issuance of study units is pegged on fee payment. Those who pay fees late feel that they do not have adequate time to interact with the study units because they get them late. It is important to avail study units on time. This would give learners a fair chance to complete their program of study on schedule and also give confidence to learners that they have had adequate time to study.

The study has confirmed previous researches that most distance learners are adults with responsibilities and most of them are on employment. Majority of the learners are able to balance job demands with their studies but a number find marital status a challenge.

Guidance and counseling services should be strengthened to assist such group of learners to cope with the demands of the study.

Learners find face- to- face tuition given to them during residential schools very important in influencing their participation in distance learning. Majority of them feel that they need more time with their tutors for this support service. They indicated that time given is inadequate for handling all the issues they have with regard to their participation in the program. With regard to counseling, majority of the respondents perceive it as a very important aspect of distance learning even though only a few of them seek this service from their tutors and administrators.

5.5 Recommendations

From the foregoing findings and conclusions, a number of recommendations were made for the study. The recommendations are presented in this section.

1.There is need to review content used in the delivery of distance learning so that distance learners may have current knowledge on various aspects of the curriculum to make them competent in their field of specialization.

2. The design of the study units should be improved to include suggestions on how long a learner should take while studying a given topic. Icons should also be made meaningful to serve the purpose they are intended to serve.

3 Procurement bottlenecks and administrative systems should be streamlined through policy to make production and distribution of study units smooth. This will also resolve delays in issuing materials.

4. Administrators should address face-to-face tuition to enable learners have adequate support during residential schools. Many learners feel that the time allocated does not allow them ample time for revision.

5. Guidance and Counseling should be strengthened to enable learners to get help when they need it. Administrators should also establish the best way to handle guidance and counseling so as to attract more learners to this service.

5.6 Suggestions for Further Research

From the analyses and findings of the study, a number of areas for further research in learner participation in distance learning have been identified. These are reviewed below.

1. Since this study was limited to PAC study unit, a study should be done on study units in other subject areas so as to ascertain their suitability as delivery tools in the program.
2. A study may also be carried out to ascertain reasons behind learner apathy to guidance and counseling support services offered by the University of Nairobi.
3. Another area for study could be carried out to determine the relationship between learner participation and infrastructure in distance learning.
4. Influence of policy on the growth of Bachelor of Education program by distance learning at the University of Nairobi.

5.7 Contribution to the body of Knowledge

Past studies have identified media as an indispensable aspect of distance learning. ICT in particular has gained currency in an increasingly digitalized world. Print medium which for many years formed the backbone of distance learning and is still used by many institutions has hardly been studied in the recent past. In a developing country like Kenya where majority of students still live in areas not covered by electricity and other infrastructure that can support ultra modern forms of ICT. The use of print is still going to be prevalent for some time. The study will therefore go long way in enabling policy makers to address the issues highlighted. Table 5.1 provides a summary of contribution to the body of knowledge.

Table 5.1: Contribution to the body of knowledge

Objectives	Findings
1. To establish the influence of content of print instructional medium on participation in distance learning	Content of print instructional medium has influence in learner participation in distance learning. Finding shows that content is outdated and needs to be reviewed.
2. To determine the influence of design of print instructional medium on learner participation and distance learning	Design of print instructional medium influences learner participation in distance learning. There is need to redesign icons to make them more meaningful to learners.
3. To examine influence of availability of PIM on learner participation in distance learning.	Availability does not influence learner participation in distance learning because materials are not available on time. Learners photocopy or look for content elsewhere in order to participate in the program.
4. To assess the combined influence of content, design and availability of PIM on learner participation in distance learning	Content, design availability of study units have influence on learner participation in distance learning. There is need to update the content, redesign the content and avail learning materials to learners.
5. To establish how learner characteristics moderate the relationship between print instructional medium and learner participation in distance learning.	Learners are able to balance job demands with their studies but marital status is a challenge. There is need to provide guidance and counselling to search learners to make them cope with their studies.
6. To assess how learner support services moderate the relationship between print instructional medium and learner participation in distance learning.	Many learners feel that time allocated for tuition support is not adequate. Most learners do not seek guidance and counseling from lecturers yet they find support important. There is need to strengthen learner support services to enable the learners to participate in the program.

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APPENDICES

APPENDIX A: COVER LETTER

The University of Nairobi,
Department of Educational,
P.O. Box 30197-00100,
NAIROBI.

Dear Sir\ Madam

RE: PARTICIPATION IN RESEARCH THESIS

I am a PhD student carrying out research on "Influence of learner perception of print instructional medium on participation in distance learning: The case of Bachelor of Education (Arts) program, University of Nairobi." The purpose of this letter is to request you to participate in the study by completing the questionnaires provided.

The information you provide will be used purposely for this study and will be treated with confidence and so you need not write your name anywhere.

Thank you in advance.

Yours sincerely,

Joyce Otieno

APPENDIX B: QUESTIONAIRE FOR STUDENTS

The questionnaire is designed to gather information on influence of learner perception of print instructional medium on participation in distance learning. It has seven sections B1 to B6. Respond with a [√] in the space provided or indicate in a scale of 0 to 100 percent your agreement of the given statement.

B1 Content of study units

The following statements refer to content of PAC study units used in Bachelor of Education (Arts) program by distance learning. On a scale of 5 to 1 tick (√) on the most appropriate response in your opinion

Content of study units	Strongly Agree 5	Agree 4	Undecided 3	Strongly Disagree 2	Disagree 1
1Content of study units are fairly broad and enables me to do assignments					
2Content of study units are fairly broad and enables me to prepare for CATs					
3Content of study units are fairly broad and enables me to prepare for examinations					
4. Content in the study units contains current information in the subject area that enables me to do assignments.					

5. Content in the study units contains current information in the subject area that enables me to prepare for CATs.					
6. Content in the study units contains current information in the subject area that enables me to prepare for examinations					
7. Content of study units contains accurate information that enables me to do assignments.					
8.Content of study units contain accurate information that enables me to prepare for CATs					
9. Content of study units contain accurate information that enables me to prepare for examinations.					
10. Content of study units has relevant information that enables me to do assignments.					
11. Content of study units have relevant information that enables me to prepare for CATs					
12. Content of study units have relevant information that enables me to prepare for examinations.					

13. On a scale of 0 to 100 percent indicate the extent to which content of PAC study units is suitable for studying the course_____

B2 Design of study units

The following statements refer to PAC Study unit design. Indicate with (√) your appropriate response.

Design of study units	Strongly Agree5	Agree4	Undecided3	Disagree 2	Strongly Disagree 1
1.Study units are written in a clear manner that enables me to do assignments					
2 Study units are written in a clear manner that enables me to prepare for CATs.					
3. 2 Study units are written in a clear manner that enables me to prepare for examinations.					
4. Study units are written in an interactive language that enables me to do assignments.					
5. Study units are written in an interactive language that enables me to prepare for CATs.					
6 Study units are written in an interactive language that enables me to prepare for examinations.					
7. Icons in the study units enable me to do assignments.					
8. Icons in the study units enable me to prepare for CATs.					
9. Icons in the study units enable me to prepare for examinations					
10. Presence of self assessment exercises in the study units enable me to revise for CATs and examinations.					
11. Objectives in the study units are clearly stated and enables me to do assignments					

12. Objectives in the study units are clearly stated and enables me to prepare for CATs Objectives					
13. Objectives in the study units are clearly stated and enable me to prepare for examinations.					

14. On a scale of 0 to 100 percent indicate the extent to which material design in the PAC study units is suitable for studying the course_____

B3 Availability of study units.

The following statements refer to availability of study units, indicate with a

(√) your opinion

Availability of study units	Strongly Agree-5	Agree-4	Undecided-3	Disagree-2	Strongly Disagree-1
1.All study units are usually distributed at the beginning of every semester					
2.Some study units are not available for distribution					
3.Study units provided are adequate for my course					

4. On a scale of 0 to 100 percent indicate the extent to which availability of the PAC study units enables you to participate in distance learning_____

B4 Content, design and availability of study units

19. On a scale of 0 to 100 percent indicate the extent to which the PAC study units content, design and availability are suitable for studying the course_____

B5 Learner characteristics

10. Indicate with a (√) appropriate response in the space provided where applicable

1. Part of the study

[ ]

6). Do you hold a full time job?

a) Yes [ ]

b) No [ ]

7). what is your marital status?

a) Married [ ]

b) Single [ ]

c) Widowed [ ]

d) Others [ ]

10. Indicate with a (√) appropriate response in the space provided where applicable.

No		5	4	3	2	1
		Strongly Agree	Agree	Undecided	Disagree	Strongly disagree
1	My marital status does not hinder my participation in assignments					
2	My marital status does not					

	hinder my participation in CATs					
3	My marital status does not hinder my participation in examinations					
4	I am able to balance job demands with assignments					
5	I am able to balance job demands with preparations for CATs					
6	I am able to balance job demands with preparations for examinations					

11. On a scale of 0 to 100 percent indicate the extent to which your personal characteristics facilitate you in studying the course_____

_____

B6. Learner support services

20. The following statements refer to learner support services indicate with a (√) the most appropriate response.

1.Support given during face to face tuition enables me to participate in assignments					
2 .Support given during face to face tuition enables me to participate in CATs					
3. Support given during face to face tuition enables me to participate in examinations					
4. Time allocated for face to face tuition is adequate for Preparations for CATs and examinations.					
5. I normally seek guidance from lecturers on concepts I					

do not understand in the study units when doing assignments					
6 I normally seek guidance from lecturers on concepts I do not understand in the study units when preparing for CATs					
7 I normally seek guidance from lecturers on concepts I do not understand in the study units when preparing for examinations.					
8.counseling is very important aspects of distance learning					

9. On a scale of 0 to 100 percent indicate the extent to which learner support services are suitable for studying the course_____

B6. Learner participation

The following statements refer to Learner participation:

1. To what extent do you make reference to your study units when doing assignment?

   0 – 25 [ ] 26 – 50 [ ] 51 – 75 [ ] 76 – 100 [ ]

2. To what extent do you refer to PAC study units while preparing for CATs

   0 – 25 [ ] 26 – 50 [ ] 51 – 75 [ ] 76 – 100 [ ]

3. To what extent do you refer to PAC study units while preparing for examinations

   0-25] 26 -50 [ ] 51 -75 [ ] 76 -100 [ ]

4. On a scale of 0 - 100 percent, indicate the extent to which print instructional medium facilitates your participation in distance learning_____

APPENDIX C: INTERVIEW GUIDE FOR PART TIME AND FULL TIME LECTURERS

1. For how long have you worked for the department of educational studies?

1-2 years ( ) 3-4 years ( ) 5-6 years ( ) over 6 years( )

What is your area of specialization?

2. Distance learning [ ] others [ ] specify

3. Do you have any formal training in distance learning?

4. Do you have a copy of the study units in the area you teach? If yes,

5. Do you use study units to prepare lecture notes?

6. Do you find the content of study units adequate for the course?

7. Do you use any other source to prepare your lecture notes?

If yes why?

8 In a scale of 0 to 100 rate the extent to which what you teach is based on the content of study units.

9. Is there disconnect between the study units and what you teach?

10. Do the students complain to you about the content, availability and design of study units?

If yes, which aspect do they complain about and why?

11. What do you do about their complaints?

12. Do you sometimes insert new materials not found in the print instructional medium in your lecture notes?

13. Do you encourage students to attempt revision questions found in the study units?

14. How can lack of study units affect learners in the program?

15. How would you rate print instructional medium that you use in your subject area?

17. If called upon to review a study unit would you be ready to do so?

APPENDIX D: INTERVIEW GUIDE FOR STAFF IN THE PRINT AND DISTRIBUTION OFFICE

1. How long have you worked for this section?

2. How do you the PAC study units distributed?

3. What are the conditions for issuing study units to the students?

4. What happens to students who have not met these conditions?

5. Do students sometimes miss study units? If yes why?

6. What steps do you take when students miss study units?

7. Do you sometimes issue study units mid semester?

8. Do students complain about the way study units are distributed? If yes

9. What do they complain about mostly?

10. What do you do about these complaints?

11. What improvements would you like to recommend about distribution of study units?

APENDIX E: CONTENT ANALYSIS GUIDE

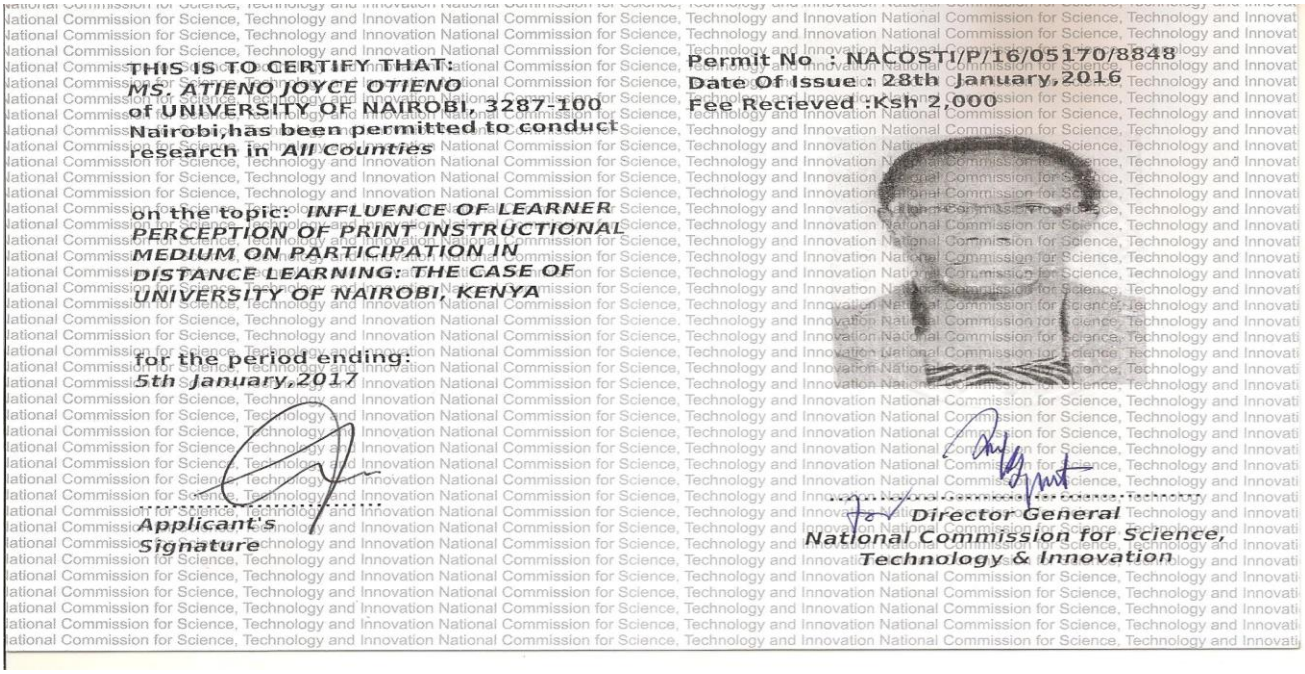
(5)Very good, (4) good, (3) satisfactory, (2) poor, (1) very poor.

Items for analysis content	5	4	3	2	1
• Currency of content (year of publication/ review of the study units) • Relevance (Does the content contain current issues in the discipline) • Breath (is the content broad enough by providing variety for learners?) • Depth (is the content detailed enough?) • Layout (is the design spread in manageable components?) • Clarity of objectives • Comprehensiveness of objectives (do the objectives cover the six levels – recall, comprehension, application, analysis, synthesis, and evaluation?) • Sequence- from simple to complex • Presence of learning activities • Presence of in-text questions • References for further reading • Provision of end of lecture evaluation					

APENDIX F: DOCUMENT ANALYSIS ON LEARNER PARTICIPATION

Learner Participation	Expected attendance	Actual attendance	Percent
Class attendance	174	172	98.8
Assignment collected	174	169	97.1
Participation in CATs	174	170	97.7
Participation in Examinations	174	171	98.2

APPENDIX G: RESEARCH PERMIT



THIS IS TO CERTIFY THAT:
MS. ATIENO JOYCE OTIENO
of UNIVERSITY OF NAIROBI, 3287-100
Nairobi,has been permitted to conduct
research in All Counties
on the topic: INFLUENCE OF LEARNER PERCEPTION OF PRINT INSTRUCTIONAL MEDIUM ON PARTICIPATION IN DISTANCE LEARNING: THE CASE OF UNIVERSITY OF NAIROBI, KENYA
for the period ending:
5th January,2017

Applicant's Signature

Permit No : NACOSTI/P/16/05170/8848
Date Of Issue : 28th January,2016
Fee Recieved :Ksh 2,000

Director General
National Commission for Science, Technology & Innovation

CONDITIONS

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

REPUBLIC OF KENYA

National Commission for Science, Technology and Innovation

RESEARCH CLEARANCE PERMIT

Serial No. A 7636

CONDITIONS: see back page

APPENDIX H: AUTHORIZATION LETTER

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: +254-20-2213471,
2241349, 310571, 2219420
Fax: +254-20-318245, 318249
Email: secretary@nacosti.go.ke
Website: www.nacosti.go.ke
When replying please quote

9th Floor, Utalii House
Uhuru Highway
P.O. Box 30623-00100
NAIROBI-KENYA

Ref: No. **NACOSTI/P/16/05170/8848**

Date: **28th January, 2016**

Atieno Joyce Otieno
University of Nairobi
P.O. Box 30197-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"Influence of learner perception of print instructional medium on participation in distance learning: The case of University of Nairobi, Kenya,"*** I am pleased to inform you that you have been authorized to undertake research in **all Counties** for a period ending **5th January, 2017.**

You are advised to report **the Vice Chancellor, University of Nairobi, the County Commissioners and the County Directors of Education, all Counties** before embarking on the research project.

On completion of the research, you are expected to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.

DR. S. K. LANGAT, OGW
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The Vice Chancellor
University of Nairobi.

The County Commissioners
All Counties.