

**// CONSTRUCTION AND EVALUATION OF THE EFFECTIVENESS OF
A NEEDS-BASED LEARNER SUPPORT SYSTEM: THE CASE OF THE
SCHOOL OF CONTINUING AND DISTANCE EDUCATION,
UNIVERSITY OF NAIROBI, KENYA //**

By

**UNIVERSITY OF NAIROBI
MUKIYU LIBRARY**

PATRICIA WATHATA MUCHIRI

**A THESIS SUBMITTED IN FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF
THE DEGREE OF DOCTOR OF PHILOSOPHY IN DISTANCE EDUCATION OF THE
UNIVERSITY OF NAIROBI**

2012

University of NAIROBI Library



0436173 9

DECLARATION

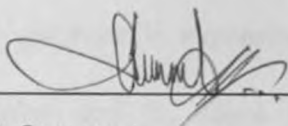
This thesis is my original work and has never been presented for any degree in any other University.



Muchiri, Patricia Wathata

L80/9287/ 2005

This thesis has been presented for examination with our approval as University Supervisors.



Prof. Elijah Omwenga

Associate Professor,

School of Computing and Informatics,

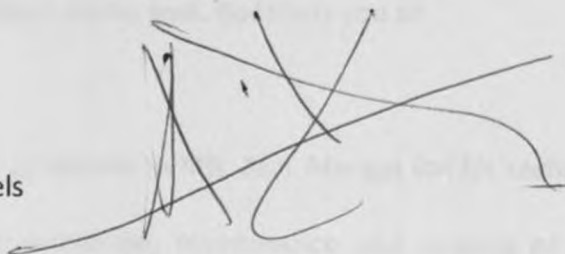
University of Nairobi

Prof. Arno Libotton

Professor,

Faculty of Education,

Free University of Brussels

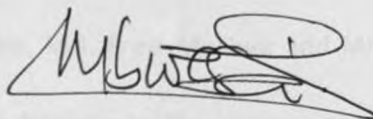


Dr. Joyce Mbwesa

Senior Lecturer,

School of Continuing and Distance Education

University of Nairobi



ACKNOWLEDGEMENT

This research work would not have been possible without the support and contributions of various individuals and groups. I am highly indebted to Vlaamse Interuniversitaire Raad (VLIR) for sponsoring my Doctor of philosophy (Ph.D) studies through the Kenya- Belgium Flemish Interuniversity Council in Cooperation with the University of Nairobi (VLIR-IUC-UoN) Programme.

Much gratitude is expressed to my supervisors Prof. Arno Libotton, Prof. Elijah Omwenga and Dr. Joyce Mbvesa for their invaluable guidance, support and constructive criticism during the entire period of the study. Thank you for urging me on even when I faltered along the journey.

I thank Dr. Harriet kidombo, Dr. Christopher Gakuu and Dr. Peter Keiyoro for your support, contribution and guidance in the course of the study. Dr. Guantai Mboroki and Prof. David Macharia, thank you for urging me on to complete my studies. You helped me to keep focus on my goal. God bless you all.

I also express much gratitude to MR. Paul Mungai for his technical assistance and dedication in the construction, maintenance and running of the online learner support system. May God bless you.

Lots of thanks also goes to MR. Weru Kanake, MR. Fred Mwikya and MR. Hudson Eboso for their assistance in data entry and analysis in the various phases of the

study and to MR. Moses Kimani for editing the work. MR. John Mbugua, MR. Ila Okech and MR. Evanson Mbuva, I appreciate your assistance in data collection in the various stages of the research. I also express thanks and gratitude to the distance learners in the School of Continuing and Distance Education for participating in the study.

Pastor Cicily Wangari, you stood with me in prayer and encouraged me throughout the study, I thank you, but to God be all the glory and honour. My husband and friend MR. John Kairu you supported and encouraged me throughout the study. Thank you for being there for me and for your patience even during my study trips to Brussels, Belgium . Last but not least, I give thanks to my family for support and prayers throughout my studies. God bless you all.

DEDICATION

This thesis is dedicated to my son, master Jerome Ndathe. May this research project inspire you to climb to the highest academic rung, and to all those who brave a long treacherous journey never losing sight of the prize.

ABSTRACT

The purpose of this study was to construct and evaluate a needs-based learner support system. The study sought to fulfill the following objectives: to analyse the expressed learner support needs of distance learners in the School of Continuing and Distance Education in the University of Nairobi based on gender, location, year of study, study environment and course of study; to construct a prototype learner support system based on the expressed learner support needs; and to evaluate the effectiveness of the learner support system in the delivery of learner support services to distance learners in the University of Nairobi. The study comprised Phase One and Phase Two. The Research Design of Phase One of the study was survey. The survey involved analysis of expressed learner support needs of distance learners in the School of Continuing and Distance Education, University of Nairobi in order to generate a prioritized list of learner support needs. Data analysis techniques consisted of non-parametric statistics to test hypotheses for significant differences. The findings in Phase One of the study indicated significant differences in expressed learner support needs of distance learners at the University of Nairobi based on gender, year of study, location, study environment and course of study. The research design for Phase Two of the study was experimental (randomized Pre-test- post-test control group design) whereby the learner support needs generated in Phase One of the study were used to construct a prototype online learner support system which was experimented in the field. Research instruments used for data collection were questionnaires. Data were analysed using Mann-Whitney U test, to test for significant differences between the experimental and control group. Significant differences were observed between the experimental and control group in student learning self-efficacy, student motivation and student satisfaction. Evaluation of the learner support system indicated that the system had good information quality and system usage characteristics. The respondents were satisfied with the learner support system. The study recommended that the University of Nairobi adopts the learner support system in order to enhance learner support for her distance learners; that the University of Nairobi should endeavour to provide time - and location-independent access to a complete array of learner support services to distance learners; that learner support services for distance learners be tailored and be responsive to the needs of the learners and that many student services should be completely reconceived to serve distance learners effectively.

TABLE OF CONTENT

TITLE	PAGE
DECLARATION.....	ii
ACKNOWLEDGEMENT	iii
DEDICATION.....	v
ABSTRACT	vi
LIST OF ACRONYMS AND ABBREVIATIONS.....	xviii
CHAPTER ONE: INTRODUCTION	1
1.1: Background to the Study.....	1
1.1.1: History of Distance Education	3
1.1.2: Learner Support Services in Distance Education.....	7
1.2: Statement of the Problem.....	10
1.3: Purpose of the Study	13
1.4: Objectives of the Study	13
1.5: Research Questions.....	14
1.6: Hypotheses for the Study.....	15
1.7: Significance of the Study	20
1.8: Scope of the Study.....	20
1.9: Basic Assumptions of the Study	21
1.10: Definition of Significant Terms Used in the Study	21
1.11: Organisation of the Study.....	25
CHAPTER TWO LITERATURE REVIEW	27
2.1: Introduction.....	27
2.2: Overview of Learner Support in Distance Education	28
2.3: Learner Support Service Needs	38
2.4: Expressed learner Support Needs Based on Year of Study.....	55
2.5: Selected Online Learner Support Systems	55
2.5.1: Athabasca University, Canada (www.athabascau.ca).....	56
2.5.2: Massey University, New Zealand (www.massey.ac.nz)	58

2.5.3: Pace University, New York (www.pace.edu).....	59
2.5.4: University of Bath, United Kingdom (www.bath.ac.uk).....	63
2.5.5: University of Chicago (www.uchicago.edu).....	67
2.5.6: University of Nairobi, Kenya (www.uonbi.ac.ke).....	71
2.5.7: School of Continuing and Distance Education, University of Nairobi:.....	73
2.6: Student Learning Self-efficacy.....	73
2.6.1: Self-efficacy Beliefs.....	74
2.6.2: Effects of Self-efficacy Beliefs.....	76
2.6.3: Self-efficacy and Human Performance.....	81
2.6.4: Gender and Student Self-efficacy.....	83
2.7: Student Motivation.....	85
2.7.1: Motivation of Distance Learners.....	87
2.7.2: Demographics and Student Motivation.....	89
2.7.3: Prior Levels of Knowledge.....	91
2.7.4: Study Conditions.....	91
2.7.5: Student Motivation and Academic Achievement.....	92
2.8: Student Satisfaction.....	95
2.8.1: Student Satisfaction and Student Support Services.....	98
2.9: Theoretical Framework for the Study.....	106
2.10: Conceptual Framework of the Study.....	110
2.11: Overall Summary of the Reviewed Literature.....	114
CHAPTER THREE: RESEARCH METHODOLOGY.....	119
3.1: Introduction.....	119
3.2: Research Methodology for Phase One of the Study.....	119
3.2.1: Research Design.....	120
3.2.2: Target Population.....	120
3.2.3: Sample and Sampling Procedure.....	122
3.2.3.1 Sample.....	122
3.2.3.2 Sampling Procedure.....	122
3.2.4: Pilot Study.....	123

3.2.5: Research Instrument	123
3.2.6: Instrument Validity.....	125
3.2.7: Instrument Reliability.....	125
3.2.8: Data Collection Procedure.....	126
3.2.9: Data Analysis Techniques.....	126
3.2.10: Operationalisation of Variables in Phase One of the Study.....	127
3.3 Research Methodology for Phase Two of the Study.....	131
3.3.1: Research Design	131
3.3.2: Target Population	132
3.3.3: Sample and Sampling Procedure.....	134
3.3.3.1: Sample	134
3.3.3.2: Sampling Procedure	134
3.3.4: Pilot Study.....	135
3.3.5: Research Instrument	136
3.3.6: Instrument Validity.....	137
3.3.7: Instrument Reliability	138
3.3.8: Data Collection Procedure.....	139
3.3.9: Data Analysis Techniques.....	140
3.3.10: Operationalisation of Variables in Phase Two of the Study.....	141

CHAPTER FOUR: DATA ANALYSIS, PRESENTATION AND INTERPRETATION (PHASE ONE)..... 143

4.1: Introduction.....	143
4.2: Response Rate	143
4.3: Background Data of the Respondents.....	143
4.3.1: Age of Respondents.....	144
4.3.2: Gender of Respondents.....	144
4.3.3: Employment Status (Job) of Respondents	144
4.3.4: Course of Study	145
4.3.5: Time for Study	145
4.3.6: Professional Qualifications.....	146

4.3.7: Year of study.....	147
4.3.8: Location / Residence of Respondents.....	148
4.3.9: Financial Dependants.....	148
4.3.10: Financial Responsibility for Children.....	149
4.3.11: Distribution of Students in Regional Centres.....	149
4.3.12: Distance of Residence from Centre.....	150
4.3.13: Means of Travel to Regional Centre.....	151
4.3.14: Group Discussion.....	151
4.3.15: Access to Various ICT Facilities.....	152
4.3.16: Place of Access to Various ICT Facilities.....	152
4.3.17: Length of Time Taken to Get Feedback on Assignments, CATs and Examinations.....	153
4.3.18: Separate Room for Private Study at Home.....	156
4.3.19: Support from Family Members for Academic Pursuit.....	157
4.3.20: Possession of an e-mail Address.....	158
4.4: Summary of Main Findings in Background Data.....	158
4.5: Learner Support Services Inventory.....	159
4.6: Tests for Significant Difference/Hypotheses Testing.....	161
4.6.1: Expressed Learner Support Needs Based on Gender.....	162
4.6.1.1: Need for Orientation Based on Gender.....	164
4.6.1.2: Need for Student Governance (being involved in college leadership) Based on Gender.....	165
4.6.2: Expressed Learner Support Needs Based on Year of Study.....	165
4.6.2.1: Need for Academic Advising Based on Year of Study.....	168
4.6.2.2: Need for Course Work Tutoring Based on Year of Study.....	169
4.6.2.3: Need for Information About Examinations Based on Year of Study.....	170
4.6.2.4: Need for Communication with Course Tutors Based on Year of Study.....	170
4.6.2.5: Need for Access to Study Groups Based on Year of Study.....	171
4.6.2.6: Need for Communication with Other Distance Learners Based on Year of Study.....	172
4.6.2.7: Need for Communication with Faculty Staff Based on Year of Study.....	173

4.6.2.8: Need for Communication with Learner Support Staff (regional centre staff) based on Year of Study.....	173
4.6.2.9: Need for Guidance on How to Get Financial Aid Based on Year of Study	174
4.6.2.10: Need for Orientation Based on Year of Study.....	175
4.6.2.11: Need for Involvement in Student Organisations (such as S.O.N.U.) Based on Year of Study	175
4.6.3: Expressed Learner Support Needs Based on Location of Distance Learner (rural or urban).....	176
4.6.3.1: Need for Information About Course Registration Based on Location of Distance Learner.....	178
4.6.3.2: Need for Communication with Learner Support Staff (regional centre staff) Based on Location of Distance Learner	179
4.6.3.3: Need for Orientation Based on Location of Distance Learner.....	180
4.6.4: Expressed Learner Support Needs Based on Study Environment	180
4.6.4.1: Expressed Learner Support Needs Based on Support from Family Members for Academic Pursuit.	181
4.6.4.2: Need for Academic Advising Based on Support from Family Members for Academic Pursuit.....	184
4.6.4.3: Need for Coursework Tutoring Based on Support from Family Members for Academic Pursuit.....	185
4.6.4.4: Need for Information about Assignments Based on Support from Family Members for Academic Pursuit.....	185
4.6.4.5: Need for Access to Course Tutors Based on Support from Family Members for Academic Pursuit.....	186
4.6.4.6: Need for Communication with Learner Support Staff/Regional Centre Staff Based on Support from Family Members for Academic Pursuit.....	187
4.6.4.7: Need for Orientation Based on Support from Family Members for Academic Pursuit.....	187
4.6.5: Expressed Learner Support Needs Based on Course of Study.....	188
4.6.5.1: Need for Access to Personal Student Records/Personal Files Based on Course of Study.....	190

4.6.5.2: Need for Guidance on How to get Financial Aid Based on Course of Study.	191
4.7: Summary of Main Findings in the Tests of Significance in Phase One of the Study .	191

CHAPTER FIVE: CONTENT DEVELOPMENT AND IMPLEMENTATION OF THE ONLINE LEARNER SUPPORT SYSTEM 194

5.1: Introduction.....	194
5.2: Clustering Data for Content Development.....	195
5.3: Content Development	199
5.4: Selection and Organisation of Content	200
5.4.1: Academic Advising and Communication	200
5.4.2: Student Communities.....	201
5.4.3: Administrative Services and Orientation	202
5.4.4: Personal and Social Services.....	203
5.5: Summary of Content and Sources.....	205
5.6: Features of the Online Learner Support System.....	208
5.7: Programming of the Learner Support System.....	210
5.8: Debugging of the Online Learner Support System.....	211
5.9: Randomization.....	211
5.10: Registration of Students and Testing of the Online Learner Support System ..	212
5.11: The Experimental Design.....	213

CHAPTER SIX: DATA ANALYSIS, PRESENTATION AND INTERPRETATION (PHASE TWO)..... 214

6.1: Introduction.....	214
6.2: Response Rate	214
6.3: Mortality Rate.....	215
6.4: Pre-test	215
6.5: Post-test.....	216
6.5.1: Student Learning Self-efficacy.....	216
6.5.2: Student Motivation	218

6.5.3: Student Satisfaction	220
6.6: Summary of Main Findings in the Tests of Significance	222
6.7: Evaluation of the Online Learner Support System	224
6.8: Applicability of Content Areas of the Learner Support System to Distance Learners	226
6.9: Overall Satisfaction with the Learner Support System	228
6.10: Extent to Which the Learner Support System Meets the Expressed Learner Support Needs of the Respondents.	228
6.11: Content of the Learner Support System that Should be Removed from the System	228
6.12: Content that Should be Added to the Learner Support System to Improve it Further	229
6.13: Suggestions for Improvement of the Learner Support System	229
CHAPTER SEVEN: SUMMARY OF FINDINGS, DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS	232
7.1: Introduction	232
7.2: Summary of Findings	232
7.2.1: Phase One of the Study	232
7.2.2: Phase Two of the Study	238
7.2.2.1: Pre-test	238
7.2.2.2: Post-test	239
7.2.2.3: Evaluation of the Online Learner Support System	240
7.3: Discussion	242
7.3.1: Expressed Learner Support Needs Based on Course of Study	251
7.3.2 :Evaluation of the Online Learner Support System	254
7.4: Conclusions	255
7.5: Limitations of the Study	259
7.6: Recommendations	260
7.7: Contribution to Knowledge	263
7.8: Policy Implications	264

7.9: Suggestions for Further Research 265

REFERENCES..... 267

APPENDIX A: LEARNER NEEDS ASSESSMENT QUESTIONNAIRE 285

APPENDIX B: STUDENT MOTIVATION, SATISFACTION AND LEARNING SELF EFFICACY
QUESTIONNAIRE (SMSLSEQ) 291

APPENDIX C: STUDENT MOTIVATION, SATISFACTION AND LEARNING SELF EFFICACY
QUESTIONNAIRE (SMSLSEQ) 296

APPENDIX D : TABLES FOR DATA ANALYSIS 303

APPENDIX E: SCREEN SHOTS OF THE LEARNER SUPPORT SYSTEM 351

List of Figures

FIGURE	PAGE
Figure 1: Conceptual Framework of the Study.....	112
Figure 2: The Randomized Pre- test--Post-test Control Group Design.	132
Figure 3: Dendrogram Resulting from Clustering.....	197
Figure 4: Screenshot of the Content Pages of Academic Advising and Communication	201
Figure 5: Screenshot of the Content Pages of Student Communities.....	202
Figure 6: Screenshot of the Content Pages of Orientation and Administrative Services	203
Figure 7: Screenshot of the Content Pages of Personal and Social Services	205
Figure 8: The Randomized Pre-test-- Post-test control group design.....	213
.....	147
.....	148
.....	152
.....	154
.....	155
.....	156
.....	161
.....	167
.....	167
.....	177

List of Tables

TABLE	PAGE
Table 1.1: Linkage between Research Objectives, Questions and Hypotheses in Phase One of the Study.....	17
Table 1.2 Linkage between Research Objectives, Questions and Hypotheses in Phase Two of the Study.....	19
Table 3.1 Sampling Procedure.....	123
Table 3.2: Table of Operationalisation of Variables in Phase One of the Study	128
Table 3.3 Sampling procedure.....	135
Table 3.4 : Table of Operationalisation of Variables in Phase Two of the Study	142
Table 4.1: Time for Study, Frequencies and Percentages	145
Table 4.2: Year of Study, Frequencies and Percentages	147
Table 4.3: Regional Centre, Frequencies and Percentages.....	149
Table 4.4: Distance of Respondents from the Regional Centre, Frequencies and Percentages.	150
Table 4.5: Time Taken to Get Feedback on Assignments, Frequencies and Percentages	154
Table 4.6: Time Taken to Get Feedback on CATS, Frequencies and Percentages	155
Table 4.7: Time Taken to Get Feedback on Examinations, Frequencies and Percentages	156
Table 4.8 learner Support Services and Means of Perceived Need	160
Table 4.9: Gender, expressed learner Support Need, Fisher’s Exact Test (Exact sign.(2 sided) and Exact sign.[1 sided])	163
Table 4.10: Year of Study, Expressed Learner Support Need and Pearson Chi-square (value, degrees of freedom (df) and Asymptotic Significance).....	167
Table 4.11: Location/residence of Distance Learner (rural or urban), Expressed Learner Support Need and Fisher’s Exact Test (Exact sign.(2 sided) and Exact sign.[1 sided])	177

Table 4.12: Support from Family Members for Academic Pursuit, Expressed Learner Support Needs, Fisher’s Exact Test (Exact sign.(2 sided) and Exact sign.[1 sided])	183
Table 4.13: Course of Study, Expressed Learner Support Needs, Fisher’s Exact Test (Exact sign.(2 sided) and Exact sign.[1 sided])	189
Table 5.1: Suite, Sub-category, Content and Sources	206
Table 5.2: Number, Plugin and Features of the Online Learner Support System	209
Table 6.1: Sub-items on Student Learning Self-efficacy, Mann-Whitney U and Asymptotic Significance (2-sided)	217
Table 6.2: Sub-items on Student Motivation, Mann-Whitney U and Asymptotic Significance (2-sided).....	219
Table 6.3: Sub-items on Student Satisfaction, Mann-Whitney U and Asymptotic Significance (2-sided).....	221
Table 6.4: Evaluation of the Online Learner Support System	225
Table 6.5: Applicability of Content Areas of the Learner Support System.	227
Table 7.1: Hypothesis, Status, and Significant Difference (learner support need, data interpretation).....	235
Table 7.2: Hypothesis, Status, and Significant Difference.....	240

LIST OF ACRONYMS AND ABBREVIATIONS

- ADHD – Attention Deficit Hyperactivity Disorder
- AIDS – Acquired Immunodeficiency Syndrome
- AMREF – African Medical Research Institute
- ANOVA – Analysis of Variance
- APA – American Psychological Association
- ASAP – Academic Study Skills Assessment Programme
- ASD – Access to Students with Disabilities
- AU – Athabasca University
- AUSI – Australian Universities Study Institute
- B.Ed (Arts) – Bachelor of Education (Arts)
- B.Ed (Science) – Bachelor of Education (Science)
- CATs – Continuous Assessment Tests
- Crow – Counselling Resources on the Web
- CV – Curriculum Vitae
- FAQs – Frequently Asked Questions
- HIV – Human Immunodeficiency Virus
- ICT- Information and Communication Technology
- IHEs – Institutions of Higher Education
- MSLQ – Motivated Strategies for Learning Questionnaire
- NCU – North Carolina State University
- NYC – New York City
- ODL – Open and Distance Learning

OWRC – Online Wellness Resource Centre

P.G.D.E. – Post Graduate Diploma in Education

P.G.D.S.T.I – Post Graduate Diploma in Sexually Transmitted Infections

P1 – Primary Teacher 1

Ph.D – Doctor of Philosophy

PLAR – Prior Learning Assessment and Recognition

S.O.N.U – Student Organisation of Nairobi University

S.T.I – Sexually Transmitted Infections

SCC- Student Care Centre

SCS – Student Counselling Service

SPSS – Statistical Package for Social Sciences

SSI – Student Satisfaction Inventory

U.S.A – United States of America

UNISA - University of South Africa

URL – Uniform Resources Locator

WWW – World Wide Web

WAN – Wide Area Network

WCET – Western Cooperative for Educational Telecommunications

WCLSRN – West Country Learning and Skills Research Network

WICHE – Western Interstate Commission for Higher Education

CHAPTER ONE

INTRODUCTION

1.1: Background to the Study

Distance Education can be defined as a mode of education where the teacher and the learner are separated in space and time most of or all the time and where the separation is bridged by a two-way communication system through the use of one or more appropriate media. However, the following descriptive definition of distance education seems to be generally recognized: Distance education is a form of education characterized by quasi-permanent separation of learner and teacher throughout the length of the learning process; the influence of an educational organisation; the use of technical media; the provision of two way communication and the quasi-permanent absence of the learning group throughout the length of the learning process (Keegan,1990)

Three different modes of operation under which distance education can operate are identified by Rumble (1986), including Sole responsibility: where the institution and its administration have distance education as their sole responsibility and purpose, such as with the Open University in the United Kingdom. Administration and faculty focus on distance education teaching methods and student needs, and are not controlled by other programmes or purposes. Development of teaching techniques and innovative practices are seen as primary benefits.

Mixed Mode: Institutions where both distance and conventional education occur, such as the University of New England in Australia and most traditional American universities. Organisation may fall under a single department with University administration being responsible, several departments may offer distance education with each department administering its own programme, or a distinct unit may offer distance education in a variety of areas and be solely devoted to this purpose. The mixed mode approach may have the advantage of being able to draw upon the resources of the resident faculty and services, but a disadvantage is that some faculty and administrators may consider distance education to be less effective and less important than campus-based instruction (Rumble, 1986).

Consortium: A group of institutions or distance education programmes devoted to distance education as a means of broadening or sharing distance education programming. Students may register with their own institution and use centrally developed learning materials with credits being easily transferable. Though this segment of distance education has had fast growth, it has also experienced administrative problems when it comes to collaboration between universities and conflicts in philosophical differences, teaching resources, and cost-sharing. The University of Mid-America failed in its attempts at a consortium but efforts such as the Mind Extension University are viewed as a success (Verduin and Clark, 1991).

How distance education is best defined or differentiated from other educational approaches has been the subject of much debate. From the perspective of many

educational technologists, distance education is 'inexorably linked to the technology' (Garrison, 1987) and seems to be viewed as different from other forms of education, a factor which may contribute to course development and acceptance problems.

1.1.1: History of Distance Education

The history of distance education could be tracked back to the early 1700s in the form of correspondence education, but technology-based distance education might be best linked to the introduction of audio visual devices into the schools in the 1900s.

The first tentative step to enroll students in the University programme offered by distance mode were made by the University of London which from 1858 allowed qualified candidates to be admitted for degree studies without the necessity of following a course of instruction at one of its approved colleges. The first steps to provide correspondence tuition to 'external' students was taken by universities in USA such as Illinois State University and University of Chicago. This was later copied by other institutions through the development of correspondence directorates at Indian universities, external studies in Australian University and Anglophone African universities, and independent studies at United States Universities.

The 1970s witnessed another development in Distance Education by the establishment of what is currently known as open learning institutions by the British Open University. This brought about distance education for home-based students

based on a combination of correspondence tuition, face-to-face tutorials and the use of broadcast media as well as print, within the framework of a publicly funded institution offering its degrees. Today we have 'mega' open universities some with hundreds of thousands of students enrolled at a given time such as the Indira Gandhi Open University, the Open University of United Kingdom, University of South Africa (UNISA) and the African Virtual University which offers courses by Internet (WWW).

With the advent of the new communication revolution, the world is witnessing an expansion in distance education. The information and communication technology revolution has enabled academic institutions to provide a flexible and more open learning environment for students. The convergence of new information telecommunications, computers, satellites and fiber optic technologies is making it easier for institutions to implement distance education (Harasim, 1993). Indications are that distance education in higher education will continue to grow (Hanna, 1998; Rahm and Reed, 1998). The World Wide Web has emerged as a locus of innovative instructional modalities in higher education.

Higher education in Africa is facing a critical challenge to meet new demands for the 21st century, with its ever increasing population growth (Osei and Fikile, 2000). This means that those seeking access to education at all levels will increase. In spite of this fact, educational institutions in Africa are not expanding enough to accommodate the increasing number of students who will be seeking access to higher education. Africans need an educational environment that would make it

more responsive to challenges confronting the continent. Alternative ways of providing access to higher education via distance education need to be fully explored. Distance education makes it possible for students anywhere who have internet and web connections to enroll for online courses (Osei and Fikile , 2000). Even though the application and use of information technology in education in Sub-Saharan Africa has been severely underutilized, over the past few years, there has been tremendous growth in that respect.

Distance education could be used to make it possible for African secondary school graduates, only a fraction of whom can be accommodated in African tertiary institutions, to enroll directly and without leaving their homes, in online colleges and universities on the continent and around the world (Osei and Fikile, 2000). This type of education offers several advantages over the traditional education system. These advantages include virtual access to faculty in higher institutions around the world; introduction of new interactive pedagogical techniques such as more hands-on learning opportunities, independent research, less reliance on rote memorization; and the creation of virtual institutions and linkages where resources could be shared by people and organisations in physically unconnected places.

In Kenya, the history of distance education dates back to 1949 when the Asquith Commission Report on new University challenges in the British colonies recommended the creation of a centre for adult education in keeping with British

traditions. This saw the establishment of the College of Social Studies founded at Kikuyu in 1961 as an independent centre for liberal education.

At independence there was a large number of untrained Primary Teachers most of whom had only primary level education. The University of Nairobi in conjunction with the Ministry of Education provided a two-year high school education to about 3,000 primary school teachers by distance mode, between 1967 and 1980. Between 1967 and 1982, 3,000 adult education untrained teachers got trained by distance mode by the University of Nairobi, Institute of Adult Studies. The main instructional mode was through the print media and evening radio classes.

From 1986, the University of Nairobi launched degree level distance learning programmes in education (B.Ed. Arts). In 2003 a Bachelor of Education (Science) was also launched. A post graduate diploma course in Sexually Transmitted Infections (STI) offered by the School of Continuing and Distance Education and the School of Health Sciences was launched in 1999 to train medical doctors by distance mode. The School of Continuing and Distance Education also has a Post-Graduate Diploma in Education offered by distance mode.

There has also been other distance education initiatives in Kenya by other institutions of higher education such as the African Virtual University which is a World Bank sponsored programme offering University courses mainly from United States of America (USA) Universities, electronically. The Ministry of Agriculture has also

developed distance education programmes for farmers and extension workers mainly through booklets supported by radio broadcast. The African Medical Research Foundation (AMREF) and the Ministry of Health also trains the health personnel through distance education. The Kenya Institute of Special Education also launched distance education to train teachers in special and regular schools in 2002. Most public and private universities have also started distance education programmes mainly using print media.

The objectives of the distance learning programmes include, but are not limited to, providing learning opportunities for those aspiring Kenyans who cannot secure places in the existing internal faculties of the public universities hence provide high level manpower. It also has the objective of providing an opportunity for adults to learn at their own pace as opposed to the conventional systems that ignore the learners' individual differences and provide an opportunity to maximize the use of the limited educational resources both human and material by making University education available beyond the lecture halls.

1.1.2: Learner Support Services in Distance Education

Several international universities such as University of South Africa (UNISA), Australian Universities Study Institute (AUSI) and Indira Gandhi Open University (IGOU) and others have entered into collaborative arrangements with local higher education institutions to offer education by distance mode. But as Mills, (2003) puts it:

Those institutions which are successful in the future may find that it is the quality of their learner support services which provides the competitive edge as more and more learning materials become available from a wide range of providers. Institutional managers will continue to regard learner support as an optional 'add-on' at their peril (p.112).

An essential aspect of any distance education project is the support services available to the students (Abate, 1999; Gibson and Gibson, 1997; Holmberg, 1989; Hudspeth and Brey, 1986; Kovel-Jarboe, 1997; Moore and Kearsley, 1996; Peters, 1998). Mills and Ross (1993) state that, to ensure that the quality of a distance learning environment is maintained, student support for learners must be provided.

Sewart (1992) underscores the importance of the inclusion of learner support resources. He states that students will not easily achieve success in a distance learning environment if they are not provided with a student support system. 'The success or failure of student support will be judged on a number of performance indicators. The most simple and obvious of these is probably the rate of success of the students' (p. 8).

An almost infinite variation of student support systems exists in distance education (Sewart, 1992). However, student support services for distance learners are often extremely underdeveloped (Peters, 1998). Chute, Thompson and Hancock (1999) cite insufficient student support services as 'a common mistake that can sabotage distance education implementation efforts' (p. 192). Hardy (1999) explains that:

The institution may not always demonstrate an understanding of the needs of distance learning students. Many institutions fail to provide support that is critical to the success of the students in distance

education settings...This type of service is often overlooked because it is often taken for granted in the face-to-face, traditional, on-campus environment" (p. 50)

Friedman (1981) commented at an early stage of modern distance education that the emphasis within the field on service to students was unusual for an academic institution (p. 123). However, while there has subsequently appeared a substantial literature on methodologies relating to the production of learning materials and resources for open and distance learning (ODL), relatively little has been written about the planning and management of student support (Tait, 2000).

No one can understand the difficulties that distance learners encounter better than the learners themselves. Yet in many institutions offering distance education programmes, learner support is based on top-down provision rather than analysis of learners' needs (Tait, 1995; Sache and Mark, 2000; Scalzo et al., 2000). Sewart (1987) clearly stated that:

"It does not seem unfair to suggest that there is an overwhelming tendency within the field to offer systems from the view point of the institution teaching at a distance rather than from the viewpoint of the student learning at a distance". (p.72)

Traditionally, education has represented a provider-led rather than a customer-led activity and the central question of identifying student needs was often neglected. In the past when distance education was viewed as a product, rather than a process, and the quality of learning was identified as the quality of learning materials, institutions were able to operate successfully with the provider-led mindset.

However, times have changed, and today's distance learners are much more sophisticated, diversified, and demanding than ever, and they expect a lot more than well-designed learning materials. Besides that, the competition among distance education providers is such that if an institution fails to satisfy the students, it will lose them to one of its competitors. Understanding learners is critical in providing appropriate support services for the survival of distance education institutions nowadays (Ji-Yeon, 2000).

Students enrolled in distance learning challenge the traditional model of teaching and learning as well as service delivery. Administrators and staff are being asked to, "explore strategies that respond to the individual needs of students" in a new learning environment (Van Dusen, 1997, In Saelens, 2004). Krauth and Carbajal, (In Saelens, 2004), state that, "while the importance of support services is recognized, colleges and universities are still needing help to "envision what services to provide and how to design them"

This research study intended to fill that gap by analyzing learner support needs of distance learners of the University of Nairobi and then designing a prototype online learner support system based on the learner needs.

1.2: Statement of the Problem

At the University of Nairobi, distance education is offered through the School of Continuing and Distance Education in the College of Education and External Studies.

However, a Centre for Open and Distance Learning has now been established to coordinate open and distance education for the whole University and will take over management from the School of Continuing and Distance Education.

The School's legal establishment in the University of Nairobi followed the acceptance of the statutes governing it by the University Council in September 1985. The first batch of 592 adult students was admitted for a Bachelor of Education Degree Programme in 1986/87 academic year. Since then, student enrolment has expanded and so has the need for increased learner support services. The School offers learner support service through regional centres known as Extra-Mural Centres. Originally these Extra-Mural Centres were situated in the headquarters of six provinces in Kenya, in Nairobi, Mombasa, Nakuru, Kisumu, Nyeri, and Kakamega. However, more Extra-Mural Centres have been opened across the country, in Garissa, Meru, Thika, Kapenguria and Kisii to serve the ever increasing number of students. These Extra-Mural Centres serve to provide opportunities for tutors and learners to meet and have access to various student-support services. They are also distribution points for course materials and student assignments. However, these are not the core functions of the Extra-Mural Centres. The centres have students who study a range of courses from certificate to doctorate level which are mostly evening and weekend courses. These courses are also offered in various sub-centres in the regions. Therefore the personnel in the centres are neither specifically charged with learner support as their core function nor trained as learner support service providers.

The School holds face-to-face residential sessions for the Bachelor of Education students and Bachelor of Science students (in conjunction with the School of Physical Sciences) during school holidays, where the students attend lectures for tuition, revision and examination. After the residential sessions, students carry away course materials and assignments. The completed assignments are later returned either directly or through the Extra-Mural Centres for marking and recording.

Regional meetings are held once a month with the students in the respective regions to share views with the Resident Lecturer from the regional centre and visiting academic staff from the School. These meetings are seen as an integral part of learner support. The students are usually away from the University Libraries and usually out of reach of the vital library books to supplement course units.

The critical role of the College of Education and External Studies in providing support services through the Extra-Mural Centres is what differentiates the college from other colleges in the University of Nairobi. But how do we know that effective learner support services are being offered? Are important questions being asked to students about their needs and concerns? Are we listening to their responses? Are these needs based on gender, location, year of study, study environment or course of study? Which model of learner support services can be developed in response to the learner support needs? These were pertinent issues that were addressed in this study.

1.3: Purpose of the Study

The purpose of this study was to construct and evaluate a needs-based learner support system. The study was divided into two phases. Phase One was concerned with analysis of learner needs, while Phase Two constructed an online prototype learner support system and assessed its effectiveness in the delivery of learner support services to distance learners in the University of Nairobi.

1.4: Objectives of the Study

The study sought to fulfill the following objectives:

Phase One

- i. To analyse the expressed learner support needs of distance learners in the School of Continuing and Distance Education in the University of Nairobi
- ii. To analyse the expressed learner support needs of distance learners in the School of Continuing and Distance Education in the University of Nairobi based on gender.
- iii. To analyse the expressed learner support needs of distance learners in the School of Continuing and Distance Education in the University of Nairobi based on location.
- iv. To analyse the expressed learner support needs of distance learners in the School of Continuing and Distance Education in the University of Nairobi based on year of study.

- v. To analyse the expressed learner support needs of distance learners in the School of Continuing and Distance Education in the University of Nairobi based on study environment.
- vi. To analyse the expressed learner support needs of distance learners in the School of Continuing and Distance Education in the University of Nairobi based on course of study.

Phase Two

- vii. To construct a prototype online learner support system based on the expressed learner support needs.
- viii. To evaluate the effectiveness of the online learner support system in the delivery of learner support services to distance learners in the University of Nairobi.

1.5: Research Questions

The study was guided by the following research questions:

Phase One

- i. What are the expressed learner support needs of distance learners in the School of Continuing and Distance Education in the University of Nairobi?
- ii. How do the expressed learner support needs relate to gender of distance learners in the School of Continuing and Distance Education in the University of Nairobi?

- iii. How do the expressed learner support needs relate to year of study of distance learners in the School of Continuing and Distance Education in the University of Nairobi?
- iv. How do the expressed learner support needs relate to location of distance learners in the School of Continuing and Distance Education in the University of Nairobi?
- v. How do the expressed learner support needs relate to study environment of distance learners in the School of Continuing and Distance Education in the University of Nairobi?
- vi. How do the expressed learner support needs relate to course of study of distance learners in the School of Continuing and Distance Education in the University of Nairobi?

Phase Two

- vii. How can a prototype online learner support system be constructed in response to the expressed learner support needs?
- viii. How effective is the online learner support system in the delivery of learner support services to distance learners in the University of Nairobi?

1.6: Hypotheses for the Study

The following hypotheses were formulated:

Phase One

- i. There is no significant difference in distance learners expressed support needs based on gender.
- ii. There is no significant difference in distance learners expressed support needs based on year of study.
- iii. There is no significant difference in distance learners expressed support needs based on location.
- iv. There is no significant difference in distance learners expressed support needs based on study environment.
- v. There is no significant difference in distance learners expressed support needs based on course of study.

Phase Two

- vi. There is no significant difference in student learning self-efficacy between the experimental group and the control group.
- vii. There is no significant difference in student motivation between the experimental group and the control group.
- viii. There is no significant difference in student satisfaction between the experimental group and the control group.

The linkage between the research objectives, research questions and hypotheses is illustrated in Table 1.1 and Table 1.2.

Table 1.1: Linkage between Research Objectives, Questions and Hypotheses in Phase One of the Study.

Research objectives	Research questions	Hypotheses
1 To analyse the expressed learner support needs of distance learners in the School of Continuing and Distance Education in the University of Nairobi.	What are the expressed learner support needs of distance learners in the School of Continuing and Distance Education in the University of Nairobi?	
2 To analyse the expressed learner support needs of distance learners in the School of Continuing and Distance Education in the University of Nairobi based on gender.	How do the expressed learner support needs relate to gender of distance learners in the School of Continuing and Distance Education in the University of Nairobi?	There is no significant difference in distance learners expressed support needs based on gender.
3 To analyse the expressed learner support needs of distance learners in the School of Continuing and Distance Education in the University of Nairobi based on location.	How do the expressed learner support needs relate to location of distance learners in the School of Continuing and Distance Education in the University of Nairobi?	There is no significant difference in distance learners expressed support needs based on location.

Table 1.1 continued

Research objectives	Research questions	Hypothesis
4 To analyse the expressed learner support needs of distance learners in the School of Continuing and Distance Education in the University of Nairobi based on year of study.	How do the expressed learner support needs relate to year of study of distance learners in the School of Continuing and Distance Education in the University of Nairobi?	There is no significant difference in distance learners expressed support needs based on year of study
5 To analyse the expressed learner support needs of distance learners in the School of Continuing and Distance Education in the University of Nairobi based on study environment.	How do the expressed learner support needs relate to study environment of distance learners in the School of Continuing and Distance Education in the University of Nairobi?	There is no significant difference in distance learners expressed support needs based on study environment.
6 To analyse the expressed learner support needs of distance learners in the School of Continuing and Distance Education in the University of Nairobi based on course of study.	How do the expressed learner support needs relate to course of study of distance learners in the School of Continuing and Distance Education in the University of Nairobi?	There is no significant difference in distance learners expressed support needs based on course of study.

Table 1.2 Linkage between Research Objectives, Questions and Hypotheses in Phase Two of the Study.

Research Objectives	Research Questions	Hypotheses
<p>1 To construct a prototype online learner support system based on the expressed learner support needs.</p>	<p>How can a prototype online learner support system be constructed in response to the expressed learner support needs?</p>	
<p>2 To evaluate the effectiveness of the online learner support system in the delivery of learner support services to distance learners in the University of Nairobi.</p>	<p>How effective is the online learner support system in the delivery of learner support services to distance learners in the University of Nairobi?</p>	<p>There is no significant difference in student learning self-efficacy between the experimental group and the control group.</p> <p>There is no significant difference in student motivation between the experimental group and the control group.</p> <p>There is no significant difference in student satisfaction between the experimental group and the control group.</p>

1.7: Significance of the Study

This study adds to previous research on learner support services for distance learners in probing the issue of what services are needed and by whom. As financial resources become more competitive, institutions of higher learning are forced to make difficult decisions concerning learner support services. As current services need enhancing and technology advances, the institutions' efforts to address the needs of distance learners become even more complex. This study will add to the existing body of knowledge about learner support services and how institutions of higher learning could best meet the learner support service needs of distance learners.

The online learner support system can be adapted for use in other locations keeping in mind Sewart's (1992) guidance that support services for distance learners must be shaped within the frame of reference of a large number of sometimes differing needs and that they are dependent on both the educational ethos of the institution and on factors such as student dispersion, resources, curriculum and delivery system. The study will be useful to the University of Nairobi by providing an online learner support system to meet learner support needs of distance learners. This will help improve learner support services for distance learners and eventually help to improve the general quality of her distance education programmes.

1.8: Scope of the Study

The study was conducted in the University of Nairobi only, College of Education and External Studies, School of Continuing and Distance Education . The study was

basically concerned with the analysis of learner support needs and the consequent construction and evaluation of the online learner support system.

1.9: Basic Assumptions of the Study

The basic assumptions of the study were that:

- i. Learner support services must respond to the needs of distance learners.
- ii. Learner support needs are based on gender, year of study, location, study environment and course of study of the distance learners.
- iii. Provision of learner support services affects student learning self-efficacy, motivation and satisfaction.

1.10: Definition of Significant Terms Used in the Study

The following terms are defined as used in the context of the study:

Course of study: Refers to type course undertaken by distance learners, that is B.Ed (Arts), B.Ed (Science), P.G.D.E. or P.G.D.S.T.I.

Course material: These usually comprise electronic materials and printed booklets which contain lecture notes that are given to distance learners to use for study when they are away from the University.

Distance learners: These are learners enrolled for studies away from the physical University premises using course materials and face-to-face tuition during school holidays.

Effectiveness: Refers to how well the learner support system works to give the desired results. In this case the effectiveness is assessed in terms of student learning self-efficacy, motivation and satisfaction

Extra-mural centres: Refer to regional centres established to offer studies and support away from the main University buildings. At the time of this research, these Centres were eleven in number and were established in various provincial and district headquarters in Kenya.

Gender: Refers to the sex of the distance learners, that is, male or female.

Group: This is a term used to refer to a semester in the year of study of distance learners pursuing B.Ed. (Science). Each year of study has two groups. Therefore Year One has Group One and Group Two; Year Two has Group Three and Group Four; and Year Three has Group Five and Group Six. Group is equivalent to 'Part' in B.Ed. (Arts).

Indicator: This is a term used in the operationalisation of research variables to refer to the ways in which the variables were unpackaged in this study to make them more concrete and to ease their measurement in the field.

Interaction: Refers to how the learners act together or co-operatively especially so as to communicate with each other. This, for instance, could be through emails or telephone calls or even meetings.

Internal faculties: Refer to the sections of the University which offer education to on-campus students.

Learner support services: Includes the many forms of assistance that are intended to both remove barriers (situational, institutional, dispositional and informational) and promote academic success.

Location: Refers to the place of residence/home district of the learner and if it is rural or urban.

Part: This is a term used to refer to a semester in the year of study of distance learners in B.Ed. (Arts). Each year has two parts. Therefore Year One has Part One and Part Two; Year Two has Part Three and Part Four; and Year Three has Part Five and Part Six

Performance: Refers to the academic output of learners in a given programme of study.

Regional meeting: Refers to meetings organized in the various regional centres, when the learners are away from the University, that bring together the learners and academic staff from the regional centre and the School to discuss various issues of the learners and to disseminate information from the School.

Resident lecturer: Refers to an academic member of staff attached to the regional centre to teach and coordinate academic activities in the region.

Residential session: This is a period of time when distance learners leave their work places and residence to go to the University for face-to-face tuition, revision and examination. During that period, they are accommodated in the University hostels or other boarding facilities. This occurs thrice in a year during the April, August and December school holidays.

School of Continuing and Distance Education: Refers to a section of the College of Education and External Studies charged with the responsibility of offering distance studies and coordinating various academic activities away from the main University buildings.

Student learning self-efficacy: Refers to a student's expectations of success in relation to the completion of specific academic tasks.

Student motivation: This is the student's drive and resilience in pursuing and excelling in distance education.

Student Satisfaction: This is a state felt by a student whose support needs have been met or exceeded.

Study environment: These are the surrounding conditions under which the learners study at home. These conditions include availability of time for study, having a separate room for study, support from the family and group discussions.

Sub-centre: Refers to various places in the regions served by the respective Extra-Mural Centres where meetings and classes are held for learners who live far away from the extra-mural centre.

Year of study: This refers to level of study of the distance learners. The distance learners take three years to complete their courses. There are referred to as year 1, year 2 and year 3 in the study.

1.11: Organisation of the Study

Chapter one is the introduction of the whole study. Chapter Two covers literature review for the study. Chapter Three is research methodology for both Phase One and Two of the study. Chapter Four covers data Analysis, presentation and interpretation for Phase One of the study. This is followed by Chapter Five that covers content

development and implementation of the online learner support system. Chapter Six covers data analysis, presentation and interpretation for Phase Two of the study. Chapter Seven is the final chapter that covers summary of findings, discussion, conclusions and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1: Introduction

This chapter covers literature review for the whole of the study. The literature review is organised under the following subheadings: overview of learner support in distance education, learner support service needs, expressed learner support needs based on year of study, selected online learner support systems, student learning self-efficacy, student motivation, student satisfaction, theoretical framework, conceptual framework of the study and overall summary of the reviewed literature. The researcher concentrated on distance learning in higher education. The literature search was carried out through review of relevant theses and texts on learner support of distance learners, student learning self-efficacy, student motivation and student satisfaction. Other content was also obtained online with specific focus on higher learning. The literature basically highlights learner support in distance education and specifically learner support needs from previous research. The literature reviewed also relates to description of other existing learner support systems. Content development for the online learner support system in phase two of the study was designed in line with these learner support systems. The literature review also covers student learning self-efficacy, student motivation and student satisfaction. These variables were used in effectiveness assessment of the online learner support system. Literature on selected online learner support systems was accessed through the various universities websites.

The last part of the chapter covers summary of the reviewed literature for the study. This section highlights the research gaps, established in the literature review, that the current study endeavoured to fill.

2.2: Overview of Learner Support in Distance Education

Mills (2003) defines learner support as the totality of the provision by an institution to support the learner other than generic teaching materials produced by institutional designers or course producers. It is a holistic approach to the provision of non subject-based support to the individual learner in the context of a study career which operates from the first enquiry to the completion of studies (Philips, 2003). A learner support service offers guidance, advice and study support as developmental factors in the whole learning process and aims to identify and remove barriers to learning.

Krauth (1999) asserts that students enrolled in distance education programmes need the same types of student support services that are available to on-campus students, but that distance learners expect the delivery of these support services to meet their needs for flexibility and convenience. She also notes that special needs also arise based on distance learners' isolation and the fact that they depend heavily on technology for learning and accessing resources. Abate (1999) states, 'think of all the offices on campus, all of the services provided for traditional students. All of these should be considered and made available in some fashion for students studying at a

distance' (p. 2). Though these assertions are not research based, they allude to the importance of supporting both on-campus and distance learners equitably.

Student support – the assistance and guidance that students are offered above and beyond the learning materials – has often been an overlooked component in distance education systems. Recently, however, student support has gained more attention and interest among distance educators. The renewed interest among distance educators reaffirms that student support is an integral part of the delivery of quality distance education experiences (LaPadula, 2003).

Student services are important for many reasons. They can enhance enrolment, decrease attrition, and provide for a well-rounded programme. In addition, they ease students' adjustment to college, assist in their intellectual and personal growth, and contribute to their academic success (Dirr, 1999). For the traditional student, support services are readily available on campus. There is usually a student services division that houses such resources as admissions, student records, financial aid, registration, library services, bookstore and counselling. These services are assumed to be part of the educational process.

Support mechanisms that are readily available to on-campus students often are lacking in distance education programmes, leading to further isolation of distance learners. Even the most highly motivated and self-directed distance education students can find their experience lonely, difficult, and sometimes daunting. A lack of

adequate student services can be discouraging and lead to failure (Dirr,1999). These assertions, however, are not research based but they highlight the essence of adequate student support services.

A student's distance learning experience is shaped by the quality of the services that support the educational process. Institutions have traditionally handled services for distance learning students as an add-on to on-campus procedures, a situation that was satisfactory when enrolment in distance programmes was smaller. However, as institutions are now serving larger numbers of students over a wider range of academic disciplines and geographical distance, traditional student services solutions are no longer adequate. Many student services should be completely reconceived to serve distance learners (Dirr, 1999).

One of the biggest gaps in distance education is institutions' inability to provide time- and location – independent access to a complete array of student support services. In "Beyond the Administrative Core: Creating Web-based student services for online learners", a three-year (2000-2002) project funded by the U.S Department of Education's Fund for Improvement of Postsecondary Education, it was found that when student services are considered, the most common services that are incorporated into a time- and location- independent format are those within the administrative core – such as financial aid, admissions, and registration. Like traditional campus-based students, distance learners need to access other support services such as tutoring, academic advisement, personal counselling, career

counselling, and library services. It is unrealistic to expect that students who do not come to campus for their education will travel to campus to access student services.

Still, there is a general lack of empirical research guiding the design of effective student support systems in distance education (Visser and Visser, 2000). While no exhaustive, universal model exists for which student support services should be available to distance learners, the literature indicates that important components of student support services offered to distance learners include (a) orientation of students to distance learning, (b) access to library resources, (c) academic advising, (d) course registration, (e) personal counselling, (f) technical support, (g) financial-aid, (h) mentoring, and (i) opportunities for social interaction (Beede and Burnett, 1999; Chute *et al.*, 1999; Kovel-Jarboe, 1997; Nunan, 1992;Sewart, 1992). However, one element that is rarely directly addressed in the literature concerning student support services for distance learners concerns the extracurricular needs of distance learners which relate to a variety of such issues as employment, job stability, work-load, family responsibilities, health, and social interests/obligations (Moore and Kearsly, 1996). Distance learners play a variety of roles other than 'student,' each with its own set of responsibilities and all of which directly impact learning at a distance. An individual does not relinquish his or her many life roles when becoming a distance learner. These many roles may conflict with one another if they are not acknowledged and addressed. Robinson (1981) indicates that a distance learner may 'have domestic problems of one kind or another, including those arising from the conflicting demands on his time of full-time employment, family commitments and

study requirements' (p. 142). To help alleviate the heightened stress level incurred from balancing these many roles, Gibson and Gibson (1997) emphasize the importance of including time and stress management components as part of the student support services available to distance learners. Sewart (1992) stresses the need for student support services to meet these various needs, stating that 'the greater the input to the provision of student support services, the greater the success rate' (p. 9) of the learners.

Krauth (1999) stresses that this diverse combination of distance learner needs necessitates the development and delivery of specifically conceived approaches to student support services. She asserts that such approaches are critical to learners' success. However, determining the specific combination of services and the means by which to make these services available is problematic.

According to Nyondo (1993), a learner support system can be said to have three subsystems in operation, namely: the administrative, the academic and the socio subsystems. The administration subsystem deals with matters such as early dispatch of materials and marked assignments, provision of times when tutors are available, telephone access, counselling and many others. The academic subsystem involves support that is provided within materials or aspects of face-to-face teaching (including electronic media). The socio subsystem involves matters that pertain to home and community environment such as access to libraries, availability of peers or family members who are able to assist in the studies. For the learner support system

to be effective, all the three subsystems should operate effectively. The three subsystems operate simultaneously and are not mutually exclusive or disjointed.

In practice, there seems to be differences in what is viewed as being learner support. Wright (1991), describes learner support as “the requisite student services essential to insure the successful delivery of learning experiences at a distance”. Thorpe (1988), describes learner support as “the elements of an open learning system capable of responding to a particular individual learner”. Hill (1989), describes learner support as “the support incorporated within the self-learning materials, the learning system and assignment marking”. It is generally acknowledged that there are different versions of learner support systems. Robinson asserts:

There is enormous variation in learner support systems in open and distance learning. Commonalities lie in similar goals (such as ‘providing interactivity and dialogue’, ‘personalizing a mass system’, ‘mediating between learner and the materials, the institution and the learners’, ‘institutional responsiveness to individuals’, ‘differentiation of support services according to different group and individual needs’), but with diverse ways of achieving them(1995).

Robinson offers another way of looking at learner support systems. “Learner support can be viewed as having three components: the elements that make up the system, their configuration, and interaction between them and the learners, which creates its dynamics.”

Considering that there are numerous definitions or descriptions of learner support systems, what elements are to be included in the learner support system? Robinson explains:

The elements are: personal contact between learners and support agents (people acting in a variety of support roles and with a range of titles), individuals or group, face-to-face or via other means; peer contact; the activity of giving feedback to individuals on their learning; additional materials such as handbooks, advice notes or guides; study groups and centres, actual or 'virtual' (electronic); access to libraries, laboratories, equipment and communication networks' (1995).

Though these elements were not research based, they were found applicable in the construction of the learner support system in the current study. Evaluation of the system by the users helped to shed more light on their usefulness.

According to Tait (1995), the term student support means the range of activities which complement the mass-produced materials which make up the most well-known elements in Open and Distance Learning (ODL). He further states that, it is, of course, true that printed course units, television and radio programmes, computer programmes, and other media, which replace the lecture as a means of delivery, and so much both in terms of social and geographical access, and in terms of cost effectiveness, support students in central ways. But the elements of ODL which are commonly referred to as student support are made up of: tutoring, whether face-to-face, by correspondence, telephone or electronically, counselling; the organisation of study centres; interactive teaching through television and radio, and other activities. These activities have as key conceptual components, the notion of supporting the individual learning of the student whether alone or in groups, while in contrast the mass – produced elements are identical for all learners.

Nyondo (2002), asserts that the factors impacting the design of an effective learner support system are the learners themselves and their study habits, home and community environment, institutional philosophy and practices, and the cultural and social structure and aspirations of the community. Designers of learner support systems must have a clear understanding of how these factors correlate in order to be able to design effective learner support systems. As to which factors will be more influential than others will depend on individual contexts of the communities in which the distance education providers reside. However, it is imperative to note that these factors were not research based or a result of factor analysis but they do add to the theory on the construction of an effective learner support system.

There is no universal learner support system that is modeled for all possibilities and indeed Tait (1995) states that social, cultural, economic and technological issues provide a range of factors in planning student support which ensure that each institution has a unique task, and no general schemes can be drawn up on an international or even national basis.

Nyondo (2002) states that to have an effective learner support system, it is imperative that the professionals involved in the design of the system do understand their learners. To be able to do this, they must be familiar with: Learning/study habits, that is, how much time are the students likely to assign to their studies? For example, some students are still expected to provide for their families as they study.

Majority may be rural whereby their daily provisions come from land, whereas urban-based students may have other disruptions.

Age and gender of the learners: Younger students are likely to be more amenable to use of modern technology than their older counterparts. A female student may be expected to do house chores more than a male counterpart.

Home environment: Do they have facilities at home? A student may have no room for private study. Are the family members supportive?

Availability of local support, that is, are there peers or relatives that are educated and can render assistance? Is there a library in the community?

Geography: That is, how widely spread is the student population? What facilities do they have in the local communities? Is it possible to and worthwhile to organise local centres of study? He concludes that a familiarity with the learner's characteristics and their home and community environment will help in designing an effective learner support system.

According to Dare, Zapata and Thomas (2005) one major model for defining the scope of services for distance learners emerges in both the literature and in institutional practice and can be described as an enrollment management – plus model. Included in this model are the typical enrollment-management services, such as admissions, financial aid, and registration, in addition to basic academic resources, such as libraries, academic advising, and technical support. These represent the minimal transactional services required for students to be enrolled and complete a distance education course and for which technology has been used to adapt existing

services to extend the provision to the distance learning population. This limited set is very often the extent of services found in the literature and offered in practice (Western Cooperative for Educational Telecommunications, 2003; LaPadula, 2004).

There has been a recent trend to include tutoring, career counselling and bookstore services in research and in practice (Levy and Beaulieu, 2003; Floyd and Casey-Powell, 2004). While some researchers have been looking beyond this somewhat limited model and examining other services and activities as well, such as student health, student government, personal counselling, orientation, and virtual communities (Hirt, Cain, Bryant, and Williams, 2003; LaPadula, 2003; Rinear, 2003; Meyers and Ostach, 2004), no studies could be identified involving institutions that offer the full array of student affairs programmes and activities to the distance learning population.

According to Dare et al., (2005), while the body of research is growing, there is one significant omission of key importance from the student affairs perspective. Missing from much of the earlier distance education literature is the connection between success and a sense of connection with other students and the institution. One exception is Krauth and Carbajal (1999), who find that sense of connection is strongly tied to retention, completion, and satisfaction. A widely accepted concept in the student affairs profession is that traditional on-campus students benefit from being engaged in campus life and feeling connected to various aspects of the institution (Pascarella and Terenzini, 1991). This benefit may also extend to distance learners, as evidence mounts that these students are more successful when provided with

support services (Dirr, 1999; Levy and Beaulieu, 2003). More recent research has observed the importance of a sense of connection for distance learners as the student affairs profession seeks to understand its role in serving this population. Meyers and Ostash (2004) point to the value of online communities to nurture distance learners' sense of inclusion.

A significant area of growth in literature about distance learning in higher education focuses on student services. Support for distance learners is emphasized in publications by professional organisations and associations, primarily in the fields of distance education and technology. However, while the topics of student support and student services appear with increasing frequency in the literature, the provision of student services is reported to be a significant but underdeveloped component of distance education programmes (Peters, 1998; McCleadon and Cronk, 1999; Husmann and Miller, 2001; Levy and Beaulieu, 2003; Levy, 2003). Student services for distance education is also an area that has only recently seen empirical study and is still quite lacking (Visser and Visser, 2000; Lapadula, 2003). The current empirical study will contribute towards filling this gap and revamp the field of learner support which is, apparently, a significant but underdeveloped component of distance education programmes.

2.3: Learner Support Service Needs

Robinson (1995) comments that in the literature on learner support in open and distance education, description and prescription outweigh empirical enquiry or

research. Publications on learner support are often in the form of 'how to do it' guidance or reports of experience. These can have practical value but may be a theoretical, unsubstantiated or lack validity when transferred to other contexts. While many accounts express the conviction that learner support services make a difference to outcome, demonstrations of the relationships are less easy to find. This means that more research is needed to determine a more definite relationship involving learner support system elements. The current research endeavoured to fill this gap.

Potter (2000), carried out a study of the support service needs and assessments of distance learners at three Canadian Bi-modal Universities (that is., offering degree-credit courses both on-campus and through distance education). The purpose of the study was to develop a model of support services for distance learners. Three universities were selected for the study using the criteria of being Canadian, bi-modal, their geographical location, size and willingness to participate and to assist with sampling. The findings of the study related to the profile of participating students (224 in number) indicated that about four out of five were women, with three quarters aged 25 to 50. Distance students in the study were generally married with children and employed.

Approximately 6 in 10 of employed students worked on a full-time basis, largely in the fields of health and education. Almost two-thirds of the study's participants lived at least 50 kilometers from a University, with about 44 percent residing more than

200 kilometers from a campus. More than 70 percent of respondents were taking courses for career related reasons. The respondents were asked to rate the importance to distance learners of 24 possible support services (1 = very to 4 = none). Respondents indicated that the most important services (those with a mean rating of under 2.0) are the ones required to get students through the early steps. In this case, provision of information and advice about distance learning opportunities and orientation to resources and learning formats were rated as most important. They also rated communication with the course instructor as very important. Services that received a mean rating of between 2.0 to 2.5 were largely those required while studying: learning centre, communication with other learners, assistance with academic skills, tutoring and dealing with the impact of distance study on self. Services seen as least important (those with a mean rating of 2.5 or above) primarily related to others, such as family, friends and employers with the exception of help with self-confidence and personal counselling. Other important services added by respondents included flexibility, information about specific courses, orientation to faculty and administrative structure, help with exam preparation skills, and referral to local resources.

When asked their views on the most important services that Universities could and should provide to distance learners, interviewees highlighted two issues: more than half emphasized the need for high-quality study materials designed specifically for distance learners and sent out in time for the beginning of the course. An equal number talked about the importance of access to the instructor, largely for feedback

and encouragement. Next in significance were streamlined administrative procedures, such as timely and accurate information; registration systems that work, returning calls promptly, and "one-stop shopping". The respondents were also asked to rate the accessibility to distance learners of 24 possible support services (1 = very to 4 = none). Only two services scored a mean rating of under 2.0: the provision of information about ordering textbooks and general information about distance learning opportunities. Only six services received a mean accessibility rating of between 2.0 and 2.5, and all related to starting out activities that respondents had earlier rated as important. Almost half of the services (11 of 24) received an accessibility rating of 3.0 or greater on a scale where 4.0 = no accessibility. From the responses gathered, the importance of services was not matched by their accessibility; the mean rating in the two ratings for each service was .67 on a 4 point scale.

Respondents' views regarding the need for specific support services at particular stages in the academic life of a distance student were also sought. The stages were divided into three phases: before starting; starting a course/programme; and moving through a programme. At pre-enrolment stage, respondents viewed the provision of information and guidance as most significant. Other important services related to the appropriateness and impact of distance study as well as the provision of information about getting texts and using the particular delivery format. At the starting out stage, respondents attached primary importance to communication with the instructor and orientation to the media/delivery format as well as to learning

resources. Other important services included those related to academic skills and resources. Respondents listed fewer critical services for individuals moving through their programme, but they stressed the need for communication – both with the instructor and among learners – as well as for some academic supports.

Recommendations made by respondents in an open-ended question regarding support services for distance learners could be clustered into eight categories: on-site possibilities; improved communications; registration/admission services; academic services; institutional pathways; financial assistance; course selection/ availability; academic advising/counselling services. Recommendations focusing on academic issues indicated that respondents wanted timely and constructive feedback on assignments and tests. Assistance with writing and study skills as well as a need for tutoring services geared to the distance learner were also suggested. The respondents also recommended an improvement in communication with instructors and other students – regular contact, whether by telephone, computer, teleconferences, or face-to-face, was clearly a priority. Respondents also suggested that their institutions provide comprehensive information about available support services to distance students. Access to academic advising and career guidance and help with financial concerns was suggested. With respect to admissions and registration, respondents stressed the need for accurate information and clear procedures and also wanted to know how to access help when they run into problems with registration.

The foregoing study by Potter(2000) highlights the importance of student support services to learners whereby the most important services are seen to be those required by students while studying (such as tutoring, study skills and communication with other learners) whereas the least important are those that relate to others such as family, friends and employers. The study also highlights issues of accessibility to distance learners of various support services whereby it was found that the importance of services was not matched by their accessibility. In the study, need for various support services was tied to specific stages in the academic life: pre-enrolment stage, starting-out stage and moving through the programme. Learner support services were then clustered into eight categories. The current study sought to highlight learner support needs as expressed by learners and similar to the study by Potter, these needs were assessed against year of study of the distance learners. However, the current study went further to relate learner support needs to gender, location, study environment and course of study of the distance learners. Similar to Potter, the current study clustered learner support needs into categories which informed content development for the online learner support system.

David (2005) carried out a case study which investigated the need for co-curricular student services for distance education students within a college of nursing and health professions at a large urban University. The purpose of this study was to assess the types of co-curricular student services needed for distance learning students and to determine ways in which these services may be implemented. The researcher used mixed method approach, utilizing both qualitative and quantitative

methods involving distance learning students at Drexel University aspiring for undergraduate and graduate degrees in nursing and other health related professions and the faculty and administrators responsible for teaching, administering and implementing those courses. The methods included a questionnaire for the students using the semantic differential, which was administered electronically to students taking online courses. The student questionnaire was the main core of the research study. Interviews were also conducted with faculty and administrators involved in developing and delivering education courses.

Students' perceptions of the types of co-curricular student services that they would perceive to be "crucial" (versus, "non-essential), "helpful" (versus "not helpful"), "convenient" (versus "inconvenient"), and "enabling" (versus "disabling") were assessed. The types of student services surveyed were academic advising, career counselling, financial aid guidance, information about scholarships, services for student with disabilities, services for international students, computer technical support, library services (reference/online journals), personal (mental health) counselling services, academic enrichment services (study skills, learning styles assessments, assistance with issues such as test anxiety), bookstore services, coursework tutoring, involvement in student organisations, non-course related educational programmes (such as speakers and panels, on topics such as financial management, life and family issues, social issues), student governance (being involved in the leadership of the college/University) and student activities (cultural/social opportunities).

Academic advising, computer technical support and library services had a weighted average of approximately 2.0, meaning that the students felt that the services were more crucial than non-essential, more helpful than not helpful, more convenient than inconvenient and more enabling than disabling. In addition, the students ranked bookstore services as more crucial than non-essential and student activities as more non-essential than crucial. Other services deemed more non-essential than crucial were non-course related educational programmes, student governance and involvement in student organisations, which was ranked in the last place. Library services, computer technical support, and academic advising had the least amount of dispersion among responses, meaning that most of the respondents agreed that those services were indeed most essential. Information about scholarships and bookstore services had the greatest amount of dispersion among responses, meaning that the students disagreed most on the essentiality of those services. One of the conclusions drawn from the study was that the primary needs for the students surveyed were not the kinds of services that most Students Affairs professionals provide in the typical and on-campus University setting. Another conclusion was that the role of the Student Affairs professionals has changed as a result of distance education and that the services that student affairs divisions provide need to be crafted so that they are attractive, but most importantly, useful for distance students.

The foregoing study by David highlights learner support needs for distance learners and emphasizes the need for learning institutions to assess the needs of their

learners in order to provide support services oriented to those needs. The research study affirms the assertion that universities, as a result of distance education, should take on a customer service role, becoming more service oriented and customer driven.

Scheer (2001) conducted a study on the inclusion of an online wellness resource centre within an instructional design model for distance education. The purpose of this study was (a) to determine which student support service resources should be included in an Online Wellness Resource Centre (OWRC) available within an online course and (b) to create a paper-based schematic for such a prototype. To address these research questions, a needs assessment was conducted to determine whether learners perceived a need for access to wellness resources. The assessment identified the specific wellness resources to include in the OWRC. A Schematic was then created for OWRC development, incorporating the results of the needs assessment. Not every resource presented to respondents was incorporated into the final wellness resource list. Only resources receiving 25 percent or higher response rate were included in the final list. Twenty-five percent indicates that one out of four learners had requested access to this resource. This number was determined by the researcher to be a reasonable cut off point for development purposes. The resources were then ordered from highest-rated to lowest-indicated request. This final list was then broken down into four priority levels. Those resources having received a checked response by 50% or more of participants were considered first priority resources. These included need to physically meet classmates (68%), stress

management (55%) and online lectures (51%) among others. Those resources receiving between 40% and 49% response rates were second priority resources. Those resources receiving between 30% and 25% were considered lowest priority resources. These included database alumni contacts (25%).

Based on the data gathered during the needs assessment, the learners assessed themselves to possess those characteristics necessary to succeed as distance learners. These characteristics included having strong time management skills, being able to work independently, being comfortable with technology and having the ability to express ideas orally and in writing. Yet, while these learners considered themselves to possess those characteristics necessary to succeed as distance learners, they still expressed the need for access to certain support needs. This underscores the significance of learner support services to distance learners for wholesome education.

Dirr (1999) gives a report of the findings of a survey on promoting effective support services for students in distance learning. The survey was an early part of "putting principles into practice" project conducted by Western Cooperative for Educational Telecommunications (WCET). The purpose of the project was to help colleges and universities improve the availability and quality of support services they provided to students enrolled in distance education programmes and courses. One of the first steps of the project was to document the services institutions of higher education (IHEs) were providing to distance learners, how they were providing those services,

and how they valued their services. WCET also planned to use the study to identify those IHEs that had particularly strong distance education support services, find out what made those programmes strong, and match those institutions with institutions that requested help in improving their services to students.

The aspects of student support services focused on by the study included pre-enrollment services (recruiting, promotion, orientation), admissions and registration, academic advising, financial planning and management, library and bookstore services, counselling and career counselling, social support services, programme planning and degree and transcript audit and technical assistance. Regarding the structure of student support services, it was found that most IHEs (84%) organise their distance education student support services by functional areas (for example, admissions, registrar, financial aid and advising) as opposed to being organised by cross-functionality (Staff trained to provide “one-stop shopping” for students) (13%), while 3% volunteered that they have some of each type of structure.

Findings of the study also indicated that distance education students get access to general advising assistance to help plan their academic programmes in a variety of ways. Most common was that they traveled to the campus for in-person advising (90% of the institutions providing distance education courses and programmes). Among those respondents who indicated “other” approaches for delivering academic advising, the majority cited counsellors or faculty traveling to remote sites periodically while a few others, referred to one or another form of live

teleconferencing with counsellors or faculty. There was almost across the board uniformity in the types of general academic advising provided by IHEs for distance learners: Course selection (85%), degree planning (76), articulation and transfer assistance (73%), orientation sessions (66%), and semester planning (58%).

Each responding institution that offered distance education courses and programmes was asked to rate the effectiveness of the support services it provided to distance learners, using one (1 = not effective) to ten (10 = extremely effective). The hope was that these valuations could be used to identify institutions that might have exemplary student support programmes and others that might benefit from information and assistance from the exemplary programmes. The mean score ratings for all the services were modest, at best, ranging from 6.1 for registration services to 3.6 for social support services. The services that the group as a whole thought they were doing best were: registration, programme planning, degree and graduation audit, and transcript evaluation. Social support services, career counselling, and counselling services were rated lowest. After further analysis, very few institutions emerged as having a broad range of student support services for their distance learners. No institution emerged as having a comprehensive exemplary support service programme.

In developing the survey, WCET thought that more institutions might think it important to offer complete suites of support services for distance learners for several reasons: to provide a learner-centred environment for distance learners; to

improve student retention; to be more competitive in today's changing higher education environment; to take full advantage of the power of today's technology; to meet the expectations of the regional accrediting agencies regarding support services; and, to provide the distance learner with the learning experience that is equivalent to the experience of on-campus learners. Instead, the survey found that most of the responding institutions were in the early stages of rethinking their support services for distance learners.

The study by Dirr reveals that very few institutions had a broad range of student support services for their distance learners and that no institution emerged as having a comprehensive exemplary support service programme. While the current study did not purport to provide a comprehensive exemplary learner support system, it did however, intend to nudge the University of Nairobi to rethink her support services for distance learners.

In an effort to understand better the role of the Division of Student Affairs in Serving the Distance Learners at North Carolina State University (NCU) a survey was conducted by Dare, Zapata and Thomas (2005) to gauge several aspects of the distance education experience. This quantitative study was designed to compare the responses of distance learners at the North Carolina State University with a matched group of on-campus learners. The research team collected feedback from all student affairs offices and other units providing services to students to develop the survey instruments. The survey was distributed to both on-campus and distance learners in

an attempt to learn whether there were any differences between those student groups regarding their knowledge, use, and need of the various courses, services and programmes in student affairs. Students were asked to rate importance, satisfaction, and likeliness on a four-point Likert-type scale (1=very unimportant, 4=very important; 1=very unsatisfied, 4=very satisfied; 1=very unlikely, 4=likely).

One of the primary goals of this study was to explore the importance of student services to distance learners compared to on-campus learners, regardless of where those services and programmes resided. Thus respondents were asked to rate the importance of a collection of services and programmes, as well as their satisfaction with each. The services rated highest in terms of importance to distance learners included registration and records, faculty advising, and libraries. In comparison, on-campus students rated registration and records, libraries, and student health services highest in terms of importance.

In conclusion Dare, et al. assert that student affairs professionals, as well as other services professionals and researchers, must identify the needs of distance learners and then provide appropriate services and programmes. The current study endeavoured to do that.

Bowa (2008) conducted a study on the influence of learner support services on academic performance of distance learners focusing on the University of Nairobi External Degree Programme. The objectives of the study were to find out the extent

to which tutoring and use of self-study; the use of ICT for studying; the use of academic or social counselling services; the use of administrative support services and personal characteristics of the learner influence the grades scored in examinations. Correlation analysis was used to explore and describe the strength, direction and significance of linear relationships between variables relating to aspects of learner support services, learner characteristics and examinations grades. The findings of the study were that most of the cognitive, affective and systemic learner support services did not contribute significantly to academic performance of the learners because the services were either not adequately provided or because learners lacked easy access to the services. However, learner characteristics consisting of part of study, age, family size, entry academic qualification and supplementary income were found to have a significant influence on academic performance of the learners. On the basis of the results, it was concluded that learner support services and learner characteristics have a considerable influence on academic performance of distance learners in the External Degree Programme of the University of Nairobi. Their influence varies in form and strength but all point to the weakness in the provision of support services in the External Degree Programme. The researcher recommended that the development of study skills, provision of learning resources, establishment of modern ICT services at the regional centres and educational support fund, provision of guidance and counselling services and review of External Degree curriculum be enhanced.

to which tutoring and use of self-study; the use of ICT for studying; the use of academic or social counselling services; the use of administrative support services and personal characteristics of the learner influence the grades scored in examinations. Correlation analysis was used to explore and describe the strength, direction and significance of linear relationships between variables relating to aspects of learner support services, learner characteristics and examinations grades. The findings of the study were that most of the cognitive, affective and systemic learner support services did not contribute significantly to academic performance of the learners because the services were either not adequately provided or because learners lacked easy access to the services. However, learner characteristics consisting of part of study, age, family size, entry academic qualification and supplementary income were found to have a significant influence on academic performance of the learners. On the basis of the results, it was concluded that learner support services and learner characteristics have a considerable influence on academic performance of distance learners in the External Degree Programme of the University of Nairobi. Their influence varies in form and strength but all point to the weakness in the provision of support services in the External Degree Programme. The researcher recommended that the development of study skills, provision of learning resources, establishment of modern ICT services at the regional centres and educational support fund, provision of guidance and counselling services and review of External Degree curriculum be enhanced.

The foregoing study by Bowa highlights the issue of provision and accessibility of learner support services by distance learners at the University of Nairobi. An important finding of the study was that learner support services did not contribute significantly to academic performance of the learners because the services were either not adequately provided or because learners lacked easy access to the services. It points out to the weakness in the provision of support services in the External Degree Programme. However, the study measured influence correlationally but did not do a path analysis to show the strength of that influence. The current study intended to fill the gap in provision and accessibility of support services by distance learners by assessing learner support needs and then embodying them in an online learner support system that bridges the gap of accessibility by availing the services to the learners at any time and any place. The study went further to assess the effectiveness of the learner support system through a Pre-test-Post-test control group experimental design.

Ochogo (2004) conducted a research on factors affecting the provision of guidance and counselling to distance learners in Nakuru and Nairobi Extra-mural Centres of the University of Nairobi. The research was ex-post facto by design. The target population was the students studying Diploma in Business Management in Nakuru and Nairobi Extra-Mural centres and two Resident Lecturers. Descriptive data analysis and percentages were used. The findings of the study were that the counselling service was inadequate. It was also found that majority of the students (91%) had a major difficulty in time management. Among the guidance and

counselling services not offered, the respondents ranked psychological and social guidance highest (46.2%), followed by career guidance (44.9%). Among the difficulties encountered by the lecturers in the provision of guidance and counselling was the absence of material resources which was rated as the main difficulty. The lecturers had inadequate training in guidance and counselling but they used every available skills, theories, approaches and mannerisms to guide and counsel the students in the Extra-Mural Centres. The students had a positive attitude towards guidance and counselling and felt that it had a role to play for excellence in their education. It was established that resource materials and resources that may lead to effective counselling were lacking in Extra-Mural Centres. The Resident Lecturers also had other administrative functions and duties to carry out and therefore had limited time for counselling. However, the study did not carry out a factor analysis to show how each of the factors influenced the provision of guidance and counselling but rather, percentages were used.

The findings of the study by Ochogo showed inadequacy of guidance and counselling services at the Extra-Mural Centres of the University of Nairobi. This inadequacy was further compounded by lack of counselling materials and resources and little or no training in counselling of personnel at the Extra-Mural Centres. The current study hoped to fill this gap by providing online counselling resources for distance learners.

2.4: Expressed learner Support Needs Based on Year of Study

Potter (2000) carried out a study of the support service needs and assessments of distance learners at three Canadian bi-modal universities . The purpose of the study was to develop a model of support services for distance learners. Respondents' views regarding the need for specific support services at particular stages in the academic life of a distance student were also sought. The stages were divided into three phases: before starting; starting a course/programme; and moving through a programme. At pre-enrolment stage, respondents viewed the provision of information and guidance as most significant. Other important services related to the appropriateness and impact of distance study as well as the provision of information about getting texts and using the particular delivery format. At the starting out stage, respondents attached primary importance to communication with the instructor and orientation to the media/delivery format as well as to learning resources. Other important services included those related to academic skills and resources. Respondents listed fewer critical services for individuals moving through their programme, but they stressed the need for communication – both with the instructor and among learners – as well as for some academic supports

2.5: Selected Online Learner Support Systems

The researcher selected some online learner support systems, which were accessible and rich in content, as follows:

2.5.1: Athabasca University, Canada (www.athabascau.ca)

Learner support services at Athabasca University (AU) are aimed at encouraging and supporting learner success. The learner support system offers information and assistance on course selection and programme planning, for students with disabilities, on educational counselling, on writing examinations. Specifically, the system gives information on AU governance documents that provide the framework from which the Learner Support Services unit operates: Mandate, Mission, Principles and Values; Strategic University Plan; Student Services and Learning Support Vision

The learner support services offered are broadly categorized as: access to students with disabilities (ASD); advising services; counselling services; examination services; and AU learning link at Hub Mall. It also has a category named AU resources that contains: Student handbook, online calendar, AU library, AU collaborations; and prior learning assessment and recognition.

In the category on ASD, services offered are such as: advocacy, liaison and referral; alternate format course materials; assistive technology; course management; exam accommodations; and learning support services. ASD is committed to provide students who have disabilities with reasonable, individualized accommodations and support services to facilitate access and the successful completion of Athabasca University undergraduate, graduate, programmes and courses

Advising services target prospective, programme and visiting/ non-programme students. Academic Advisors at AU assist in areas ranging from clarifying one's undergraduate programme requirements, to helping choose the next course for the programme of studies. The advisors also provide information about University regulations and procedures, and assist with the interpretation of transfer credit evaluation.

Counselling services are aimed at providing the tools to build one's future. Counsellors help students to clarify their career and educational goals and also provide them with the tools necessary to become a successful student. The counselling service is available through e-mail, telephone and, if for those who live in the town of Athabasca or surrounding area, they can meet with a counsellor in person. Content in the counselling service comprises of contacts; general information (what you need to know) ; education and career planning; learner success; learner support services; service standards for students; starter kit (download) ; online application; course registration; online calendar; library; write site; math readiness; student handbook; learning services collaborations and prior learning assessment and recognition (PLAR). Specific content in the area general information (what you need to know) includes distance education; readiness assessments; readiness for studies at AU; preparation courses; finance options and frequently asked questions (FAQs) . In the area of education and career planning, content includes interest assessment; career planning and information and career options for your degree. Learner success involves: study skills; exam anxiety; learning styles; time management; create a semester study schedule; overcoming procrastination and

studying with children around. Examination services give examination regulations at AU. The services also include examination request deadlines; online request forms and applicable fees.

AU learning link provides an opportunity for learners to obtain information and assistance in planning their educational programmes without leaving the AU campus. The Learning Link office assists students with the following services: accessing information on AU courses, programmes, and provides general information about the University regulations and procedures; academic advising assistance; accredited on-line and individualized distance study courses; admission, course registration and other registry related inquiries; transfer credit information, and chat with AU staff about educational opportunities at AU. The learner support system at AU also highlights news and events and lists the names of learner support staff for various sections detailing their responsibilities and contacts. In each of the content areas of the learner support system are frequently asked questions (FAQs).

2.5.2: Massey University, New Zealand (www.massey.ac.nz)

Student services at Massey University, New Zealand provide services to help students achieve their academic and personal goals. The services include: academic and study skills; careers and employment; chaplaincy and religious services; child care centres; computer labs and wireless networks; course advice; disability services; harassment

resolution; health and counselling; information services; international student support; library services; student advisors; and student leadership programme.

The system has counselling resources that comprise of: balancing for life; bereavement; cannabis; choosing a career or major; concentration; conflict resolution; coping with traumatic incidents; dealing with low self-esteem; assertiveness; coping when your partner leaves; I just can't sleep; suicide; leaving home; listening; making friends; managing depression; managing stress; mature students; motivation; myths about counselling; panic attacks; perfectionism; procrastination; going flatting; thinking of dropping out; anxiety and leaving a relationship.

2.5.3: Pace University, New York (www.pace.edu)

Learner support services offered at Pace University, New York include: personal counselling (individual and group; educational counselling; vocational counselling; alcohol and other drug assessments and counselling; resources and support services for students with disabilities; workshops and other programmes; psychological assessment; referrals to community and other programmes.

Personal counselling: The Counselling Centre Staff is available to discuss any personal or emotional difficulties in complete confidentiality. Services include individual and group counselling and range from counselling for personal and professional problems

to crisis intervention. The concerns that students discuss with the staff include relationship and family issues, roommate problems, drug or alcohol use, self-esteem, and problems with eating.

Educational counselling: Educational counselling helps people strengthen skills needed to succeed in the classroom. Counselling Centre staff offer expertise in the areas of study skills, time-management, test-taking strategies and stress-management techniques.

Vocational counselling: Vocational Counselling helps people appraise their interests, attitudes, and personality traits. The Counselling Centre staff frequently use tests to reveal these characteristics. By gaining self awareness, people become better equipped to make decisions vital to their educational and professional future. This may include decisions about what major or future career to choose.

Resources and support services for students with disabilities: Pace University has resources and procedures to ensure that disabled students have full access to its quality education programmes and facilities.

Workshops and other programmes: The Counselling Centre assists the individuals and groups within the University community who are working to promote the personal, social, and intellectual development of students. Interested student groups, personnel, sororities and fraternities, academic departments and instructors, and

other groups usually request the Counselling Centre to conduct programmes, workshops, and presentations related to career and educational decision-making, improving academic effectiveness, and personal and social issues. Examples of these topics are: understanding stress and its management; eating disorders; testing tips; how to get accommodations for disabilities; suicide: facts and fables; adult children of alcoholic parents; protecting yourself: date rape and safety issues; alcohol/ drug awareness; what is your personality type; assertiveness training; study skills; self hypnosis for stress management; test anxiety management; career interest testing; building self esteem; and time management. The counselling Centre staff design programmes on other topics to meet specific needs and concerns of students. They also help individuals and groups in the development and implementation of their own programmes.

Psychological assessment: this helps provide insight about an individual's personality characteristics and can help clarify therapeutic goals. Counselling centre staff provide psychological assessment to help determine appropriate counselling treatment and/or as an adjunct to ongoing counselling. For students who may be concerned that a learning disability may be interfering with their academic success, the staff provides a referral to an outside practitioner or agency for evaluation.

Referrals to community and other programmes: when students are evaluated at the Counselling Services, it is sometimes felt that they would benefit most from referral to resources in the community. This referral may be to a more specialized

programme at a hospital or clinic or to a therapist in private practice. The referral list is extensive and offers students a wide range of services which are of high quality and affordable. Once a student has been referred to an outside resource, they are required to reconnect with the Counselling Services once they have contacted the referral. At that time, students are encouraged to provide the staff with feedback about their experience. If the referral does not seem to be a good fit, then the students are provided with more resources.

On-line resource : This has resources on stress management fun and interactive; faculty and staff referral guide; Pace health insurance information; managing anniversary reactions to traumatic events; coping after a crisis; learning styles; relationships; transitions; about alcohol and other drugs; how many drinks will you have this year?; go ask Alice! Health Q&A service; other topics of interest for college students; NYC Counselling Survey; NYC Post-Internship Survey; and NYC Post-Screening Form. Amongst other topics of interest for college students is a Counselling Centre Village. The Counselling Centre Village is made up of the many home pages -- and other web resources -- created by college and University counselling centres around the world. It comprises of a wide range of resources, for the counselling centre professional, such as:

Counselling Centre Directory: A listing of University and college counselling centres currently on-line.

Virtual Pamphlet Collection: Psychoeducational pamphlets organized by topic.

Workshop Central: Psychoeducational workshop outlines, manuals, handouts, and other materials

Training Resources: Internships, practical, externships, seminar presentations, readings, job searches

At the Office: Policies and procedures, forms and paperwork, HIPAA, assessment, and more

Research and Technology: Research, publications, internet, web design, software, surveys, CSCMH

Staff Development: Professional organisations, job search resources, staff development materials.

Practice Resources: Clinical, assessment, screenings, journals, and other practice-related resources.

2.5.4: University of Bath, United Kingdom (www.bath.ac.uk)

At University of Bath, a wide range of specialist student support services are available on campus for student issues such as: academic; accommodation; anxiety; careers;

cultural; dental; depression; disability advice; equalities; health; immigration; jobs; mental health; money matters; residences; security; spiritual; and supervision.

Student support services addressing specific issues include:

Accommodation: Advice on all accommodation-related issues, for example, finding or terminating on-campus, off-campus and private sector accommodation, paying fees, transferring rooms.

Advice and Representation Centre (Student's Union): Academic - problems with courses, changing courses, submitting academic reviews (appeals) Welfare - housing, benefits, health, childcare.

Careers: Changing or leaving your course, help with work experience, employability skills and career decisions.

Chaplaincy: Personal - homesickness, loneliness, relationships etc. Spiritual - provision of Christian Worship, quiet space for prayer.

Dental Centre: Dental advice and treatment.

Equalities and Diversity: Support and advice on race, gender, disability, faith and sexual orientation issues

Health and Well-Being: Personal counselling - depression, anxiety, relationships etc

International Student Advice: Immigration and visa applications, cultural adaptation, healthcare, employment, dependent families, social activities, etc.

Students' Union JobLink: Recruitment - part-time and vacation work, Employment Law, Human Resources - registering for work on campus, pay queries, tax, National Insurance and contracts of employment.

Medical Centre: Physical and mental health difficulties, sexual health, travel, smoking, alcohol use.

Mindmatters: Relationship problems, sexuality, exams, leaving home and other experiences causing stress

Research Postgraduate Ombudsman: Problems encountered by postgraduates in connection with supervision issues

Resident Tutors: These staff/students live in University Halls of Residence and support student welfare, health and safety, social activities and student discipline

Security Services: Campus security, communication with emergency services, car parking

Student Disability Advice: Identification and assessment of needs, disability related funding, additional learning support, assistive technology, alternative arrangements for assessments and examinations.

Student Information and Funding: Budgeting, bursaries, scholarships, debt counselling, student loans, benefits, tax, hardship funds.

The location and contacts for each specific service is given in the University of Bath learner support system. The system also details performance standards for the

student support services such as: student discipline; student health and well being; student disability advice; student information and funding; and international student advice. Service objectives, principles and vision are outlined and services to students, staff and the institution are detailed. Contact details for external organisations are also listed.

2.5.5: University of Chicago (www.uchicago.edu)

The University of Chicago, USA has a Student Counselling Service (SCS) that offers the following services:

Needs Assessment: all students go through the same process at their first appointment at (SCS) called "intake." At his or her first appointment, the student completes a registration form and meets with an intake counsellor to discuss his or her personal concerns and expectations from the counselling process. The counsellor performs an assessment and determines the services that can best assist him or her. These services include: psychotherapy, psychiatric consultation, academic skills assessment programme, support groups, assessment and treatment for alcohol and other drug abuse, referrals, emergency intervention, and health promotion and wellness programmes. Students with physical disabilities are required to inform the receptionist when calling for an intake appointment so that arrangements can be made for the student to be seen in a physically accessible location.

Psychotherapy: this is usually an individual and couples therapy. SCS offers both short-term individual and short-term couples' psychotherapy. If it is decided at a student or couple's intake appointment that the student or couple will pursue therapy at SCS, the intake counsellor schedules a therapy appointment with an SCS staff member. Couples desiring joint therapy are expected to attend an intake appointment together. Couples can be married, partners, dating, same-sex, or heterosexual, but at least one member of the couple must be a University student who has paid the Student Life Fee.

Psychiatric Consultation: There are psychiatrists on staff at SCS as well as therapists. If, as a result of a student's intake appointment or SCS therapy appointment, it is decided that the student will meet with an SCS psychiatrist, the intake counsellor or the student's therapist usually helps the student schedule an appointment with a psychiatrist.

Medication Management: If the student is prescribed medication, the psychiatrist usually monitors the student's case on a short-term basis. In some cases, the staff offers longer-term medication management throughout the student's University career. SCS psychiatrists can assess students' needs for psychiatric medication. The psychiatrist usually monitors the student's medical case. In some cases, the student may be referred out for long-term psychiatric care and in certain appropriate cases a student may be referred to the SCS medication management clinic.

Academic Skills Assessment Programme: The Academic Study Skills Assessment Programme (ASAP) assists students with improving academic performance through assessment, short term coaching and referral. ASAP addresses a wide range of concerns with respect to study skills including time management; reading effectiveness; concentration and memory; reading skills; note taking; test taking and attention deficit hyperactivity disorder (ADHD). The University also offers “other resources”. These include time management, test taking and study skills that are derived from what other college counselling services and web resources are offering on those issues. ASAP workshops that focus on specific areas of interest are offered to groups of students throughout each academic quarter and the students can sign up to attend on the SCS website.

Support Groups: these are initiated by individual SCS staff members based on student interest and the staff member’s area of expertise. Group services are offered in the areas of men and women’s identity issues; sexual orientation; eating concerns; Ph.D. dissertation support; dissertation proposal writing support; procrastination; crisis intervention; the balancing act: work and mothering; breaking the procrastination habit; coming out support group; dealing with social anxiety; dissertation support group; relationships group for graduate students; sexual assault survivors support group; and students of color group.

Let's Talk: these are free and confidential consultations. Speaking with a "Let's Talk" counsellor helps provide insight, solutions and information about other resources.

Referrals: the SCS serves as the "gatekeeper" for the Student Medical Plan. If a student wishes to see an outside clinician, he or she must make an appointment at SCS to obtain referral forms before meeting with their new clinician. If the student is not satisfied with the therapist to whom he/she was referred and want a second referral to a different therapist, the student will need to have a new referral form completed by an SCS clinician, and signed by the Director.

Wellness Programme: Wellness is a healthy balance, integration and harmony of one's body, mind and spirit. The programme comprises of: mindfulness meditation; stress management; wellness workshops; wellness events; let's talk; academic skills assessment programme (ASAP); physical fitness; student care centre (SCC); support groups and other wellness resources. Related Services: These are categorised into University services and non-University services. University services include: student life fee; guide to student health care services; primary care services; sexual harassment and violence resources and universal student health insurance plan. Non-University services include: Virtual pamphlet Collection; self-assessment screening and tools; Ulifeline; substance abuse recovery support groups; resources for survivors of sexual violence and resources for veteran students and their families

Virtual Pamphlet Collection: The Student Counselling Virtual Pamphlet Collection was originally developed by Dr. Robert Hsiung. SCS clinicians reviewed the Collection and selected the information most salient to University of Chicago students for their website. The virtual pamphlets are organized by topic as follows: addiction; anger; cultural issues; depression; disabilities; eating disorders; concerned others; impulse control; relationships; sexual assault/ harassment; sexual orientation; stress/wellness; study skills; traumatic events and University life.

2.5.6: University of Nairobi, Kenya (www.uonbi.ac.ke)

Various resources and services for students include: library services, computing and internet services, health services, student placement, special student advisor, sports and games, dean of students, student welfare authority, work study programme, financial assistance. There are also resources for University life: dean of students, resources and services, computing services, student leadership.

Dean of Students: The Office of the Dean of Students is primarily concerned with students' welfare, from entry to graduation. Admission to the University marks the beginning of one's career, hence it requires one to make mental, physical and emotional adjustments. This office maintains staff who help students adjust to life in the University. Services and programmes conducted by the Office of the Dean of Students are: chaplaincy services; counselling services; disabled students services; placement services; entertainment services; students orientation programmes; various students organisations.

Placement Services: include organizing career fairs; career talks by employers and professionals; trains students on how to write winning CVs; preparing for interviews; how to search for employment; organizes for on-campus interviews, Searches for employment in various possible organisations; receives and disseminates information on available employments; makes references and recommendation for employment; provides career counsel to students.

Internships and Attachments: liaises with various organisations that offer internships and attachments; receives and disseminates information on available places for internship and attachments; assists students to acquire places where they could attain work experiences.

Links University with Industry: keeps close touch with industry making it possible for the University to benefit from various industries interns of employment, internships, attachments and information exchange.

Computing services: the University has several well-stocked computer laboratories established on all campuses, which are specifically tailored to address computing needs for students. An extensive intercampus WAN and Campus -Wide backbone

network enables the labs to tap to several network based services, including 24x7 internet access, E-mail facilities, file-sharing services, library services among other shared server services.

Sports and Games: several Sports and Games are offered at the University of Nairobi. These Sports and Games are categorized as Indoors and Outdoors. Available indoor activities include table tennis, scrabble, chess and darts. Outdoors sports include track or field athletics, football, rugby, basketball, hockey, handball, volleyball, netball and others. **Student Leadership:** the University has various students' bodies, which represent students' interests. Through the various representatives, students access all decision-making levels from the halls, the Senate, and all the way to Council.

2.5.7: School of Continuing and Distance Education, University of Nairobi:

The School has a Records Office and Department of Educational Studies from where documents and files are available, containing information on orientation and administrative services.

2.6: Student Learning Self-efficacy

Self-efficacy refers to beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments (Bandura,1997). That is, self efficacy beliefs allow someone to answer the question, can I do this? Much research shows

that self-efficacy influences academic motivation, learning, and achievement (Pajares, 1996; Schunk, 1995). Self-efficacy is grounded in a larger theoretical framework known as social cognitive theory, which postulates that human achievement depends on interactions between one's behaviors, personal factors (for example, thoughts, beliefs), and environmental conditions (Bandura, 1986, 1997).

2.6.1: Self-efficacy Beliefs

Self-efficacy beliefs influence task choice, effort, persistence, resilience, and achievement (Bandura, 1997; Schunk, 1995). Compared with students who doubt their learning capabilities, those who feel efficacious for learning or performing a task participate more readily, work harder, persist longer when they encounter difficulties, and achieve at a higher level.

Bandura (1986) wrote that, through the process of self-reflection, individuals are able to evaluate their experiences and thought processes. According to this view, what people know, the skills they possess, or what they have previously accomplished are not always good predictors of subsequent attainments because the beliefs they hold about their capabilities powerfully influence the ways in which they will behave. Consequently, how people behave is both mediated by their beliefs about their capabilities and can often be better predicted by these beliefs than by the results of their previous performances. This does not mean that people can accomplish tasks beyond their capabilities simply by believing that they can, for competent functioning requires harmony between self-beliefs on the one hand and possessed skills and

knowledge on the other. Rather, it means that self-perceptions of capability help determine what individuals do with the knowledge and skills they have. More important, self-efficacy beliefs are critical determinants of how well knowledge and skills are acquired in the first place.

The process of creating and using these self-beliefs is an intuitive one: individuals engage in a behavior, interpret the results of their actions, use these interpretations to create and develop beliefs about their capability to engage in subsequent behaviors in similar domains, and behave in concert with the beliefs created. In school, for example, the beliefs that students develop about their academic capabilities help determine what they do with the knowledge and skills they have learned. Consequently, their academic performances are in part the result of what they come to believe that they have accomplished and can accomplish. This helps explain why students' academic performances may differ markedly when they have similar ability. Researchers have suggested that these self-beliefs may play a mediational role in relation to cognitive engagement and that enhancing them might lead to increased use of cognitive strategies that, in turn, lead to improved performance (Pintrich and De Groot, 1990).

Bandura's (1986) emphasis that one's mastery experiences are the most influential source of self-efficacy information has important implications for the self-enhancement model of academic achievement, which contends that, to increase

student achievement in school, educational efforts should focus on altering students' beliefs of their self-worth or competence.

2.6.2: Effects of Self-efficacy Beliefs

Self-efficacy beliefs influence motivational and self-regulatory processes in several ways. They influence the choices people make and the courses of action they pursue. Most people engage in tasks in which they feel competent and confident and avoid those in which they do not. Beliefs of personal competence also help determine how much effort people will expend on an activity, how long they will persevere when confronting obstacles, and how resilient they will prove in the face of adverse situations--the higher the sense of efficacy, the greater the effort, persistence, and resilience. Efficacy beliefs also influence the amount of stress and anxiety individuals experience as they engage in a task and the level of accomplishment they realize.

Strong self-efficacy beliefs enhance human accomplishment and personal well-being in many ways. People with a strong sense of personal competence in a domain approach difficult tasks in that domain, as challenges to be mastered rather than as dangers to be avoided, have greater intrinsic interest in activities, set challenging goals and maintain a strong commitment to them, heighten their efforts in the face of failure, more easily recover their confidence after failures or setbacks, and attribute failure to insufficient effort or deficient knowledge and skills which they believe they are capable of acquiring. High self-efficacy helps create feelings of serenity in approaching difficult tasks and activities. Conversely, people with low self-

efficacy may believe that things are tougher than they really are, a belief that fosters stress, depression, and a narrow vision of how best to solve a problem. As a result of these influences, self-efficacy beliefs are strong determinants and predictors of the level of accomplishment that individuals finally attain.

Efficacy beliefs in part determine outcome expectations. Individuals who expect success in a particular enterprise anticipate successful outcomes. Students confident in their academic skills expect high marks on exams and expect the quality of their work to reap benefits. The opposite is also true of those who lack such confidence. Students who doubt their academic ability envision low marks before they begin an exam. The expected results of these imagined performances will be differently envisioned: continued good grades and academic success for the former, curtailed possibilities and academic failure for the latter. Bandura (1984) argued that the outcomes people expect are largely dependent on their judgments of what they can accomplish.

Research findings over the years have generally supported Bandura's (1986) contention that efficacy beliefs mediate the effect of skills or other self-beliefs on subsequent performance attainments (Bandura, 1997; Schunk, 1991). Researchers have also demonstrated that self-efficacy beliefs influence these attainments by influencing effort, persistence, and perseverance (Bandura and Schunk, 1981; Bouffard-Bouchard, 1990; Schunk and Hanson, 1985). Bouffard-Bouchard, Parent, and Larivée (1991) found that students with high self-efficacy engaged in more

effective self-regulatory strategies at each level of ability. Self-efficacy also enhances students' memory performance by enhancing persistence (Berry, 1987). In studies of college students who pursue science and engineering courses, high self-efficacy has been demonstrated to influence the academic persistence necessary to maintain high academic achievement (Lent, Brown, and Larkin, 1984, 1986).

Zimmerman, Bandura, and Martinez-Pons (1992) used path analysis to demonstrate that academic self-efficacy mediated the influence of self-efficacy for self-regulated learning on academic achievement. Academic self-efficacy influenced achievement directly ($= .21$) as well as indirectly by raising students' grade goals ($= .36$). Other researchers have found that self-efficacy is related to self-regulated learning variables (for example, Feather, 1988; Fincham and Cain, 1986; Paris and Oka, 1986; Pintrich and Schrauben, 1992; Pokay and Blumenfeld; 1990; Schunk, 1982b, 1985). Findings in this area suggest that students who believe they are capable of performing academic tasks use more cognitive and metacognitive strategies and persist longer than those who do not (Pintrich and Garcia, 1991). Pintrich and De Groot (1990) reported a correlation between academic self-efficacy and both cognitive strategy use and self-regulation through use of metacognitive strategies. Academic self-efficacy also correlated with semester and final year grades, in-class seatwork and homework, exams and quizzes, and essays and reports. Pintrich and De Groot concluded that self-efficacy played a "facilitative" role in the process of cognitive engagement, that raising self-efficacy beliefs might lead to increased use of cognitive strategies and, thereby, higher performance, and that "students need to

have both the 'will' and the 'skill' to be successful in classrooms" (p. 38). Students who lack confidence in skills they possess are less likely to engage in tasks in which those skills are required, and they may more quickly give up in the face of difficulty. Some researchers have found that girls perform as capably as do boys in varied academic tasks but often report lower self-efficacy, particularly at higher academic levels (Pajares and Johnson, 1996; Pajares and Miller, 1994, 1995).

Pajares and Valiante (1997) detected no sex differences in the confidence ratings that students made, relative to their confidence to accomplish varied tasks related to the process of writing an essay. Boys and girls gave themselves an average rating of 82 on a scale of 0 to 100 on which they were asked to express their confidence. Indeed, although boys and girls did not differ in their reported confidence to accomplish the writing skills outlined on the efficacy measure, when asked to directly compare their writing capability with that of boys, girls expressed a greater degree of superiority in their writing relative to boys in their class or in their school. In other words, although girls did not award themselves higher numbers than did the boys when asked to provide ratings of their confidence to accomplish the specific writing skills called for on the efficacy measure, it was evident that girls considered themselves better writers than the boys.

In academic settings, self-efficacy researchers have sought to determine the predictive value of self-efficacy beliefs on other motivation constructs or on varied

performances. In most cases, the statistical models with self-efficacy as a dependent variable have accounted for only a small portion of the variance. Future investigations might seek to identify sources of academic self-efficacy information other than those typically used -- aptitude, ability, previous achievement -- so as to trace the genesis and development of self-efficacy beliefs as well as determine how perceptions of efficacy mediate the influence of these sources on self-regulatory strategies, on other constructs, and on subsequent performances. The current research intended to fill this gap by assessing the effect of learner support services on student self-efficacy.

According to Pajares (1997) students cannot accomplish tasks beyond their capabilities simply by believing that they can; beliefs become the internal rules individuals follow as they determine the effort, persistence, and perseverance required to achieve optimally as well as the strategies they will use. Researchers have examined the influence of self-efficacy on these variables and reported significant relationships, but it is not entirely clear how these connections are made or under what conditions similar self-beliefs can result in different levels of motivation. Because of the survey nature of most investigations, effects are generally assessed in terms of students' self-reported effort and persistence rather than investigator-observed effort and persistence. This has also been the case with self-regulatory strategies, which have been typically self-reported by students rather than directly observed by investigators. Two strategies are called for. The first is for researchers to assess both the sources and the effects of self-efficacy through direct observation

rather than rely on students' self-reports; the second is to increase the use of experimental techniques so as to manipulate sources and effects. The current study was designed in line with the second strategy.

2.6.3: Self-efficacy and Human Performance

Peterson and Arnn (2005) argue that self-efficacy is the foundation of human performance. According to Zimmerman and Schunk (2003), in the context of human learning, the predictive power of self-efficacy beliefs on students' academic functioning has been extensively studied. Research on self-efficacy in academic settings has focused on prior performance, modeling, goal setting, and attributional feedback (Pintrich and De Groot (1990), Zimmerman, Bandura and Martinez-Pons (1992). The principal finding is that students' self-efficacy beliefs are significantly related to academic performance.

Prior performance has proven to be an important element in students' perceptions of self-efficacy. Self-efficacy beliefs, however, appear to be more than a reflection on prior performance. Several studies have shown that self-efficacy beliefs are formed by a cognitive weighting process using such factors as prior performance, self-perceptions of ability, effort expended, task difficulty, and the amount of assistance received (Bouffard-Bouchard, 1989; Schunk, 1982, 1983, 1984; Zimmerman, Bandura, and Martinez-Pons (1992). Modeling was addressed by Schunk and Hanson (Schunk,1981; Schunk and Hanson, 1985,1989). In these studies, it was again determined that self-efficacy is an accurate predictor of performance.

Further evidence of the link between self-efficacy beliefs and academic pursuits can be observed in the meta-analysis by Multon, Brown, and Lent (1991). The researchers used 36 studies to investigate the relationship between self-efficacy and performance. The majority of samples in the studies consisted of elementary school children and college students divided into students of normal achievement and low achievement. A variety of experimental designs and measures were used in the studies examined. Multon, et al. found an overall effect size estimate for self-efficacy and performance of 0.38, representing 14 percent of the variance in students' academic performance. It was also found that there was a stronger relationship between self-efficacy and performance for low-achieving students (0.56 effect size) over normal achieving students (0.33 effect size). Age was also a factor. In the normal achievement range, high school and college students had greater effect sizes than elementary students, 0.41, 0.35, and 0.21 respectively. This may have been in part due to the more mature students being able to make more realistic judgements of their self-efficacy.

As an overall conclusion, self-efficacy has been shown to play an important role in academic performance. Under varied circumstances, in different experimental treatments, and for different age groups, it has emerged as an important component in the process of motivating learners in traditional learning environments. The body of research relating self-efficacy and academic performance in distance learning, however, does not yet have the same depth. Distance learning has been embraced by

many institutions of higher learning and has experienced increasing enrolments. It would be important to also assess the role played by self-efficacy in academic performance and in the process of motivating learners in distance learning.

2.6.4: Gender and Student Self-efficacy

The relationship between gender and self-efficacy has been a focus of research. In general, researchers report that boys and men tend to be more confident than girls and women in academic areas related to mathematics, science, and technology (Meece, 1991; Pajares and Miller, 1994; Wigfield, Eccles, and Pintrich, 1996), despite the fact that achievement differences in these areas either are diminishing or have disappeared (Eisenberg, Martin, and Fabes, 1996). Conversely, in areas related to language arts, male and female students exhibit similar confidence despite the fact that the achievement of girls typically is higher (Pajares, 2003)

Gender differences in self-efficacy are confounded by a number of factors. First, these differences often are nullified when previous achievement is controlled (Pajares, 1996). Boys and girls also have a tendency to adopt a differing stance when responding to self-efficacy instruments. Researchers have observed that boys tend to be more self-congratulatory in their responses whereas girls are more modest (Wigfield et al., 1996). A third confounding factor is related to the manner in which gender differences typically are assessed and reported. Students usually are asked to provide confidence judgments that they possess certain academic skills or can

accomplish academic tasks. Differences in the average level of confidence reported are interpreted as gender differences in self-efficacy.

Another confounding factor deals with the nature of the self-belief that may be undergirding those differences. Some researchers have argued that gender differences in social, personality, and academic variables may actually be a function of gender orientation—the stereotypic beliefs about gender that students hold—rather than of gender (Eisenberg et al., 1996; Hackett, 1985; Harter, Waters, and Whitesell, 1997; Matsui, 1994). Eccles's (1987) model of educational and occupational choice posits that cultural milieu factors such as students' gender role stereotypes are partly responsible for differences in course and career selection and in confidence beliefs and perceived value of tasks and activities. Pajares and Valiante (2003) found that gender differences favouring middle school girls in writing self-efficacy were nullified when gender orientation beliefs were controlled.

Gender differences are related to developmental level. There is little evidence for differences in self-efficacy among elementary-aged children. Differences begin to emerge following children's transition to middle or junior high school (Eccles and Midgley, 1989; Wigfield, Eccles, Maclver, Reuman, and Midgley, 1991; Wigfield et al., 1996), with girls typically showing a decline in self-efficacy beliefs.

Jianwei, Fei, Chongjiang and Gengsheng (2001) carried out a research on self-efficacy of distance learning and its influence to learners' attainments. The purpose of the study was to explore learners' self-efficacy beliefs of distance learning, attainments in

distance learning, and the relations to learners' characteristics. The overall distance learning self-efficacy among students of different genders and grades were computed. Their beliefs about the effectiveness of distance learning were relatively positive with an average rating of 3.94 on the six-point scale (1=strongly disagree to 6=strongly agree). The ANOVA using gender and grade between subject factors manifested that gender had significant main effect on the self-efficacy of distance learning ($F(1,100)=16.97, p=.000$), indicating that male students had more positive beliefs than female. Grade had a marginally significant effect ($F(1,100)=3.33, p=.071$), showing that freshmen had more positive beliefs than students with one or two years of distance learning experience. Significant interaction was found for gender and grade ($F(1, 100)=8.29, p=.005$). Simple effect analysis revealed that gender had significant effect among the students with one or two years of distance learning ($F(1,101)=15.02, p=.000$), while it had no significant effect among freshmen ($p>.10$).

The foregoing studies have sought to relate self efficacy to such factors as gender, grade level, family background and funding. However, none of the studies have sought to find out whether learner support services affect self-efficacy. The current study sought to fill that gap.

2.7: Student Motivation

Motivation is an important variable related to adult distance learner success and is often cited in the professional distance education literature (Moore and Kearsley, 2005). Knowles (1980) theorized the primacy of motivational processes in successful

adult learning. Research into characteristics of distance learners (Terrell and Dringus, 1999) reported that such students are more likely to have an independent learning style, manifest self-directed behavior, and possess an internal locus of control, although findings regarding achievement and persistence in the distance classroom have been inconclusive (Gibson, 2003).

Merisotis and Phipps (1999), in a review of the distance education literature, suggested that the most important factors influencing student success are student motivation, the nature of the learning tasks, learner characteristics, and the instructor. Threlkeld and Brzoska (1994), in writing about distance education, noted that "maturity, high motivation levels, and self-discipline have been shown to be necessary characteristics of successful, satisfied students" (p. 53). Indeed, a few studies (Oxford, Young, Ito, and Sumrall, 1993; Schwittman, 1982) reported student motivation as the single most important predictor of student success in distance education. A meta-analysis of distance education empirical literature conducted by Bernard et al. (2004) identifies the need to explore more fully, student motivational dispositions in distance education. Accordingly, the present research examines student motivation.

There are many constructs of importance in understanding motivational processes: outcome expectancies (Feather, 1982; Vroom, 1964), attributions (Miller, Brickman, and Bolen, 1975), goal directedness (Covington, 2000), intrinsic versus extrinsic motivation (Deci, 1975), locus of control (Rotter, 1966), self-efficacy (Bandura, 1977),

volition (Kuhl and Fuhrmann, 1998), self-regulation (Zimmerman, 2002), and self-control (Rosenbaum, 1989). A common thread that runs through many of these constructs is the identification of internal and external sources of motivation, for example, internal and external attribution and intrinsic and extrinsic motivation.

Although theories on what motivates learners suggest that there are many elements that influence learners such as gender, peer influence and age, these theories have focused on the traditional learner rather than the distance learner (Elaine 2003). Much of the existing research on motivation and learners discusses factors which contribute to the development of the learners' intrinsic motivation. In the event a student lacks motivation, several theories suggest ways to increase this through extrinsic reinforcement, learning goals, student expectations, among others (Elaine, 2003).

2.7.1: Motivation of Distance Learners

Distance learning is an excellent method of reaching the adult learner because it allows a high degree of flexibility to those who have competing responsibilities and priorities of work, family and school. However, distance education has its problems, including loss of student motivation and high attrition rates. While designers of distance education programmes hope that all of the students who enroll in their programmes are motivated, this quality should be considered a prerequisite for distant learners. The motivating forces that are usually present in traditional classrooms such as group pressure or a familiar learning situation and social factors,

are often missing in the distance settings (Zvacek, 1991). Student motivation has a powerful effect on attrition rates, and motivators for adult distance learners are often different from those of traditional students.

Feasley (1983) observed that distance education students mostly seek to satisfy specific life goals, for example, job-related training, as well as their own intellectual curiosity. In a study of undergraduate distance learners, Becker (as cited in Perdue, 2003) found that students expected their distance programme would have increased interaction with instructors and learners, require less campus time, be more flexible, and be more engaging due to the use of media. Such findings suggest both external and internal sources of motivation for choosing distance learning.

Klesius, Homan, and Thompson (1997) concluded that distance education is more likely to be perceived positively when students need the course content, enjoy little or no travel to the instruction site, and are intrinsically motivated. Intrinsic motivation was found to be a significant predictor of persistence and achievement in distance education (Coussement, 1995; Fjortoft, 1996).

According to Nashashbi (2002), part-time and distance learners are strongly motivated to study. West Country Learning and Skills Research Network (2002) found that they study for a variety of reasons. These are sometimes seen as internal to the individual learner (such as an intrinsic interest or desire to learn) or external (such as studying to learn new skills for a job).

Teacher/student relationships are also significant in determining the motivation of the learners. Bloomer and Hodkinson (2000), found that the strength of student-tutor relationship affects the level of student satisfaction and James (2002) found that learner motivation is affected by the amount of "quality" contact time with teacher and level of teacher commitment. Other factors are also important in determining student motivation, and these apply to both full time, part-time and distance students. Martinez and Maynard (2002) identified the following as important: teaching-related issues; course-related issues; assessment; individualized support and guidance; and student-related issues.

2.7.2: Demographics and Student Motivation

According to Galusha (1997), students who enroll in distance learning courses do so for convenience. They are either time bound by work, travel schedules, or location bound due to geographic or family responsibilities. Traditionally, distance learners are perceived as adults, providing education at the post secondary level. In a study by Kahl and Copley (1992), it was noted that the majority of face to face learners are under 25 yrs old, whereas the majority of distance learners are between 25-34 years old.

Studies involving the age of distance learners indicate some motivational differences among young and older students. Percy and Withnall (1992) noted that elderly students were motivated by enjoyment of learning and pleased with the flexibility of

distance education. In addition, older students (those over 50) appear to have higher completion rates (Galusha, 1997). This makes sense in that older students probably have greater coping skills in dealing with the problems in distance learning, and fewer priorities (such as children) competing for their time.

Two studies of older students in the British Open University between 1982 and 1987 indicated that the most frequently mentioned reasons for studying were to make up for missed opportunities in the past, keep an active mind, and continue developing and earn a degree (Percy and Withnall, 1992). In the same study, these older students mentioned concerns about memory and their ability to keep up with the pace and organisation of the study. In addition, poor health, disabilities and dislikes in travel might further motivate elderly students to participate in distance courses (Percy and Withnall, 1992). Conversely, barriers to elderly students' motivation may include limited prior educational experiences or negative self images including the perception that they are too old to learn (Percy and Withnall, 1992).

Galusha (1997) indicated that the majority of students enrolled in distance courses are women. Other research by Matthews (1999) supports this finding. In her research, Matthews (1999) stated that distance learning mainly attracts women with children, and that sixty six percent of the adult distance education market is female, and eighty percent of them have children. Again, this would suggest competing interests of family/children, because women are predominantly the caregivers, taking care of both children and elderly parents.

2.7.3: Prior Levels of Knowledge

Another factor that seems to influence motivational levels in distance learners is prior levels of knowledge. Rekkedal (1983) noted that educational levels prior to enrollment in a distance course were related to persistence. Kahl and Cropley(1992), noted that one third of distance learners have had experience with adult education, but only ten percent of face to face learners have had the same exposure. This may be accounted for by the age differences that have been observed between traditional and distance learners.

2.7.4: Study Conditions

Distance learners have been found to differ from face to face learners in several ways. First, they are generally more isolated, display lower levels of self confidence, have less opportunity to study, have less access to supportive structures such as library, advisors, tutors, and show an increased desire for structure in their learning material (Kahl and Cropley, 1992). In addition, distance learners must demonstrate the ability to work independently. They must undertake their studies with virtually no supervision, be willing to seek assistance when needed, and be motivated to advance at an appropriate pace (Manzo, 1997).

Isolation becomes a major factor in the motivation of distance learners. Distance learners must cope with isolation from both the instructor and peers. A study by Kahl and Cropley (1992), showed that about one third of the distance learners complained

that they wanted to work in groups with other people, but were unable to make contacts necessary to do so. Kahl and Cropley (1992), also noted that half of distance learners indicated that they were unable to discuss courses with anyone. Students enrolled in distance courses often lack proper feedback, which also often leads to a decline in motivation levels. Isolation has been attributed to high attrition rates among many distance learners (Schieman and Jones, 1993).

Research indicates that the psychological consequences of isolation are that distance learners have clearer expectations of their studies, and have decreased levels of confidence about their ability to complete their studies. The decreased level of self confidence leads students to a desire to structure and organize their learning. Related to the issue of structure is learner control. Many distance learners, when interviewed, reported that the problem of low learner control was a very real one. This often led to a sense of alienation and frustration, which in turn, often resulted in failure and/or drop out (Schieman and Jones, 1993). Distance learners are further disadvantaged by problems of access to information and support. Poor access to libraries, student advisors, tutors, financial aid, and technical support all influence motivation levels of the student. Without proper support, students often develop a sense of learned helplessness which in turn, acts as a de-motivator.

2.7.5: Student Motivation and Academic Achievement

High motivation and engagement in learning have consistently been linked to reduced dropout rates and increased levels of student success (Kushman, Sieber, and

Harold, 2000). Student's motivation for learning is generally regarded as one of the most critical determinants, if not the premier determinant, of the success and quality of any learning outcome (Mitchell, 1992). Research shows that students' perceptions of academic competency decline as they advance in school (Eccles, Wigfield, and Schiefele, 1998). Schunk and Pajares (2002) attribute this decline to various factors, including greater competition, less teacher attention to individual student progress, and stresses associated with school transitions.

Some studies have found little or no significant relationship between motivation and academic achievement. A study by Niebuhr (1995) examined relationships between several variables and student academic achievement. The study included an investigation of the relationship of individual motivation and its effect on academic achievement. Findings indicate that student motivation showed no significant effect on the relationship with academic achievement. Niebuhr's (1995) findings suggest that the elements of both school climate and family environment have a stronger direct influence on academic achievement. Another study by Boggiano, Main, and Katz (1991), regarding differences in gender in motivation, found that females were significantly more extrinsic than males. Male students' performance accords their interest level more than is the case for female students. Specifically, female students' academic performance is less associated with their interests than male students' academic performance (Schiefele, Krapp, and Winteler, 1992).

Ibtesam (2006) carried out a study on the effect of motivation, family environment, and student characteristics on academic achievement. The study was conducted on 388 high school students (193 males and 195 females) from Abu Dhabi District, United Arab Emirates (UAE). An independent t-test was used to compare results between male and female on each variable. Relationship between motivation, family environment, student characteristics, and academic achievement were assessed by calculating simple correlations among these variables. Results for male students on the three scales were similar to those of female students. To statistically check whether the differences between males and females are significant, an independent t-test was used on each scale using (.01) level of significance. Differences on motivation and parental influence were found to be statistically not significant, while the difference between males and females on student's characteristics was significant ($t= 2.91, p < .001$). However, practically, this small difference could not be counted. Based on that, it was concluded that there are no gender differences on the three variables measured by the instrument.

The relationship between motivation, family environment, student characteristics, and academic achievement were assessed by calculating simple correlations among these variables. The correlation between achievement and motivation was very small (.07). Although the correlations between achievement and family environment (.15) and between achievement and student's characteristics (.16) were statically significant, these values were still practically small. Motivation and family environment were not highly correlated (.19). However, the foregoing study focused

on high school students and though the findings contribute to the pool of knowledge, the situation in higher education, that was the focus of the current study, may differ basing on the maturity level of the students. Similar to the literature earlier reviewed on self-efficacy, the foregoing literature on student motivation have sought to relate student motivation to demographics, study conditions and academic achievement but none of the studies reviewed has sought to investigate whether learner support services affect student motivation. The current study sought to fill that gap.

2.8: Student Satisfaction

Student satisfaction is a broad area covering student's subjective experience during their college years and perceptions of the value of that experience. Levitz and Noel (2000) stated that the most successful colleges and universities are those that view themselves as active participants and contributors to their student's intellectual, personal, and social growth.

Many higher education institutions have overlooked the degree to which student satisfaction can influence the overall college experience and the impact it has on student outcomes (Astin, 1993). Astin states, "it is difficult to argue that student satisfaction can be legitimately subordinated to any other educational outcomes".

Results of Astin's study indicated that students highest levels of satisfaction, while attending college, were associated with : courses in their major; their opportunities to participate in extra-curricular activities; personal interactions with their professors

and the overall college experience. The lowest level of student satisfaction dealt with regulations governing campus life and essentially all student support services such as academic advising, financial aid assistance, career counselling and job placement services. The study did not analyse the degree of the associations, but only categorized students levels of satisfaction into highest and lowest.

Student satisfaction in traditional learning environments has been overlooked in the past (Astin, 1993) and has not been explored sufficiently (De Bourgh, 1999; Navarro and Shoemaker, 2000). Student satisfaction has also not been given the proper attention in distance learning environments (Biner, Dean and Mellinger, 1994). Many current distance learners are “non-traditional students” – adults who have important commitments such as raising a family and maintaining full-time employment (Richards and Ridley, 1997). Non-traditional learners may differ from traditional learners in reporting satisfying experiences. According to Donohue and Wong (1997), further research should be conducted to investigate causes of satisfaction in non-traditional students. Richards and Ridley (1997) also suggest further research is necessary to study factors affecting student enrolment and satisfaction.

Prior studies in classroom-based courses have shown there is a high correlation between student satisfaction and retention (Astin, 1993; Edwards and Waters, 1982). Studies in which distance learners were the target population have yielded similar results (Bailey et al., 1998).

Most college students spend considerable time, money, and effort in obtaining a quality education and perceive their post secondary educational experiences as being of high value (Knox, Lindsay, and Kolb, 1993). Satisfaction is an important "intermediate outcome" (Astin, 1993, p.278). Student satisfaction is important because it influences the student's level of motivation (Chute, Thompson and Hancock, 1999, Donohue and Wong, 1997) which is an important psychological factor in student success (American Psychological Association (APA), 1997). Bean and Bradley (1986), found student satisfaction has a significant effect on performance. Conversely, performance does not affect student satisfaction.

According to experts, satisfaction is a good predictor of academic success (Donohue and Wong, 1997) and retention (Astin, 1993; Edwards and Waters, 1982). Elliot (1999), notes that postsecondary educational institutions must retain existing students in order to achieve the goal of maximum growth. Therefore educational institutions must focus on student satisfaction in order to increase retention (Astin, 1993). A postsecondary educational institution may also use student satisfaction as one measure of its success (Knox et al., 1993).

Student satisfaction is an important element in the student retention equation. Without careful identification of, and attention to, students' expectations of the college, compared to their satisfaction, an institution may commit valuable time and resources in areas that may not have as much impact on student satisfaction and

retention, than other areas of identified need. (Hundriesser,1999; Juillerat, 1995; Noel –Levitz Inc., 2001; Schreiner and Juillerat, 1993).

2.8.1: Student Satisfaction and Student Support Services

Cooney (2000) did a student satisfaction survey at Salt Lake Community College. The Student Satisfaction Inventory (SSI) concentrated on mean averages of the student responses evaluating Salt Lake Community College programmes and services. The Salt Lake Community College was rated highest on: responsiveness to diverse populations (5.23), registration effectiveness (5.12), and academic services (5.07). The college was rated lowest on: admissions and financial aid (4.64), academic advising (4.67) and campus support services (4.69). In the Noel Levitz scoring system, a score of 4.60 is just above the mid-point between 4.00 “neutral” and 5.00 “somewhat satisfied”.

Kapi’olani Community College (1999) carried out a current student survey. The purpose of the survey was to poll the campus climate for the purpose of highlighting areas of strength and areas in need of improvement. The survey had a biographical information section in addition to which it was divided into parts that were based on the same answering scale, with no consideration for the topics covered. For analysis purposes, the items were rearranged into six sections, that is, Academic Support, Education, Workshops, Climate, Services and Overall. The Overall section was a one-item section that dealt with a general opinion about the institution. The results indicated that the Kapi’olani Community College students rated the institution with a

mean score of 3.04 out of 4.00. This was above average rating. Although it is described as average rating, significance was not calculated and therefore meaningful conclusions may not be drawn. Climate was ranked as the most satisfactory feature of the institution, with a mean score of 3.14, while services were ranked as the least satisfactory with a mean score of 2.91.

The survey items were ranked in order of students' satisfaction. The items with the highest level of student satisfaction were: instructor/student relations (3.31), student/student relations (3.27), the library (3.25), information about how to apply for admission to the institution (3.22), I am satisfied with the knowledge I have gained in my courses (3.16), courses in my major are relevant to my career plans (3.15), counsellor/student relations (3.11), the equipment used in my classes is adequate for my needs (3.10), I have enjoyed most of the courses I have taken (3.10), and admissions counselling (3.09).

The survey items with the lowest level of current student satisfaction were: communication of policy decision by student congress to students (2.55), representation by student congress in campus governance (2.63), my math placement test level accurately reflects my ability (2.72), financial aid (2.74), campus physical facilities (2.76), the college uses student input to improve (2.77), student activities (2.78), student employment services (2.79), registration (2.79) and, I can do my coursework more efficiently thanks to my knowledge of the internet (2.82).

The responses were also analysed according to the time duration in years at the institution. The mean responses of the three time categories, (1st year, 2nd year and over 2 years), indicated that students who were at the institution for their third or fourth semester, (that is 2nd year), were the least satisfied with the institution with a mean of 2.96. Differences between this mean and the other two means, (3.01 for 1st year and 3.00 for over 2 years) were statistically significant.

A survey of online students at New York Institute of Technology was conducted to determine satisfaction with existing online student services and to find out what type of services would be desirable in the future (LaPadula, 2003). A two-part survey was devised: In the first part, participants were asked how satisfied they were with the following online student services: admissions, financial aid, registrar, prior learning credit evaluation, bursar, academic advisement, textbooks, library, student commons, and technical assistance. For each of these, students were asked about the following: quality of service, knowledge of staff, helpfulness and attitude of staff, ease of application process, wait time for response, and a few other questions pertaining to specific services. Items were accompanied by six-point scales, ranging from "very dissatisfied" to "very satisfied".

In the second part of the survey, the online students were asked what additional types of student services they would be interested in having at the institution. They were asked about four areas in which they were receiving limited or no online

services: social services, academic advising /career counselling, technical assistance, and personal/mental health counselling.

For most items, students expressed satisfaction with existing services; that is, the majority of respondents checked categories of slightly satisfied, satisfied and very satisfied. The percentage of dissatisfied students was too small to examine differences among categories reflecting the degree of dissatisfaction. Therefore, response categories were collapsed to yield a dichotomy of dissatisfied versus satisfied for all analyses.

Overall, the students were satisfied with many of the online student services that they were receiving. The levels of satisfaction with the services were ranked as follows: For library, the students were most satisfied with library services online. Of the students surveyed, 92% to 97% were satisfied with library services such as quality of service, knowledge of staff, helpfulness and attitude of librarians, assistance with research, and wait time for response.

With regard to admissions, 90% to 93% of the students were satisfied with quality of service, knowledge of staff, helpfulness and attitude of staff, ease of application process, and wait time for response. Another 90% to 92% students were satisfied with textbook services; 88% to 94% were satisfied with technical assistance services; 84% to 93% were satisfied with prior learning credit evaluation services; and 85% and 90% were satisfied with academic advising services. Regarding financial aid, of those

surveyed, 82% to 88% were satisfied with the quality of service, knowledge of staff, helpfulness and attitude of staff, and ease of the application process. However, only 67% were satisfied with the wait time for response, 70% satisfied with amount of financial aid available, and 73% satisfied with the explanation of how aid is computed.

Regarding Bursar, of those surveyed, 83% were satisfied with the knowledge of staff, 80% were satisfied with the ease of the payment process, and 76% were satisfied with the quality of service. However, 70% were dissatisfied with the helpfulness and attitude of staff as well as with the wait time for response, and 69% were satisfied with the accuracy of billing. With regard to registrar services, 70% to 78% were satisfied in terms of knowledge of staff, helpfulness and attitude of staff, ease of registration process, and wait time for response. The Student Commons (this is a place where students and faculty come together as a community to discuss issues about online campus and the world in general), 73% of the survey participants were satisfied with the willingness of faculty to discuss questions and problems on The Commons, 69% were satisfied with The Commons as a source of student support, and 73% were satisfied with the wait time for response.

Even though the students were satisfied with most of the online student services available to them, they still expressed an interest in having additional student services online as follows: Of the participants surveyed, 25% to 38% reported interest in various types of social function services such as book club, current events chat

rooms, a student newspaper, academic clubs, online peer support groups, and guest speakers from the community. Of the students surveyed, 50% to 69% reported interest in additional academic services and career counselling services, such as degree maps accessible online, seminars related to career choices, online tutoring, and more information on career options. Interest was expressed by 36% to 42% of the participants in more technical help, such as how to do research online. Of the students surveyed, 25% to 34% reported interest in personal/mental health counselling such as seminars on parenting and time management, hot-line numbers (e.g. for depression and substance use), and access to an online psychologist. Though the foregoing study generated information on student satisfaction with various services, it only analysed them in percentages which had no corresponding numbers of students and neither was significance calculated.

Elrod (2002), conducted a study to compare institutional factors and student satisfaction. The study investigated and examined the relationship of institutional variables that is, those factors students associated and interacted with while attending a community college, and compared these to their reported level of expectations and satisfaction with the institution. Further inquiry examined the potential influence these variables may have had on students' decision to remain enrolled at Doña Ana Branch Community College, a two-year branch campus of New Mexico State University. Additionally, it was posited the study would provide new insight into the types of institutional services and programmes that are important to students while enrolled at Doña Ana Branch Community College.

The student satisfaction inventory contained 70 item statements designed to assess a variety of community college student experiences. The inventory's item statements were factor-analysed and scaled into 12 cluster variables (institutional variables) for use in the study analyses. These clustered items were : Academic advising and counselling effectiveness; academic services ; admissions and financial aid; campus climate; campus support services; concern for the individual; instructional effectiveness; registration effectiveness; responsiveness to diverse populations; safety and security; service excellence; and student centeredness. These were examined on a Likert scale of 1 to 7.

Generally the majority of responses fell within the range of "important" (6) to "very important" (7) for each cluster variable associated with expectations. The variable of instructional effectiveness had the highest mean score (6.44) while campus support services received the lowest mean score (4.71). Satisfaction mean scores were lower in every category compared to levels of expectation scores, but generally fell within the range of "somewhat satisfied" (5) to "satisfied" (6). However, the highest mean score for satisfaction was on the variable "registration effectiveness" and "student centeredness" (5.68) with the lowest score being on "campus support services" (4.08). An item on overall satisfaction level, whereby the students were asked to rate their overall satisfaction with their experience there thus far, had a mean score of 5.85. This indicated that students were "satisfied" with their experiences at the

college. However, the significance of these mean scores was not analysed. The study only assessed gender as a basis for these satisfaction levels.

One of the research hypotheses was that a difference exists in students' satisfaction of institutional variables between men and women. ANOVA was used to analyse the data collected. The findings did not support the hypothesis there would be differences in satisfaction levels of students' college experiences for men and women. Therefore, the research hypothesis was not accepted.

Greer, Hudson, and Paugh (1998), carried out a study on student support services and success factors for adult on-line learners. The study examined a variety of student support services and four areas for student success from the view point of World Wide Web-based learners in the University of Central Florida, College of Education, Vocational Education Area. The overall ratings for the student support services were very high, with only 10% of the respondents giving poor ratings for the entire array of student support services, and 90% of the respondents giving average or above-average overall ratings. The students numbers corresponding to the percentages were not given and therefore it is difficult to gauge the significance of the findings.

The most common theme in terms of students' perceptions of success factors were budgeting time, being self-motivated, and having supportive friends and family. Mentoring students and encouraging them, especially those new to web-based

learning, seemed to be the most effective and appreciated aspect of institutional support. Suggestions for improvement included better instructions during face-to-face orientation and steps for logging into web course sites, an improved process for obtaining student identification cards, and specific hands-on training during orientation for using Web LUIS and other internet search engines.

The foregoing studies on student satisfaction document learner support services offered by various institutions and ratings by students of their satisfaction with the services. None of the studies has attempted to go beyond rating of support services to investigate whether learner support services affect student satisfaction. The current study sought to fill that gap.

2.9: Theoretical Framework for the Study

The theoretical framework of this study is based on the constructivist theory. This theory was selected because the study was looking for an actual innovative approach to teaching and learning in higher education. The construction of a needs-based online learner support system was an innovation in supporting distance learners in the school of Continuing and Distance Education, University of Nairobi.

Constructivism is a theory of learning that advocates for students to develop and construct their own understanding of the material based upon their own knowledge and beliefs and experiences in concert with new knowledge presented in the classroom (Miller, 2000). Constructivism is recognized as a unique learning theory in

itself. It however, may be associated with cognitive psychology because as a theory of learning it focuses on a learner's ability to mentally construct meaning of their own environment and to create their own learning. As a teaching practice it is associated with different degrees of non-directed learning. The term constructivism is linked to cognitive and social constructivism.

Theorists associated with constructions are John Dewey; Lev Vygotsky, Jean Piaget, Jerome Bruner, Seymour Papert and Mitchell Resnick. Behaviourist learning theory had served its purpose and its approach and goals were becoming outdated according to constructivists like Seymour Papert. Constructivist learning theory sought to improve on what Behaviourist learning theory had already established by focusing on the motivation and ability for humans to construct learning for themselves. It viewed behaviourism as being too teacher centred and directed. Constructivists regarded the educational system as a process of matching skill objectives with test items. It was void of meaningful learning. They also saw the teaching process focus too much on individual work rather than on group work.

Constructivists believe that all humans have the ability to construct in their own minds through a process of discovery and problem-solving. The extent to which this process can take place naturally, without structure and teaching is the defining factor amongst those who advocate this learning theory. Jean Piaget, a Swiss psychologist, observed human development as progressive stages of human development. His four stages, which commence at infancy and progress into adulthood, characterize

the cognitive abilities necessary at each stage to construct meaning of one's environment.

The educational system as Papert saw it was too structured and it stifled natural curiosity. The means by which children were being taught relegated them to role of passive recipients of the teaching hence, they were not motivated to construct any meaning for themselves. Learning according to constructivists is a question of motivating an individual to attach new meaning to past cognitive experiences. Papert's desire to have children become motivated learners, critical thinkers, problem –solvers, and metacognitionists is to be achieved through educational reform that provides the learner with the necessary tools to participate and to take ownership of the learning process. According to Papert, the computer is the appropriate tool to achieve such desired educational reform.

Other learning theories equated with cognitive psychology are: Information – Processing theory, Scaffolding Theory (associated with the Russian Philosopher Lev, Vygotsky) and Brain-based learning theory. Lev Vygotsky thought that our cognitive development was directly related to our social environment. The culture we live in influences our social and cognitive development according to Vygotsky. He further recognizes the differences of how the world is seen by children and adults. Vygotsky labeled this difference in cognitive ability as the “Zone of proximal development”. The job of educators was to identify this zone and to find out where the child was situated in this zone and build upon their specific level through a “Scaffolding”

process. Building from what the learner knows is in essence, anchoring the learning on past experience. Such anchoring is fundamental to constructivist theory of learning.

In Van Glaserfeld's (1995b) radical constructivist conception of learning, the teachers play the role of a "midwife in the birth of understanding" as opposed to being "mechanics of knowledge transfer". Their role is not to dispense knowledge but to provide students with opportunities and incentives to build it up (Von Glaserfeld, 1996). Mayer (1996) describes teachers as "guides", and learners as "sense makers". In Gergen's (1995) view, teachers are coordinators, facilitators, resources advisors, tutors or coaches.

According to Driver, Aasoko, Leach, Mortimer, and Scott, (1994, P. 11), the role of the authority figure has two important components. The first is to introduce new ideas or cultural tools where necessary and to provide the support and guidance for students to make sense of these for themselves. The other is to listen and diagnose the ways in which the instructional activities are being interpreted to inform further action. Teaching from this perspective is also a learning process for the teacher.

3.3. Conceptual Framework of the Study

Central to constructivism is its conception of learning. Von Glaserfeld (1995) argues that: "From the constructionist perspective, learning is not a stimulus – response phenomenon. It requires self regulation and the building of conceptual structures through reflection and abstraction". (p.14). Fosnot (1996) adds that "rather than

behaviours or skills as the goal of instruction, concept development and deep understanding are the foci(...) (P.10). For educators, the challenge is to be able to build a hypothetical model of the conceptual worlds of students since these worlds could be very different from what is intended by the educator (Von Glasersfeld, 1996). Multiplicity is an overriding concept for constructivism. It defines not only the epistemological and theoretical perspective but, as well, the many ways in which the theory itself can be articulated.

Constructivism advocates for learner-centred approach to education, learner independence and interaction. Teachers are seen as coordinators, facilitators, resource advisors, tutors or coaches. They provide support and guidance for students as they construct meaning of their environment. For learner support, this implies that the learner support services should be responsive to the learners needs so as to enable them to participate and to take ownership of the learning process. It also implies that the learner support system should allow for human interaction whether with peers, tutors or discussion groups and that there should be room for immediate feedback.

2.10: Conceptual Framework of the Study

The conceptual framework of the study is based on the variables of the study and the literature reviewed. It illustrates how the variables in both Phase One and Phase Two are interrelated into one whole. The variables in Phase One of the study are indicated as independent and dependent variables. These variables illustrate how needs

analyses was undertaken forming the basis for construction of the learner support system. The final step of the study was an evaluation of the effectiveness of the learner support system in the delivery of the learner support services to distance learners. Figure 1 presents the conceptual framework of the study.



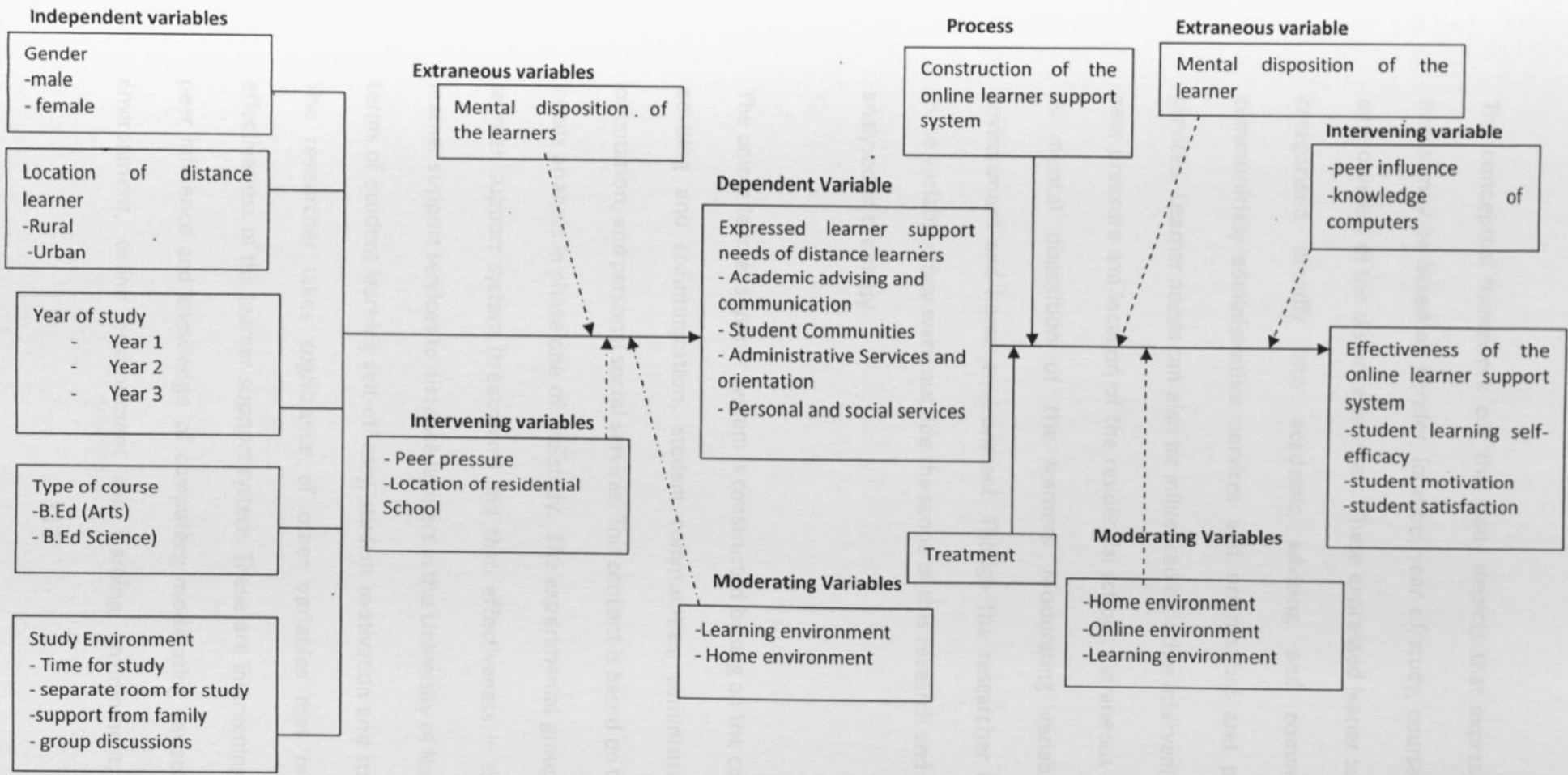


Figure 1: Conceptual Framework of the Study

The conceptual framework of the study depicts that expressed learner support needs may be based on gender, location, year of study, course of study and study environment of the distance learners. These expressed learner support needs can be categorised broadly into academic advising and communication; student communities; administrative services and orientation; and personal and social services. Learner needs can also be influenced by other intervening variables such as peer pressure and location of the residential school. Extraneous variables were such as mental disposition of the learners. Moderating variables were learning environment and home environment. Though the researcher took cognizance of these variables they were outside the scope of this research and were therefore not analysed in the study.

The online learner support system is constructed basing on the content on academic advising and communication, student communities, administrative services and orientation, and personal social services. This content is based on the learner support needs analysis in phase one of the study. The experimental group is exposed to the learner support system (treatment) and then effectiveness in the delivery of the learner support services to distance learners in the University of Nairobi is assessed in terms of student learning self-efficacy, student motivation and student satisfaction. The researcher takes cognizance of other variables that may influence the effectiveness of the learner support system. These are intervening variables such as peer influence and knowledge of computers; moderating variables such as home environment, online environment and learning environment; and extraneous

variables such as the mental disposition of the learner. However, in this study, random assignment of individuals meant that every individual who was participating in the experiment had an equal chance of being assigned to any of the experimental or control conditions being compared. The random assignment allowed the researcher to form groups that, right at the beginning of the study, were equivalent- that is, they differed only by chance in any variables of interest. In other words, random assignment was intended to eliminate the threat of additional, or extraneous variables- not only those of which the researcher was aware but also those she was not aware- that might affect the outcome of the study.

2.11: Overall Summary of the Reviewed Literature

The literature reviewed has highlighted those elements that should be included in a learner support model such as personal contact between learners and support agents, peer contact, the activity of giving feedback to learners, academic advising, technical support and financial aid. It has also discussed the issues impacting the design of an effective learner support system such as study habits, age and gender of learners, home environment, availability of local support and geography. However, there is no universal learner support system that is modeled for all possibilities and no studies could be identified involving institutions that offer the full array of student affairs programmes to the distance learning population; there is no universal learner support system.

The literature reviewed also reveals that sense of connection is strongly tied to retention, completion and satisfaction(Krauth and Carbajal,1999) and that a widely accepted concept in student affairs is that traditional on-campus students benefit from being engaged in campus life and feeling connected to various aspects of the institution and that this benefit may also extend to distance learners as evidence mounts that these students are more successful when provided with support services(Dirr,1999;Levy and Beaulieu,2003).

The literature review has also evidenced that while support for distance learners is emphasized in publications by professional organisations and associations, primarily in the fields of distance education and technology and while the topics of student support and student services appear with increasing frequency in the literature, the provision of student services is reported to be a significant but underdeveloped component of distance education programmes (Peters, 1998; McCleadon and Cronk, 1999; Husmann and Miller, 2001; Levy and Beaulieu, 2003; Levy, 2003). Student services for distance education is also an area that has only recently seen empirical study and is still quite lacking (Visser and Visser, 2000; Lapadula, 2003). The current empirical study will contribute towards filling this gap and revamp the field of learner support which is, apparently, a significant but underdeveloped component of distance education programmes.

Robinson (1995) comments that in the literature on learner support in open and distance education, description and prescription outweigh empirical enquiry or

research. Publications on learner support are often in the form of 'how to do it' guidance or reports of experience. These can have practical value but may be a theoretical, unsubstantiated or lack validity when transferred to other contexts. While many accounts express the conviction that learner support services make a difference to outcome, demonstrations of the relationships are less easy to find. This means that more research is needed to determine a more definite relationship involving learner support system elements. The current research endeavoured to fill this gap.

The studies reviewed document learner support services, their importance, accessibility and requirement phases but none of the studies has tried to relate learner support needs to gender, location, course of study and study environment of distance learners, variables which were the subject of the current study.

While studies reviewed highlight the elements of learner support system, none of the studies has endeavoured to construct and evaluate the effectiveness of a learner support system and therefore most of the resultant theoretical assumptions about learner support system have not been put to the test for empirical evidence. The current study endeavoured to fill that gap.

Literature review has also evidenced that self-efficacy beliefs influence task choice, effort, persistence, resilience, and achievement. Compared with students who doubt their learning capabilities, those who feel efficacious for learning or performing a task

participate more readily, work harder, persist longer when they encounter difficulties, and achieve at a higher level.

Self-efficacy beliefs influence motivational and self-regulatory processes in several ways. They influence the choices people make and the courses of action they pursue. Most people engage in tasks in which they feel competent and confident and avoid those in which they do not. Efficacy beliefs in part determine outcome expectations such that individuals who expect success in a particular enterprise anticipate successful outcomes. Students confident in their academic skills expect high marks on exams and expect the quality of their work to reap benefits. It has also been argued that self-efficacy is the foundation of human performance

The studies reviewed have sort to relate self efficacy to such factors as gender, grade level, family background and funding but none of the studies have sort to find out whether learner support services affect self-efficacy. The current study seeks to fill this gap

Regarding student motivation, the literature reviewed indicates that motivation is an important variable related to adult distance learner success. High motivation and engagement in learning have also been linked to reduced dropout rates and increased levels of student success. The literature has drawn an association of student motivation with prior levels of knowledge and study conditions. However, none of the studies reviewed has endeavoured to inquire into the link between

student motivation and provision of learner support services. This study therefore sort to investigate that link and fill the gap in knowledge

1.1 Introduction

Literature reviewed has indicated that satisfaction is a good predictor of academic success and that it is an important element in the student retention equation. Without careful identification of, and attention to, students' expectations of the college, compared to their satisfaction, an institution may commit valuable time and resources in areas that may not have as much impact on student satisfaction and retention, than other areas of identified need.

The literature has also investigated the link between gender and year of study and student satisfaction. Much of the literature however, has been on ratings of, and satisfaction with various learner support services but none of the studies has shed light on the relationship between provision of learner support services and student satisfaction. This study sought to investigate that relationship.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1: Introduction

This section deals with the elucidation of the methods that were applied in carrying out Phase One (Learner Needs Analysis) and Phase Two (Construction and Evaluation of the Online Learner Support System) of the research study.

The First section covers research methodology for Phase One of the Study. It is organized under the following subsections: research design, target population, sample and sampling procedure, research instrument, instrument validity, instrument reliability, data collection procedure and data analysis techniques and operationalisation of variables.

The second section covers research methodology for Phase Two of the study. It is organized under the following subsections: research design, target population, sample and sampling procedure, research instrument, instrument validity, instrument reliability, data collection procedure and data analysis techniques and operationalisation of variables.

3.2: Research Methodology for Phase One of the Study

This section covers research methodology for Phase One of the study.

3.2.1: Research Design

Research design for Phase One of the study was survey. Survey research involves researchers asking (usually) a large group of people questions about a particular topic or issue. Survey research has three major characteristics: Information is collected from a group of people in order to describe some aspects or characteristics (such as abilities, opinions, attitudes, beliefs and/ or knowledge) of the population of which that group is a part. The main way in which the information is collected is through asking questions; the answers to these questions by the members of the group constitute the data of the study. Information is collected from a sample rather than from every member of the population (Fraenkel and Wallen, 2000).

This design was found appropriate because the study involved an analysis of learner support service needs of distance learners in the School of Continuing and Distance Education. A sample of the distance learners was studied in order to collect information on learner needs of the entire population. The needs of distance learners helped generate a prioritized list of learner support needs.

3.2.2: Target Population

Target population is defined as the group of interest to the researcher. The group to whom the researcher would like to generalize the results of the study (Fraenkel and Wallen, 2000). The target population in Phase of the study consisted of distance learners in the School of Continuing and Distance Education of the University of Nairobi. The distance learners consisted of learners undertaking degree level

programmes, that is, Bachelor of Education (Arts) and Bachelor of Education (science). Bachelor of Education (science) is conducted in conjunction with the School of Physical and Biological Sciences, University of Nairobi. The mode of study for these learners includes face-to-face residential session in the months of April, August and December, where the students attend lectures for tuition, revision and examination. After the residential sessions, students carry away course materials and assignments. The completed assignments are later submitted to tutors either directly or through the Extra-Mural Centres for marking and recording. Regional meetings are held once a month in the respective regions for the students to share views with the Resident Lecturer from the regional centre and visiting academic staff from the Faculty. These meetings are seen as an integral part of learner support. The students are usually away from the University grounds in various regions of the country. There were also learners undertaking Post-Graduate courses in Sexually Transmitted Infections (STI) and Education (P.G.D.E.). The mode of study of the learners undertaking the Post-Graduate Diploma in Education (P.G.D.E.) is similar to that of the degree programmes whereas those undertaking Post-Graduate Diploma in Sexually Transmitted Infections (STI) undergo face to face mode of learning in scheduled sessions at the College of Health Sciences.

At the time of conducting Phase One of the study, there were 6,500 distance learners taking B.Ed (Arts), 200 in B.Ed (Science), 23 in P.G.D.S.T.I and 14 in P.G.D.E. These formed the target population for Phase One of the study.

3.2.3: Sample and Sampling Procedure

Sample and sampling procedure is discussed in this section.

3.2.3.1 Sample

The sample size was determined as per the table of random numbers for determining sample size of a given population suggested by Krejcie and Morgan (1970) (in Sekaran, 2004). For each of the sub-sets of distance learners, an appropriate sample size was drawn using this table. This enabled the researcher to get an appropriate sample size for each of the subsets and to include groups which would have otherwise been obscured due to their small size in the entire population of distance learners. These groups were the P.G.D.S.T.I and P.G.D.E

3.2.3.2.Sampling Procedure

According to the table of random numbers for determining sample size of a given population suggested by Krejcie and Morgan (1970), a sample size of 362 out of the possible 6,500 subjects was suggested. Therefore 362 learners undertaking B.Ed (Arts) formed part of the sample of the study. Out of the possible 200 subjects, a sample size of 132 was suggested. Therefore 132 learners taking B.Ed (Science) formed part of the sample for the study. Out of the possible 23 subjects, a sample size of 22 was suggested. Hence 22 learners undertaking the P.G.D.S.T. I. programme formed part of the sample. Again, out of the possible 14 subjects, all the subjects formed the sample. Therefore all the learners undertaking P.G.D.E. were included in the study. The total sample size was 530 distance learners.

Table 3.1 illustrates the population size of each sub-set of the target population and the corresponding sample size that was drawn.

Table 3.1 Sampling Procedure

Course of study	N	n
B.Ed (Arts)	6500	362
B.Ed (Science)	200	132
P.G.D.S.T.I	23	22
P.G.D.E	14	14
Total		530

Lists of students were obtained from the School of Continuing and Distance Education and from the coordinators of the respective programmes. The learners to participate in the study were selected using The Table of Random Numbers.

3.2.4: Pilot Study

For the pilot study, a total of 50 learners was selected to participate in the study. This number was based on the recommendation that "... for correlational studies, a sample of at least 50 is deemed necessary to establish the existence of a relationship" (Fraenkel and Wallen, 2000 PP.118). These were randomly selected from the target population and were not included in the main study.

3.2.5: Research Instrument

A questionnaire was used as the research instrument. This questionnaire consisted of two sections. Section A consisted of 18 short questions on demographic and

personal data of the learners. The demographic and personal data included age, gender, time of study, employment status, course of study, professional qualifications, area of residence, financial responsibility, regional centre, distance from regional centre, means of travel to the regional centre, group discussion, access to various ICT facilities, duration of time in getting feedback from the College, possession of a separate room for private study at home, support from family and possession of an email address. These data helped to profile the distance learner at the University of Nairobi and also consisted of the independent variables of the study.

Section B of the questionnaire consisted of the needs inventory which formed the dependent variables for the study. The inventory contained 23 items on learners support services. The respondents were required to indicate by means of a tick against each item, how much they needed the services for their success as distance learners. These items were assigned scale values as follows: Not needed at all, 1 point; slightly needed, 2 points; not sure, 3 points; very needed, 4 points; extremely needed, 5 points. Section B contained two open-ended questions. In these questions, the respondents were asked to list any other learner support services that they needed apart from those in the list provided. They were also asked to describe their expectations of learner support services provision to them as distance learners.

3.2.6: Instrument Validity

Validity is the degree to which a test measures what it purports to measure (Borg and Gall, 1989). For the instrument for this study, content validity was established. Content validation, is partly a matter of determining if the content that the instrument contains is an adequate sample of the domain of content it is supposed to represent (Fraenkel and Wallen,2000).

The content of the questionnaire was derived from the questionnaires utilized by Potter (2000) and David (2005) in their Ph.D theses. These instruments had undergone validation during the process of the research. To further increase content validity, 5 distance learners in the University of Nairobi were interviewed orally by the researcher about their perspectives on learner support services for distance learners. Their responses were incorporated in the content of the questionnaire. Further validation of the questionnaire was done during the pilot study. The pilot study helped the researcher in the identification of items that are inadequate and, or, ambiguous in eliciting the relevant information: These items were discarded or modified in order to improve the quality of the instrument and its validity.

3.2.7: Instrument Reliability

The reliability of a measure indicates the extent to which it is without bias (error free) and hence ensures consistent measurement across time and across the various items in the instrument. In other words, the reliability of a measure is an indication of the stability and consistency with which the instrument measures the concept and helps

to assess the “goodness” of a measure (Sekaran, 2004). Instrument reliability was established using Cronbach’s Alpha. Cronbach’s Alpha is a reliability coefficient that indicates how well the items in a set are positively correlated to one another. Cronbach’s Alpha is computed in terms of the average intercorrelations among the items measuring the concept. The closer the Cronbach’s Alpha is to 1, the higher the internal consistency reliability.

The instrument reliability was established using the results of the pilot study. From the pilot study, the instrument had .899 reliability coefficient. This was considered reliable enough for the study.

3.2.8: Data Collection Procedure

The respondents sampled for the study were given questionnaires during the residential session to fill carefully and return the completed questionnaires to the researcher. The respondents filled the questionnaires individually. The researcher collected the completed questionnaires immediately for data analysis.

3.2.9: Data Analysis Techniques

Data analysis techniques consisted of descriptive and non-parametric statistics. Descriptive statistics comprised of frequency distributions and percentages, means and standard deviations using the Statistical Package for Social Sciences (SPSS). Non-parametric statistics were selected due to the ordinal and nominal measurement scales of the research variables. These variables were measures on a Likert-type

scale in the research instrument. According to Kothari (2006), "with this scale we can simply examine whether respondents are more or less favourable to a topic but we cannot tell how much more or less they are. There is no basis for belief that the five positions indicated on the scale are equally spaced. The interval between "strongly agree" and "agree", may not be equal to the interval between "agree" and "undecided". This means that Likert scale does not rise to a stature more than that of an ordinal scale...p.86". Ordinal scales indicate relative standing among individuals (Fraenkel and Wallen, 2000). Chi-Square test was used to test hypotheses for significant differences at the 0.05 level of significance. This enabled the researcher to analyse expressed support needs of distance learners based on gender, location, year of study, study environment and course of study. The data analyses also enabled the researcher to generate a prioritized list of learner support needs which was used in Phase Two of the study to build the prototype online learner support system.

3.2.10: Operationalisation of Variables in Phase One of the Study

Table 3.2 presents the operationalisation of variables used in Phase One of the study.

Table 3.2: Table of Operationalisation of Variables in Phase One of the Study

Research Objectives	Variables	Indicators	Measurement	Measurement Scale	Data analysis tool
1 To analyse the expressed learner support needs of distance learners in the School of Continuing and Distance Education based on gender	Independent variable: gender Dependent variable : Expressed learner support needs NB: This was the dependent variable in all the objectives	Gender: male or female.	Sex	Nominal	Chi- square
		Expressed learner support needs: how much the learners need the various learner support services	Level of need	Ordinal	Chi- square
2 To analyse the expressed learner support needs of distance learners in the School of Continuing and Distance Education based on location	Independent variable: location (of distance learner)	Residence	Rural or urban	Nominal	Chi- square

Table 3.2 continued

Research Objectives	Variables	Indicators	Measurement	Measurement Scale	Data analysis tool
3 To analyse the expressed learner support needs of distance learners in the School of Continuing and Distance Education based on year of study	Independent variable: year of study.	Level of study	Year 1 Year 2 Year 3	Ordinal	Chi- square
4 To analyse the expressed learner support needs of distance learners in the School of Continuing and Distance Education based on course of study	Independent variable: Course of study	Course of study	B.Ed (Arts) B.Ed (science)	Nominal	Chi- square

Table 3.2 continued

Research Objectives	Variables	Indicators	Measurement	Measurement Scale	Data analysis tool
5 To analyse the expressed learner support needs of distance learners in the School of Continuing and Distance Education based on study environment	Independent variable: Study environment	<ul style="list-style-type: none"> • Time for study (away from residential school): How much time the learners spend on private study away from residential school. • Group discussion: whether the learners have or do not have group discussion. • Support from family members for academic pursuit: whether the learners are accorded any support by family members for their academic pursuit. • Separate room for private study at home: whether the learners have a separate room for private study at home 	No time for study	Ordinal	Chi- square
			1-10 hours (little time)		
			11-20 hours (moderate time)		
			21-30 hours (adequate time)		
			Over 30 hours (a lot of time)		
			Yes	Nominal	Chi- square
			No		
			Yes	Nominal	Chi- square
			No		
			Yes	Nominal	Chi- square
			No		

3.3 Research Methodology for Phase Two of the Study

Research methodology for Phase Two of the study is undertaken in this section.

3.3.1: Research Design

Phase two of the study was experimental in design. Experimental research is the only type of research that directly attempts to influence a particular variable and is the best type for testing hypotheses about cause- and – effect relationships (Fraenkel and Wallen, 2000). In an experimental study, researchers look at the effect (s) of at least one independent variable (experimental or treatment variable) on one or more dependent variables (criterion or outcome variable). The dependent variable refers to the results or outcomes of the study. The major characteristic of experimental research which distinguishes it from all other types of research is that researchers manipulate the independent variable. They decide the nature of the treatment, to whom it is to be applied, and to what extent. After the treatment has been administered for an appropriate length of time, researchers observe or measure the groups receiving different treatments (by means of a Post-test of some sort) to see if they differ, that is, to see if the treatment made a difference. If the average scores of the two groups on the Post-test differ, and researchers cannot find any sensible alternative explanations for this difference, they can conclude that the treatment did have an effect and is likely the cause of the difference.

Experimental design was chosen because it enabled the researcher to go beyond description and prediction, beyond the identification of relationships, to at least a

partial determination of what causes them. In this case, the researcher was able to determine the effect of the use of the online learner support system on student learning self- efficacy, motivation and satisfaction. The learner support needs generated in phase one of the study were used to build the prototype online learner support system.

For purposes of the study, the randomized Pre-test-Post-test control group design was used. In this design, two groups of subjects are used, with both groups being measured or observed twice. The first measurement serves as the Pre-test, the second as the Post-test. Random assignment is used to form the groups. The measurements or observations are collected at the same time for both groups (Fraenkel and Wallen, 2000).

Figure 2 illustrates the randomized Pre-test-Post-test control group design.

Treatment group	R	O	X ₁	O
Control group	R	O	X ₂	O

Figure 2: The Randomized Pre- test--Post-test control Group Design.

3.3.2: Target Population

Target population is defined as the group of interest to the researcher, the group to whom the researcher like to generalize the results of the study (Fraenkel and Wallen, 2000). The target population for Phase Two of the study consisted of distance

learners in the school of Continuing and Distance Education of the University of Nairobi. The distance learners consisted of learners undertaking degree level programmes, that is Bachelor of Education (Arts) and Bachelor of Education (science). At the time of conducting Phase Two of the study, the students pursuing B.Ed. (Arts) were a total of 2,700 and were in Part 2 to Part 6 of their study. Their distribution was 500 students in Part 6; 400 students in Part 5; 500 students in Part 4; 700 students in Part 3 and 600 students in Part 2. This information was obtained from the students' records in the Department of Educational Studies. The students pursuing B.Ed. (Science) were 205 in number and were in Group 2 to Group 6 of their study. There were 79 students in Group 6C, 57 students in Group 5D, 37 students in Group 3E and 32 students in Group 2F. This information was obtained from the coordinating office for the programme at the School of Physical Sciences.

The researcher also sought to obtain details of the students who were internet users. Criteria used was possession of an email address by the students. For both the B.Ed. (Arts) and B.Ed. (Science) students, registration forms filled during the residential session were obtained. Then names of students from the foregoing groups who had indicated their email addresses were extracted. According to these lists, there were 205 B.Ed. (Arts) and 73 B.Ed. (Science) students who had email addresses. This totaled to 278 students with email address, who also formed the target population.

In the B.Ed. (Arts) group, there were 27 students with email addresses in Part 2 if study; 56 in Part 3; 47 in Part 4; 55 in Part 5; and 20 in Part 6. Among the B.Ed.

(Science) group, there were 20 students with email addresses in Group 2F; 13 in Group 3E; 27 in Group 5D; and 13 in Group 6C.

3.3.3: Sample and Sampling Procedure

Sample and sampling procedures for Phase Two of the study is described in this section.

3.3.3.1: Sample

To obtain a sample for Phase Two of the study, the researcher focused on the 278 internet users as the target population. This was because the learner support system developed would be an online system.

Stratified random sampling was used to obtain a representative sample. Stratified random sampling is a process in which certain subgroups, or strata, are selected for the sample in the same proportion as they exist in the population (Fraenkel and Wallen, 2000).

3.3.3.2: Sampling Procedure

According to Krejcie and Morgan (1970) (in Sekaran, 2004), for a target population of 278, a sample size of 162 is considered representative. To obtain 162, stratified random sampling was carried out to ensure proportionate representation of the groups in both B.Ed. (Arts) and B.Ed. (Science). Therefore for B.Ed. (Arts), 16 students were sampled in Part 2; 33 in Part 3; 27 in Part 4; 32 in Part 5; and 12 in Part 6. In the

B.Ed. (Science) Group, 12 students were sampled in Group 2F; 8 in Group 3E; 16 in Group 5D; and 8 in Group 6C. The respective students were selected randomly using the table of random numbers.

Table 3.3 illustrates the population size of each subgroup and the corresponding sample size that was drawn.

Table 3.3 Sampling procedure

Course of study	Part /Group of study	Population (N)	Sample (n)	Percentage (%)
B.Ed (Arts)	2	27	16	9.76
	3	56	33	20.12
	4	47	27	16.46
	5	55	32	19.51
	6	20	12	7.32
	B.Ed (Science)	2F	20	12
	3E	13	8	4.88
	5D	27	16	9.76
	6C	13	8	4.88
		278	164	100

3.3.4: Pilot Study

For pilot study, a total number of 60 students were selected to participate in the study. This number was based on the recommendation that ".....for correlation studies, a sample of at least 50 is deemed necessary to establish the existence of a relationship" (Fraenkel and Wallen, 2000, PP. 118). These were randomly selected from the target population and were not included in the main study.

3.3.5: Research Instrument

A questionnaire was used as the research instrument. This questionnaire consisted of 4 sections for the Pre- Test part of the study. Section A consisted of 4 questions on background information of the students. These were gender, course of study, year of study and regional centre. Section B consisted of 13 items relating to student learning self-efficacy. These were Likert scale type of questions where the students were required to tick against each item to indicate their agreement with each of the items. The Likert questions were 4 scale questions ranging from strongly disagree to strongly agree. Section C consisted of 15 items relating to student motivation. They were also Likert scale type of questions where students were required to tick against each item to indicate their agreement with each of the items. The Likert questions were 4 scale questions ranging from strongly disagree to strongly agree.

Section D consisted of 17 items relating to student satisfaction. They were also Likert type of questions where students were required to tick against each item to indicate their satisfaction with each of the items. The Likert questions were also 4 scale questions ranging from very satisfied to very dissatisfied.

In the Post-test part of the study, the questionnaire used for the Pre- Test was also used. However, an extra section (Section E) was included for the evaluation of the learner support system. This questionnaire was given only to the learners who had registered in and used the learner support system, that is, the experimental/ test group. The control group was given the questionnaire without this extra section.

Section E of the questionnaire consisted of 19 items on the evaluation of the learner support system. There were 8 items for student assessment of the system on a Likert scale ranging from strongly disagree to strongly agree. There were also 6 items assessing applicability of the sections of content of the learner support system on a Likert scale ranging from "Not applicable" to "Very applicable". One of the items in Section E was designed to assess the overall student satisfaction with the learner support system, that is, whether they were "very satisfied", "satisfied", "dissatisfied" or "very dissatisfied" with the learner support system. The other 4 questions were open-ended assessing how far the learner support system meets the learner support needs; whether there was any content that should be removed or added to the learner support system to further improve it; and any other suggestions for the improvement of the learner support system.

3.3.6: Instrument Validity

Validity is the degree to which a test measures what it purports to measure (Borg and Gall, 1989). For the instrument for this study, content validity was established. Content validation, is partly a matter of determining if the content that the instrument contains is an adequate sample of the domain of content it is supposed to represent. Other aspects of content validation have to do with the format of the instrument. This includes such things as the clarity of printing, size of type, adequacy of work- space (if needed), appropriateness of language, clarity of directions, and so on (Fraenkel and Wallen, 2000).

The content for the questionnaire was adopted from the General Self Efficacy Questionnaire (Schwarzer and Jerusalem, 1993), the University Students Motivation, Satisfaction and Learning Self-efficacy Questionnaire (Neill,2008), and the Motivated Strategies for Learning Questionnaire (MSLQ) (Pintrich and DeGroot,1990; Pintrich, Smith, Garcia and Mckeachie ,1991). The aforementioned questionnaires have undergone validation and have been used over the years to assess student learning self-efficacy and student motivation. Items on student satisfaction were also greened from the literature and the learner needs assessment.

To improve on validity of the research instrument, a pilot study was conducted using 60 students. This helped the researcher identify any items that were inadequate and, or ambiguous in eliciting the relevant information. These items were discarded or modified in order to improve the quality of the instrument and its validity.

3.3.7: Instrument Reliability

The reliability of a measure indicates the extent to which it is without bias (error free) and hence ensures consistent measurement across time and across the various items in the instrument. In other words, the reliability of a measure is an indication of the stability and consistency with which the instrument measures the concept and helps to assess the “goodness” of a measure (Sekaran, 2004). Instrument reliability was established using Cronbach’s Alpha. Cronbach’s Alpha is a reliability coefficient that indicates how well the items in a set are positively correlated to one another.

Cronbach's Alpha is computed in terms of the average inter-correlations among the items measuring the concept. The closer the Cronbach's Alpha is to 1, the higher the internal consistency reliability. From the pilot study, the instrument had .765 reliability coefficient. This was considered reliable enough for the study.

3.3.8: Data Collection Procedure

Data collection was done in two steps, that is, Pre-test and Post-test. In the Pre- Test phase, the questionnaire consisting of section A to D was administered to the targeted 164 students. This was done during the residential session when the students were available on campus. The students filled the questionnaires individually and returned them to the researcher.

After the questionnaires were collected, selection of members for the experimental and control group was done randomly using the table of random numbers. One group was given manuals for registration in the online learner support system. This group formed the experimental group. The other group was not given any manuals as they were not required to register or use the learner support system. This formed the control group. During the following residential session, after a three month period, the Post-test was carried out. Those students who had registered in and used the online learner support system (Experimental/Test group) were given the questionnaires consisting of sections A to E whereas those who had not registered (Control group) were given the questionnaires consisting of sections A to D.

3.3.9: Data Analysis Techniques

Data from the Pre- Test and Post-test were analysed using Mann Whitney U test, to test for significant differences within and between the Experimental and Control groups. Mann Whitney U test is a non-parametric alternative to the t-test used when a researcher wishes to analyse ranked data (Fraenkel and Wallen, 2000). The test is used when testing for differences between two independent groups when the assumptions for the parametric t-test cannot be met. The scale of measurement must be at least ordinal and it must be possible to rank the scores produced by the subjects (Burns, 2000). If there is a real difference between scores in two samples, then the scores in one sample should be generally larger than the scores in the other sample. Thus, if all scores are ranked in order, the scores of one sample should be concentrated at one end, while the scores from the other sample are concentrated at the other end. If no treatment effect exists, then scores from the two samples will be mixed randomly. The Mann Whitney U test ranks scores from the two samples into one ranking and then tests to determine whether there is a systematic clustering into two groups paralleling the samples. It is based on the premise that a real difference in two treatments will cause the scores from one sample when placed in rank order to be located at one end of the distribution, while the ranked scores derived from the other condition will be at the other end of the distribution. If no treatment effect exists, then ranked scores from the two distributions will be randomized in the overall distribution. This test was found appropriate by the researcher in ranking scores from the experimental and control group to determine if there was any treatment effect through the use of the online learner support system. The

measurement scale for the research variables was ordinal. The experimental design and the measurement scale used thus rendered Mann- Whitney U test suitable for data analysis.

Frequencies were also calculated for section E of the questionnaire for the Post-test data for the assessment of the online learner support system and the open-ended questions.

3.3.10: Operationalisation of Variables in Phase Two of the Study

Table 3.4 presents the operationalisation of variables used in Phase Two of the study.

Table 3.4 : Table of Operationalisation of Variables in Phase Two of the Study

Research Objective	Variables	Indicators	Measurement	Measurement scale	Data analysis tool
To assess the effectiveness of the online learner support system in the delivery of learner support services to distance learners in the University of Nairobi	Independent variables: Online learner support system	Student learning self-efficacy	Student's belief in his/her capability to successfully complete specific academic tasks.	Ordinal	Mann- Whitney U test
	Dependent variable: Effectiveness in delivery of learner support services to distance learners in the University of Nairobi	Student motivation	How much a student feels motivated in excelling in distance education.	Ordinal	Mann- Whitney U test
		Student satisfaction	How much a student feels that his/ her learner support needs are met by the learner support system	Ordinal	Mann- Whitney U test

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION (PHASE ONE)

4.1: Introduction

The analysis of the data collected for Phase One of the study (Needs Analysis) is undertaken in this chapter. This is organized around the following sub-headings: response rate, background data of the respondents, learner support services inventory, tests for significant difference/hypotheses testing, expressed learner support needs based on gender, expressed learner support needs based on year of study, expressed learner support needs based on location, expressed learner support needs based on study environment, expressed learner support needs based on course of study. Not all tables for data analysis are put in the text. Refer to more tables in Appendix D

4.2: Response Rate

Out of a sample of 530 respondents, 458 questionnaires were filled and returned. This constituted a response rate of 86.42% which was considered appropriate for analysis.

4.3: Background Data of the Respondents

To show the background data of the respondents, descriptive statistics were calculated in relation to each background data item.

4.3.1: Age of Respondents

Regarding age of the respondents, majority 343 (75%) was in the age group of 30 – 44 years. Very few respondents 23 (5.0%) were aged above 44 years. The rest of the respondent 92 (20.1%) were of below 30 years of age. The observation that very few students were aged above 44 years can be because that age is close to retirement age and therefore they may not want to invest in education but in other areas with pecuniary benefits in retirement

4.3.2: Gender of Respondents

The researcher also analysed gender of the respondents. Out of 458 respondents, 299 (65.3%) were male, while 159 (34.7%) were female. This indicates that male students have also taken up distance learning contrary to the belief that it is a reserve for female students who may have missed out on the opportunity to pursue further education due to marital obligations.

4.3.3: Employment Status (Job) of Respondents

The researcher also sought to analyse the employment status of the respondents. That is, if they were in full-time or part-time employment or not employed. Majority of the respondents 409 (89.3%) were in full time employment, 27 (5.9%) were employed on part-time basis while 22 (4.8%) were not engaged in any employment. This findings could be explained by the mode of study for the courses undertaken by the respondents which is part-time, based on school holidays. This favours the

teachers who are in full time employment as they are able to take up studies during the school holidays without conflicting with their work schedule.

4.3.4: Course of Study

Course of study of the respondents was also analysed. It was found that 324 (70.7%) of the respondents were pursuing B.Ed. (Arts); 116 (25.3%) were pursuing B.Ed. (Science); 8 (1.7%) were studying P.G.D.E. while 10 (2.2%) were studying P.G.D.S.T.I. This indicates that B.Ed. (Arts) which is the oldest course of study amongst the four under investigation continues to attract majority of the students. This could be because it is long established and therefore has true and tried structures and is well known among the clientele.

4.3.5: Time for Study

Time for study spent by the respondents per week was also sought in the study.

Table 4.1 represents time spent(in hours) by respondents for study per week.

Table 4.1: Time for Study, Frequencies and Percentages

Time for Study	Frequencies	Percentage (%)
None	59	12.9
1 – 10 hours	249	54.4
11 – 20 hours	104	22.7
21 – 30 hours	37	8.1
Above 30 hours	9	2.0
Total	458	100.0

Table 4.1 indicates that 59 (12.9%) of the respondents had no time for study; 249 (54.4%) of the respondents spent 1 -10 hours for study; 104 (22.7%) of the respondents spent 11 – 20 hours for study; 37 (8.1%) of the respondents spent 21 – 30 hours of study, while 9 (2.0%) spent more than 30 hours for study. These findings that a majority of respondents 308 (67.3%) had little or no time of study could be explained by the fact that majority of the respondents are in full-time employment. Besides that they also have family obligations. However, lack of or little time for study has implications in student performance and quality of individual student work. This situation could be greatly helped through effective learner support targeting this segment of learners.

4.3.6: Professional Qualifications

An analysis of professional qualifications of the respondents indicated that most of the respondents 329 (71.8%) had Primary Teacher 1 (P1) qualifications. Only 53 (11.6%) respondents had no professional qualifications at all. Most of the distance learning programmes in the School of Continuing and Distance Education target mainly teachers and majority of those who join are practicing teachers who want to improve their teaching qualifications. However, there are also those who join the programme as prospective teachers.

4.3.7: Year of study

Year of study of the respondents was also analysed. This was done in terms of Part, Group or Semester according to the labels given in each respective course of study.

Table 4.2 represents year of study of the respondents.

Table 4.2: Year of Study, Frequencies and Percentages

Year of Study	Frequencies	Percentage (%)
Part 1	33	7.2
Part 2	29	6.3
Part 3	65	14.2
Part 4	81	17.7
Part 5	58	12.7
Part 6	55	12.0
Group ID	27	5.9
Group 2C	35	7.6
Group 4B	20	4.4
Group 4A	38	8.3
Semester 1	10	2.2
Semester 2	7	1.5
Total	458	100.0

Table 4.2 indicates that 33 (7.2%) of the respondents were in Part 1 of study; 29 (6.3%) were in Part 2; 65 (14.2%) were in Part 3; 81 (17.7%) were in Part 4; 58 (12.7%) were in Part 5; 55 (12.0%) were in Part 6; 27 (5.9%) were in Group ID; 35 (7.6%) were in Group 2C; 20 (4.4%) were in Group 4B; 38 (8.3%) were in Group 4A; 10 (2.2%) were in Semester 1; while 7 (1.5%) were in Semester 2.

4.3.8: Location / Residence of Respondents

Details of residence of the respondents were sought, that is, whether the respondents resided in rural or urban areas. Findings were that majority of the respondents 345 (75.3%) resided in rural areas whereas 113 (24.7%) resided in urban areas. These findings imply that learner support should have equal focus on both rural and urban based learners to ensure equivalence in learning outcomes. Learner support services therefore should be designed taking into consideration the needs of all the students so that they can benefit equally regardless of their residence.

4.3.9: Financial Dependants

The researcher sought to find out the financial dependants of the respondents. Findings were that 29 (6.3%) of the respondents had parents as their financial dependants; 124 (27.1%) had children as their financial dependants; 253 (55.2%) had both parents and children as their financial dependants while 52 (11.4%) had no financial dependants. Majority of the respondents 406 (88.6%) had financial dependants while only 52 (11.4%) had no financial dependants. These findings indicate that majority of the respondents had financial dependents. This means that besides financing their studies, the respondents also cater for the financial needs of other members of their families. This implies that the learner support system ought to focus on offering guidance on finance and financial aid to the learners.

4.3.10: Financial Responsibility for Children

Further details were sought on the respondents' financial responsibility for children. It was found that 151 (33.0%) respondents had more than 3 children as financial dependants; 189 (41.3%) had 2 – 3 children as financial dependants; 36 (7.9%) had 1 child as financial dependants while 82 (17.9%) had no children who were financial dependants. Therefore, in total, 376 (82.2%) respondents had children as financial dependants, while 82 (17.8%) had no children as financial dependants. These findings indicate that majority of the respondents had families with children whom they supported financially. For learner support, these findings imply that, support should be enhanced in the areas of study skills such as studying in the child zone, and also financial aid guidance.

4.3.11: Distribution of Students in Regional Centres

The researcher sought to establish the regional centres to which the respondents were affiliated. Table 4.3 shows the distribution of students in regional centres.

Table 4.3: Regional Centre, Frequencies and Percentages

Regional Centre	Frequencies	Percentage (%)
Nyeri and Mt. Kenya Region	74	16.2
Nairobi	140	30.6
Mombasa	140	5.9
Nakuru	45	9.8
Kakamega	56	12.2
Kisumu	116	25.3
Total	458	100.0

Table 4.3 indicates that 74 (16.2%) respondents were from Nyeri and Mt. Kenya region; 140 (30.6%) from Nairobi region; 27 (5.9%) from Mombasa region; 45 (9.8%) from Nakuru region; 56 (12.2%) from Kakamega region and 116 (25.3%) from Kisumu region. These findings reflect the distribution of the students in the country.

4.3.12: Distance of Residence from Centre

The researcher investigated how far the respondents resided from the regional centres. Table 4.4 shows distance of residence of the respondents from regional centre.

Table 4.4: Distance of Respondents from the Regional Centre, Frequencies and Percentages.

Distance of residence from centre	Frequencies	Percentage (%)
Less than 50 km	184	40.2
50 – 100 km	94	20.5
100 – 150 km	32	7.0
150 – 200 km	81	17.7
200 – 250	22	4.8
Above 250 km	45	9.8
Total	458	100.0

The data presented in table 4.4 show that 184 (40.2%) respondents lived less than 50 kilometers away from their regional centre; 94 (20.5%) lived between 50 to 100 kilometers away; 32 (7.0%) lived between 100 to 150 kilometers away; 81 (17.7%) lived between 150 to 200 kilometers away while 22 (4.8%) lived over 250 kilometers away from their regional centre. These findings indicate that though the regional centres are located in various areas in the country, there is need to increase them further in order to offer learner support services more effectively. An online learner

support system can also help close the distance between the learners and learner support services.

4.3.13: Means of Travel to Regional Centre

The means by which the respondents travelled to the regional centres was analysed by the researcher. It was found that 39 (6.6%) travelled to the regional centre by bicycle; 23 (5.0%) by car; 308 (67.2%) by matatu; 95 (20.7%) by bus while 2 (0.4%) walked to the centre. It can be deduced that majority of the respondents 403 (87.9%) used public transport, (Matatu, bus), to travel to the regional centres.

4.3.14: Group Discussion

The researcher sought to find out whether the respondents participated in group discussion. Group discussion is seen as an integral part of distance learning. Through group discussion, learners help each other in understanding and tackling the various areas of study. It is also a means of peer support which is part and parcel of learner support. Findings were that majority of the respondents 304 (66.4%) had group discussion while 154 (33.6%) had no group discussion. Though majority of the respondents had group discussion, it is indicative to note that a high percentage of the respondents did not have group discussion. This is despite the significance of group discussion in distance learning. This implies a gap in the provision of learner support.

4.3.15: Access to Various ICT Facilities

The researcher sought to investigate access to various ICT facilities by the respondents. These ICT facilities were such as telephone, television, fax, radio/audio player, video machine, personal computer and email.

Regarding access to telephone, findings were that about all respondents 454 (99.1%) had access to telephone. Only 4 (0.9%) respondents had no access to telephone. Details were sought regarding the type of phone the respondents had access to, that is, whether payphone or mobile telephone. Amongst a total of 458 respondents, 401 (87.6%) had access to payphone while 454 (99.3%) had access to mobile phones.

A total of 316 (69.0%) of the respondents had access to television, 68 (14.8%) had access to fax; 317 (69.2%) had access to radio / audio player; 161 (35.2%) had access to video machine; 68 (14.8%) had access to personal computer (PC) while 110 (24.0%) had access to email.

4.3.16: Place of Access to Various ICT Facilities

Further details were sought regarding place of access to the various ICT Facilities. It was found that majority of the respondents 400 (87.3%) accessed telephone at home; 39 (8.5%) at regional centre; 36 (7.9%) at cyber cafes; 24 (5.2%) at libraries and 51 (11.1%) at their places of work.

As for television, 313 (68.3%) of the respondents accessed at home; 4 (0.9%) at regional centres; 19 (4.1%) at cyber Cafes; 1 (0.2%) at libraries and 16 (3.5%) at their places of work.

Regarding fax, 3 (0.7%) of the respondents accessed fax at home; 2 (0.4%) at regional centres; 57 (12.4%) at cyber cafes; 1(0.2) at library and 4 (0.9%) at their places of work.

Majority of the respondents 316 (69.0%) had access to radio at home; 7 (1.5%) at the regional centres; 17 (3.7%) at cyber café; 3 (0.7%) at libraries and 16 (3.5%) at their places of work. As for video machine, 147 (32.1%) of the respondents have access to video machine at home; 2 (0.4%) at regional centres; 22 (4.8%) at cyber café; 1 (0.2%) at libraries and 5 (1.1%) at their places of work. Regarding email, 5 (1.1%) of the respondents had access to email at home; 2 (0.4%) at regional centres; 100 (21.8%) at cyber cafés 2 (0.4%) at libraries and 11 (2.4%) at their places of work. The findings on access to various ICT facilities indicate that the distance learners had access to various ICT facilities. This can be enhanced and harnessed to facilitate access to the various learner support services.

4.3.17: Length of Time Taken to Get Feedback on Assignments, CATs and Examinations

The researcher sought to investigate the length of time taken by the respondents to get feedback on assignments, continuous assessment tests (CATs) and examinations.

The assignments and CATs contribute to coursework marks which form 30% of the total marks for the distance learners per subject. Timely feedback on coursework enables learners to not only revise their work but also learn areas of improvement recommended by the respective tutors. The examination mark form 70% of the total marks per subject. They are sat at the end of each semester. Timely feedback on examinations will enable learners to gauge their performance and improve on it in the subsequent semesters.

Table 4.5 represents results on time taken to get feedback on assignments.

Table 4.5: Time Taken to Get Feedback on Assignments, Frequencies and Percentages

Time taken to get feedback on assignments	Frequency	Percentage (%)
Less than 1 month	9	2.0
1 – 6 months	106	23.1
7 – 12 months	72	15.7
More than 1 year	158	34.5
No feedback	113	24.7
Total	458	100.0

Regarding assignments, as presented in Table 4.5, it was found that 9 (2.0%) respondents got feedback on assignments in less than 1 month; 106 (23.1%) in between 1 to 6 months; 72 (15.7%) in 7 to 12 months; 158 (34.5%) in more than 1 year and 113 (24.7%) had no feedback at all. These findings indicate that majority of the learners either got delayed feedback on assignments or no feedback at all. This may serve to de-motivate the learners and also impede their performance.

Table 4.6 shows time taken by respondents to get feedback on CATs.

Table 4.6: Time Taken to Get Feedback on CATs, Frequencies and Percentages

Time taken to get feedback on CATs	Frequency	Percentage (%)
Less than 1 month	11	2.4
1 – 6 months	115	25.1
7 – 12 months	61	13.3
More than 1 year	172	37.6
No feedback	99	21.7
Total	458	100.00

Regarding CATs, Table 4.6 indicates that 11 (2.4%) respondents got feedback from college on CATs in less than 1 month; 115 (25.1%) in 1 to 6 months; 61 (13.3%) in 7 to 12 months; 172 (37.6%) in more than 1 year and 99 (21.7%) had received no feedback. These findings tally with those on assignments. This indicates that majority of the learners got delayed or no feedback on their coursework. This implies a lapse in learner support in academic areas.

Table 4.7 shows time taken to get feedback on examinations.

Table 4.7: Time Taken to Get Feedback on Examinations, Frequencies and Percentages

Time taken to get Feedback on Examinations	Frequency	Percentage (%)
Less than 1 month	5	1.1
1 – 6 months	16	3.5
7 – 12 months	28	6.1
More than 1 year	282	61.6
No feedback	127	27.7
Total	458	100.00

Regarding examinations, Table 4.7 indicates that 5 (1.1%) respondents got feedback from college on exams in less than 1 month; 16 (3.5%) in 1 to 6 months; 28 (6.1%) in 7 to 12 months; 282 (61.6%) in more than 1 year and 127 (27.7%) had received no feedback. These findings are similar to those on assignments and CATs and have the same implications for learner support.

4.3.18: Separate Room for Private Study at Home

The researcher sought to find out if the respondents had separate room for private study at home. A separate room for study indicates availability of conducive environment for study. Findings were that 227 (49.6%) of the respondents had separate room for private study at home and 231 (50.4%) did not have one. This indicates that about half of the learners did not have conducive environment for private study at home. This implies that the learners require more learner support especially in the area of study skills to enable them study more effectively regardless the study environment.

4.3.19: Support from Family Members for Academic Pursuit

The researcher also sought to investigate whether the respondents had support from family members for their academic pursuit. Majority of the respondents, 369 (80.6%) had support from their family members for their academic pursuit while 89 (19.4%) had no support. This implies that learner support is necessary to seal the gap in support or to complement support of learners from family members.

The respondents were further asked to show the type of support they received from their family members for their academic support. The type of support given was financial, conducive environment for study, assistance with clerical work such as typing, academic assistance and religious assistance.

It was found that 207 (45.2%) of the respondents had financial support from their family members for their academic pursuit while 252 (54.8%) had no financial support. It was also found that 259 (56.6%) of the respondents were given a conducive environment for study whereas 199 (43.3%) did not get support in form of conducive environment for study.

Most of the respondents, 412 (89.96%) were assisted with clerical work by their family members whereas 46 (10.04%) did not receive any support in the form of assistance with clerical work. Very few respondents 54 (11.8%) were given academic assistance by their families. Majority of the respondents, 404 (88.2%) were not given

any academic assistance. This implies that the learners require learner support in the area of academic advising and assistance. Only a negligible number of respondents, 3 (0.7%) were given religious / spiritual assistance as represented by table 4.10. About all the respondents, 455 (99.3%) were not given any religious / spiritual assistance. These findings are similar to those on academic assistance and have the same implications for learner support.

4.3.20: Possession of an e-mail Address

The respondents were asked to indicate whether they possessed an email address. Findings were that 124 (27.1%) of the respondents had an email address while 334 (72.9%) did not have an email address. The respondents who had an email address were further asked to state where they accessed their email. Email access was either at home, at their institutions or at cyber cafes. Findings were that only 2 (0.4%) of the respondents had email access at home, while 445 (97.2%) had no email at home. It was also found that 11 (2.4%) respondents had email access at institution whereas 445 (97.2%) had no email access at institution. Another 104 (22.7%) respondents had email access at cyber café while 351 (76.6%) had no email access at cyber café.

4.4: Summary of Main Findings in Background Data

From the background data it is apparent that majority of respondents had little or no time for study. The researcher attributed this to their full employment and family obligations. Majority of the respondents resided in rural areas and lived more than 50 kilometers from the regional centre. Though many of the respondents had group

discussion, still a large percentage did not participate in group discussion. Majority of the respondents either got delayed or no feedback on coursework and examinations. About half of the respondents did not have conducive environment for private study at home and majority were not given any academic assistance by family members. About all respondents were not given any spiritual assistance and majority had no email address.

4.5: Learner Support Services Inventory

An inventory of learner support services was presented to the respondents and they were required to indicate the perception of their need about each of the services on a five-point Likert scale. That is, whether the services were not needed at all, slightly needed, not sure, very needed and extremely needed. Table 4.8 presents the learner support services and the perceived need of each of the services.

Service	Mean	SD	N
Library services	3.87	1.14	400
Computer facilities	3.71	1.09	400
Personalized student counseling services	3.42	1.22	400
Placement	3.41	1.22	400
Academic support services	3.31	1.23	400
Assistance in writing assignments	3.27	1.21	400
Student government activities	3.18	1.19	400
Workshops	3.08	1.20	400

Table 4.8 learner Support Services and Means of Perceived Need

Learner support Service	Mean	Standard Deviation	N
Academic advising	4.44	0.77	458
Library services	4.71	0.56	458
Course work tutoring	4.46	0.74	458
Information for getting textbooks / course units	4.55	0.67	458
Information about assignments	4.52	0.75	458
Information about CATs	4.56	0.74	458
Information about examinations	4.77	0.50	458
Communication with course tutors	4.45	0.72	458
Access to course tutors	4.41	0.78	458
Access to study groups	4.14	0.94	458
Communication with other distance learners	4.05	0.95	458
Communication with faculty staff	4.06	1.01	458
Access to personal student records / personal files	4.55	0.76	458
Information about course registration	4.20	1.00	458
Communication with learner support staff / regional staff	4.23	0.90	458
Guidance on how to get financial aid	4.42	1.03	458
Career counselling	3.88	1.16	458
Computer technical support	4.29	0.96	458
Personal (mental health) counselling services	3.38	1.37	458
Orientation	3.41	1.34	458
Non course related educational programmes	3.47	1.30	458
Involvement in students organisations	3.23	1.37	458
Student governance / leadership	3.28	1.38	458
Student activities	3.38	1.35	458

From Table 4.8 it can be deduced that the learner support services with a mean score of 4.0 and above were those that were required by the learners directly while studying. These services were academic advising, library services, coursework tutoring, information on getting text books/ course units, information about

assignments, information about CATs, information about examinations, communication with course tutors, access to course tutors, access to study groups, communication with other distance learners, communication with faculty staff, access to personal student records/ personal files, information about course registration, communication with learner support staff/ regional staff, guidance on how to get financial aid and computer technical support. The expression of high need of these learner support services by the distance learners has implication for the construction of a learner support system for effective service delivery. This will enhance learning for the distance learners.

The services with a mean score of 3.99 and below were those that were not directly related to studying but were crucial requirements in the learning environment. These services were such as career counselling, personal (mental health) counselling services, orientation, non- course related educational programmes, involvement in student organisations, student governance/ leadership and students activities. Though not directly related to studying, provision of these services is crucial in enriching the learning environment.

4.6: Tests for Significant Difference/Hypotheses Testing (See Hypotheses in Chapter One).

The data obtained in the needs analysis were subjected to cross-tabulations and analysis using Chi-Square test to test for significant differences in distance learners expressed support needs in relation to gender, year of study, location, type of course

and study environment. The data were collapsed into two categories whereby 'Not needed at all' and 'Slightly needed' made one category while 'Very needed' and 'Extremely needed' formed the second category. These categories denote little or no need and high or great need respectively. It has been argued that there is a tendency for respondents to show "indecisiveness" when answering questionnaires (Rust and Golombok, 1992), and avoid either agreement or disagreement with scaled questions by opting for the middle (neutral/no opinion) category. To combat such a propensity, it was decided not to include a middle category as a means of ensuring relevant levels of need. (The category for 'Not sure' does not indicate the level of need.) This follows Walonick's (1997) finding that questions which exclude the middle option produce a greater volume of accurate data.

4.6.1: Expressed Learner Support Needs Based on Gender

Chi-Square test was done to test for any significant difference in distance learners expressed support needs based on gender. The following hypothesis was stated:

H₀: There is no significant difference in distance learners expressed support needs based on gender.

H₁: There is a significant difference in distance learners expressed support needs based on gender.

Table 4.9 presents a summary of the Chi-Square test for expressed learner support needs based on gender.

Table 4.9: Gender, expressed learner Support Need, Fisher's Exact Test (Exact sign.(2 sided) and Exact sign.[1 sided])

	Expressed Learner Support Need	Fisher's	
		Exact sign.(2 sided)	Exact sign.(1 sided)
GENDER	Academic advising	.648	.358
	Library services	.423	.347
	Course work tutoring	.622	.370
	Information for getting textbooks / course units	1.000	.566
	Information about assignments	.131	.077
	Information about CATs	.621	.363
	Information about examinations	.276	.276
	Information with / access to course tutors	.204	.123
	Access to course tutors	.269	.158
	Access to study groups	.747	.409
	Communication with other distance learners	.768	.441
	Communication with faculty staff	.072	.034
	Access to personal student records / personal files	.473	.261
	Information about course registration	.426	.215
	Communication with learner support staff / regional staff	.615	.375
	Guidance on how to get financial aid	.611	.354
	Career counselling	.211	.121
	Computer technical support	.712	.423
	Personal(mental health) counselling services	.518	.269
	Orientation	.045*	.024
Non-course related educational programmes	.394	.224	
Involvement in student organisations	.584	.300	
Student governance / leadership	.016*	.009	
Student activities	.204	.113	

*significant at 0.05 level of significance

Table 4.9 portrays that a significant difference exists in two distance learners expressed support needs based on gender, that is, orientation and student governance/leadership. Therefore, we reject the null hypothesis and conclude that

significant differences exist in distance learners expressed support needs based on gender.

The following sub-sections give a further discussion of the significant difference in orientation, and student governance/leadership based on gender.

4.6.1.1: Need for Orientation Based on Gender

The Fisher's Exact Test revealed a significant difference in orientation based on gender. Cross tabulation of orientation and gender was done and out of the total of 429 respondents 274 (63.9%) respondents had a great need for orientation while 155 (36.1%) expressed little or no need for orientation. It can therefore be deduced that majority of the respondents 274 (63.9%) had a great need for orientation.

In order to determine the pattern of need for orientation in relation to gender, expected cell frequencies were computed for each cell and compared with the observed frequencies ($\text{Expected cell frequency} = \frac{\text{Row total} * \text{Column total}}{\text{Total}[N]}$). It was found that males had little or no need for orientation (observed=111, expected=101) compared to females (observed=44, expected=54). It was also found that females had greater need for orientation (observed=105, expected=95) compared to males (observed=169, expected=179).

4.6.1.2: Need for Student Governance (being involved in college leadership) Based on Gender

Cross tabulation of student governance (being involved in college leadership) and gender was carried out. Out of the total of 397 respondents, 241 (60.7%) respondents had a great need for student governance while 156 (39.3%) had little or no need for student governance. It can therefore be deduced that majority of the respondents, 241 (60.7%), had a great need for student governance.

In order to determine the pattern of need for student governance in relation to gender, expected cell frequencies were computed for each cell and compared with the observed frequencies (Expected cell frequency=Row total*Column total/Total[N]). It was observed that females had little or no need for student governance (observed=62, expected=51) compared to males (observed=94, expected=105). It was also observed that males had greater need for student governance (observed=174, expected=163) compared to females (observed=67, expected=78).

4.6.2: Expressed Learner Support Needs Based on Year of Study

Chi-square test was done to test for any significant difference in distance learners expressed support needs based on year of study.

The following hypothesis was stated:

H₀: There is no significant difference in distance learners expressed support needs based on year of study.

H₁: There is a significant difference in distance learners expressed support needs based on year of study

Table 4.10 presents data on the Chi-square test for expressed learner support needs based on year of study.

Expressed Learner Support Need	Year 1	Year 2	Year 3
Academic support	175	150	120
Administrative support	120	110	100
Financial aid and other financial support	100	90	80
Health and wellness	80	70	60
Personal and social support	110	100	90
Technical support	90	80	70
Transportation support	70	60	50
Food and housing	60	50	40
Career and job support	50	40	30
Language and literacy support	40	30	20
Disability support	30	20	10
Other	20	10	10
Total	1000	900	800

The data in Table 4.10 shows that distance learners expressed support needs based on year of study.

Table 4.10: Year of Study, Expressed Learner Support Need and Pearson Chi-square (value, degrees of freedom (df) and Asymptotic Significance)

	Expressed Learner Support Need	Pearson Chi-Square		
		Value	df	Asymp. Sig. (2-sided)
	Academic advising	10.219	2	.006*
	Library services	1.375	2	.503
	Course work tutoring	9.221	2	.010*
	Information for getting textbooks /course units	1.896	2	.387
	Information about assignments	.602	2	.740
	Information about CATs	.804	2	.669
	Information about examinations	6.121	2	.047*
	Communication with course tutors	9.787	2	.007*
	Access to course tutors	1.903	2	.386
	Access to study groups	9.047	2	.011*
	Communication with other distance learners	14.337	2	.001*
	Communication with faculty staff	10.076	2	.006*
	Access to personal student records / personal files	2.232	2	.328
	Information about course registration	3.321	2	.190
	Communication with learner support staff / regional staff	6.147	2	.046*
	Guidance on how to get financial aid	7.439	2	.024*
	Career counselling	3.288	2	.193
YEAR OF STUDY	Computer technical support	1.453	2	.483
	Personal(mental health) counselling services	.077	2	.962
	Orientation	6.720	2	.035*
	Non-course related educational programmes	2.648	2	.266
	Involvement in student organisations	8.942	2	.011*
	Student governance / leadership	3.519	2	.172
	Student activities	5.022	2	.081

*significant at 0.05 level of significance

The data presented in Table 4.10 indicate that significant differences exist in distance learners expressed support need for 11 learner support services based on year of

study, that is, academic advising, course work tutoring, information on exams, communication with course tutors, access to study groups, communication with other distance learners, communication with faculty staff, communication with learner support staff, guidance on how to get financial aid, orientation, and involvement in student organisations. Therefore, we reject the null hypothesis and conclude that significant differences exist in distance learners expressed support needs based on year of study.

The following sub-sections give a further discussion of the significant difference in distance learners expressed support need for each of the 11 learner support services based on year of study.

4.6.2.1: Need for Academic Advising Based on Year of Study

Cross-tabulation of academic advising and year of study was done. Out of the total of 449 respondents, 427 (95.1%) respondents had a great need for academic advising while 22 (4.9%) expressed little or no need for academic advising. It can therefore be deduced that majority of the respondents 427 (95.1%) had a great need for academic advising. In order to determine the pattern of need for academic advising in relation to year of study, expected cell frequencies were computed for each cell and compared with the observed frequencies (Expected cell frequency=Row total*Column total/Total[N])

It was found that students in Year 3 required less academic advising (observed=14,

expected=7) compared to those students in Year 1 (observed=5, expected=7) and in Year 2 (observed=3, expected=8). It was further observed that students in Year 1 (observed=131, expected=129) and those in Year 2 (observed=161, expected=156) required more academic advising than those in Year 3 (observed=135, expected=142). Among the students in Year 1 and Year 2, those in Year 2 required more academic advising than those in Year 1 of study.

4.6.2.2: Need for Course Work Tutoring Based on Year of Study

Cross-tabulation of course work tutoring and year of study was carried out. Among the 450 respondents, 18 (4.0%) expressed little or no need for course work tutoring whereas 432 (96.0%) had great need for course work tutoring. In order to ascertain the levels of need for course work tutoring among the three groups, expected cell frequencies were computed for each cell and compared with the observed frequencies (Expected cell frequency = Row total * Column total / Total [N])

The cross-tabulation indicated that among the students in the three years of study, those students in Year 2 of study (observed=163, expected=157) had more need for course work tutoring than those in Year 1 (observed=129, expected=130) and Year 3 (observed=140, expected=145). The students who expressed the least need for course work tutoring among the three groups were those in Year 3 (observed=11, expected=6).

4.6.2.3: Need for Information About Examinations Based on Year of Study

Cross tabulation of need for information about examinations and year of study was carried out. The cross-tabulation portrayed that among a total of 451 respondents, 3 (0.7%) had little or no need for information about examinations while 448 (99.3%) expressed great need for that information.

In order to compare the expressed need for information about examinations with the year of study, expected cell frequencies were computed for each cell and compared with the observed frequencies (Expected cell frequency=Row total*Column total/Total[N]) . The frequencies indicated that students in Year 3 (observed=3, expected=0) had less need for information about examinations compared to those in Year1 (observed=0, expected=1) and Year 2 (observed =0, expected=1). It was also observed that students in both Year 1 (observed=138, Expected=137) and Year 2 (observed=164, expected=163) had equally great need for information about examinations.

4.6.2.4: Need for Communication with Course Tutors Based on Year of Study

Cross tabulation of communication with course tutors and year of study was carried out. The results showed that out of a total of 450 respondents, 18 (4.0%) had little or no need for communication with course tutors whereas 432 (96.0%) expressed a lot of need for communication with course work tutors. In order to compare the expressed need for communication with course tutors with the year of study, expected cell frequencies were computed for each cell and compared with the

observed frequencies (Expected cell frequency=Row total*Column total/Total[N]) .

The computation portrayed that learners in Year 3 of study had little or no need of communication with course tutors (observed=12, expected=6) compared to those in Year 1 (observed=4, expected=5) and those in Year 2 (observed=2, expected=7). It was also observed that learners in Year 1 (observed=132, expected=131) and those in Year 2 (observed=161, expected=156) expressed more need for communication with course tutors compared to learners in Year 3 (observed=139, expected=145). However, among the learners in Year 1 and Year 2 of study, those with greater need for communication with course tutors were those in Year 2.

4.6.2.5: Need for Access to Study Groups Based on Year of Study

Cross tabulation of access to study groups and year of study was carried out. The cross-tabulation indicated that of the total 434 respondents, 47 (10.8%) had little or no need for access to study groups while 387 (89.2%) expressed great need for access to study groups. Computation of expected frequency was done to show the strength of the relationship between year of study and access to study groups. The results showed that learners in Year 1 and Year 3 of study had less need for access to study groups (observed=17, expected=14; and observed=22, expected=16, respectively) compared to those in Year 2 of study (observed=8, expected=17). Among the three groups of learners, Year 2 expressed the most need for access to study groups (observed=151, expected=142). Learners in Year 3 of study had the least need for access to study groups.

4.6.2.6: Need for Communication with Other Distance Learners Based on Year of Study

Cross tabulation of communication with other distance learners and year of study was carried out. The cross-tabulation indicated that out of a total of 441 respondents, 57 (12.9%) had little or no need for communication with other distance learners while 384 (87.1%) expressed great need for communication with other distance learners. In order to compare the need for communication with other distance learners with the year of study, expected cell frequencies were computed for each cell and compared with the observed frequencies (Expected cell frequency = Row total * Column total / Total[N])

The observed and expected frequency for learners in Year 1 of study was the same (observed=17, expected=17) for little or no need for communication with other distance learners. In the category of high need for communication with other distance learners the observed and expected frequency was also the same (observed=117, expected=117). Therefore this distribution could have occurred by chance alone. However, the frequencies indicated that learners in Year 2 had a tendency for high need of communication with other distance learners (observed=152, expected=141) and that learners in Year 3 tended to have low or no need for communication with other distance learners (observed=115, expected=126).

4.6.2.7: Need for Communication with Faculty Staff Based on Year of Study

Cross tabulation of communication with faculty staff and year of study was carried out. The cross-tabulation indicated that among the total of 426 respondents, 58 (13.6%) had little or no need for communication with faculty staff and 368 (86.4%) expressed a lot of need for communication with faculty staff. Expected and observed frequencies were computed to determine the levels of need for communication with faculty staff in relation to year of study, amongst the three years of study.

The observed and expected frequency for learners in Year 1 of study was the same (observed=18, expected=18) for little or no need for communication with other distance learners. In the category of high need for communication with other distance learners the observed and expected frequency was also the same (observed=115, expected=115). Therefore this distribution could have occurred by chance alone. However, the frequency indicated that learners in Year 2 had a tendency for high need of communication with other distance learners (observed=144, expected=135) and those in Year 3 tended to have low or no need for communication with other distance learners (observed=109, expected=118).

4.6.2.8: Need for Communication with Learner Support Staff (regional centre staff) based on Year of Study

Cross-tabulation for communication with learner support staff (regional centre staff) and year of study was also carried out. The cross-tabulation indicated that among a total of 443 respondents, 42 (9.5%) had little or no need for communication with

learner support staff whereas 401 (90.5%) expressed a high need for communication with learner support staff.

Computation of expected and observed frequencies was done to ascertain the amounts of need for communication with learner support staff among the three groups. The computation revealed that learners in Year 1 and Year 2 of study had greater need for communication with learner support staff (observed=126, expected=122; observed=150, expected=147 respectively) compared to those in Year 3 (observed=125, expected=132). Learners in Year 3 expressed the least need for communication with learner support staff (observed=21, expected=14). It was also observed that learners in Year 1 had the greatest need for communication with learner support staff.

4.6.2.9: Need for Guidance on How to Get Financial Aid Based on Year of Study

Cross-tabulation for guidance on how to get financial aid and year of study was carried out. Out of a total of 445 respondents, 42 (9.4%) expressed little or no need for guidance on how to get financial aid whereas 403 (90.6%) had a high need for guidance on how to get financial aid. Computation of expected and observed frequencies was done to ascertain the amounts of need for guidance on how to get financial aid among the three groups. It was found that learners in Year 1 and Year 2 of study had greater need for guidance on how to get financial aid (observed=126, expected=122; observed=150, expected=146 respectively) compared to those in Year 3 (observed=127, expected=135). Learners in Year 3 expressed the least need for

guidance on financial aid (observed=22, expected=14). Learners in Year 1 and Year 2 expressed equally great need for guidance on how to get financial aid.

4.6.2.10: Need for Orientation Based on Year of Study

Cross-tabulation of orientation and year of study was performed. It was found that among a total of 429 respondents, 155 (36.1%) had little or no need for orientation whereas 274 (63.9%) expressed a high need for orientation. Computation of expected and observed frequencies was done to ascertain the amounts of need for orientation among the groups. It was found that learners in Year 1 and Year 2 of study had greater need for orientation (observed=93, expected=84; observed=103, expected=100 respectively) compared to those in Year 3 (observed=78, expected=89). Learners in Year 3 expressed the least need for orientation (observed=62, expected=51). Learners in Year 1 had the greatest need for orientation.

4.6.2.11: Need for Involvement in Student Organisations (such as S.O.N.U.) Based on Year of Study

Cross-tabulation of involvement in student organisations (such as SONU) and year of study was carried out. Among a total of 387 respondents, 172 (44.4%) expressed little or no need for involvement in student organisations whereas 215 (55.6%) had a high need for involvement.

Computation of expected and observed frequencies was done to ascertain the

amounts of need for involvement in student organisations among the three groups. It was found that learners in Year 2 expressed a high need for involvement in student organisations (observed=89, expected=76). Learners in Year 1 and Year 3 of study expressed little or no need for involvement in student organisations (observed=53, expected=52; observed=71, expected=60 respectively). Learners in Year 3 had the least need for involvement in student organisations.

4.6.3: Expressed Learner Support Needs Based on Location of Distance Learner (rural or urban)

Chi-square test was done to test for any significant difference in distance learners expressed support needs based on location. Location referred to the place of residence/home district of the learner and if it was rural or urban. The following hypothesis was stated

H₀: There is no significant difference in distance learners expressed support needs based on location.

H₁: There is a significant difference in distance learners expressed support needs based on location.

Table 4.11 presents a summary of the Chi-Square test for distance learners expressed support needs based on location.

Table 4.11: Location/residence of Distance Learner (rural or urban), Expressed Learner Support Need and Fisher's Exact Test (Exact sign.(2 sided) and Exact sign.[1 sided])

	Expressed Learner Support Need	Fisher's Exact Test			
		Exact sided)	sign.(2 sided)	Exact sided)	sign.(1 sided)
LOCATION OF DISTANCE LEARNER(RURAL OR URBAN)	Academic advising	.293		.196	
	Library services	.619		.399	
	Course work tutoring	.566		.369	
	Information for getting textbooks / course units	.744		.372	
	Information about assignments	.774		.400	
	Information about CATs	.386		.195	
	Information about examinations	1.00		.475	
	Information with / access to course tutors	.569		.378	
	Access to course tutors	.800		.441	
	Access to study groups	.063		.039	
	Communication with other distance learners	.087		.053	
	Communication with faculty staff	.866		.450	
	Access to personal student records / personal files	.164		.119	
	Information about course registration	.028*		.021	
	Communication with learner support staff / regional staff	.000*		.000	
	Guidance on how to get financial aid	1.000		.536	
	Career counselling	.396		.238	
	Computer technical support	.393		.224	

Table 4.11 continued

Expressed Learner Support Need	Fisher's Exact Test			
	Exact sided)		sign.(2 sided)	
	Exact sided)	sign.(2 sided)	Exact sided)	sign.(1 sided)
Non-course related educational programmes	.329		.163	
Involvement in student organisations	.806		.430	
Student governance / leadership	.621		.316	
Student activities	.543		.283	

*significant at 0.05 level of significance

Table 4.11 indicates that a significant difference exists in distance learners expressed support need for 3 learner support services based on location, that is, information about course registration, communication with learner support staff (regional centre staff) and orientation. Therefore, we reject the null hypothesis and conclude that significant differences exist in distance learners expressed support needs based on location.

The following sub-sections give a further discussion of the significant difference in distance learners expressed support need for each of the 3 learner support services based on location.

4.6.3.1: Need for Information About Course Registration Based on Location of Distance Learner

Cross-tabulation of information about course registration and location of distance learner was carried out. Among a total of 441 respondents, 49 (11.1%) expressed

little or no need for information about course registration whereas 392 (88.9%) had a high need for information about course registration.

Computation of expected and observed frequencies was done to compare the amounts of need for information about course registration among the two groups. It was found that learners from rural areas of residence had greater need for information about course registration (observed=312, expected=306) compared to learners from urban areas (observed=80, expected=86). Learners from urban areas expressed less or no need for information on course registration (observed=17, expected=11) compared to their counterparts from rural areas (observed=32, expected=38).

4.6.3.2: Need for Communication with Learner Support Staff (regional centre staff) Based on Location of Distance Learner

Cross-tabulation for communication with learner support staff (regional centre staff) and location of distance learner was done. Among a total of 443 respondents, 42 (9.5%) had little or no need for communication with learner support staff, whereas 401 (90.5%) expressed a high need for communication with learner support staff. Computation of expected and observed frequencies was done to compare the amounts of need for communication with learner support staff among the two groups. It was found that learners from rural areas of residence had greater need for communication with learner support staff/regional centre staff (observed=325, expected=312) compared to learners from urban areas (observed=76,

expected=89).Learners from urban areas expressed less or no need for communication with learner support staff/regional centre staff (observed=22, expected=9) compared to their counterparts from rural areas (observed=20, expected=33).

4.6.3.3: Need for Orientation Based on Location of Distance Learner.

Cross-tabulation for orientation and location of distance learner was carried out. It was found that out of a total of 429 respondents, 155 (36.1%) expressed little or no need for orientation, whereas 274 (63.9%) had a high need orientation. Computation of expected and observed frequencies was done to compare the amounts of need for orientation among the two groups.

Learners from rural areas of residence were found to have greater need for orientation (observed=222, expected=213) compared to learners from urban areas (observed=52, expected=61).Learners from urban areas expressed little or no need for orientation (observed=43, expected=34) compared to their counterparts from rural areas (observed=112, expected=121).

4.6.4: Expressed Learner Support Needs Based on Study Environment

Chi-square test was done to test for any significant difference in distance learners expressed support needs based on study environment. The following hypothesis was stated:

H₀: There is no significant difference in distance learners expressed support needs based on study environment

H_a: There is a significant difference in distance learners expressed support needs based on study environment.

Study environment was analysed in terms of time of study (in hours) during the week away from residential session, possession of separate room for private study at home, participation in group discussion with fellow learners (peers) and support from family members for academic pursuit. No significant differences existed in distance learners expressed support needs based on time of study, participation in group discussion with fellow learners and possession of separate room for private study at home (see corresponding tables in Appendix D). However, significant differences existed in distance learners expressed support needs based on support from family members for academic pursuit. Therefore, we reject the null hypothesis and conclude that significant differences exist in distance learners expressed support needs based on study environment. These significant differences are discussed in the following sub-sections

4.6.4.1: Expressed Learner Support Needs Based on Support from Family Members for Academic Pursuit.

Chi-Square test for expressed learner support needs based on support from family members for academic pursuit was carried out.

Table 4.12 shows a cross-tabulation for expressed learner support needs based on support from family members for academic pursuit.

Learner Support Need	Family Support	
	Yes	No
Total	100	100
Academic support	75	25
Financial support	60	40
Emotional support	85	15
Informational support	90	10
Practical support	70	30
Administrative support	80	20
Technical support	75	25
Personal support	65	35
Health support	50	50
Legal support	40	60
Other support	30	70
Total	100	100

Table 4.12: Cross-tabulation of learner support needs by family support.

Table 4.12 shows a cross-tabulation for expressed learner support needs based on support from family members for academic pursuit.

Table 4.12: Support from Family Members for Academic Pursuit, Expressed Learner Support Needs, Fisher's Exact Test (Exact sign.(2 sided) and Exact sign.[1 sided])

	Expressed Learner Support Needs	Fisher's Exact Test	
		Exact sign.(2 sided)	Exact sign.(1 sided)
SUPPORT FROM FAMILY MEMBERS FOR ACADEMIC PURSUIT	Academic advising	.021*	.013
	Library services	.328	.328
	Course work tutoring	.012*	.012
	Information for getting textbooks / course units	1.000	.478
	Information about assignments	.012*	.012
	Information about CATs	.760	.466
	Information about examinations	1.000	.525
	Communication with course tutors	.763	.481
	Access to course tutors	.031*	.026
	Access to study groups	.557	.273
	Communication with other distance learners	.720	.416
	Communication with faculty staff	.105	.064
	Access to personal student records / personal files	1.000	.550
	Information about course registration	.126	.076
	Communication with learner support staff / regional staff	.022*	.016
	Guidance on how to get financial aid	.303	.140
	Career counselling	.449	.276
	Computer technical support	.493	.298
	Personal(mental health) counselling services	.359	.191
	Orientation	.032*	.020
	Non-course related educational programmes	1.000	.543
	Involvement in student organisations	.516	.268
	Student governance / leadership	1.000	.509
Student activities	.614	.328	

*significant at 0.05 level of significance

Table 4.12 indicates that a significant difference existed in distance learners expressed support need for six learner support services based on support from family

members for academic pursuit, that is, academic advising, coursework tutoring, information about assignments, access to course tutors, communication with learner support staff/regional staff and orientation.

The following sub-sections give a further discussion of the significant difference in distance learners expressed support need for each of the six learner support services based on support from family members for academic pursuit.

4.6.4.2: Need for Academic Advising Based on Support from Family Members for Academic Pursuit

Cross-tabulation for academic advising and support from family members for academic pursuit was carried out. Out of a total of 449 respondents, 427 (95.1%) expressed a high need for academic advising while 22 (4.9%) had little or no need for academic advising. Computation of expected and observed frequencies was done to compare the amounts of need for academic advising among the two groups. Learners who had support from family members for their academic pursuit expressed greater need for academic advising (observed=350, expected=345) compared to learners who had no support (observed=77, expected=82). Learners who had no support from family members for their academic pursuit expressed less or no need for academic advising (observed=9, expected=4) compared to their counterparts who had support (observed=13, expected=18).

4.6.4.3: Need for Coursework Tutoring Based on Support from Family Members for Academic Pursuit

Cross-tabulation for coursework tutoring and support from family members for academic pursuit was carried out. Out of a total of 450 respondents, 432 (96.0%) expressed a high need of coursework tutoring while 18 (4.0%) had little or no need for coursework tutoring. Computation of expected and observed frequencies was done to compare the amounts of need for coursework tutoring among the two groups. Learners who had support from family members for their academic pursuit expressed a greater need for coursework tutoring (observed=352, expected=348) compared to learners who had no support (observed=80, expected=84). Learners who had no support from family members for their academic pursuit expressed little or no need for coursework tutoring (observed=8, expected=4) compared to their counterparts who had support (observed=10, expected=14).

4.6.4.4: Need for Information about Assignments Based on Support from Family Members for Academic Pursuit

Cross-tabulation for information about assignments and support from family members for academic pursuit was carried out. Results indicated that out of a total of 452 respondents, 434 (96.0%) had a high need of information about assignments while 18 (4.0%) expressed little or no need for information about assignments. Computation of expected and observed frequencies was done to compare the amounts of need information about assignments among the two groups.

Findings were that learners who had support from family members for their academic pursuit had a greater need for information about assignments (observed=354, expected=350) compared to learners who had no support (observed=80, expected=84). Learners who had no support from family members for their academic pursuit expressed less or no need for information about assignments (observed=8, expected=4) compared to their counterparts who had support (observed=10, expected=14).

4.6.4.5: Need for Access to Course Tutors Based on Support from Family Members for Academic Pursuit.

Cross-tabulation for access to course tutors and support from family members for academic pursuit was carried out. Findings were that out of a total of 449 respondents, 425 (94.7%) had a high need of access to course tutors while 24 (5.3%) expressed little or no need for access to course tutors. Computation of expected and observed frequencies was done to compare the amounts of need for access to course tutors among the two groups. It was found that learners who had support from family members for their academic pursuit had a greater need for access to course tutors (observed=347, expected=343) compared to learners who had no support (observed=70, expected=82). Learners who had no support from family members for their academic pursuit expressed less or no need for access to course tutors (observed=9, expected=5) compared to their counterparts who had support (observed=15, expected=19).

4.6.4.6: Need for Communication with Learner Support Staff/Regional Centre Staff Based on Support from Family Members for Academic Pursuit.

Cross-tabulation for communication with learner support staff/regional centre staff based on support from family members for academic pursuit was carried out. Out of a total of 443 respondents, 401 (90.5%) expressed a high need of communication with learner support staff/regional centre staff whereas 42 (9.5%) had little or no need for communication with learner support staff.

Computation of observed and expected frequencies was done to compare the amounts of need for communication with learner support staff/regional centre staff, among the two groups. Learners who had support from family members for their academic pursuit expressed a greater need for communication with learner support staff/regional centre staff (observed=330, expected=324) compared to learners who had no support (observed=71, expected=77). Learners who had no support from family members for their academic pursuit expressed little or no need for communication with learner support staff/regional centre staff (observed=14, expected=8 compared to their counterparts who had support (observed=28, expected=34).

4.6.4.7: Need for Orientation Based on Support from Family Members for Academic Pursuit

Cross-tabulation for orientation and support from family members for academic pursuit was done. It was found that out of a total of 429 respondents, 274 (63.9%)

had a high need of orientation whereas 155 (36.1%) expressed little or no need for orientation. Computation of expected and observed frequencies was done to compare the amounts of need for orientation among the two groups. Learners who had support from family members for their academic pursuit expressed a greater need for orientation (observed=229, expected=220) compared to learners who had no support (observed=45, expected=54). Learners who had no support from family members for their academic pursuit expressed little or no need for orientation (observed=39, expected=30) compared to their counterparts who had support (observed=116, expected=125).

4.6.5: Expressed Learner Support Needs Based on Course of Study.

Chi-square test was done to test for any significant difference in distance learners expressed support needs based on course of study. The following hypothesis was stated:

H₀: There is no significant difference in distance learners expressed support needs based on course of study

H₁: There is a significant difference in distance learners expressed support needs based on course of study

Table 4.13 presents a summary of the Chi-Square test for expressed learner support needs based on course of study.

Table 4.13: Course of Study, Expressed Learner Support Needs, Fisher's Exact Test (Exact sign.(2 sided) and Exact sign.[1 sided])

	Expressed Learner Support Needs	Fisher's Exact Test	
		Exact sided)	sign.(2 sided) Exact sign.(1 sided)
COURSE OF STUDY	Academic advising	0.613	0.31
	Library services	0.116	0.12
	Course work tutoring	0.788	0.51
	Information for getting textbooks / course units	0.373	0.24
	Information about assignments	1.000	0.54
	Information about CATs	0.423	0.25
	Information about examinations	0.570	0.40
	Communication with course tutors	1.00	0.55
	Access to course tutors	0.808	0.46
	Access to study groups	0.593	0.34
	Communication with other distance learners	0.742	0.43
	Communication with faculty staff	0.871	0.48
	Access to personal student records / personal files	0.017*	0.01
	Information about course registration	0.731	0.41
	Communication with learner support staff / regional staff	1.000	0.53
	Guidance on how to get financial aid	0.002*	0.00
	Career counselling	0.135	0.08
	Computer technical support	0.677	0.37
	Personal(mental health) counselling services	1.000	0.52
	Orientation	0.207	0.10
	Non-course related educational programmes	0.291	0.14
	Involvement in student organisations	0.819	0.43
	Student governance / leadership	0.642	0.35
	Student activities	1.000	0.54

*significant at 0.05 level of significance

Table 4.13 shows that a significant difference exists in distance learners expressed support need for access to personal student records/personal files, and guidance on

how to get financial aid, based on course of study. Therefore, we reject the null hypothesis and conclude that significant differences exist in distance learners expressed support needs based on course of study.

The following sub-sections give a further discussion of the significant difference in distance learners expressed support need for each of the two learner support services based on course of study.

4.6.5.1: Need for Access to Personal Student Records/Personal Files Based on Course of Study

Cross-tabulation for access to personal student records/personal files and course of study was carried out. Out of a total of 431 respondents, 415 (96.3%) expressed a high need for access to personal student records/personal files whereas 16 (36.1%) had little or no need for access to personal student records/personal files. Computation of expected and observed frequencies was done to compare the amounts of need for access to personal student records/personal files, among the two groups. Findings were that learners who were studying B.Ed. (Arts) had a greater need for access to personal student records/personal files (observed=309, expected=304) compared to learners studying B.Ed. (Science) (observed=106, expected=111). Learners studying B.Ed. (Science) expressed little or no need for access to personal student records/personal files (observed=9, expected=4) compared to their counterparts studying B.Ed. (Arts) (observed=7, expected=12).

4.6.5.2: Need for Guidance on How to get Financial Aid Based on Course of Study

Cross-tabulation for guidance on how to get financial aid and course of study was carried out. Out of a total of 429 respondents, 388 (90.4%) expressed a high need for guidance on how to get financial aid whereas 41 (9.6%) had little or no need for guidance on how to get financial aid. Computation of expected and observed frequencies was done to compare the amounts of need for guidance on how to get financial aid among the two groups. It was found that learners who were studying B.Ed. (Science) had a greater need for guidance on how to get financial aid (observed=110, expected=102) compared to learners studying B.Ed. (Arts) (observed=278, expected=286). Learners studying B.Ed. (Arts) expressed little or no need for guidance on how to get financial aid (observed=38, expected=30) compared to their counterparts studying B.Ed. (Science) (observed=3 expected=11).

4.7: Summary of Main Findings in the Tests of Significance in Phase One of the Study

The tests of significance revealed that there were significant differences in distance learner's expressed support needs based on gender. Females had a greater need for orientation than males. Males had a greater need for student governance than females.

Significant differences also existed in distance learners expressed support needs based on year of study. Though all the learners had expressed a need for all the learner support services, learners in Year 2 of study expressed the highest need for

academic advising; coursework tutoring; communication with course tutors; access to study groups; communication with other distance learners; communication with faculty staff and involvement in student organisations (e.g. SONU), whereas those learners in Year 3 had the least need for those services. Learners in Year 1 of study expressed the highest need for communication with learner support staff/regional centre staff and orientation whereas learners in Year 3 had the least need for those services. Learners in Year 1 and Year 2 of study expressed equally great need for information about examinations and guidance on how to get financial aid. It is apparent that learners in Year 3 had the least need for the various learner support services in comparison to learners in year 1 and year 2.

There were significant differences in distance learners expressed support needs based on location. Learners from rural areas expressed a greater need for information about course registration; communication with learner support staff/regional centre staff and orientation than their urban counterparts.

Significant differences existed in distance learners expressed support needs based on study environment. In the support from family members for academic pursuit variable, learners who had support from family members for their academic pursuit expressed greater need for academic advising; coursework tutoring; information about assignments; access to course tutors; communication with learner support staff/regional centre staff and orientation compared to those who had no support from family members.

CHAPTER FIVE

Significant differences existed in distance learners expressed support needs based on course of study. Learners pursuing B.Ed. (Arts) expressed greater need for access to personal student records compared to learners pursuing B.Ed. (Science). Learners pursuing B.Ed. (Science) expressed greater need for guidance on how to get financial aid compared to learners pursuing B.Ed. (Arts).

CHAPTER FIVE

CONTENT DEVELOPMENT AND IMPLEMENTATION OF THE ONLINE LEARNER SUPPORT SYSTEM

5.1: Introduction

In Phase One of the study (Learner Needs Analysis), distance learners were provided with an inventory of learner support services. The learners rated the services in terms of how much they needed them (See Chapter Four). This helped to generate a prioritized list of learner support needs of distance learners. The learner needs informed content development for the learner support system for Phase Two of the study (Construction and Evaluation of the Online Learner Support System).

The expressed needs of distance learners were clustered into four broad categories, that is, academic advising and communication; student communities; administrative services and orientation; and personal and social services. Content was developed and organized around those broad categories. Content development for the online learner support system was carried out in line with other learner support systems developed in other universities (see a review of the learner support systems in Chapter Two). The system was then programmed with the assistance of ICT staff at the University of Nairobi. After debugging the system, registration of distance learners in the experimental group was carried out. The learners were exposed to the system for a period of three months and the control group did not receive this treatment.

5.2: Clustering Data for Content Development

Hierarchical clustering was done to group the items in the questionnaire (See Appendix A) into clusters of similar items. In the hierarchical clustering, agglomerative cluster analysis was used.

In agglomerative hierarchical clustering, every case is initially considered a cluster, then the two cases with the lowest distance (or highest similarity) are combined into a cluster. Then the case with the lowest distance to either of the first two is considered next. If that third case is closer to a fourth case than it is to either of the first two, the third and fourth cases become the second two-case cluster; if not, the third case is added to the first cluster. The process is repeated, adding cases to existing clusters, or combining clusters to get to the desired final number of clusters. From the agglomeration schedule the coefficients were close together up to stage 19 where there was a sudden jump (Refer to the agglomeration schedule in Appendix D). In other words, the differences between the coefficients were small until this point (595.071) where there was a sudden change to (727.500). This therefore showed the stopping distance (19) for cluster formation.

The cluster analysis produced a hierarchical tree (dendrogram). The dendrogram depicts the relative size of the proximity coefficients at which cases were combined. Cases with low distance/high similarity are close together. Cases showing low distance are close, with a line linking them a short distance from the left of the dendrogram, indicating that they are agglomerated into a cluster at a low distance

coefficient indicating a likeness. When, on the other hand, the linking line is to the right of the dendrogram the linkage occurs a high distance coefficient, indicating the cases/clusters were agglomerated even though much less alike.



***** HIERARCHICAL CLUSTER ANALYSIS *****

Dendrogram using Average Linkage (Between Groups)

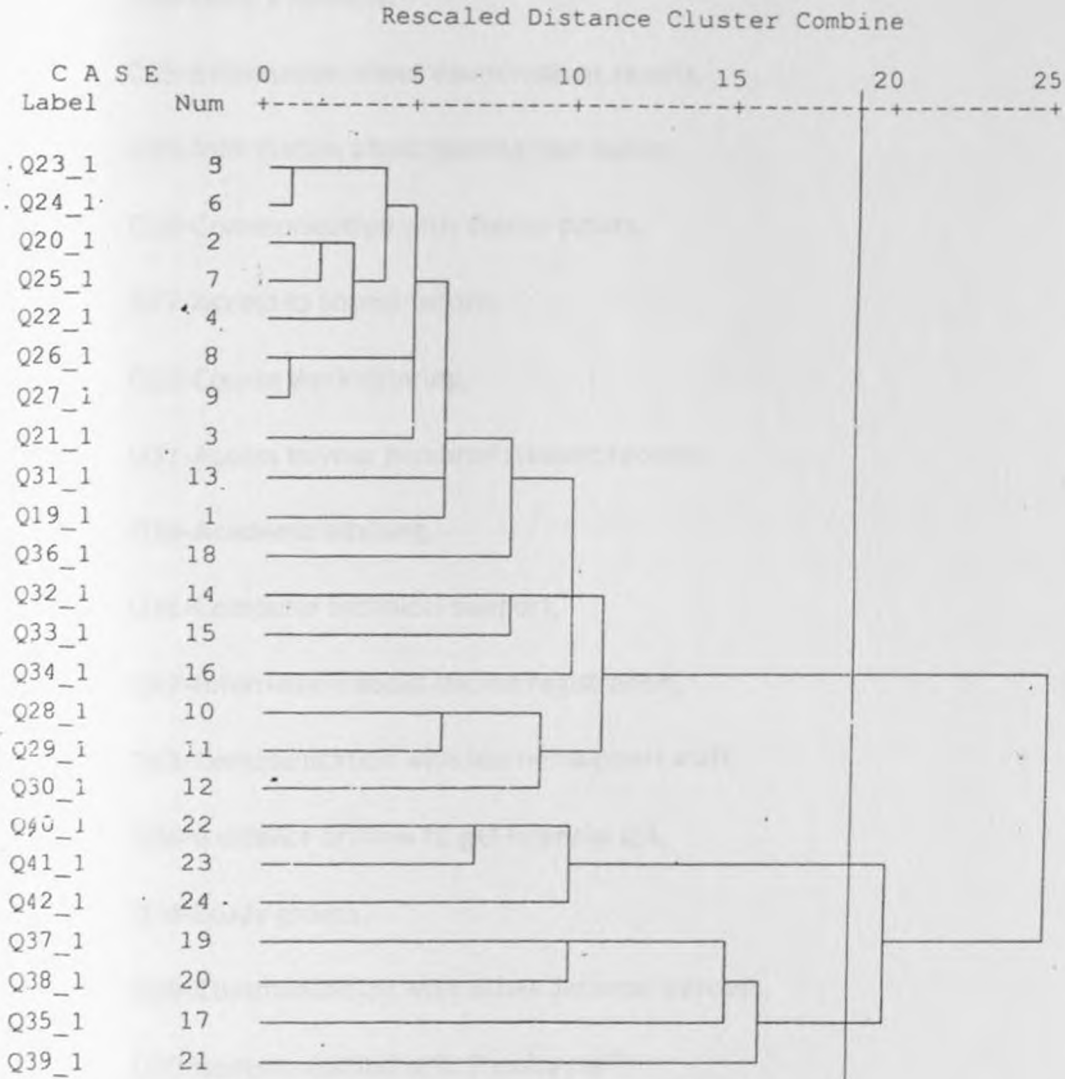


Figure 3; Dendrogram resulting from the clustering

Using the distance for stopping as 19, three clusters were formed as indicated in the dendrogram.

Cluster one:

Q23-Information about assignments,

Q24-Information about CATs,

Q20-Library services,

Q25-Information about examinations results,

Q25-Information about getting text books,

Q26-Communication with course tutors,

Q27-Access to course tutors,

Q21-Course work tutoring,

Q31-Access to your personal student records,

Q19-Academic advising,

Q36-Computer technical support,

Q32-Information about course registration,

Q33-Communication with learner support staff,

Q34-Guidance on how to get financial aid,

Q28-Study groups,

Q29-Communication with other distance learners,

Q30-Communication with Faculty staff

Cluster two:

Q40-Involvement in student organisations,

Q41-Student governance,

Q42-Student activities

Cluster three:

Q37-Personal (mental health) counselling services;

Q38-Orientation,

Q35-Career counselling,

Q39-Non-course related educational programmes.

The three clusters were labeled as follows:

Cluster One: Academic and Communications Suite

Cluster Two: Student Communities

Cluster Three: Personal and Administrative Services

Cluster three was further divided into two clusters, that is, Orientation and Administrative Services and Personal and Social Services for purposes of distinctive content development.

These four clusters formed the basis of content development areas/categories for construction of the Learner Support System.

5.3: Content Development

Comprehensive content development was carried out under the four areas and organized into the learner support system in an endeavour to address the learner support needs of distance learners and deliver support to the learners where it will

be available as and when they need it. Content development was done in line with other online learner support systems from other universities such as Athabasca University, Canada; Massey University, New Zealand; Pace University, New York; University of Bath, United Kingdom and University of Chicago, USA. Some content was also derived from the University of Nairobi website and the School of Continuing and Distance Education (Refer to description of content of the learner support system in Chapter Two).

5.4: Selection and Organisation of Content

After analysing information from other existing online learner support systems(See Chapter Two) and websites and documents from the School of Continuing and Distance Education, content for the online learner support system was considered, and selected to suit the expressed needs of distance learners at the University of Nairobi, under the four categories of learner support services as follows:

5.4.1: Academic Advising and Communication

Under this cluster, issues addressed included: effectively marking your text, time management and time scheduling, procrastination, studying in the child zone, test taking, answering examination questions and dealing with examination anxiety, writing a term paper/assignment, studying from the text book, frequently asked questions, developing effective reading skills, learning resources for distance learners, residential school, organizing your study space, the library and searching for current books in the library, study groups, studying from modules and other course

materials, the roles of coordinators and tutors, perfectionism and learning styles and how to maximize your success in school.

Figure 4 shows a screenshot of the content pages of Academic advising and Communication.

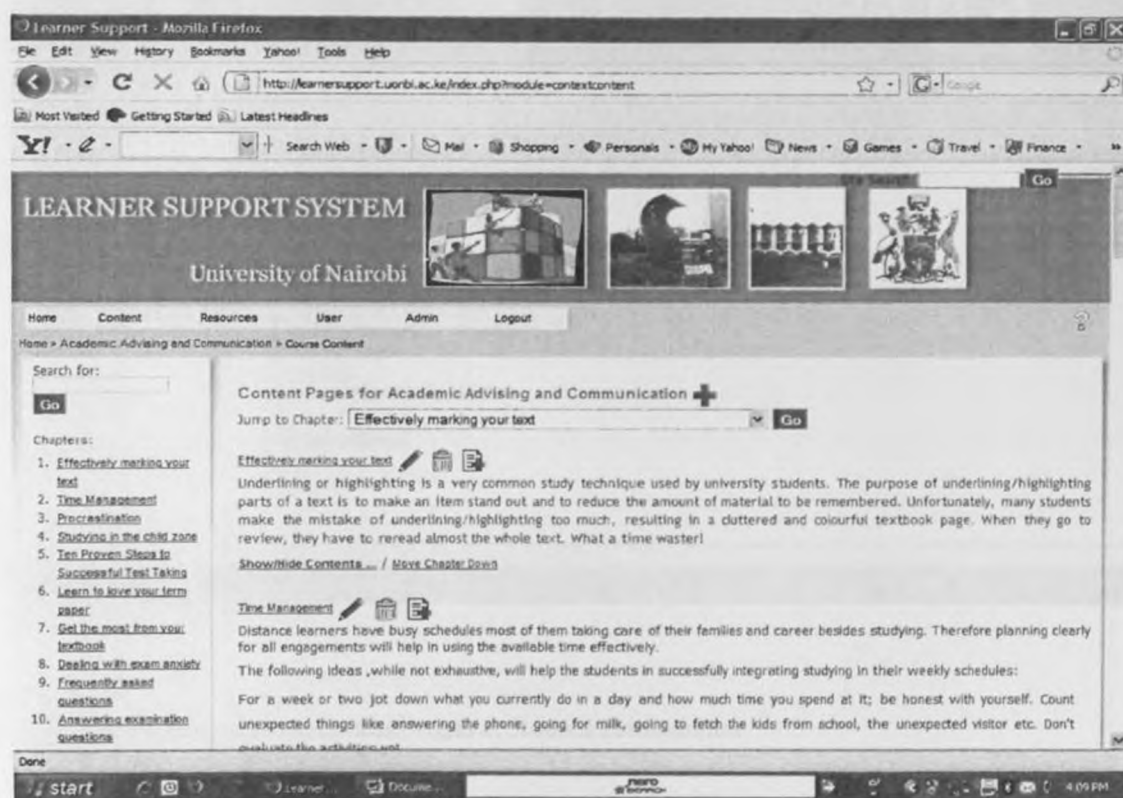


Figure 4: Screenshot of the Content Pages of Academic Advising and Communication

5.4.2: Student Communities

In this cluster, issues of concern were such as student organisations (University wide, college, school and departmental student organisations), student activities, the University of Nairobi alumni and useful links to other students' areas of concern.

Figure 5 shows a screenshot of the content pages of Student Communities

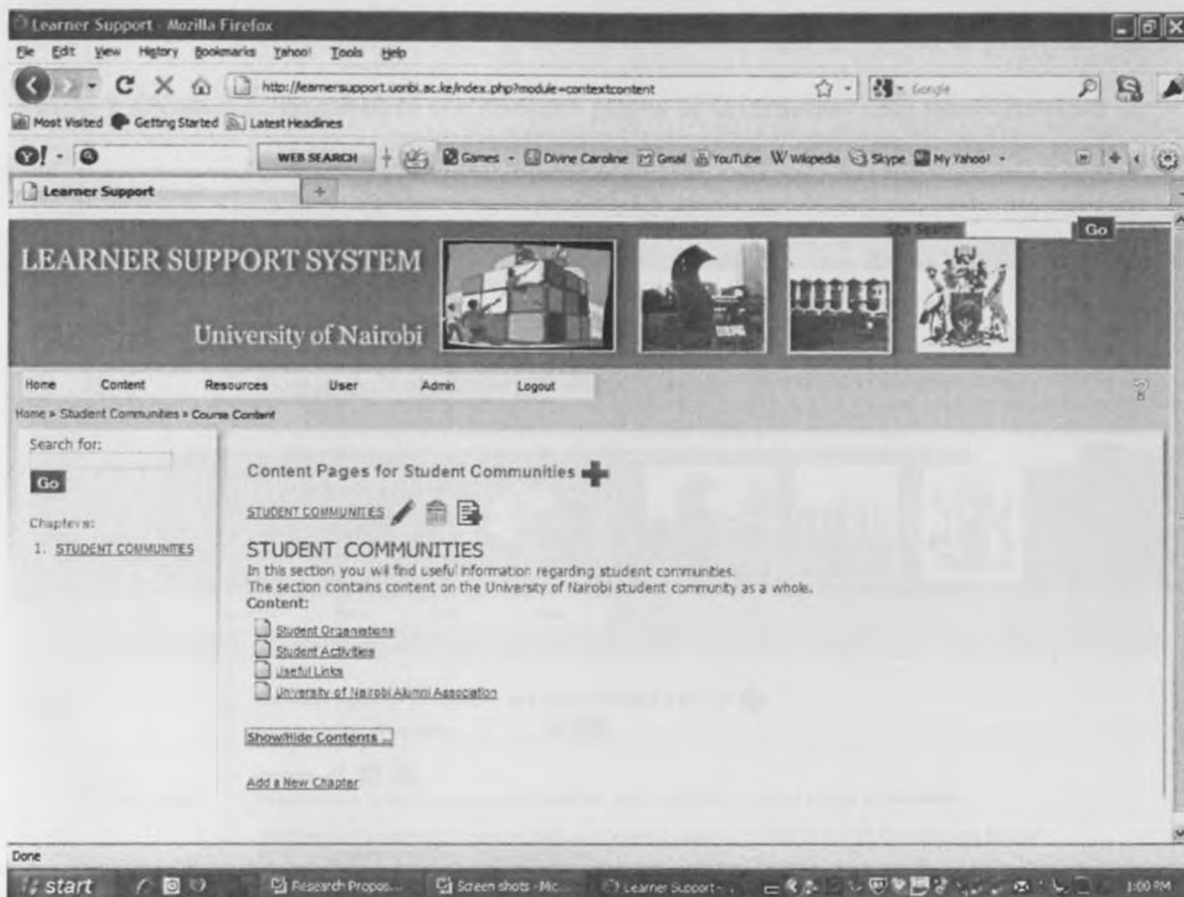


Figure 5: Screenshot of the Content Pages of Student Communities

5.4.3: Administrative Services and Orientation

Included in the cluster of administrative services were: course calendars, course structure, fees structure and regulations for B.Ed. (Arts) and B.Ed. (Science) and lists of tutors and coordinators for various subject units and their contact details. In the area of orientation, content included the mode of learning for distance learners, the

Student handbook, residential school, regional meetings and the role of regional centres.

Figure 6 shows a screenshot of the content pages of Orientation and Administrative Services

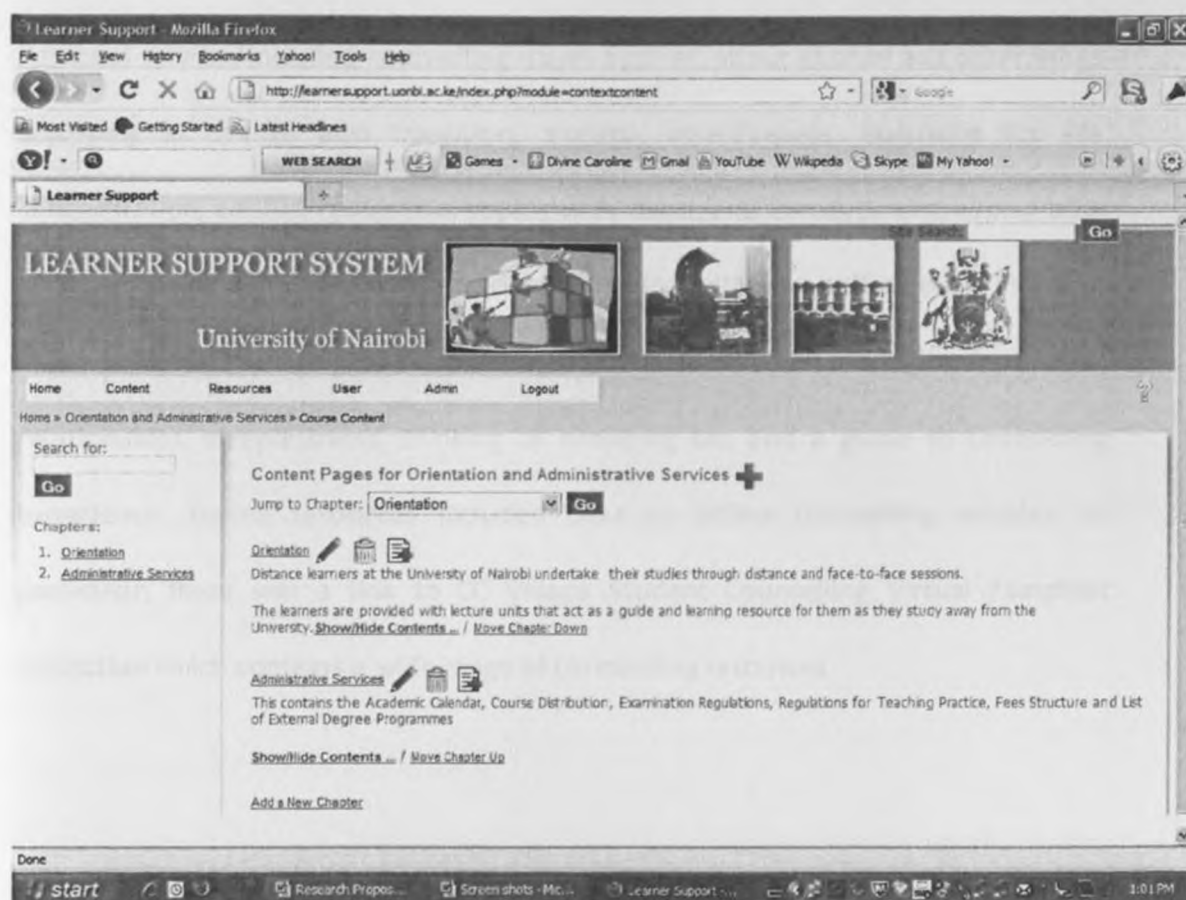


Figure 6: Screenshot of the Content Pages of Orientation and Administrative Services

5.4.4: Personal and Social Services

Included in this cluster was career guidance, personal services and online resources. In the area of career guidance, matters addressed included: developing career skills, creating your career profile, generating career ideas, career action plan, career

choice, career planning process, career self-appraisal, job families, preparing a curriculum vitae, job search strategies, application forms, cover letters for job application, online job applications, interview skills, informational interviewing, interview questions, first impressions and useful tips for a successful interview.

Personal services included counselling issues such as: about alcohol and other drugs, adjusting to change and transition, anxiety, assertiveness, balancing for life, concentration, conflict resolution, coping with death and bereavement, coping after a crisis, coping with traumatic incidents, dealing with low self-esteem, listening, making friends, managing stress, mature students, motivation, managing depression, relationships, sleeplessness, thinking of dropping out and a guide to counselling experience. Online resources included links to online counselling services. In particular, there was a link to CC Village Student Counselling Virtual Pamphlet Collection which contains a wide range of counselling resources.

Figure 7 shows a screenshot of the content pages of Personal and Social Services

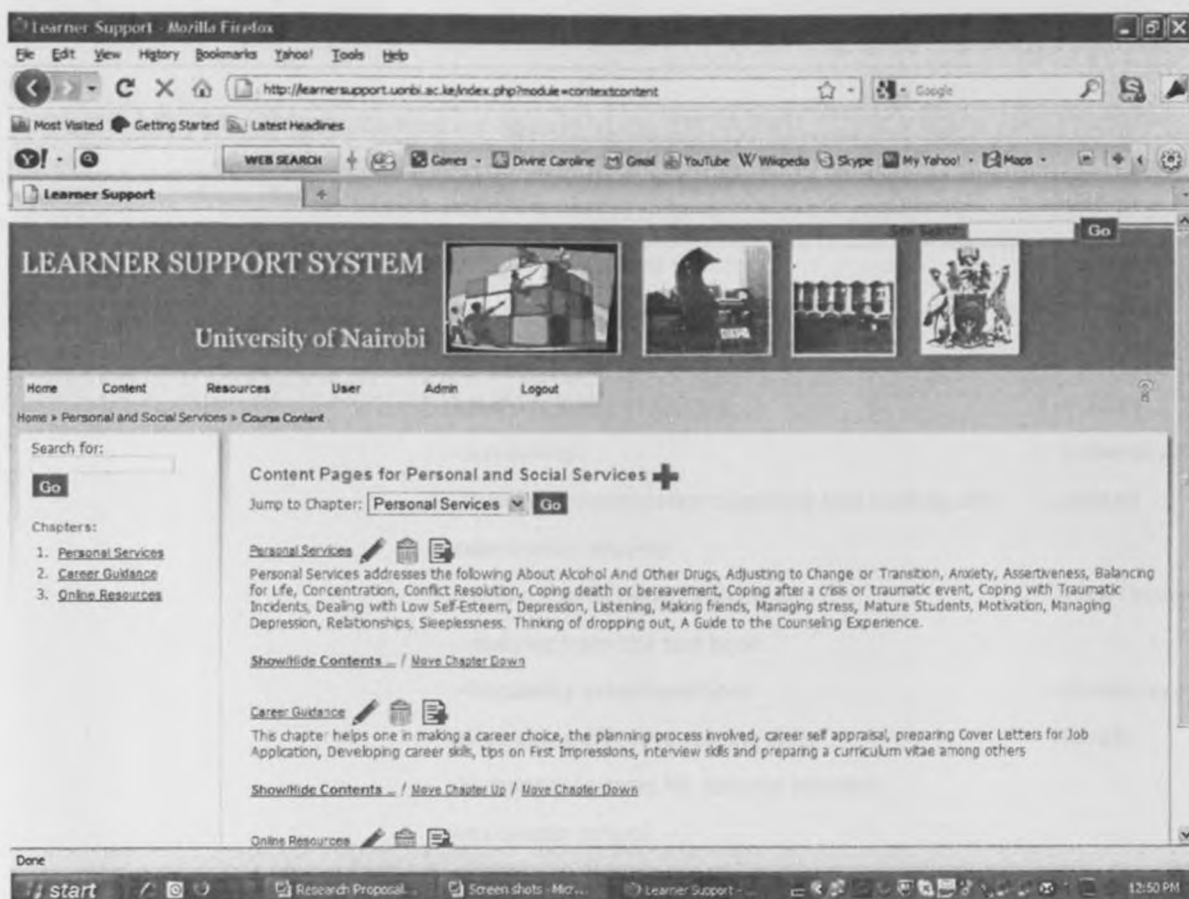


Figure 7: Screenshot of the Content Pages of Personal and Social Services

5.5: Summary of Content and Sources

Table 5.1 shows a summary of content and sources for the construction of the online learner support system

Table 5.1: Suite, Sub-category, Content and Sources

Suite	Sub-category	Content	Sources
Academic Advising and Communication	Academic advising	-effectively marking your text	-Athabasca University
		-time management and time scheduling	
		-procrastination	
		-studying in the child zone	-Massey University-New Zealand
		-test-taking	
		-answering examination questions and dealing with examination anxiety	
		-writing a term paper/assignment	-Pace University
		- studying from the text book	
		-frequently asked questions	-University of Nairobi
		-developing effective reading skills	
		-learning resources for distance learners	
		-residential school	
		-organizing your study space	
		-the library and searching for current books in the library	
		-study groups,	
-studying from modules and other course materials			
-the roles of coordinators and tutors			
-perfectionism and learning styles			
-how to maximize your success in school			
-Study skills			
-Research skills			
-Study planners			

Table 5.1 continued

Suite	Sub-category	Content	Sources
	Library	-Link to UoN library and to full text databases, electronic books and journals	
	Communication	Information on -Assignments-topics, deadlines -Exams-schedules -Academic transcripts-how to apply, access -Results-release of results -Schedule of residential school -Frequently asked questions (FAQs) -Personal telephone contacts for Faculty staff, learner support staff - internal email -Telephone contacts for college -Telephone contacts for regional centers staff	
Student communities	Student organisation s/ Student activities	Student organisations: - Student Organisation of Nairobi University(SONU) -College organisations -Faculty organisations -Departments organisations -Students activities -Alumni	-University of Nairobi
Administrative services and Orientation	Orientation	-University administrative structure -Learning modes for distance learners -Student study centers/ Extra-Mural Centers -Regional meetings -Residential school -Student handbook -Courses	-School of Continuing and Distance Education -University of Nairobi website

Table 5.1 continued

Suite	Sub-category	Content	Sources
Personal and Social Services	Personal Services	-Personal counseling	-University of Chicago
	Social Services	-General resources - Online resources >CC Village Student Counseling Virtual Pamphlet Collection >Counseling Resources on the Web (CROW)	-Massey University

5.6: Features of the Online Learner Support System

The online learner support system had some salient features that were tabulated and explained in the following table.

Table 5.2 presents Number, plugin and features of the online learner support system

Table 5.2: Number, Plugin and Features of the Online Learner Support System

No.	Plugin	Features of the online learner support system
1.	Content manager	<ul style="list-style-type: none"> • Contains a navigation tree and links to help navigate through the course content. • Rendering the course content. • Managing (add/edit/delete) the content in a course. • Searching for content within a course.
2.	Course manager	<ul style="list-style-type: none"> • Lists courses where one has permissions allowing one to enter and interact with the course. • Lists other courses that view for they are public for anyone, or accessible to anyone registered in the system. • Lists other courses that exists and one does not have permission but may request the course lecturer for permission to view if interested. • Allows one to create and manage (edit/delete/add plugins) a course if they have lecturer rights in the system. • One can add different plugins in the course to facilitate in assessment or rendering of content.
3.	Statistics	<ul style="list-style-type: none"> • One can view the number of people who have used each module/tool in the system. This is useful in determining the most used feature in the system. • One can also view the page statistics per course. This is the time spent on every course page per learner. If the logged in user is not a lecturer, they can only see their data. If the one logged in is a lecturer and has a course in the system with active learners, then, he/she can view the statistics for every course per learner. This helps track how much a learner is making use of the material provided through the system.
4.	Internal mail	<ul style="list-style-type: none"> • The internal mail feature helps learners and course conveners to interact with each other asynchronously. A user can send an email to a group, where a group could be members of a certain course, and the message gets relayed to the members. A user could also send an email to specific users. This enhances communication within the learning environment.

Table 5.2 continued

No.	Plugin	Features of the online learner support system
5.	User manager	<ul style="list-style-type: none"> The system allows users with administrative rights to perform certain functions such as create new users, activate or deactivate users, grant users permissions such as adding them as members of a certain category to a course. This is useful as it helps set the rules that help ensure orderliness in the learning environment.
6.	System administration	<ul style="list-style-type: none"> This is useful in managing the various plugins and configurable parameters within the system. It is only accessible to users with administrative rights.
7.	Happiness Indicator	<ul style="list-style-type: none"> This feature was very useful to the learning process as it allowed a lecturer to post several evaluative questions about the course, in a given time frame within the semester, and get the feedback from the learners. This helped the lecturer to fill in the gaps and improve on the course.
8.	News	<ul style="list-style-type: none"> This feature allowed the lecturers to post news to the learners about various issues that may be of value to the learner community within the system.
9.	Poll	<ul style="list-style-type: none"> This feature helps in getting general feedback about the system in general, or some parts of the system. It could also be used to get other views that do not necessarily have to do with the system.

5.7: Programming of the Learner Support System

Programming of the learner support system was carried out by ICT staff at the University of Nairobi. The researcher provided the content. The learner support system was built on Chisimba Model, View, Controller Architecture which is highly scalable. It uses MySQL Database. It was built using php5 with view helpers for AJAX, JavaScript, HTML Forms and more. It has a built-in Form Validation and uses Access Control Lists and fine grained permissions system to manage users. It uses Security, Session, and Request Handling Components. The hosting server environment

operating system was Linux Storage and was capacity 1GB. File access and transfer was File Transfer Protocol (FTP), CPANEL Web application and the allowed data transfer was 12.5 GB

5.8: Debugging of the Online Learner Support System

Prior to registration and use of the learner support system by the actual participants, a beta test of the system was done in order to debug the system. Members of staff and learners from other programmes (other than the distance learners in the study) in the School of Continuing and Distance Education were encouraged to register in the system and use it for some time and give feedback on any areas of improvement. The feedback enabled the researcher to improve on the system before utilizing it with the learners in the study.

5.9: Randomization

Random assignment of subjects into two groups was carried out before the beginning of the experiment. This meant that every individual who was participating in the experiment had an equal chance of being assigned to any of the experimental or control condition. Each member of the group was given a number (arbitrarily), and a table of random numbers was then used to select the members of the experimental and control groups. The use of random assignment allows the researcher to form groups that, right at the beginning of the study, are equivalent- that is, they differ only by chance in any variables of interest. In other words, random assignment is intended to eliminate the threat of additional, or extraneous variables- not only

those of which researchers are aware but also those of which they are not aware- that might affect the outcome of the study (Fraenkel and Wallen, 2000).

5.10: Registration of Students and Testing of the Online Learner Support System

After debugging of the online learner support system, the students in the experimental group were given manuals and guidelines on how to register and use the system. The Url for the online learner support system was; <http://learnersupport.uonbi.ac.ke> The students registered in the system and were confirmed by the system administrator and researcher in order to ensure that only the experimental group accessed and used the system. The students accessed and used the system for a three month period after which data collection was carried out to test the effectiveness of the system. Test of effectiveness was done through the randomized Pre- Test-Post-test control group design (Refer to Chapter Three [Research methodology]). Testing was done for student learning self-efficacy, student motivation and student satisfaction (Refer to the research instruments in Appendix B and C).

5.11: The Experimental Design

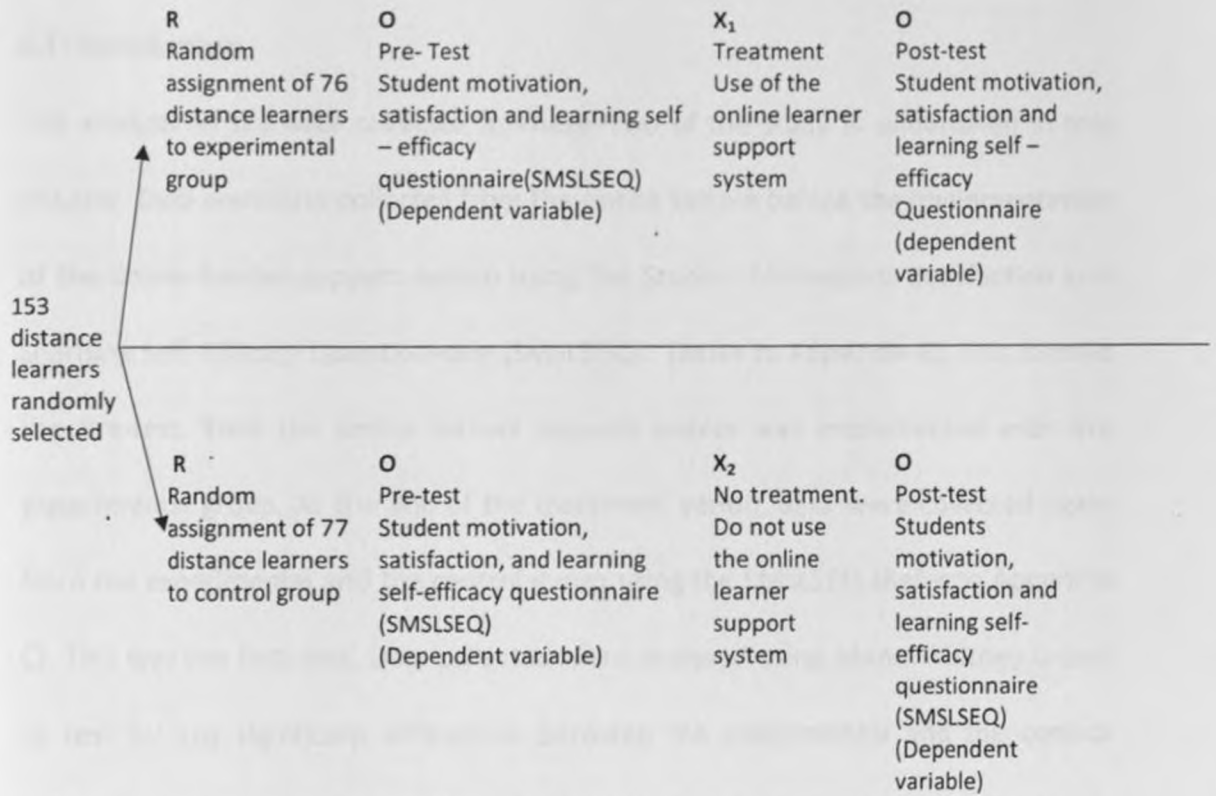


Figure 8: The Randomized Pre-test-- Post-test control group design

CHAPTER SIX

DATA ANALYSIS, PRESENTATION AND INTERPRETATION (PHASE TWO)

6.1: Introduction

The analysis of the data collected in Phase Two of the study is undertaken in this chapter. Data were first collected from the entire sample before the implementation of the online learner support system using the Student Motivation, Satisfaction and Learning Self- Efficacy Questionnaire (SMSLSEQ). (Refer to Appendix B). This formed the Pre-test. Then the online learner support system was implemented with the experimental group. At the end of the treatment period, data were collected again from the experimental and the control group using the SMSLSEQ (Refer to Appendix C). This was the Post-test. Data collected were analysed using Mann Whitney U-test to test for any significant differences between the experimental and the control group. The system was also evaluated by the experimental group in terms of content, clarity and usefulness. Not all data analysis tables are included in this chapter. For more data analysis tables refer to Appendix D. The chapter is organised around the following sub-headings: Introduction; response rate; Pre-test; Post-test; summary of main findings of the tests of significance; and evaluation of the online learner support system.

6.2: Response Rate

Out of the 164 respondents targeted in the Pre-test, 153 filled and returned the questionnaires. The response rate was 93.29%. In the Post-test, out of the 76 subjects in the experimental group, 61 questionnaires were filled and returned

making a response rate of 80.26%. For the control group, out of 77 targeted respondents, 70 questionnaires were filled and returned making a response rate of 90.91%.

6.3: Mortality Rate

In the post test 61 questionnaires were returned out of a targeted 76 subjects in the experimental group. This gave a mortality rate of 19.74%. In the control group, the mortality rate was 9.09%. In both cases this resulted from absence of the targeted subjects during the residential session due to lack of fees and also completion of studies by the students who were in Part 6 (last semester) during the Pre-test.

6.4: Pre-test

Mann-Whitney U test was applied to the items on student learning self-efficacy, student motivation and student satisfaction. The results of the analyses indicated that there was no significant difference between the Experimental and Control group in student learning self-efficacy, student motivation or student satisfaction (See tables in Appendix D). The Pre-test enabled the researcher to check whether or not the two groups (Experimental and control group) were really similar- that is, whether random assignment actually succeeded in making the groups equivalent. The results of the Pre-test showed that the two groups were equivalent.

6.5: Post-test

Mann-Whitney U test was applied to a number of items on student learning self-efficacy, student motivation and student satisfaction in order to compare Experimental and Control Group.

6.5.1: Student Learning Self-efficacy

Mann-Whitney U-test was done to test for any significant difference in student learning self-efficacy between the Experimental and the Control group. The following hypothesis was stated:

H₀: There is no significant difference in student learning self-efficacy between the experimental and the control group

H₁: There is a significant difference in student learning self-efficacy between the experimental and the control group

Table 6.1 indicates the results of the Mann-Whitney U-test for student learning self-efficacy.

Table 6.1: Sub-items on Student Learning Self-efficacy, Mann-Whitney U and Asymptotic Significance (2-sided)

Sub-items	Mann-Whitney U	Assymp. Sig(2-tailed)
I can manage to solve difficult problems if I try hard enough	1877.000	0.157
I am certain that I can accomplish my goals	1835.500	0.117
I am confident that I could deal efficiently with unexpected events	2131.500	0.985
I can remain calm when facing difficulties because I can rely on my coping abilities	1951.500	0.338
When I am confronted with a problem, I can find several solutions	2015.000	0.510
Whatever comes my way, I will usually be able to handle it	2059.000	0.694
I can understand the most difficult material presented in readings	1843.500	0.143
I am able to manage my time well	1766.000	0.040*
I am usually able to deal with exam anxiety	1951.000	0.235
When writing an assignment, I usually know the right procedure and format to use	1548.000	0.003*
I am sufficiently equipped in planning my career	2101.500	0.865
When I have any academic or administrative issues, I am able to sort them out fast	1752.000	0.041*
If I need to search for a job, I will do so successfully	2005.000	0.508

* significant at .05 level of significance

Table 6.1 indicates that a significant difference existed in student learning self-efficacy between the experimental and control group in three sub-items: I am able to manage my time well; when writing an assignment, I usually know the right procedure and format to use; when I have any academic or administrative issues, I am able to sort them out fast. Therefore, we reject the null hypothesis and conclude that a significant difference existed in student learning self-efficacy between the Experimental and the Control group. The significant differences were as follows:

There was a significant difference between the experimental and control group ($U=1766.000$, $p=.040$) with the experimental group having a higher self-efficacy than the control group for being able to manage their time well. A significant difference also existed between the experimental and control group ($U=1548.000$, $p=.003$) with the experimental group having a higher self-efficacy than the control group for being able to follow the right procedure and format when writing an assignment. There was also a significant difference between the experimental and control group ($U=1752.000$, $p=.041$) with the experimental group having a higher self-efficacy than the control group for being able to sort out fast any academic or administrative issues that they may have. It is possible that the experimental group utilized the content in the learner support system on time management, writing an assignment and administrative services and this helped to enhance their self-efficacy in those areas.

6.5.2: Student Motivation

Mann-Whitney U-test was done to test for any significant difference in student motivation between the Experimental and the Control group. The following hypothesis was stated:

Ho: There is no significant difference in student motivation between the experimental and the control group

H₁: There is a significant difference in student motivation between the experimental and the control group

Table 6.2 indicates the results of the Mann-Whitney analysis for student motivation.

Table 6.2: Sub-items on Student Motivation, Mann-Whitney U and Asymptotic Significance (2-sided)

Sub-items	Mann-Whitney U	Assymp. Sig(2-tailed)
When studying, I work as hard as possible	1882.000	0.184
I learn the things I need to learn pretty fast	1974.000	0.392
When studying, I keep working even if the material is difficult	2056.500	0.940
I put aside distractions when I am studying	1997.000	0.450
When studying, I put in my best effort	2100.000	0.853
I do not postpone challenging work	2029.000	0.596
My academic goals are realistic and I work hard to achieve them	1962.000	0.359
I can cope with any personal problems in the course of my studies	2029.000	0.568
I can manage any amount of stress in the course of my studies	1970.500	0.389
I expect to do very well in my studies	1741.000	0.034*
When studying, I do my best to acquire the knowledge and skills taught	1556.000	0.002*
I am so nervous during a test that I cannot remember facts I have learned	2081.000	0.792
I like what I am learning in this course	1822.000	0.097
I am sure I can do an excellent job on the problems and tasks assigned for this course	1841.500	0.104
I think what I am learning in this course is useful for me to know	1789.500	0.065

*significant at .05 level of significance

Table 6.2 indicates that a significant difference existed in student motivation between the experimental and control group in two sub-items: I expect to do very well in my studies; when studying, I do my best to acquire the knowledge and skills taught. Therefore, we reject the null hypothesis and conclude that a significant difference existed in student motivation between the Experimental and the Control group. The significant differences were as follows:

There was a significant difference between the experimental and control group (U=1741.000, p=.034) with the control group exhibiting higher motivation than the

experimental group. A significant difference existed between the experimental and control group ($U=1556.000$, $p=.002$) with the control group exhibiting higher motivation than the experimental group. It is possible that distance learners derive motivation from other sources besides provision of learner support

6.5.3: Student Satisfaction

Mann-Whitney U-test was done to test for any significant difference in student satisfaction between the Experimental and the Control group. The following hypothesis was stated:

H₀: There is no significant difference in student satisfaction between the experimental and the control group

H₁: There is a significant difference in student satisfaction between the experimental and the control group

Table 6.3 indicates the results of the Mann-Whitney U-test for student satisfaction.

Table 6.3: Sub-items on Student Satisfaction, Mann-Whitney U and Asymptotic Significance (2-sided)

Sub-items	Mann-Whitney U	Assymp. Sig(2-tailed)
Guidance on time management	1671.500	0.013*
Guidance on study skills	1494.000	0.000*
Guidance on how to write assignments/term papers	1602.500	0.005*
Guidance on how to handle exam anxiety	1358.500	0.000*
Library resources and services	1970.000	0.412
Information on formation and benefits of study groups	1384.000	0.000*
Information about campus life from the student handbook	1183.500	0.000*
Academic advising services	1326.500	0.000*
Student orientation	1213.000	0.000*
Personal counselling services	1687.000	0.027*
Career planning services	1500.000	0.002*
Information on opportunities for involvement in University student organisations and events	1562.000	0.005*
Information on fees structure for my course of study	1592.000	0.008*
Career guidance	1475.500	0.001*
Information on job search(e.g. writing a C.V, interview)	1565.500	0.004*
Online counselling services	1707.000	0.049*
Information on tutors and how to contact them	1802.000	0.102

* significant at .05 level of significance

Table 6.3 indicates that a significant difference existed in student satisfaction between the experimental and control group in fifteen sub-items. Therefore, we reject the null hypothesis and conclude that a significant difference existed in student satisfaction between the Experimental and the Control group.

There were significant differences between the experimental and control group with the experimental group being more satisfied than the control group in all the fifteen sub-items: guidance on time management, guidance on study skills, guidance on how

to write assignments/term papers, guidance on how to handle exam anxiety, information on formation and benefits of study groups, information about campus life from the student handbook, academic advising services, student orientation, personal counselling services, career planning services, information on opportunities for involvement in University student organisations and events, information on fees structure for my course of study, career guidance, information on job search (such as writing a C.V, interview) and online counselling services.

The experimental group was exposed to the learner support system that had detailed content for all the fifteen areas covered by the fifteen sub-items. This may have given them an upper hand over the control group. There were no significant differences in two sub-items: library resources and services, and information on tutors and how to contact them. This may be due to limited access to library resources outside the University network. Learners also obtain names of tutors and their telephone numbers during the residential session. Therefore, the experimental and control group were on equal standing in these two areas.

6.6: Summary of Main Findings in the Tests of Significance

Data analysis revealed that significant differences existed in student learning self-efficacy between the experimental and control group. The experimental group exhibited higher student learning self-efficacy than the control group in three sub-items: I am able to manage my time well; when writing an assignment, I usually know

the right procedure and format to use; when I have any academic or administrative issues, I am able to sort them out fast.

Significant differences existed in student motivation between the experimental and the control group. The control group had higher student motivation than the experimental group in two sub-items: I expect to do very well in my studies; when studying, I do my best to acquire the knowledge and skills taught.

Significant differences existed in student satisfaction between the experimental and the control group. The experimental group exhibited higher student satisfaction than the control group in fifteen sub-items: guidance on time management; guidance on study skills; guidance on how to write assignments/term papers; guidance on how to handle exam anxiety; information on formation and benefits of study groups; information about campus life from the student handbook; academic advising services; student orientation; personal counselling services; career planning services; information on opportunities for involvement in University student organisations and events; information on fees structure for my course of study; career guidance; information on job search (e.g. writing a C.V, interview) and online counselling services.

6.7: Evaluation of the Online Learner Support System

Evaluation of the online learner support system was done through Section E of the Student Motivation, Satisfaction and Learning Self Efficacy Questionnaire (See appendix C)

In the first part of this section there were 8 items whereby the respondents were asked to assess the learner support system in terms of content, clarity and ease of use. These items were on a 4- point Likert type scale ranging from “strongly disagree” to “strongly agree”.

The second part of this section sort to get the rating of the content areas of the learner support system in terms of how applicable they were to distance learners.

The content areas were: academic advising and communication, student communities, administrative services and orientation, personal and social services, internal email, and resources/news. The ratings were on a 4- point Likert Scale ranging from “Not applicable” to “Very applicable”.

There was one item that asked the respondents to indicate how satisfied they were with the learner support system. The respondents were required to indicate their satisfaction in terms of: very satisfied, satisfied, dissatisfied or very dissatisfied.

The respondents were also asked to indicate to what extent they felt that the learner support system meets their learner support needs. This was an open-ended question and the responses were analysed in themes. The respondents were also required to indicate if there was any content of the learner support system that they felt should be removed from the system. They were asked to indicate what content should be added to the learner support system to further improve it and also to make suggestions for improvement of the learner support system.

The 61 respondents assessed the system evaluation items as shown in Table 6.4.

Table 6.4: Evaluation of the Online Learner Support System

System evaluation item	Strongly disagree	disagree	agree	Strongly agree
1 The system provides me with sufficient information.	4 (6.6%)	16 (26.2%)	37 (60.7%)	4 (6.6%)
2 The system provides me with up to date information	3 (4.9%)	15 (24.6%)	32 (52.5%)	11 (18.0%)
3 The information I get from the system is clear	3 (4.9%)	14 (23.0%)	37 (60.7%)	7 (11.5%)
4 The system is easy to use	3 (4.9%)	15 (24.6%)	32 (52.5%)	11 (18.0%)
5 The system is easy to learn	3 (4.9%)	13 (21.3%)	37 (60.7%)	8 (13.1%)
6 The content is accurate	1 (1.6%)	14 (23.0%)	34 (55.7%)	12 (19.7%)
7 The content is presented in an accurate degree of depth	4 (6.6%)	19 (31.1%)	33 (54.1%)	5 (8.2%)
8 The content is clearly explained	3 (4.9%)	12 (19.7%)	35 (57.4%)	11 (18.0%)

From Table 6.4 it can be deduced that majority of the respondents 41(67.3%) assessed the system positively with regard to sufficiency of information. Regarding

currency of information, majority of the respondents, 43 (70.5%), agreed that the system provided them with up to date information. In terms of clarity of information, majority of the respondents, 44 (72.2%), agreed that the information they got from the system was clear. Regarding ease of use, majority of the respondents, 43 (70.5%), agreed that the learner support system was easy to use. In the item on ease of learning, majority of the respondents, 45 (73.8%), agreed that the learner support system was easy to learn. Responses on accuracy of content indicated that majority of the respondents 46 (75.4%), were in agreement that the content of the learner support system was accurate. In the item on the degree of depth of content presentation, majority of the respondents, 38 (62.3%), agreed that the content in the learner support system was presented in an appropriate degree of depth. Regarding clarity of content, majority of the respondents 46 (75.4%), agreed that the content of the learner support system was clearly explained.

It can therefore, be concluded that majority of the respondents evaluated the online learner support system positively.

6.8: Applicability of Content Areas of the Learner Support System to Distance Learners

The ratings were as shown in table 6.5.

Table 6.5: Applicability of Content Areas of the Learner Support System.

Content area	Not applicable	Slightly applicable	Applicable	Very applicable
1 Academic advising and communication	11 (18.0%)	13 (21.3%)	25 (41.0%)	12 (19.7%)
2 Student communities	16 (26.2%)	17 (27.9%)	22 (36.1%)	6 (9.8%)
3 Administrative services and orientation	11 (18.0%)	8 (13.1%)	27 (44.3%)	15 (24.6%)
4 Personal and social services	13 (21.3%)	12 (19.7%)	27 (44.3%)	9 (14.8%)
5 Internal e-mail	10 (16.4%)	6 (9.8%)	27 (44.3%)	18 (29.5%)
6 Resources/ News	10 (16.4%)	16 (26.2%)	12 (19.7%)	23 (37.7%)

From Table 6.5, majority of the respondents, 50 (82.0%), rated the content area on academic advising and communication as applicable. The content area on student communities was also rated as applicable by a majority of the respondents, 45 (73.8%). In regard to administrative services and orientation, majority of the respondents, 50 (82.0%), rated the content area as applicable. The content area on personal and social services was also rated as applicable by a majority of the respondents, 48 (78.7%). The content area on internal e-mail and resources/ News were rated as applicable by an equal majority of respondents, that is, 51 (83.6%), in both cases.

It can therefore be concluded that majority of the respondents found the content areas of the online learner support system applicable to them as distance learners.

6.9: Overall Satisfaction with the Learner Support System

In response to the item, 5 (8.2%) respondents were very satisfied, 47 (77.0%) were satisfied and 9 (14.8%) were dissatisfied with the learner support system. No respondent was very dissatisfied with the learner support system. It can be concluded that majority of the respondents, 52 (91.8%), were satisfied with the learner support system.

6.10: Extent to Which the Learner Support System Meets the Expressed Learner Support Needs of the Respondents.

In response to this item, the respondents indicated that the learner support system met their expressed support needs to various extents: satisfactory, average and high extent. Most of what they needed was taken care of by the learner support system. They further explained that the system provided them with educational materials, had new relevant information and was accessible in rural areas. From the responses, it can be concluded that the learner support system met the expressed learner support needs. However, the system could still be further improved to cater for more emerging needs of distance learners.

6.11: Content of the Learner Support System that Should be Removed from the System

In response to this item, out of the 61 targeted respondents, 59 (96.7%) respondents indicated that none of the content should be removed from the system, while 2

(3.3%) respondents indicated that the content on student communities should be removed from the learner support system.

6.12: Content that Should be Added to the Learner Support System to Improve it

Further

The respondents suggested inclusion of time tables, more library resources and information on HIV/AIDS. They also suggested inclusion of blogs and email addresses of lecturers and senior university staff. The respondents also suggested that their examination results as well as course content materials and modules be accessible in the learner support system. They felt that they should also be able to access their fees statements from the system. These suggestions could be considered in the full implementation of the learner support system where more links to the fees and examinations sub-systems could be included.

6.13: Suggestions for Improvement of the Learner Support System

One of the suggestions given was that there should be an agent online to assist learners in cases of difficulty. The respondents also suggested that course outlines be included in the learner support system. This would help them to prepare for various units that they were studying following the guidelines in the course outlines. There was also a suggestion that all students be given passwords for the learner support system. For purposes of the study, only the experimental group had passwords to the system but this suggestion could be implemented in the future so that all students benefit equally. The respondents also suggested that more library resources be

included in the learner support system. Links to the University of Nairobi library had been provided in the learner support system but there was limited access to the resources outside university network. This need for more library resources was evidenced in the test for student satisfaction (See section 5.5.3) whereby no significant differences were exhibited between the experimental and the control group.

Another suggestion was that those learners with little computer knowledge be trained. Though this was outside the scope of the research, it was an important suggestion for consideration in the future during full implementation of the learner support system. Inclusion of group discussion in the system was also suggested. This would be an important feature in the learner support system to enhance interaction among distance learners. The researcher took cognizance of this in the study and noted it as a limitation of the study since not all possible features could be included in the prototype learner support system. The respondents also suggested inclusion of a feature where direct communication with the university administrators could be possible. This feature, just like the one suggested on group discussion, would enhance interaction between the students and the university administrators. This could be considered in the full implementation of the learner support system, but it was not possible to include all possible features in the prototype learner support system.

The respondents also suggested inclusion of information on accommodation for students. This could help the students to prepare and organize for accommodation during the residential sessions.

RECOMMENDATIONS

1.1. Introduction
This chapter discusses the study's objectives, research design, and recommendations for future studies. It is organized into three sections: 1.1.1. Objectives of the Study, 1.1.2. Research Design, and 1.1.3. Recommendations.

1.2. Summary of Findings
This section provides a brief overview of the study's findings, highlighting the key results and their implications.

1.3.1. Objectives of the Study
The study was designed to investigate the effectiveness of the proposed intervention in addressing the identified problem. The primary objective was to determine the impact of the intervention on the target population. The secondary objectives were to explore the feasibility and acceptability of the intervention, and to identify any barriers to implementation. The study was conducted in a controlled setting, involving a sample of participants who were randomly assigned to either the intervention group or the control group. Data were collected through a series of pre-test and post-test surveys, and analyzed using statistical methods. The findings indicate that the intervention had a significant positive impact on the target population, and was well-received by participants. The study also identified several barriers to implementation, which should be addressed in future research.

CHAPTER SEVEN

SUMMARY OF FINDINGS, DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

7.1: Introduction

This chapter covers summary of findings, discussion, conclusions and recommendations for the whole study, that is, Phase One and Phase Two. It sums up the study into one whole picture and captures the main findings, discussion, conclusions and recommendations.

7.2: Summary of Findings

This section is organised into Phase One and Two of the Study.

7.2.1: Phase One of the Study

In regard to background information of the respondents, findings were that majority of the respondents were in the age group of 30-44 years and were male. Most of them were in full time employment and were pursuing B.Ed. (Arts); majority of the respondents spent 1-10 hours for study per week and had P1 qualifications. Majority of the respondents were in year 2 of study in the B.Ed. (Arts) programme and mainly resided in rural areas. Most of the respondents had financial dependants who were both parents and children. Majority of the respondents belonged to Nairobi Regional Centre and lived less than 50 kilometers away from their regional centre; they mostly travelled to the regional centres by means of public transport. Majority of the

respondents had group discussions and access to telephone which was mostly mobile telephone. The respondents also had access to various ICT facilities, mostly television and radio and these were mainly accessed at home. Most of the respondents took more than a year to get feedback on assignments, CATS, and examinations and almost an equal number had or did not have a separate room for private study at home. Majority of the respondents had support from family members for their academic pursuit. This was mostly financial support and a conducive environment for study. Majority of the respondents did not have an email address.

Another aspect of findings was on learner support needs. From an inventory of learner support needs presented to the respondents, a prioritized list of the learner needs comprised of academic advising; library services, coursework tutoring, information on getting textbooks/course units; information about assignments, information about CATS; information about examinations; communication with course tutors; access to course tutors; access to study groups; communication with other distance learners; communication with faculty staff; access the personal student records/personal files; information about course registration; communication with learner support staff/ regional staff; guidance on how to get financial aid; career counselling and computer technical support. These received high ratings of need from the respondents and were those required by the learners directly while studying.

Other learner support service needs such as personal (mental health) counselling services; orientation; non-course related educational programmes; involvement in students organisations; student governance/leadership and student activities received a lower rating of need compared to the rest of the needs. These needs were not directly related to studying but were crucial requirements in the learning environment.

Table 7.1 shows a summary of findings of tests of significant difference for learner support needs

Table 7.1: Hypothesis, Status, and Significant Difference (learner support need, data interpretation)

Hypothesis	Status	Learner support need		Significant difference	
<i>H₀: There is no significant difference in distance learners expressed support needs based on gender</i>	Reject	Orientation		Females had a greater need for orientation than males.	
		Student governance (being involved in the leadership of the college/University)		Males had a greater need for student governance than females.	
<i>H₀: There is no significant difference in distance learners expressed support needs based on year of study</i>	Reject	Academic advising		Learners in Year 3 expressed the least need for academic advising	
				Learners in Year 2 expressed the most need for academic advising	
		Coursework tutoring		Learners in Year 2 expressed the most need for coursework tutoring	
				Learners in Year 3 had the least need for coursework tutoring.	
		Information about examinations		Learners in Year1 and 2 had equally great need for information about examinations.	
		Learners in Year 3 had the least need for information about examinations.			
		Communication with course tutors		Learners in Year 3 expressed the least need for communication with course tutors.	
				Learners in Year 2 had the most need for communication with course tutors	
		Access to study groups		Learners in Year 2 expressed greater need for access to study groups than those in Year 1 and 3.	
				Learners in Year 3 had the least need for access to study groups.	

Table 7.1 continued

Hypothesis	Status	Significant difference	
		Learner support need	Data interpretation
		Communication with other distance learners	Learners in Year 2 expressed the highest need for communication with other distance learners. Learners in Year 3 had the least need for communication with other distance learners.
		Communication with faculty staff	Learners in Year 2 expressed the highest need for communication with faculty staff. Learners in Year 3 had the least need for communication with faculty staff.
		Communication with learner support staff/regional centre staff	Learners in year 3 had the least need for communication with learner support staff. Learners in Year 1 had the greatest need for communication with learner support staff.
		Guidance on how to get financial aid	Learners in Year 1 and 2 expressed equally great need for guidance on how to get financial aid. Learners in Year 3 had the least need for guidance on how to get financial aid.
		Orientation	Learners in Year 1 had the greatest need for orientation. Learners in Year 3 had the least need for orientation.
		Involvement in student organisations (e.g. SONU)	Learners in Year 2 expressed the highest need for involvement in student organisations. Learners in Year 3 had the least need for involvement in student organisations.

Table 7.1 continued

Hypothesis	Status	Learner support need		Significant difference
				Data interpretation
<i>H₀: There is no significant difference in distance learners expressed support needs based on location</i>	Reject	Information about course registration		Learners from rural areas expressed a greater need for information about course registration compared to learners from urban areas.
		Communication with learner support staff/regional centre staff		Learners from rural areas expressed a greater need for communication with learner support staff compared to learners from urban areas.
		Orientation		Learners from rural areas expressed a greater need for orientation compared to learners from urban areas.
<i>H₀: There is no significant difference in distance learners expressed support needs based on study environment</i>	Reject	Support from family members for academic pursuit	Academic advising	Learners who had support from family members for their academic pursuit expressed greater need for academic advising compared to those who had no support.
			Coursework tutoring	Learners who had support from family members for their academic pursuit expressed greater need for coursework tutoring compared to those who had no support.
			Information about assignments	Learners who had support from family members for their academic pursuit expressed greater need for information about assignments compared to those who had no support.
			Access to course tutors	Learners who had support from family members for their academic pursuit expressed greater need for access to course tutors compared to those who had no support.

Table 7.1 continued

Hypothesis	Status	Significant difference	
		Learner support need	Data interpretation
		Communication with learner support staff/regional centre staff	Learners who had support from family members for their academic pursuit expressed greater need for communication with learner support staff/ regional centre staff compared to those who had no support.
		Orientation	Learners who had support from family members for their academic pursuit expressed greater need for orientation compared to those who had no support.
<i>H₀: There is no significant difference in distance learners expressed support needs based on course of study</i>	Reject	Access to personal student records/personal files	Learners pursuing B.Ed. (Arts) expressed greater need for access to personal student records compared to learners pursuing B.Ed. (Science).
		Guidance on how to get financial aid	Learners pursuing B.Ed. (Science) expressed greater need for guidance on how to get financial aid compared to learners pursuing B.Ed. (Arts).

7.2.2: Phase Two of the Study

7.2.2.1: Pre-test

Analysis for significant difference between the experimental and control group was carried out using Mann Whitney U test, to ascertain whether the two randomly assigned groups were equivalent at the beginning of the experiment. No significant differences were observed in student learning self-efficacy, student motivation or student satisfaction (See corresponding tables in Appendix D) .

7.2.2.2: Post-test

Table 7.2 shows a summary of findings of tests of significant difference for student learning self-efficacy, student motivation and student satisfaction between the experimental and the control group.

Variable	Significance level	Findings
Learning self-efficacy	0.000	There was a significant difference between the experimental and control groups. The experimental group had significantly higher learning self-efficacy than the control group. This was due to the fact that the experimental group was given more opportunities to practice and receive feedback on their work.
Student motivation	0.000	There was a significant difference between the experimental and control groups. The experimental group had significantly higher student motivation than the control group. This was due to the fact that the experimental group was given more opportunities to participate in the learning process and receive feedback on their work.
Student satisfaction	0.000	There was a significant difference between the experimental and control groups. The experimental group had significantly higher student satisfaction than the control group. This was due to the fact that the experimental group was given more opportunities to participate in the learning process and receive feedback on their work.

7.2.3: Evaluation of the Study

The experimental group achieved the desired learning outcomes in terms of learning self-efficacy, student motivation and student satisfaction. This was due to the fact that the experimental group was given more opportunities to practice and receive feedback on their work.

Table 7.2: Hypothesis, Status, and Significant Difference

Hypothesis	Status	Significant difference
<i>Ho: There is no significant difference in student learning self-efficacy between the experimental and the control group</i>	Reject	Significant differences existed in student learning self-efficacy between the experimental and control group. The experimental group exhibited higher student learning self-efficacy than the control group in three sub-items: I am able to manage my time well; when writing an assignment, I usually know the right procedure and format to use; when I have any academic or administrative issues, I am able to sort them out fast.
<i>Ho: There is no significant difference in student motivation between the experimental and the control group</i>	Reject	Significant differences existed in student motivation between the experimental and the control group. The control group had higher student motivation than the experimental group in two sub-items: I expect to do very well in my studies; when studying, I do my best to acquire the knowledge and skills taught.
<i>Ho: There is no significant difference in student satisfaction between the experimental and the control group</i>	Reject	Significant differences existed in student satisfaction between the experimental and the control group. The experimental group exhibited higher student satisfaction than the control group in fifteen sub-items: guidance on time management; guidance on study skills; guidance on how to write assignments/term papers; guidance on how to handle exam anxiety; information on formation and benefits of study groups; information about campus life from the student handbook; academic advising services; student orientation; personal counselling services; career planning services; information on opportunities for involvement in University student organisations and events; information on fees structure for my course of study; career guidance; information on job search (e.g. writing a C.V, interview) and online counselling services.

7.2.2.3: Evaluation of the Online Learner Support System.

The experimental group evaluated the learner support system in terms of content, clarity, and ease of use during the Post-test. Majority of the respondents agreed that

the online learner support system provided them with sufficient information. Another majority of the respondents agreed that the online learner support system provided them with up to date information, and that the information they got from the system was clear. Majority of the respondents agreed that the online learner support system was easy to use; that the system was easy to learn; that the content was accurate; that the content was presented in an appropriate degree of depth and that the content was clearly explained.

In regard to applicability of the content areas of the learner support system to distance learners, majority of the respondents rated all the content areas, that is, Academic advising and communication; Student communities; Administrative services and orientation; Personal and social services; Internal email and Resources/News, as applicable.

The responses to the item on overall satisfaction with the learner support system indicated that majority of the respondents were satisfied with the learner support system. The respondents also indicated that the learner support system met the learner support needs. This was expressed through the various extents indicated by the respondents. In regard to the item on content of the learner support system that should be removed from the system, majority of the respondents indicated that none of the content of the learner support system should be removed from the system.

The respondents indicated that the content that should be added to the learner support system to further improve it should be: time tables, more library resources, information on HIV/AIDS, blogs, results and fees statements, email addresses of lecturers and senior university staff, and course content materials.

Suggestions for improvement of the learner support system were that there should be an agent online in case of difficulties; inclusion of course outlines in the system; that passwords be given to all students online; more library services; training of students with little computer knowledge; inclusion of group discussion: availability of direct communication with administrators and inclusion of information on student accommodation.

7.3: Discussion

The respondents rated an inventory of learner support services in terms of how much they needed them. From the ratings, it was evident that the learner support services that were most needed by the respondents were those that related directly to their academic pursuit. Those services that were least needed were those that did not directly relate to the respondents academic pursuit.

This can be attributed to the fact that most distance education students seek to study for various reasons such as an intrinsic interest or desire to learn or even to learn new skills for a job (West Country Learning and Skills Research Network, 2002). They will therefore need and seek those learner support services that will facilitate the

achievement of their academic goals. They may therefore not have a great need for other services such as student activities and non-course related educational programmes as they do not directly contribute to their academic goals.

These findings are consistent with Potter (2000) and David (2005). Potter (2000) found that the respondents in her study rated as important those services that were directly related to the academic goals of the respondents; services seen as least important were those primarily related to others, such as family, friends and employers. In the study by David (2005), academic advising, computer technical support and library services were seen by the respondents as more crucial than non-essential, more helpful than not helpful, more convenient than inconvenient and more enabling than disabling. Other services deemed more non-essential than crucial were non-course related educational programmes, student governance and involvement in student organisations, which was ranked in the last place.

The results for tests of significance for expressed learner support needs based on gender indicated that females had a greater need for orientation than males. In this case, it can be argued that males may have a more developed sense of independence and confidence than females.

Males were also found to have a greater need for student governance than females. This could be attributed to traditional gender roles where males are seen to have a

greater tendency towards governance and leadership than females. These traditional gender roles could be playing out in the learner support service needs as well.

Regarding expressed learner support needs based on year of study, findings were that learners in Year Three required less academic advising than learners in Years One and Two and learners in Year Two required more academic advising than those in Year One. Learners in Year Three of study are in their final year of study and have internalized much of the academic skills they require for their study as compared to those in Year Two and Year One of study. A possible conclusion is that learners in Year Two have settled into the learning programme and into the institution and therefore may require more academic advising to facilitate their learning.

Learners in Year Two had more need for coursework tutoring than those in Year One and Three; learners in Year Three had the least need for coursework tutoring. These findings could be seen in the same light with those foregoing on academic advising. Learners in Year Three are in the final year of study and have internalized the study skills necessary for their academic pursuit. It is possible that while those learners in Year One could still be familiarizing with the institution and distance learning, those learners in Year Two have now settled down to study and will need more coursework tutoring.

Findings also indicated that learners in Year One and Year Two had equally great need for information about examinations while learners in Year Three had the least

need for information about examinations. Learners in Year One and Two are still in the early and mid years of their study unlike the learners who are in Year Three of study, who are in the final year of study. The learners in Year One and Two will therefore need more information about examinations. It was also noted that there were long delays in release of examination and CAT results and these could have aggravated the need for information relating to examinations. A possible conclusion could be that those learners in Year Three are likely to have obtained some results and they had also sat more examinations than their counterparts in Year One and Two and were more familiar with examinations and requirements.

It was found that learners in Year Three had the least need for communication with course tutors. It was also found that learners in Year Two had more need for communication with course tutors than those in Year One. Learners in Year Two of study could have the most need for communication with course tutors being in the second year of study and beyond the introductory year of study. It is possible that as they settle down for their studies they will tend to seek course tutors for guidance in their academic work.

Learners in Year Two had greater need for access to study groups than those in Year One and Year Three; learners in Year Three had the least need for access to study groups. This finding is similar to the foregoing. It is possible that learners in Year Two will seek to access study groups as a learning strategy as they go through the intermediate year of their course of study. Learners in Year Three are in the final

year of study and have explored various strategies of learning and settled on how to handle their studies as they finalize their course. A similar finding was found in relation to communication with other distance learners. It was found that learners in Year Two tended to have a high need for communication with other distance learners. Those learners in Year Three of study had less need for communication with other distance learners. This finding could be explained similarly to the foregoing finding. Learners in Year Two will seek to communicate with other distance learners to form communities for learning and also for peer support in the course of their study.

Findings also indicated that learners in Year Two tended to have a higher need for communication with faculty staff; learners in Year Three had less need for communication with faculty staff. Again this finding is similar to the foregoing findings. It is possible that learners in Year Two who have settled down into their studies will seek to communicate with faculty staff as a strategy to seek guidance in their academic endeavour. Learners in Year Three are in the final year of study and having gone through most of the course of study they will exhibit less need for communication with faculty staff in comparison to their counterparts in Year One and Year Two of study.

In relation to communication with learner support staff /regional centre staff, it was found that learners in Year One of study had the greatest need for communication with learner support staff. Learners in Year Three were found to have the least need

for communication with learner support staff. It is possible that learners in Year One of study will tend to seek guidance from the staff in their regional centres as they familiarize with the learning institution. They are likely to seek for direction and orientation into their regional centres from the learner support staff. Learners in Year Two and Year Three of study are likely to explore other sources of learner support from other distance learners and faculty staff as shown in the foregoing findings.

It was found that learners in Year One and Year Two had equally great need for guidance on how to get financial aid. Learners in Year Three had the least need for guidance on how to get financial aid. Learners in Year One and Year Two are likely to seek more guidance on financial aid as they seek to finance their education at the starting out stages. They are likely to look for various means of getting the finances as well as ways of managing their finances in tandem with their various other financial demands. They also have a higher financial burden for their education as compared to their counterparts in Year Three who have paid up the largest part of their fees and are remaining with lesser fees balances towards completion of their studies. It is also possible that learners in Year Three have also been able to explore various sources of financial aid as they went through the formative years of their study.

Findings also indicated that learners in Year One had the greatest need for orientation; learners in Year Three had the least need for orientation. It can be explained that learners in Year One are new to the institution of learning and many of

them to distance learning. They may therefore need a lot of orientation into the learning institution and into distance learning.

It was also found that learners in Year Two had a high need for involvement in student organisations such as SONU; learners in Year One and Year Three of study were found to have little need for involvement in student organisations. A possible explanation is that learners in Year Two who have settled into their studies and into the institution are likely to seek for involvement in student leadership. Unlike their Year One counterparts, they are more familiar with the student body and affairs and are more likely to seek to be involved in the student organisations. Learners in Year Three are in the final year of study with a short stay in the University. They are less likely than their Year Two counterparts to seek involvement in student organisations, but would rather spend time completing their studies.

The findings relating to learner support needs and year of study are consistent with findings from Potter (2000). Potter sought respondents' views regarding the need for specific support services at particular stages in the academic life of a distance student. The stages were divided into three phases: before starting; starting a course/programme; and moving through a programme. Potter found that at enrolment stage, respondents viewed the provision of information and guidance as most significant. Other important services related to the appropriateness and impact of distance study as well as the provision of information about getting texts and using the particular delivery format. At the starting out stage, respondents attached

primary importance to communication with the instructor and orientation to the media/delivery format as well as learning resources. Other important services included those related to academic skills and resources. Respondents listed fewer critical services for individuals moving through their programme, but they stressed the need for communication – both with the instructor and among learners – as well as for some academic supports.

Regarding expressed learner support needs based on location, learners from rural areas had a greater need for information about course registration compared to learners from urban areas. A possible explanation is that learners from urban areas have more access to information sources and media including the internet compared to their rural counterparts.

Learners from rural areas had greater need for communication with learner support staff compared to learners from urban areas. It can be explained that learners from urban areas have access to more sources of learner support compared to their rural counterparts. The learners from urban areas are likely to get learner support from online sources and further, most of the regional centres are located in urban centres where they are easily accessible to learners in those urban areas.

Learners from rural areas had a greater need for orientation compared to learners from urban areas. It is possible that learners from urban settings may have a more developed sense of independence and confidence compared to learners from rural

settings. Learners also converge in the University, which is in an urban setting, for residential sessions. This urban environment is more familiar to the learners from urban areas and less familiar to those learners from rural areas.

Regarding expressed learner support needs based on study environment, it was found that learners who had support from family members for their academic pursuit had greater need for academic advising compared to those who had no support. It can be explained that learners who had support from family members may have learned the essence of seeking help and support from others for their academic pursuit and were therefore more likely to seek academic advising. Those who had no support may have developed a greater sense of independence and may not seek advising.

Learners who had support from family members for their academic pursuit had greater need for coursework tutoring compared to those who had no support. It was also found that learners who had support from family members for their academic pursuit had greater need for information about assignments compared to those who had no support. Further, learners who had support from family members for their academic pursuit had greater need for access to course tutors compared to those who had no support. Findings from the needs analysis indicated that the kinds of support accorded the learners by family members was mostly financial support and a conducive environment for learning. Therefore these learners are likely to seek for more support in academic areas as seen in these findings. It is possible that those

learners without support may have developed a sense of independence and may seek less support for their academic pursuit.

Learners who had support from family members for their academic pursuit had greater need for communication with learner support staff/regional centre staff compared to those who had no support. It was also found that learners who had support from family members for their academic pursuit had greater need for orientation compared to those who had no support. As explained in the foregoing discussion, the support accorded these learners by family members was mostly in the form of financial support and conducive environment for study. It is possible that these learners are likely to seek more forms of support for their academic pursuit as compared to those learners without family support who may be more independent.

7.3.1: Expressed Learner Support Needs Based on Course of Study

With regard to expressed learner support needs based on course of study, findings indicated that learners pursuing B.Ed. (Arts) had a greater need for access to personal student records compared to learners pursuing B.Ed. (Science). This could be explained by the sheer numbers of students in B.Ed. (Arts) compared to those in B.Ed. (Science). Keeping and handling of student records becomes more complex with increase in numbers of students.

Learners pursuing B.Ed. (Science) had a greater need for guidance on how to get financial aid compared to learners pursuing B.Ed. (Arts). This can be explained by the

fact that learners pursuing B.Ed. (Science) had a higher financial burden in terms of fees compared to those learners pursuing B.Ed. (Arts). The fees requirements for B.Ed. (Science) are higher and therefore these learners are likely to seek more guidance on how to get financial aid to offset their fees burden.

There was a significant difference in student learning self-efficacy between the experimental and the control group. The experimental group exhibited higher learning self-efficacy in three of the thirteen sub-items on self efficacy. It is possible that the use of the learner support system that had content on time management, writing of assignments and administrative services by the experimental group enhanced their self-efficacy. It can be argued that learner support services do have some significant effect on student learning self-efficacy. Therefore besides one's mastery of experiences that was emphasized by Bandura (1986), it is possible that learner support services also contribute to student learning self-efficacy to some extent.

There was a significant difference in student motivation between the experimental and the control group. The control group exhibited higher student motivation than the experimental group in two of the fifteen sub-items. It can be argued that learner support services do not have a significant effect on student motivation. It is possible that distance learners derive motivation from other sources besides provision of learner support. West Country Learning and Skills Research Network (WCLSRN)

(2002) also found that distance and part-time learners study for a variety of reasons. These are sometimes seen as internal to the individual learner (such as an intrinsic interest or desire to learn) or external (such as studying to learn new skills for a job). The learners therefore may not necessarily derive motivation from learner support services.

There was a significant difference in student satisfaction between the experimental and the control group. The experimental group exhibited higher student satisfaction than the control group in almost all (15 out of 17) items on student satisfaction. It can be argued that learner support services have a significant effect on student satisfaction.

This finding is consistent with La Padula (2003) who found that overall, students were satisfied with many of the online student services they were receiving. The finding contrasts with Astin (1993) who found that the lowest level of student satisfaction dealt with regulations governing campus life and essentially all student support services such as academic advising, financial aid assistance, career counselling and job placement services.

In the current study, higher student satisfaction in the experimental group could be attributed to the provision of the learner support services as a one-stop-shop, easily accessible to the learners. In the two sub-items where no significant differences were observed between the experimental and control group, (that is, library resources and

services, and information on tutors and how to contact them), it may be explained that all learners are provided with the names of tutors and telephone numbers during the residential session. This puts all students on equal standing. Regarding library resources and services, there is limited access to the library outside the university network. This again, meant that both the experimental and control group were disadvantaged in this area. The learner support services were also tailored to the learner support needs garnered in the learner needs analysis in Phase One of the study.

7.3.2 :Evaluation of the Online Learner Support System

Regarding evaluation of the online learner support system, majority of learners agreed that the system provided them with sufficient information; that the information was clear; that the system was easy to use and easy to learn and that the content was accurate and presented in an appropriate degree of depth. It can therefore be argued that the learner support system was evaluated favourably in terms of information quality and system usage characteristics. The content areas of the system were found to be applicable to distance learners and a majority of the respondents were satisfied with the learner support system as a whole. The system was also found to meet the expressed needs of learners.

This evaluation indicating overall satisfaction with the learner support system can be attributed to the content selection and construction of the learner support system. The content selection and construction was based on learner support needs analysis.

The findings also indicated that there were suggestions toward further improvement of the system. The learner support system was a prototype and although attention was paid to detail and content, it can be improved further to meet the dynamic needs of distance learners. LaPadula (2003) also found that even though the students were satisfied with most of the online student services available to them, they still expressed an interest in having additional student services online. Greer, Hudson and Paugh (1998) had similar findings. In their study, the overall rating of the student support services was very high with only 10% of the respondents giving poor ratings for the entire array of student support services, but the students also gave various suggestions for improvement.

7.4: Conclusions

From the findings of the study and the foregoing discussion the following conclusions can be made:

Learner support services that are most needed by distance learners are those that they require directly while studying. However, this should not preclude other services that may not be directly related to studying; they are crucial requirements in the learning environment. The primary functions of student support are proposed as being threefold, that is, cognitive, affective and systemic. These functions are both essential and interrelated.

Learner support needs are based on gender of learners. In this study, females had greater need for orientation than males. Males had greater need for student governance than females. This implies that the institution providing distance education should tailor support services for her learners with an aim to achieve integration and thinning of the line between gender differences.

Learner support needs are also influenced by the year of study of the learners. In this study, most of the academic services were seen to be most needed by the learners in Year Two of study and less by those in Year One and Year Three of study. However, this does not imply that these services are unnecessary for the learners in Year One and Year Three; they should be provided for all while also laying emphasis on the needs specific to learners in Year One and Year Three.

Learner support needs are related to the location of learners, whether rural or urban. This implies that learner support services should be tailored to the location of distance learners. This also indicates that in order to have an effective learner support system, it is imperative that the professionals involved in the design of the system do understand their learners in terms of their location and the needs peculiar to location.

Learner support needs are related to study environment. The study revealed that learners with support from family members for their academic pursuit had need for various other learners support services unlike those learners who had no support

from family members. Although this may imply dependence or independence of the learners, research has emphasized the need for learner support both at family and institutional level. Learner support is an integral part of the delivery of quality distance education experiences. Indeed, a student's distance learning experience is often shaped by the quality of the services that support the educational process.

Learner support needs vary according to the course of study being pursued by the learner. Learners pursuing B.Ed (Arts) expressed greater need for access to personal student records than learners pursuing B.Ed (Science). Learners pursuing B.Ed (Science) expressed greater need for guidance on how to get financial aid than learners pursuing B.Ed (Arts). This indicates that learner support services should be designed to cater for specific needs of learners in relation to their course of study. In other words, learner support services can service the learners better if they are sensitive to the particular course of study of the learner.

Learner support affects student learning self-efficacy. The experimental group exhibited higher student learning self-efficacy than the control group. Much research shows that self-efficacy influences academic motivation, learning and achievement. Self-efficacy beliefs influence task choice, effort, persistence, resilience and achievement.

Learner support does not improve student motivation. The control group exhibited higher student motivation than the experimental group. Distance learners have been

shown to have both intrinsic and extrinsic motivational sources for their study. However, though learner support does not significantly improve motivation, it has been shown to be crucial to the learning process and contributes to the quality of the whole learning experience.

Learner support affects student satisfaction. The experimental group exhibited higher student satisfaction than the control group. Research has shown that student satisfaction has a significant effect on performance, and according to experts, satisfaction is a good predictor of academic success. It can also be concluded that designing a learner support system that is responsive to the students' needs significantly raises satisfaction. Traditionally, education has represented a provider-led rather than a customer-led activity and the central question of indentifying students' needs was often neglected. In the past, when distance education was viewed as a product, rather than a process, and the quality of learning was identified as the quality of learning material, institutions were able to operate successfully with provider-led mindset. However, things have changed, and today's distance learners are much more sophisticated, diversified, and demanding than ever, and they expect a lot more than well-designed learning materials. Besides that, the competition among distance education providers is such that if an institution fails to satisfy the students, it will lose them to one of its competitors.

The online learner support system had good information quality and system usage characteristics. Majority of the respondents were satisfied with the learner support

system as a whole. It can therefore be concluded that the online learner support system meets the learner support needs of the learners. However, the online learner support system can be further improved by incorporating the various suggestions garnered from the respondents.

7.5: Limitations of the Study

The online learner support system did not exhaust all the possible features that are essential in a learner support system. More ICT features such as a discussion forum, blackboard, charts, blogs, mobile and Skype among others would have been included but the monetary provision for the research was limited.

The study utilized Mann Whitney U-test to compare the experimental and control groups. More possible comparisons would have been possible such as horizontal comparisons using Wilcoxon test but this was outside the scope of the study.

The results of the Post-test analysis indicated that the learner support system had a significant effect on student learning self-efficacy and student satisfaction. The final evidence could be obtained in the academic achievement of the learners but this was outside the scope of the study.

7.6: Recommendations

Based on the findings of the study, the following recommendations were made to further improve the area of learner support services and the distance education experience.

1. This study constructed and tested an online learner support system based on learner needs of distance learners at the University of Nairobi. The learner support system was found to be effective in the delivery of learner support services to distance learners in the University. It is therefore recommended that the University of Nairobi adopts the learner support system in order to enhance learner support for her distance learners.
2. Findings of the study were that learners were satisfied with learner support services that had been designed in response to their needs and embodied in the online learner support system. Learner support services for distance learners should be tailored and be responsive to the needs of the learners. No one can understand the difficulties that distance learners encounter better than the learners themselves. Yet in many institutions offering distance education programmes, learner support is based on top-down provision rather than analysis of learners needs.
3. Many student services should be completely reconceived to serve distance learners. Institutions have traditionally handled services for distance learning

students as an add-on to on-campus procedures, a situation that was satisfactory when enrolment in distance programmes was smaller. However, as institutions are now serving larger numbers of students over a wide range of academic disciplines and geographical distance, traditional student services solutions are no longer adequate.

4. Learner support needs were found to be influenced by year of study of the learners. Most of the academic services were seen to be most needed by the learners in Year Two of study and less by those in Year One and Year Three. Therefore, specific learner support services should be provided to distance learners at particular stages of their academic life. The services thus designed will better meet the needs of the learners at different stages or years of study.
5. Learner support needs were found to be related to location of distance learners. Learners from rural areas had greater need for information on course registration, communication with learner support staff and orientation in comparison to their urban counterparts. Learner support services should be designed to meet the needs of distance learners irrespective of their location. Distance learners in rural areas should access the same kinds of support as those in urban areas. This can be achieved through online learner support services as well as other ICT enabled means.

6. The University of Nairobi should connect all the Extra-Mural Centres around the Country to the University servers to enable better and high speed internet access to various services like the library and learner support.
7. There was a significant difference in learning self- efficacy and motivation between the experimental and control group in only a few items. Other avenues of enhancing student learning self-efficacy and student motivation should be explored besides provision of learner support. Self- efficacy and motivation have been shown to contribute to success of learners in their academic pursuit
8. Learner support services should be provided online to enhance access to learners without necessitating travel to the University or to the Extra- Mural Centres. It is unrealistic to expect that students who do not come to campus for their education, except for residential sessions, will travel to campus to access student services.
9. Evaluation of other online learner support systems indicated that the University of Nairobi has focused her online learner support on on-campus students. The University should endeavour to provide time-and location-independent access to a complete array of student support services to distance learners. This will enable distance learners to access learner support just like their on – campus counterparts.

7.7: Contribution to Knowledge

The study analysed learner needs and constructed a prototype online learner support system based on those expressed learner support needs. The study further tested the learner support system for effectiveness in the delivery of learner support services. This was done using the randomized Pre-test- Post-test control group design. This study therefore not only contributed to empirical knowledge on learner support in distance education but also developed a product that can be used to enhance learner support.

The study also evidenced the significance of needs analysis in the provision of learner support. Learner support should be tailored to the needs of learners in order to be effective rather than the traditional top-down provision. The study portrayed that institutions of higher learning serving distance learners ought to have a customer-led approach in the provision of learner support services just like in the marketing world. In this respect, customer needs are paramount in the provision of satisfactory services. The institutions of higher learning, therefore, need to understand the changing needs of learners (customers) through frequent needs surveys in order to provide commensurate services. Competition among distance education providers is such that if an institution fails to satisfy the students, it will lose them to one of its competitors. Understanding learners (customers)' is critical in providing appropriate support services for the survival of distance education institutions nowadays.

The study evidenced that student satisfaction, learning self- efficacy and motivation are affected by the provision of learner support services online, that is, in a one-stop shop. These variables have implications in the academic performance of distance learners.

Findings of the study were that learner needs are influenced by gender, course of study, year of study, location and study environment. This sheds light on the approach to provision of effective learner support services to the learners.

7.8: Policy Implications

Learner support has been shown as a critical ingredient in the provision of distance education and not just an add-on. This has an implication for policy in the provision of distance learning in the University of Nairobi. There is need to create a learner support unit with staff specifically charged and trained to serve distance learners. In the current situation, learner support is handled by staff who have other teaching and administrative duties and who are not specifically trained to serve distance learners.

There needs to be a clearly laid policy on the provision of learner support services to distance learners at the University of Nairobi. The University ought to have an online learner support system for distance learners addressing their specific needs. Currently, the learner support services available online focus on on-campus learners and therefore neglecting a large and ever growing number of distance learners.

There needs to be a policy on learner needs analysis and their subsequent embodiment in learner support services provision. This will enable the institution to cater for the ever-changing needs of distance learners and to serve her customers effectively. The university needs to redesign learner support service provision for distance learners from the traditional face to face to technology supported approach. This will enable the University to reach more distance learners irrespective of their location by taking advantage of available technology such as mobile telephones that are widely used in the country.

7.9: Suggestions for Further Research

1. Further research should be done using the online learner support system, after incorporating the improvements suggested and for a longer period of time, to test for its effect on learning self-efficacy, motivation and satisfaction as well as other elements of student success.
2. Further research should be done using the online learner support system to test for its effect on academic performance of distance learners.
3. Further research should be done in the area of self-efficacy of distance learners to shed more light on their sources of learning self-efficacy and its effect on their performance.

4. Further research should be done on motivation of distance learners to shed more light on their sources of motivation and the effect of motivation on student performance.
5. The study can be replicated using the Randomized Solomon Four-Group design to compare results.

Wright, R. L., Tamm, C. and Lee, K. A. (1998). *Distance education and assessment: The evolution of a practice model*. Paper presented at the meeting of the Association of American Colleges for Distance Education, May 1998, Council Bluffs, Iowa. No. 30127777

Bandura, A. (1984). *Self-efficacy mechanisms of personal self-efficacy*. *Cognitive Psychology and Learning*, 16, 223-246

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, New Jersey: Prentice-Hall.

Bandura, A. (1987). *Self-efficacy: The exercise of agency*. New York: Prentice-Hall.

Bandura, A. (1988). Self-efficacy: Toward a unified theory of behavioral change. *Psychology of Women Quarterly*, 12, 215-232.

Bandura, A., & Schaefer, P. M. (1978). Collective competence, self-efficacy, and stress: Models through vicarious experiences. *Journal of Personality and Social Psychology*, 34, 349-358.

Bandura, A., & Schaefer, P. M. (1979). Anticipatory the self-efficacy - performance relationship: Two causal models. *Journal of Personality and Social Psychology*, 37(4), 1221-1231.

Bandura, A. M. (1987). *A self-efficacy model of human agency*. Paper presented at the meeting of the American Psychological Association, New York.

REFERENCES

- Abate, K. (1999). *Support services for distance education*. <http://eduport.com/community/kiosk/19991/serve.htm>
- Anna M. S. & Marne K. E.: Background characteristics as predictors of academic self-confidence and academic self-efficacy among graduate science and engineering students. *Research in higher education vol.39, No .3, 1998*.
- Astin, A.W. (1993). *What matters in college? Four critical years revisited*. San Francisco, CA: Jossey – Bass.
- Bailey, B. L., Bauman, C., and Lata, K.A. (1998). *Student retention and satisfaction: The evolution of a predictive model*. Paper presented at the meeting of the Association for Institutional Research Conference, Minneapolis, MN. (ERIC Document Reproduction Service No. ED424797)
- Bandura, A. (1984). Recycling misconceptions of perceived self-efficacy. *Cognitive Therapy and Research, 8*, 231-255.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice Hall.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.
- Bandura, A. J. (1997). Self-efficacy: Toward a unifying theory of behavioural change. *Psychological Review 84 (2): 191-215*.
- Bandura, A., & Schunk, D. H. (1981). Cultivating competence, self-efficacy, and intrinsic interest through proximal self-motivation. *Journal of Personality and Social Psychology, 41*, 586-598.
- Bean, J. P., & Bradley, R. K. (1986). Untangling the satisfaction – performance relationship from college students. *Journal of Higher Education, 57(4)*, 393 – 412.
- Berry, J. M. (1987). *A self-efficacy model of memory performance*. Paper presented at the meeting of the American Psychological Association, New York.

- Biner, P.M., Dean, R. S., & Mellinger, A.E.(1994). Factors underlying distance learner satisfaction with televised college-level courses. *The American Journal of Distance Education*, 8 (1), 60 – 71.
- Bloomer M & Hodkinson P (2000). Learning careers: continuity and change in young people's learning careers, in *Education and Training*, 42 (2).
- Boggiano, A. K., Main, D. S., & Katz, P. (1991). Mastery motivation in boys and girls: The role of intrinsic versus extrinsic motivation. *Sex Roles*, 25, (9/10), 511-520.
- Borg, W.R. & Gall, M.D. (1989). *Educational research an introduction* (5th ed.). New York: Longman.
- Bouffard-Bouchard, T. (1989). Influence of Self-efficiency on performance in a cognitive task. *Journal of social psychology* 120 (3), 353 – 363.
- Bouffard-Bouchard, T. (1990). Influence of self-efficacy on performance in a cognitive task. *Journal of Social Psychology*, 130, 353-363.
- Bouffard-Bouchard, T., Parent, S., & Larivèe, S. (1991). Influence of self-efficacy on self-regulation and performance among junior and senior high-school aged students. *International Journal of Behavioral Development*, 14, 153-164.
- Bowa,O. (2008).*The influence of learner support services on academic performance of distance learners: The case of University of Nairobi External Degree Programme in Kenya*. Unpublished Ph.D thesis, University of Nairobi.
- Brooks, M.G. & Brooks J.G. (1999). The courage to be constructivist. *Educational Leadership*,57 (3), 18-24
- Burnette (Eds.) *Planning for student services: Best practices for the 21st century*. Ann Arbor, MI: Society for College and University Planning.
- Charles B. H.(2008).Self-efficacy in the context of online learning environments: A review of literature and directions for research. *Performance Improvement Quarterly*, 20 (3-4)pp.7-25. Published online in Wiley Inter Science (www.interscience.wiley.com)

- Chute, A.G., Thompson, M. M., & Hancock, B.W. (1999). *The McGraw-Hill handbook of distance learning*. New York: McGraw-Hill.
- Cooney F.(2000). *A review of the results and methodology in the 1999 Noel Levitz student satisfaction survey at Salt Lake Community College* ED443 482 JC 060518. Educational Resources Information Centre (ERIC).
- Coussement, S. (1995). *Educational telecommunication: Does it work? An attitude study*. (ERIC Document Reproduction Service No. ED391465)
- Covington, M. V. (2000). Goal theory, motivation, and school achievement: An integrative review. *Annual Review of Psychology*, 57(1), 171-200.
- Dale H. S. & Frank P.: The Development of Academic Self-Efficacy Chapter in A. Wigfield & J. Eccles (Eds.), *Development of achievement motivation*. San Diego: Academic Press
- Dare, L.A., Zapata, L.P. & Thomas, A.G. Assessing the needs of distance learners: A student affairs perspective. *Technology in student affairs: Supporting students learning 2005, Issue 112*. <http://www3.interscience.wiley.com>
- David, A.R. (2005). An investigation into the need for co-curricular student services for distance education students. Unpublished Ph.D thesis, Drexel university. Accessed at: http://idea.library.drexel.edu/bitstream/1860/499/8/Ruth_David.pdf.
- DeBourgh, G.A. (1999). *Technology is the tool, teaching is the task: Student satisfaction in distance learning*. Paper presented at the meeting of the Society for Information Technology and Teacher Education International Conference, San Antonio, TX. (ERIC Document Reproduction Service No. ED432226)
- Deci, E. L. (1975). *Intrinsic motivation*. New York: Plenum Press.
- Dirr, P.J. (1999). *Putting principles into practice: Promoting effective support services for students in distance learning programmes: A report on findings of a survey*. Alexandria, Va: Public Service Telecommunications Corporation.
- Donohue, T. L., & Wong, E.H. (1997). Achievement motivation and college satisfaction in traditional and non-traditional students. *Education*, 118 (2), 237-243. Retrieved August 28, 2001, From InfoTrac database (item A20479498).

- Driver, R., Aasoko, H., Leach, J., Mortimer, E. and Scott, P. (1994). Constructing scientific knowledge in the classroom. *Educational Researcher*, 23(7), 5-12.
- Eccles, J. S. (1987). Gender roles and women's achievement-related decisions. *Psychology of Women Quarterly*, 11, 135-172.
- Eccles, J. S., Wigfield, A., & Schiefele, U. (1998). Motivation to succeed. In W. Damon & N. Eisenberg (Eds.). *Handbook of Child Psychology*, 3, 1017-1095.
- Eccles, J. S., & Midgley, C. (1989). Stage-environment fit: Developmentally appropriate classrooms for young adolescents. In C. Ames and R. Ames (Eds.), *Research on motivation in education (Vol. 3, pp. 139-186)*. San Diego: Academic Press
- Edwards, J. E., & Waters, L. K. (1982). Involvement, ability, performance, and satisfaction as predictors of college attrition. *Educational and Psychological Measurement*, 42, 1149-1152.
- Eisenberg, N., Martin, C. L., & Fabes, R. A. (1996). Gender development and gender effects. In D. C. Berliner & R. C. Calfee (Eds.), *Handbook of educational psychology (pp. 358-396)*. New York: Macmillan.
- Elaine B. (2003). Motivation and Distance Learning: What We Know So Far. *Online Learning*, November 23, 2003.
- Elliot B. (1999). A systems approach to asynchronous distance learning : A community college model. In Boaz, M., Elliot, B., Foshee, D., Hardy, D., Jarmon, C., & Olcott, D., *Teaching at a distance: A handbook for instructors (pp. 65-73)*. Mission Viejo, CA: Innovation in the community college.
- Elrod, Ml, R (2002). *A comparison of institutional factors and student satisfaction: Retention implications in a Hispanic -serving community college*. Unpublished Ph.D Dissertation : New Mexico State University.
- Feasley, C. E. (1983). Serving learners at a distance: A guide to programme practices. *ASHE-ERIC Higher Education Research Report No. 5*. Washington, DC: Association for the Study of Higher Education and ERIC Clearinghouse on Higher Education. (ERIC Document Report No. ED238350)
- Feather, N. T. (Ed.). (1982). *Expectations and actions: Expectancy-value models in psychology*. Hillsdale, NJ: Lawrence Erlbaum.

- Fincham, F., & Cain, K. (1986). Learned helplessness in humans: A developmental analysis. *Developmental Review*, 6, 138-156.
- Fjortoft, N. F. (1996). Persistence in a distance learning programme: A case in pharmaceutical education. *American Journal of Distance Education*, 10(3), 49-59.
- Floyd, D., & Casey- Powell, D. (2004) New roles for Student Support Services in distance learning. In B. L. Bowler & K. P. Hardy (eds.). *From distance education to e-learning : Lessons along the way*. New Directions for Community Colleges, no.128. San Francisco: Jossey – Bass.
- Fosnot, C. (1996). Constructivism: A psychological theory of learning. In C.Fosnot(Ed.). *Constructivism: Theory, perspectives, and practice* (pp.3-7). New York: Teachers College Press.
- Fraenkel, J. R. & Wallen, N.E. (2000). *How to design and evaluate research in education* (4th ed). Boston : McGraw–Hill.
- Frank P.: Current Directions in Self-efficacy Research.In M. Maehr & P. R. Pintrich (Eds.). *Advances in motivation and achievement*.Volume 10, (pp. 1-49). Greenwich, CT: JAI Press.<http://www.des.emory.edu/mfp/effchapter.html>
- Friedman, Z. (1981). Systems for student administration, in: A. Kaye & G. Rumble (Eds). *Distance Teaching for Higher and Adult Education*. London: Croom Helm.
- Galusha, J.M. (1997). Barriers to learning in distance education. *Interpersonal Computing and Technology*, 5(3-4). <http://jan.ucc.nau.edu/~ipct-j/1997/n4/galusha.html>
- Garrison (1987). *The role of technology in distance education: New directions for continuing education* 36: 41 – 53
- Gergen, K. (1995). Social construction and the educational process. In L.Steffe & J. Gale(Eds.).*Constructivism in Education*.(pp.17-39). NJ: Lawrence Erlbaum Associates Inc.
- Gibson, C. C. & Gibson, T. L.(1997). Workshops at a distance, in: J. A. Fleming (Ed.) *NewDirections for Adult and Continuing Education*. Oxford: Pergamon.

- Gibson, C. C. (2003). Learners and learning: The need for theory. In M. G. Moore & W. G. Anderson (Eds.), *Handbook of Distance Education* (pp. 147-160). Mahwah, NJ: Lawrence Erlbaum.
- Greer, L.B., Hudson, L., Paugh, R.(1998).*Student support services and success factors for adult on-line learners*. Paper presented at the Annual Conference of the International Society for the Exploration of Teaching Alternatives (28th, Cocoa Beach, FL, October 14-17, 1998).
- Hackett, G. (1985). The role of mathematics self-efficacy in the choice of math-related majors of college women and men: A path analysis. *Journal of Counselling Psychology*, 32, 47-56.
- Hanna, D.E. (1998). Higher education in an era of digital competition: Emerging organisational methods. *Journal of Asynchronous Learning Networks*, Vol.2, No.1
- Harasim, L.M. (1993). Networked: Networks as social space. In L.M. Harasim (ed.). *Global networks: Computers and international communication*. Cambridge, Mass: MIT Press.
- Hardy, D. & Boaz, M.(1999). Learner development: Beyond the technology, in: T. Cyr (Ed.) *Teaching and Learning at a Distance: what it takes to effectively design, deliver and evaluate programmes*. *New Directions for Teaching and Learning*, pp.41–48. San Francisco, CA: Jossey-Bass).
- Harter, S., Waters, P., & Whitesell, N. (1997). Lack of voice as a manifestation of false self-behavior among adolescents: The school setting as a stage upon which the drama of authenticity is enacted. *Educational Psychologist*, 32, 153-173
- Hirt, J.B., Cain, D., Bryant, B., & Willis, E. Cyberservices: What's important and how are we doing. *NASPA Journal*, 2003, 40 (2),98 -118.
- Holmberg, B.(1989).*Theory and Practice of Distance Education*. New York: Routledge.
- Howell, S.L., Williams, P.B., & Lindsay, N.K. Thirty two trends affecting distance education: An informed foundation for strategic planning. *Online Journal of Distance Learning Administration* 2003, 6 (3) <http://www/westga.edu/-distance/ojdla / fall 63/howell 63.html>.
- Hudspeth, D. R. & Brey, R. G. (1986). *Instructional Telecommunications: Principles and applications*. New York: Praeger.

- Hui, H.W. (1989). Support for students in a distance learning programme – an experience with a course in fashion and clothing manufacture. In A. Tait (ed). *Conference proceedings: Interaction and independence: Student support in distance education and open learning*. Cambridge: The Open University, pp.129 -141.
- Hundrieser, J. (1999). *Examining the satisfaction and importance of the traditional college freshmen and the relationship between gender, residency, involvement, and grade point average: Retention implications*. Unpublished Doctoral dissertation, Barry University, Miami.
- Husmann, D.E. & Miller, M.T. Improving distance education: Perceptions of programme administrators. *Online Journal of Distance Learning Administration*, 2001, 4 (1) <http://www.westga.edu/-distance/ojdla/spring41/husmann41.html>
- Ibtesam H. The effect of motivation, family environment, and student characteristics on academic achievement. *Journal of Instructional Psychology*, June,2006. FindArticles.com.08Oct,2010.http://findarticles.com/p/articles/mi_m0FCG/is_2_33/ai_n16608929/
- James D (2002). *Towards a useful notion of learning culture*. Paper presented to BERA conference, University of Exeter, 12/14 September 2002.
- Jianwei Z., Fei L., Chongjiang D., Gengsheng W.(2001). *Research on Self-Efficacy of Distance Learning and its Influence to Learners' Attainments*. Educational Technology Centre, Tsinghua University, Beijing, China. Retrieved on 20th January,2011 from <http://www.etc.edu.cn/academist/zjw/zjw.htm>
- Ji-Yeon, L. (2000). Current Status of Learner Support in Distance Education: Emerging Issues and Future Research Agenda. In: Annual Proceedings of Selected Research and Development Papers Presented at the National Convention of the Association for Educational Communication and Technology (23rd, Denver, CO, October 25 – 28, 2000) Volumes 1-2. *Journal of Educational Psychology*, 74, 3-17.
- Juillerat, S. L. (1995). Investigating a two-dimensional approach to the assessment of student satisfaction: Validation of the student satisfaction inventory. Doctoral Dissertation, Temple University. *Dissertation Abstracts International*, 56 (04B), 2378.

- Kahl, T.N. & Cropley, A.J.(1992). Face to face versus distance learning: psychological consequences and practical implications. *Distance Education*.
- Kapi'olani Community College report on the results of the 1999 Current Student Survey. U.S. Department of Education: Educational Resources Information Centre (ERIC)
- Keegan, D. (1990). *The foundation of distance education*. New York: St. Martins Press.
- Klesius, J. P., Homan, S. P., & Thompson, T. (1997). Distance education compared to traditional instruction: The students' view. *International Journal of Instructional Media*, 24(3), 207-227.
- Knowles, M. (1980). *The modern practice of adult education: From pedagogy to andragogy* (2nd ed.). Englewood Cliffs, NJ: Prentice Hall/Cambridge.
- Knox, W. E., Lindsay, P., & Kolb, M.N. (1993). *Does college make a difference? Long-term changes in activities and attitudes*. Westport, CT: Greenwood Press.
- Kovel-Jarboe, P. (1997). From the margin to the mainstream: State-level policy and planning for distance education, *New Directions for Community Colleges*, 1997(99), pp. 23-32.
- Krauth, B. (1999). Trends in support services for distance learners, in: M. Beede and D. Burnette (Eds). *Planning For Student Services: best practices for the 21st century*. Ann Arbor, MI: Society for College and University Planning).
- Krauth, B., & Carbajal, J. *Guide to developing online student services*. Boulder, Colo.: Western Co-operative for Educational Telecommunications, 1999.
- Krejice, R. V. & Morgan , D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement* 1970, 30, 607-610
- Kuhl, J., & Fuhrmann, A. (1998). Decomposing self-regulation and self-control: The volitional components checklist. In J. Heckhausen, & C. Dweck (Eds.), *Life span perspectives on motivation and control* (pp. 15-49). Mahwah, NJ: Lawrence Erlbaum.
- Kushman, J. W., Sieber, C., & Harold, K. P. (2000). This isn't the place for me: School dropout. *American Counselling Association* (pp. 471-507).

- La Padula, M. (2003). A comprehensive look at online student support services for distance learners. *The American Journal of Distance Education*, 17 (2), 119 – 128.
- Lent, R. W., Brown, S. D., & Larkin, K. C. (1984). Relation of self-efficacy expectations to academic achievement and persistence. *Journal of Counselling Psychology*, 31, 356-362.
- Lent, R. W., Brown, S. D., & Larkin, K. C. (1986). Self-efficacy in the prediction of academic performance and perceived career options. *Journal of Counselling Psychology* 33 (3) : 265 – 269.
- Levitz, R., Noel, L. (2000). *Taking the initiative: Strategic moves for retention*. (Available from USA Group Noel-Levitz, Inc., 2101 ACT Circle, Iowa City, IA 52245-9581.
- Levy, S. Six factors to consider when planning distance learning programmes in higher education. *Online Journal of Distance Learning Administration*, 2003, 6 (1). <http://www.westga.edu/-distance/ojdl/spring 61/levy61.htm>
- Levy, S., & Beaulieu, R. Online distance learning among the California community colleges: Looking at the planning and implementation. *American Journal of Distance Education*, 2003, 17 (4), 207 – 220.
- Manzo, K.K. (1997). Lifestyle friendly education. *Black Issues in Higher Education* 42, 42-43.
- Martinez, P. & Maynard, J. (2002). *Improving colleges: Why courses and programmes improve or decline over time*. London: Learning and Skills Development Agency (LSDA).
- Matsui, T. (1994). Mechanisms underlying sex differences in career self-efficacy expectations of University students. *Journal of Vocational Behavior*, 45, 177-184.
- Matthews, D. (1999). The origins of distance education and its use in the United States. *T.H.E. Journal*. Available online at: <http://www.thejournal.com/magazine/vault/A2222.cfm>.

- Mayer, R. (1996). Learners as information processors: Legacies and limitations of educational psychology's second metaphor. In *Educational Psychologist*, 31(3/4), 151-161.
- McClendon, E., & Cronk, P. Rethinking academic management practices: A case of meeting new challenges in online delivery. *Online Journal of Distance Learning Administration*, 1999, 2 (1) <http://www.westga.edu/-distance/mclendon21.html> .
- Meece, J. L. (1991). The classroom context and students' motivational goals. In M. L. Maehr & P. R. Pintrich (Eds.), *Advances in Motivation and Achievement* (Vol. 7, pp. 261-285). Greenwich, CT: JAI Press.
- Merisotis, J. P., & Phipps, R. A. (1999). What's the difference? Outcomes of distance vs. traditional classroom-based learning. *Change*, 31(3), 12-17.
- Meyers, P., & Ostach, H. Pulling the pieces together: Comprehensive online support services. *IJournal – Insight Into Student Services*, 2004, issue 8. [http://www.ijournal.us/issue-08/ij-issue-08-meyers & Ostach – 01.htm](http://www.ijournal.us/issue-08/ij-issue-08-meyers-&Ostach-01.htm)
- Miller, J.B. (2000). *The quest for the constructivist statistics classroom: Viewing practice through constructivist theory*. Unpublished doctoral dissertation, The Ohio State University, Columbus.
- Miller, J.B. (2002). *Examining the interplay between constructivism and different learning styles*. Drury University, U.S.A
- Miller, R., Brickman, P., & Bolen, D. (1975). Attribution versus persuasion as a means of modifying behavior. *Journal of Personality and Social Psychology*, 31, 430-441.
- Mills R. The centrality of learner support in open and distance learning: A paradigm shift in thinking. In A. Tait & R. Mills (eds) (2003). *Rethinking Learner support in Distance Education: Change and continuity in an international context*. London: Routledge Falmer.
- Mills, R. & Ross, P. (1993). Putting the student first: Management for quality in distance education, in: T. Evans and D. Nation (Eds) *Reforming Open and Distance Education: Critical reflections from practice* .London: Kogan Page.

- Mitchell, J. V. Jr. (1992). Interrelationships and predictive efficacy for indices of intrinsic, extrinsic, and self-assessed motivation for learning. *Journal of Research and Development in Education*, 25 (3), 149-155.
- Moore, M. G. & Kearsley, G. (1996). *Distance education: A systems view*. Belmont: Wadsworth.
- Moore, M. G. & Kearsley, G. (2005). *Distance education: A systems view* (2nd ed.). Belmont, CA: Wadsworth.
- Multon, K. D., Brown, S. D., & Lent, R. W. (1991). Relation of self-efficacy beliefs to academic outcomes: A meta-analytic investigation. *Journal of Counselling Psychology*, 38, 30-38.
- Multon, K.D., Brown, S. D., & Lent, R.W. (1999). Relation of self-efficacy beliefs to academic outcomes: a meta-analytic investigation. *Journal of Counselling Psychology*, 38 (1), 30-38.
- Nashashibi, P. (2002). *Learning in progress: Recognising achievement in adult learning*. London: Learning and Skills Development Agency(LSDA).
- Navarro, P., & Shoemaker, J. (2000). Performance and perceptions of distance learners in cyberspace. *The American Journal of Distance Education* , 14 (2), 15-35.
- Niebuhr, K. (1995). *The effect of motivation on the relationship of school climate, family environment, and student characteristics to academic achievement*. (ERIC Document Reproduction Service ED 393 202).
- Noel-Levitz Inc., USA Group (2001). *National Student Satisfaction Report*. Iowa City, 1A.
- Nunan, T. (1992). *Student support as a factor affecting the quality of Australian distance education: The findings of the project to investigate quality and standards in distance education*. Paper presented at the Institute of Distance Education-Deakin University Monash Distance Education Centre TAFE Off Campus.

- Nyondo, A.C. (2002). Designing an effective learner support system. In *University News: A Weekly Journal of Higher Education* Vol. 40, No. 4. New Delhi: Association of Indian Universities.
- Ochogo, K. N. (2004): *Factors affecting the provision of guidance and counselling to distance learners: A case study of Nakuru and Nairobi Extra-mural Centres*. Unpublished M.Ed Thesis, University of Nairobi.
- Osei, D. & Fikile, M. (2000). *Creating virtual learning communities in Africa. Challenges and prospects*.
- Oxford, R., Young, P., Ito, S., & Sumrall, M. (1993). Factors affecting achievement in a satellitedelivered Japanese language programme. *American Journal of Distance Education*, 7(1), 11 -25.
- Pajares, F. (1996). Self-efficacy beliefs in achievement settings. *Review of Educational Research*, 66, 543-578.
- Pajares, F. (2003). Self-efficacy beliefs, motivation, and achievement in writing: A review of the literature. *Reading and Writing Quarterly*.
- Pajares, F., & Johnson, M. J. (1996). Self-efficacy beliefs in the writing of high school students: A path analysis. *Psychology in the Schools*, 33, 163-175.
- Pajares, F., & Miller, M. D. (1994). The role of self-efficacy and self-concept beliefs in mathematical problem-solving: A path analysis. *Journal of Educational Psychology*, 86, 193-203.
- Pajares, F., & Miller, M. D. (1995). Mathematics self-efficacy and mathematics outcomes: The need for specificity of assessment. *Journal of Counselling Psychology*, 42, 190-198.
- Pajares, F., & Valiante, G. (1997). *Influence of writing self-efficacy and related beliefs about writing on the writing performance of elementary school students*. Paper presented at the meeting of the American Educational Research Association, Chicago.
- Pajares, F., & Valiante, G. (2001). Gender differences in writing motivation and achievement of middle school students: A function of gender orientation? *Contemporary Educational Psychology*.

- Parajes, F. (1997). Current directions in self – efficacy research. In M.L. Maehr & P.R. Pintrich (eds.) *Advances in Motivation and Achievement (Vol. 10, pp. 1 – 49)*. Greenwich CT: JAI Press.
- Paris, S. G., & Oka, E. (1986). Children's reading strategies, metacognition and motivation. *Developmental Review, 6*, 25-36.
- Pascarella, E.T., & Terenzini, P.T. (1991). *How college affects students*. San Francisco: Josey – Bass.
- Percy, K.A. & Withnall, A.(1992). An examination of the motivation and experience of British elderly people when learning at a distance. *Gerontology and Geriatrics Education, 13(1-2)*, 57-70.
- Perdue, K. J. (2003). Web-based continuing professional education: Uses, motivations, and deterrents to participation. In M. G. Moore & W. G. Anderson (Eds.), *Handbook of Distance Education* (pp. 615-630). Mahwah, NJ: Lawrence Erlbaum.
- Peters, O. (1998). *Learning and teaching in distance education: Analyses and interpretation from an international perspective*. London: Kogan Page.
- Peterson, T.O, & Arnn, R. B. (2005). Self-efficacy: The foundation of human performance. *Performance improvement quarterly, 18(2)*, 5-18.
- Philips, M. Delivering learner support online: Does the medium affect the message? In A. Tait & R. Mills(eds). (2003). *Rethinking learner support in distance education: Change and continuity in an international context*. London : Routledge Falmer
- Pintrich, P. R., & De Groot, E. V. (1990). Motivational and self-regulated learning components of classroom academic performance. *Journal of Educational Psychology, 82*, 33-40.
- Pintrich, P. R., & Garcia, T. (1991). Student goal orientation and self-regulation in the college classroom. In M. Maehr & P. R. Pintrich (Eds.), *Advances in motivation and achievement: Goals and self-regulatory processes (Vol. 7, p. 371-402)*. Greenwich, CT: JAI Press.
- Pintrich, P. R., & Schrauben, B. (1992). Students' motivational beliefs and their cognitive engagement in classroom academic tasks. In D. Schunk & J.

- Meece (Eds.), *Student perceptions in the classroom: Causes and consequences* (pp. 149-183). Hillsdale, NJ: Erlbaum.
- Pokay, P., & Blumenfeld, P. C. (1990). Predicting achievement early and late in the semester: The role of motivation and use of learning strategies. *Journal of Educational Psychology, 82*, 41-50
- Potter, J. Beyond Access: Student perspectives on support service needs in distance learning. University of New Brunswick. In *Canadian Journal of University Continuing Education Vol.24, No.1* Spring. Accessed at http://www.extension.usak.ca/cjuce/articles/v24_pdf/2413.pdf.
- Rahm, D. & Reed, B.J. (1998). Tangled webs in public administration: Organisational issues in distance learning . *Public Administration and Management. Vol. 3, No. 1*Research, 66, 543-578.
- Richards, C. N. & Ridley, D. R. (1997). Factors affecting college students' persistence in on-line computer-managed instruction. *College Student Journal, 31*, 490- 495.
- Rinear, K. How to deliver integrated support to your students. *Distance Education Report, 2003, 7(2)*, 3-6
- Robinson, B. (1981). Support for student learning, in: A. Kaye & G. Rumble (Eds) *Distance Teaching for Higher and Adult Education*: London, Croom Helm.
- Robinson, B.(1995). Research and pragmatism in learner support, In F. Lockwood (ed). *Open and distance learning today*. London and New York: Routledge Studies in Distance Education, pp 222 – 231.
- Rosenbaum, M. (1989). Self-control under stress: The role of learned resourcefulness. *Advanced Behaviour Research Therapy, 11*,249-258
- Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs, 33(1)*, 300-303.
- Rumble,G. (1986). *The planning and management of distance education*. London : Croom Helm
- Rust, J., & Golombok, S. (1992). Modern psychometrics: The science of psychological assessment. London: Routledge.

- Sache, D., & Mark, M.(2000). *Support Services for online and distance Education Programmes*. Paper presented at the 16th Annual Conference on Distance Teaching and Learning. Madison, Wisconsin.
- Saelens, P.M. (2004). Defining best practices for distance learners provided by student support centres. Unpublished D.Ed thesis: Arizona State University. *Umi ProQuest Digital Dissertations* at <http://www.lib.umi.com/dissertations/preview>
- Scalzo, K., Matela – Rodier, D., & Ferrauilo, M. (2000). *Customer –focused support services for distance learning*. Paper presented at the 16th Annual Conference on Distance Teaching and Learning. Madison . Wisconsin.
- Schiefele, U., Krapp, A., & Winteler, A. (1992). Interest as a predictor of academic achievement: A meta-analysis of research. *The role of interest in learning and development* (pp. 183-212). Hillsdale, NJ: Erlbaum.
- Schieman, E. & Jones, T. (1993). Learning at a distance: Issues for the instructional designer. *The Journal of Adult Education*, 21 (112), 3-13.
- Schreiner, L.A., & Juillerat, S. L. (1993). *The student satisfaction inventory*. Available from USA Group Noel-Levitz, Inc., 2101 ACT Circle, Iowa City, IA 52245-9581).
- Schunk, D. H. (1982). Effects of effort attribution feedback on children's perceived self-efficacy and achievement. *Journal of educational psychology*, 74 (4), 548 – 556.
- Schunk, D. H. (1982b). Verbal self-regulation as a facilitator of children's achievement and self-efficacy. *Human Learning*, 1, 265-277
- Schunk, D. H. (1983). Ability versus effort attribution feedback ; Differential effects on self-efficacy and achievement. *Journal of Educational Psychology*, 75(6), 848 -856.
- Schunk, D. H. (1984). Sequential attribution feedback and children's achievement behaviors. *Journal of Educational Psychology*, 76 (6), 1159 – 1169.
- Schunk, D. H. (1985). Self-efficacy and classroom learning. *Psychology in the Schools*, 22, 208-223.

- Schunk, D. H. (1991). Self-efficacy and academic motivation. *Educational Psychologist*, 26,
- Schunk, D. H. (1995). Self-efficacy and education and instruction. In J. E. Maddux (Ed.), *Self-efficacy, adaptation, and adjustment: Theory, research, and application* (pp. 281-303). New York: Plenum Press
- Schunk, D. H., & Hanson, A. R. (1985). Peer models: Influence on children's self-efficacy and achievement. *Journal of Educational Psychology*, 77, 313-322.
- Schunk, D. H., & Pajares, F. (2002). *The development of academic self-efficacy. Development of achievement motivation* (pp. 15-32). San Diego, CA: Academic Press.
- Schwittman, D. (1982). Time and learning in distance study. *Distance Education*, 3(1), 141-156.
- Sekaran, U. (2004). *Research methods for business: A skill building approach* (4th ed). John Wiley and Sons, Inc.
- Sewart, D. (1987). Limitations of the learning package. In M. Thorpe & D. Grugeon (Eds.), *Open Learning for Adults*. Harlow: Longman.
- Sewart, D.(1992). *Student support systems in distance education*. Paper presented at the World Conference of the International Council for Distance Education, Bangkok, Thailand.
- Sewart, D. (1993). Student support systems in distance education. *Open Learning*, 8 (3), 3-12.
- Shavelson, R. J., & Bolus, R. (1982). Self-concept: The interplay of theory and methods. *Journal of Educational Psychology*, 74, 3-17.
- Tait, A. (1995). Student support in open and distance learning. In Lockwood ,F(ed.), *Open and distance learning today* .London and New York: Routledge Studies in Distance Education, pp 232-241.
- Tait,A.(2000). Planning Student Support for Open and Distance Learning. *Open Learning*, Vol. 15, No. 3, 2000

- Terrell, S., & Dringus, L. (1999). An investigation of the effect of learning style on student success in an online learning environment. *Journal of Educational Technology Systems, 28*(3),231-238.
- Thorpe, M. (1988). *Open learning module 2 of the post compulsory diploma in education*. Milton Keynes: The Open University.
- Threlkeld, R., & Brzoska, K. (1994). Research in distance education. In B. Willis (Ed.), *Distance education: Strategies and tools* (pp. 41-66). Englewood Cliffs, NJ: Educational Technology Publications.
- Verduin, J. R. & Clark, T. A. (1991) *Distance Education: The foundations of effective practice*. San Francisco, CA: Jossey-Bass Publishers.
- Visser, L., & Visser, Y.L. Perceived and actual student support needs in distance education. *Quarterly Review of Distance Education , 2000, 1*(2) 109-117.
- Volitional components checklist. In J. Heckhausen, & C. Dweck (Eds.), *Life span perspectives on motivation and control* (pp. 15-49). Mahwah, NJ: Lawrence Erlbaum.
- Von Glasersfeld, E.(1995). A constructivist approach to teaching. In L.Steffe & J. Gale(Eds.).*Constructivism in Education* (pp.3-16). NJ: Lawrence Erlbaum Associates Inc.
- Von Glasersfeld, E. (1995b).Sensory experience, abstraction and teaching. In L.Steffe & J.Gale (Eds.). *Constructivism in Education* (pp.369-384). NJ: Lawrence Erlbaum Associates Inc.
- Von Glasersfeld, E. (1996). Introduction: Aspects of constructivism. In C. Fosnot(Ed.). *Constructivism: Theory, perspectives, and practice* (pp.3-7). New York: Teachers College Press.
- Vroom, V. H. (1964). *Work and motivation*. New York: Wiley.
- Walonick, D. S. (1997). *Survival statistics*. Minneapolis, MN: StatPac Inc.
- West Country Learning and Skills Research Network (WCLSRN) (2002). *Learner guidance and support: the models used and how staff view their effects on retention*. London: Learning and Skills Development Agency (LSDA).

- Western Cooperative for Educational Telecommunications (2003). *Beyond the administrative core: Locating web-based students services for online learners*. <http://www.wcet.info/projects/laap>.
- Wigfield, A., Eccles, J. S., & Pintrich, P. R. (1996). Development between the ages of 11 and 25. In D. C. Berliner & R. C. Calfee (Eds.), *Handbook of educational psychology* (pp. 148-185). New York: Macmillan.
- Wigfield, A., Eccles, J., Maclver, D., Reuman, D., & Midgley, C. (1991). Transitions at early adolescence: Changes in children's domain-specific self-perceptions and general self esteem across the transition to junior high school. *Developmental Psychology*, 27, 552-565.
- Wright, S.J. (1991). Research on selected aspects of learner support in distance education programming: A review of selected papers, Part 1, *The second American symposium on research in distance education*, Pennsylvania State University, pp. 59 -71.
- Zimmerman, B. J. (2002). Becoming a self-regulated learner: An overview. *Theory into Practice*, 41(2), 64 -70.
- Zimmerman, B. J., Bandura, A., & Martinez –Poris, M. (1992). Self-motivation for academic attainment : the role of self-efficacy beliefs & personal goals setting. *American Educational Research Journal*, 29 (3), 663 – 676.
- Zimmerman, B. J., & Schunk, D. H. (2003). Albert Bandura : The Scholar and his contributions to educational psychology. In B. J. Zimmerman & D. H. Schunk (Eds.), *Educational Psychology : A century of Contributions* (pp.431-457). Mahwah, NJ: Erlbaum.
- Zvacek, S.M. (1991). Effective affective design for distance education. *Tech Trends*, 36(1), 40-43.

APPENDIX A: LEARNER NEEDS ASSESSMENT QUESTIONNAIRE

Dear Student,

You have been selected to participate in **THE ANALYSIS OF LEARNER SUPPORT NEEDS OF DISTANCE LEARNERS IN THE UNIVERSITY OF NAIROBI**. The attached questionnaire is intended to collect data regarding the learner support needs. The information obtained will help the University in developing a learner support system that will help in serving you better and more effectively as distance learners. The information obtained will be used for this purpose only and will be handled confidentially. Therefore please **DO NOT INDICATE YOUR NAME ANYWHERE IN THIS QUESTIONNAIRE**. Please respond to the items in the questionnaire by means of a tick (✓) giving details or as advised in each item.

Thank you in advance.

Patricia W. Muchiri

Section A

Please indicate the answer by means of a tick (✓) or answer briefly in the space provided.

1. My age group is

- a) Below 25 yrs ()
- b) 25 – 29 yrs ()
- c) 30 – 34 yrs ()
- d) 35 – 39 yrs ()
- e) 40 – 44 yrs ()
- f) 45 – 49 yrs ()
- g) 50 – 54 yrs ()
- h) 55 – 59 yrs ()
- i) 60 yrs and above ()

2. Please indicate your gender

- a) Male ()
- b) Female ()

3. How much time do you spend for study during the week?

4. My job is

- a) Full-time ()
- b) Part-time ()
- c) None (no job) ()

5. My course study is _____

- a) B. Ed (Arts) ()
- b) B. Ed (Science)()
- c) P.G.D.E ()
- d) P.G.D. STI ()

6. My professional qualifications are _____

7. My year of study is :- _____

8. Do you see your area of residence as rural or urban?

a) Rural () b) Urban ()

Please indicate the geographical location _____

9. The following are the people I am financially responsible for :-

a) Parents

b) Children (Please indicate the number of children) _____

10. Please, indicate the regional centre you belong to

a) Nyeri and Mt. Kenya Region ()

b) Nairobi and Environs ()

c) Mombasa ()

d) Nakuru ()

e) Kakamega ()

f) Kisumu ()

11. How far is your residence from the regional centre?

a) 0 – 5 km ()

b) 5 – 10 km ()

c) 10 – 15 km ()

d) 15 – 20 km ()

e) 20 – 25 km ()

f) 25 – 30 km ()

g) Above 30 km ()

12. By what means do you go to the Regional Centre? By :

a) Bicycle

- b) Car
- c) Matatu
- d) Bus
- e) Other (specify).....

13. I have group discussions with fellow learners (peers)

- a) Yes ()
- b) No ()

14. I have access to

- a) Telephone (indicate whether pay phone or mobile phone) ()
- b) Television ()
- c) Fax facilities ()
- d) Radio/audio- cassette player ()
- e) Video machine ()
- f) PC (Personal Computer) ()
- g) Email (Electronic Mail) ()

Please indicate where the services (above) are available (e.g home, regional centre, cyber cafe etc.) _____

15. How long does it take to get feedback from the college for your academic work (e.g. _____ assignments, _____ CATs, _____ Exams)?

16. I have a separate room for private study at home

- Yes () No ()

17. I have support from family members for my academic pursuit

- Yes () No ()

If yes, please indicate the type of support offered:-

18. I have an email address

Yes () No ()

If yes, please indicate where you access e-mail

a) Home ()

b) Institution ()

c) Cyber cafe ()

Section B

Please rate the following learner support services using the five words that follow each service, to indicate how much you need the services for your success as a distance learner.

	Learner Support Service	Not Needed at all	Slightly Needed	Not Sure	Very Needed	Extremely Needed
21	Academic Advising					
22	Library services/Access to library(reference/online journals)					
23	Course work tutoring					
24	Information about getting textbooks/course units					
25	Information about assignments					
26	Information about C.A.Ts.					
27	Information about examination results					
28	Communication with/access to course tutors					
29	Study groups					
30	Communication with other distance learners (peers)					
31	Communication with Faculty staff					
32	Access to student records					
33	Information about course registration					
34	Communication with learner support staff (regional centre staff)					
35	Financial aid guidance					
36	Career counselling					
37	Computer technical support					
38	Personal (mental health) counselling services					
39	Orientation					
40	Non-course related educational					

	programmes (e.g. speakers, panels etc on topics such as financial management, life and family issues, social issues, etc.)					
41	Involvement in student organisations					
42	Student governance (being involved in the leadership of the college/University)					
43	Student activities (cultural /social opportunities)					

44. If there are any other learner support services that you consider necessary apart from those listed, please list them.

45. What are your expectations of learner support services provision to you, as a distance learner, in the University?

APPENDIX B: STUDENT MOTIVATION, SATISFACTION AND LEARNING SELF EFFICACY QUESTIONNAIRE (SMSLSEQ)

Dear student,

You have been selected to participate in the **Assessment of University Student Motivation Satisfaction and Learning Self-efficacy.**

The attached questionnaire is intended to collect data regarding the student motivation, satisfaction and learning self-efficacy. The information obtained will be used for this purpose only and will be handled confidentially. Therefore, please **DO NOT INDICATE YOUR NAME ANYWHERE IN THIS QUESTIONNAIRE.**

Please respond to the items in the questionnaire by means of a tick (✓), giving details or as is advised in each item.

It is important that you answer all the questions honestly. These are opinions about yourself ; there are no right or wrong answers.

Thank you in advance

Patricia Muchiri

SECTION A

Please indicate the answer by means of a tick (✓) or answer briefly in the space provided.

1. Please indicate your gender

c) Male ()

d) Female ()

3. My course of study is _____

e) B. Ed (Arts) ()

f) B. Ed (Science) ()

3. Please indicate your year of study in the following categories depending on the course you are studying.

a) B.Ed (Arts)

(i) Part 1 ()

(ii) Part 2 ()

(iii) Part 3 ()

(iv) Part 4 ()

(v) Part 5 ()

(vi) Part 6 ()

b) B. Ed (Science)

(i) Group 1 ()

(ii) Group 2 ()

(iii) Group 3 ()

(iv) Group 4 ()

(v) Group 5 ()

(vi) Group 6 ()

4. Please, indicate the regional centre you belong to

g) Nyeri and Mt. Kenya Region ()

h) Nairobi and Environs ()

i) Mombasa ()

j) Nakuru ()

k) Kakamega ()

l) Kisumu ()

m) Meru ()

n) Garissa ()

o) Kisii ()

p) Kapenguria ()

SECTION B

Please rate each of the following items by means of a tick(✓) using the four words that follow each item to indicate how much you agree with each item

	Item	Strongly Disagree	Disagree	Agree	Strongly Agree
5.	I can manage to solve difficult problems if I try hard enough.				
6.	I am certain that I can accomplish my goals.				
7.	I am confident that I could deal efficiently with unexpected events				
8.	I can remain calm when facing difficulties because I can rely on my coping abilities				
9.	When I am confronted with a problem, I can find several solutions.				
10.	Whatever comes my way, I will usually be able to handle it.				
11.	I can understand the most difficult material presented in readings.				
12.	I am able to manage my time well				
13.	I am usually able to deal with exam anxiety.				
14.	When writing an assignment, I usually know the right procedure and format to use.				
15.	I am sufficiently equipped in planning my career.				
16.	When I have any academic or administrative issues, I am able to to sort them out fast.				
17.	If I need to search for a job, I will do so successfully.				

SECTION C

Please rate each of the following items by means of a tick(✓) using the four words that follow each item to indicate how much you agree with each item.

	Item	Strongly Disagree	Disagree	Agree	Strongly Agree
18.	When studying, I work as hard as possible				
19.	I learn the things I need to learn pretty fast				
20.	When studying, I keep working even if the material is difficult				
21.	I put aside distractions when I am studying				
22.	When studying I put in my best effort				
23.	I do not postpone challenging work				
24.	My academic goals are realistic and I work hard to achieve them				
25.	I can cope with any personal problems in the course of my studies				
26.	I can manage any amount of stress in the course of my studies				
27.	I expect to do very well in my studies				
28.	When studying, I do my best to acquire the knowledge and skills taught				
29.	I am so nervous during a test that I cannot remember facts I have learned				
30.	I like what I am learning in this course				
31.	I am sure I can do an excellent job on the problems and tasks assigned for this course				
32.	I think what I am learning in this course is useful for me to know				

SECTION D

Please indicate your level of satisfaction with each of the following aspects of learner support by means of a tick (✓) against each item.

	Item	Very Satisfied	Satisfied	Dissatisfied	Very Dissatisfied
33.	Guidance on time management				
34.	Guidance on study skills				
35.	Guidance on how to write assignments/term paper				
36.	Guidance on how to handle exam anxiety				
37.	Library resources and services				
38.	Information on formation and benefits of study groups				
39.	Information about campus life from the student handbook				

40.	Academic advising services				
41.	Student orientation				
42.	Personal counselling services				
43.	Career planning services				
44.	Information on opportunities for involvement in University student organisations and events				
45.	Information on fees structure for my course of study				
46.	Career guidance				
47.	Information on job search (eg. Writing a C.V, interview, etc)				
48.	Online counselling services				
49.	Information on tutors and how to contact them				

Thank you very much for your co-operation

APPENDIX C: STUDENT MOTIVATION, SATISFACTION AND LEARNING SELF EFFICACY QUESTIONNAIRE (SMSLSEQ)

Dear student,

You have been selected to participate in the **Assessment of University Student Motivation Satisfaction and Learning Self-efficacy**.

The attached questionnaire is intended to collect data regarding the student motivation, satisfaction and learning self-efficacy. The information obtained will be used for this purpose only and will be handled confidentially. Therefore, please **DO NOT INDICATE YOUR NAME ANYWHERE IN THIS QUESTIONNAIRE**.

Please respond to the items in the questionnaire by means of a tick (✓), giving details or as is advised in each item.

It is important that you answer all the questions honestly. These are opinions about yourself ; there are no right or wrong answers.

Thank you in advance

Patricia Muchiri

SECTION A

Please indicate the answer by means of a tick (✓) or answer briefly in the space provided.

1. Please indicate your gender

e) Male ()

f) Female ()

3. My course of study is _____

g) B. Ed (Arts) ()

h) B. Ed (Science) ()

3. Please indicate your year of study in the following categories depending on the course you are studying.

a) B.Ed (Arts)

(i) Part 1 ()

(ii) Part 2 ()

(iii) Part 3 ()

(iv) Part 4 ()

(v) Part 5 ()

(vi) Part 6 ()

b) B. Ed (Science)

(i) Group 1 ()

(ii) Group 2 ()

(iii) Group 3 ()

(iv) Group 4 ()

(v) Group 5 ()

(vi) Group 6 ()

4. Please, indicate the regional centre you belong to

q) Nyeri and Mt. Kenya Region ()

r) Nairobi and Environs ()

s) Mombasa ()

t) Nakuru ()

u) Kakamega ()

- v) Kisumu ()
- w) Meru ()
- x) Garissa ()
- y) Kisii ()
- z) Kapenguria ()

SECTION B

Please rate each of the following items by means of a tick(v) using the four words that follow each item to indicate how much you agree with each item

	Item	Strongly Disagree	Disagree	Agree	Strongly Agree
5.	I can manage to solve difficult problems if I try hard enough.				
6.	I am certain that I can accomplish my goals.				
7.	I am confident that I could deal efficiently with unexpected events				
8.	I can remain calm when facing difficulties because I can rely on my coping abilities				
9.	When I am confronted with a problem, I can find several solutions.				
10	Whatever comes my way, I will usually be able to handle it.				
11	I can understand the most difficult material presented in readings.				
12	I am able to manage my time well				
13	I am usually able to deal with exam anxiety.				
14	When writing an assignment, I usually know the right procedure and format to use.				
15	I am sufficiently equipped in planning my career.				
16	When I have any academic or administrative issues, I am able to to sort them out fast.				
17	If I need to search for a job, I will do so successfully.				

SECTION C

Please rate each of the following items by means of a tick(✓) using the four words that follow each item to indicate how much you agree with each item.

	Item	Strongly Disagree	Disagree	Agree	Strongly Agree
18.	When studying, I work as hard as possible				
19.	I learn the things I need to learn pretty fast				
20.	When studying, I keep working even if the material is difficult				
21.	I put aside distractions when I am studying				
22.	When studying I put in my best effort				
23.	I do not postpone challenging work				
24.	My academic goals are realistic and I work hard to achieve them				
25.	I can cope with any personal problems in the course of my studies				
26.	I can manage any amount of stress in the course of my studies				
27.	I expect to do very well in my studies				
28.	When studying, I do my best to acquire the knowledge and skills taught				
29.	I am so nervous during a test that I cannot remember facts I have learned				
30.	I like what I am learning in this course				
31.	I am sure I can do an excellent job on the problems and tasks assigned for this course				
32.	I think what I am learning in this course is useful for me to know				

SECTION D

Please indicate your level of satisfaction with each of the following aspects of learner support by means of a tick(✓) against each item.

	Item	Very Satisfied	Satisfied	Dissatisfied	Very Dissatisfied
33.	Guidance on time management				
34.	Guidance on study skills				
35.	Guidance on how to write assignments/term paper				
36.	Guidance on how to handle exam anxiety				

37.	Library resources and services				
38.	Information on formation and benefits of study groups				
39.	Information about campus life from the student handbook				
40.	Academic advising services				
41.	Student orientation				
42.	Personal counselling services				
43.	Career planning services				
44.	Information on opportunities for involvement in University student organisations and events				
45.	Information on fees structure for my course of study				
46.	Career guidance				
47.	Information on job search (eg. Writing a C.V, interview, etc)				
48.	Online counselling services				
49.	Information on tutors and how to contact them				

SECTION E

Please rate each of the following items by means of a tick(✓) using the four words that follow each item to indicate how much you agree with each item

	Item	Strongly disagree	Disagree	Agree	Strongly agree
50.	The system provides me with sufficient information				
51.	The system provides me with up to date information				
52.	The information I get from the system is clear				
53.	The system is easy to use				
54.	The system is easy to learn				
55.	The content is accurate				
56.	The content is presented in an appropriate degree of depth				
57.	The content is clearly explained				

Please rate the following content areas in terms of how applicable they were to you as a distance learner

	Item	Not applicable	Slightly applicable	Applicable	Very applicable
58.	Academic advising and communication				
59.	Student communities				
60.	Administrative services and orientation				
61.	Personal and social services				
62.	Internal email				
63.	Resources/news				

64. Overall, how satisfied are you with the learner support system?

a) Very satisfied ()

b) Satisfied ()

c) Dissatisfied ()

d) Very dissatisfied ()

65. To what extent do you feel the learner support system meets your learner support needs?

66. What content of the learner support system do you feel should be removed from the system?

APPENDIX 10- TABLES OF DATA ANALYSIS

67. What content should be added to the learner support system to further improve it?

Response	Frequency	Percentage (%)
1-30 years	140	70.0
31-40 years	22	11.0
41-50 years	14	7.0
51-60 years	10	5.0
61-70 years	4	2.0
71-80 years	2	1.0
81-90 years	1	0.5
91-100 years	1	0.5
Other	1	0.5
Total	200	100.0

Table 2: Number of Respondents, Frequency and Percentage

Gender	Frequency	Percentage (%)
--------	-----------	----------------

68. Please give any other suggestions for improvement of the learner support system.

Table 3: List of Respondents' Suggestions and Comments

No.	Frequency	Percentage (%)
1-10 years	100	50.0
11-20 years	50	25.0
21-30 years	30	15.0
31-40 years	10	5.0
41-50 years	5	2.5
51-60 years	2	1.0
61-70 years	1	0.5
71-80 years	1	0.5
81-90 years	1	0.5
91-100 years	1	0.5
Other	1	0.5
Total	200	100.0

Thank you very much for your co-operation

Level of Study	Frequency	Percentage (%)
1-10 years	120	60.0
11-20 years	40	20.0
21-30 years	20	10.0
31-40 years	10	5.0
41-50 years	5	2.5
51-60 years	2	1.0
61-70 years	1	0.5
71-80 years	1	0.5
81-90 years	1	0.5
91-100 years	1	0.5
Other	1	0.5
Total	200	100.0

APPENDIX D : TABLES FOR DATA ANALYSIS

Table 1: Age of Respondents, Frequencies and Percentages

Age	Frequencies	Percentage (%)
Below 25 years	29	6.3
25 – 29 years	63	13.8
30 – 34 years	96	21.0
35 – 39 years	145	31.7
40 – 44 years	102	22.3
45 – 49 years	21	4.6
50 – 54 years	2	0.4
Total	458	100.0

Table 2: Gender of Respondents, Frequencies and Percentages

Gender	Frequencies	Percentage (%)
Male	299	65.3
Female	159	34.7
Total	458	100.0

Table 3: Job of Respondents, Frequencies and Percentages

Job	Frequencies	Percentage (%)
Full time	409	89.3
Part time	27	5.9
No job	22	4.8
Total	458	100.0

Table 4: Course of Study, Frequencies and Percentage

Course of Study	Frequencies	Percentage (%)
B.Ed (Arts)	324	70.7
B.Ed (Science)	116	25.3
P.G.D.E.	8	1.7
P.G.D.S.T.I	10	2.2
Total	458	100.0

Table 5: Professional Qualifications, Frequencies and Percentages

Professional qualification	Frequencies	Percentage (%)
P1	329	71.8
S1	19	4.1
Diploma	29	6.3
Accounting	6	1.3
Degree	12	2.6
Medical doctors	10	2.2
None	53	11.6
Total	458	100.0

Table 6: Residence of respondents, Frequencies and Percentages

Residence	Frequencies	Percentage (%)
Rural	345	75.3
Urban	113	24.7
Total	458	100.0

Table 7: Financial Dependants, Frequencies and Percentages

Financial dependants	Frequencies	Percentage (%)
Parents	29	6.3
Children	124	27.1
Both (parents and children)	253	55.2
None	52	11.4
Total	458	100.0

Table 8: Financial Responsibility for Children

Financial Responsibility for children	Frequencies	Percentage (%)
More than 3 children	151	33.0
2 – 3 children	189	41.3
1 child	36	7.9
None	82	17.8
Total	458	100.0

Table 9: Means of Travel, Frequencies and Percentages.

Means of Travel	Frequencies	Percentage (%)
Bicycle	30	6.6
Car	23	5.0
Matatu	308	67.2
Bus	95	20.7
Waling	2	0.4
Total	458	100.0

Table 10: Group Discussion, Frequencies and Percentages

Have group discussion	Frequencies	Percentage (%)
Yes	304	66.4
No	154	33.6
Total	458	100.0

Access to various ICT facilities**Table 11: Access to Telephone, Frequencies and Percentages**

Access to Telephone	Frequencies	Percentage (%)
Yes	454	99.1
No	4	0.9
Total	458	100.0

Table 12: Type of Telephone, Frequencies and Percentages

Type of Telephone	Frequencies	Percentage (%)
Payphone	401	87.6
Mobile	454	99.3

Table 13: Access to ICT Facilities, Frequencies and Percentages

Access to ICT facility	Frequencies	Percentage (%)
Television	316	69.0
Fax	68	14.8
Radio / audio player	317	69.2
Video machine	161	35.2
Personal computer (PC)	68	14.8
E-mail	110	24.0

Table 14: Place of Access to Telephone, Frequencies and Percentages

Place of access to telephone	Frequencies	Percentage (%)
Home	400	87.3
Regional Centre	39	8.5
Cyber café	36	7.9
Library	24	5.2
Place of work	51	11.1

Table 15: Place of Access to Television, Frequencies and Percentages

Place of access to telephone	Frequencies	Percentage (%)
Home	313	68.3
Regional Centre	4	0.9
Cyber café	19	4.1
Library	1	0.22
Place of work	16	3.5

Table 16: Place of Access to Fax, Frequencies and Percentages

Place of access to fax	Frequencies	Percentage (%)
Home	3	0.7
Regional Centre	2	0.4
Cyber café	57	12.4
Library	1	0.2
Place of work	4	0.9

Table 17: Place of Access to Radio, Frequencies and Percentages

Place of access to radio	Frequencies	Percentage (%)
Home	316	69.0
Regional Centre	7	1.5
Cyber café	17	3.7
Library	3	0.7
Place of work	16	3.5

Table 18: Place of Access to Video Machine, Frequencies and Percentages

Place of Access to Video Machine	Frequency	Percentage (%)
Home	147	32.1
Regional centre	2	0.4
Cyber café	22	4.8
Library	1	0.2
Place of work	5	1.1

Table 19: Access to e-mail, Frequencies and Percentages

Place of Access to Video Machine	Frequency	Percentage (%)
Home	5	1.1
Regional centre	2	0.4
Cyber café	100	21.8
Library	2	0.4
Place of work	11	2.4

Table 20: Time Taken to Get Feedback on Assignment, Frequencies and Percentages

Time taken to get feedback on assignment	Frequency	Percentage (%)
Less than 1 months	9	2.0
1 – 6 months	106	23.1
7 – 12 months	72	15.7
More than 1 year	158	34.5
No feedback	113	24.7
Total	458	100.0

Table 21: Time Taken to Get Feedback on CATS, Frequencies and Percentages

Time taken to get feedback on CATs	Frequency	Percentage (%)
Less than 1 month	11	2.4
1 – 6 months	115	25.1
7 – 12 months	61	13.3
More than 1 year	172	37.6
No feedback	99	21.7
Total	458	100.00

Table 22: Time Taken to Get Feedback on Exams, Frequencies and Percentages

Time taken to get Feedback on Exams	Frequency	Percentage (%)
Less than 1 month	5	1.1
1 – 6 months	16	3.5
7 – 12 months	28	6.1
More than 1 year	282	61.6
No feedback	127	27.7
Total	458	100.00

Table 23: Possession of a Separate Room for Private Study, Frequencies and Percentages

Have Separate Room for Study	Frequency	Percentage (%)
Yes	227	49.6
No	231	50.4
Total	458	100.00

Table 24: Support From Family Members for Academic Pursuit, Frequencies and Percentages.

Have support from family members for academic pursuit	Frequency	Percentage (%)
Yes	369	80.6
No	89	19.4
Total	458	100.00

Table 25: Financial Support, Frequencies and Percentages

Time taken to get Feedback on Exams	Frequency	Percentage (%)
Yes	207	45.2
No	251	54.8
Total	458	100.00

Table 26: Conducive Environment for Study, Frequencies and Percentages

Conducive Environment for Study	Frequency	Percentage (%)
Yes	259	56.6
No	199	43.4
Total	458	100.00

Table 27: Assistance with Clerical work, Frequencies and Percentages

Assistance with Clerical Work	Frequency	Percentage (%)
Yes	46	10.04
No	412	89.96
Total	458	100.00

Table 28: Academic Assistance, Frequencies and Percentages

Academic Assistance	Frequency	Percentage (%)
Yes	54	11.8
No	404	88.2
Total	458	100.00

Table 29: Religious / Spiritual Assistance, Frequencies and Percentages

Religious / Spiritual Assistance	Frequency	Percentage (%)
Yes	3	0.7
No	455	99.3
Total	458	100.00

Table 30: Possession of an E-mail Address, Frequencies and Percentages

Possession of an E-mail Address	Frequency	Percentage (%)
Yes	124	27.1
No	334	72.9
Total	458	100.00

Table 31: Email Access at Home, Frequencies and Percentages

Email Access at Home	Frequency	Percentage (%)
Yes	2	0.4
No	445	97.2
Total	458	100.00

Table 32: Email Access at Institution, Frequencies and Percentages

Email Access at Institution	Frequency	Percentage (%)
Yes	11	2.4
No	445	97.2
Total	456	99.6

Table 33: Email Access at Cyber Café, Frequencies and Percentages

e-mail Access at Cyber Café	Frequency	Percentage (%)
Yes	104	22.7
No	351	76.6
Total	455	99.3

Table 34: Cross-tabulation for Orientation Based on Gender

		Gender		Total	
		Male	Female		
orientation	Not needed at all and Slightly needed	Count	111	44	155
		Total %	25.9%	10.3%	36.1%
	Very needed and extremely needed	Count	169	105	274
		Total %	39.4%	24.5%	63.9%
Total		Count	280	149	429
		Total %	65.3%	34.7%	100.0%

Table 35: Cross-tabulation for Orientation, Observed and Expected Frequency, and Gender

		Gender		Total	
		Male	Female		
orientation	Not needed at all and Slightly needed	Observed	111	44	155
		Expected	101	54	
	Very needed and extremely needed	Observed	169	105	274
		Expected	179	95	
Total			280	149	429

Table 36: Cross-tabulation for Student Governance (being involved in college leadership) Based on Gender.

			gender		Total
			Male	Female	
student governance (being involved in college leadership	Not needed at all and Slightly needed	Count	94	62	156
		Total %	23.7%	15.6%	39.3%
	Very needed and extremely needed	Count	174	67	241
		Total %	43.8%	16.9%	60.7%
Total		Count	268	129	397
		Total %	67.5%	32.5%	100.0%

Table 37: Cross-tabulation for Student Governance, Observed and Expected Frequency, and Gender.

			gender		Total
			Male	Female	
student governance (being involved in college leadership	Not needed at all and Slightly needed	Observed	94	62	156
		Expected	105	51	
	Very needed and extremely needed	Observed	174	67	241
		Expected	163	78	
Total		Total	268	129	397

Table 38: Cross-tabulation for Academic Advising Based on Year of Study

			year of study			Total
			year 1	year 2	year 3	
Academic advising	Not needed at all and Slightly needed	Count	5	3	14	22
		Total %	1.1%	.7%	3.1%	4.9%
	Very needed and extremely needed	Count	131	161	135	427
		Total %	29.2%	35.9%	30.1%	95.1%
Total		Count	136	164	149	449
		Total %	30.3%	36.5%	33.2%	100.0%

Table 39: Cross-tabulation for Academic Advising, Observed and Expected Frequencies and Year of Study

			year of study			Total
			year 1	year 2	year 3	
Academic advising	Not needed at all and Slightly needed	Observed	5	3	14	22
		Expected	7	8	7	
	Very needed and extremely needed	Observed	131	161	135	427
		Expected	129	156	142	
Total			136	164	149	449

Table 40: Cross-tabulation for Course Work Tutoring Based on Year of Study

			year of study			Total
			year 1	year 2	year 3	
course work tutoring	Not needed at all and Slightly needed	Count	6	1	11	18
		Total %	1.3%	.2%	2.4%	4.0%
	Very needed and extremely needed	Count	129	163	140	432
		Total %	28.7%	36.2%	31.1%	96.0%
Total		Count	135	164	151	450
		Total %	30.0%	36.4%	33.6%	100.0%

Table 41: Cross-tabulation for Course Work Tutoring, Observed and Expected Frequency and Year of Study.

		year of study			Total	
			year 1	year 2	year 3	
course work tutoring	Not needed at all and Slightly needed	Observed	6	1	11	18
		Expected	5	7	6	
	Very needed and extremely needed	Observed	129	163	140	432
		Expected	130	157	145	
Total			135	164	151	450

Table 42: Cross-tabulation for Information about Examinations Based on Year of Study

		year of study			Total	
			year 1	year 2	year 3	
info - examination	Not needed at all and Slightly needed	Count	0	0	3	3
		Total %	.0%	.0%	.7%	.7%
	Very needed and extremely needed	Count	138	164	146	448
		Total %	30.6%	36.4%	32.4%	99.3%
Total		Count	138	164	149	451
		Total %	30.6%	36.4%	33.0%	100.0%

Table 43: Year of Study, Observed and Expected Frequency and Information about Examinations

		year of study			Total	
			year 1	year 2	year 3	
info – examination	Not needed at all and Slightly needed	Observed	0	0	3	3
		Expected	1	1	1	
	Very needed and extremely needed	Observed	138	164	146	448
		Expected	137	163	148	
Total			138	164	149	451

Table 44: Cross- tabulation for Communication With Course Tutors Based on Year of Study

			year of study			Total
			year 1	year 2	year 3	
communication with course tutors	Not needed at all and Slightly needed	Count	4	2	12	18
		Total %	.9%	.4%	2.7%	4.0%
	Very needed and extremely needed	Count	132	161	139	432
		Total %	29.3%	35.8%	30.9%	96.0%
Total		Count	136	163	151	450
		Total %	30.2%	36.2%	33.6%	100.0%

Table 45: Cross-tabulation for Year of Study, Observed and Expected Frequency and Communication with Course.

			year of study			Total
			year 1	year 2	year 3	
communication with/access to course tutors	Not needed at all and Slightly needed	Observed	4	2	12	18
		Expected	5	7	6	
	Very needed and extremely needed	Observed	132	161	139	432
		Expected	131	156	145	
Total			136	163	151	450

Table 46: Cross-tabulation for Access to Study Groups Based on Year of Study.

			year of study			Total
			year 1	year 2	year 3	
access to study groups	Not needed at all and	Count	17	8	22	47
	Slightly needed	Total %	3.9%	1.8%	5.1%	10.8%
	Very needed and	Count	113	151	123	387
	extremely needed	Total %	26.0%	34.8%	28.3%	89.2%
Total	Count		130	159	145	434
	Total %		30.0%	36.6%	33.4%	100.0%

Table 47: Cross-tabulation for Year of Study, Observed and Expected Frequency and Access to Study Groups

			year of study			Total
			year 1	year 2	year 3	
access to study groups	Not needed at all and	Observed	17	8	22	47
	Slightly needed	Expected	14	17	16	
	Very needed and	Observed	113	151	123	387
	extremely needed	Expected	116	142	129	
Total			130	159	145	434

Table 48: Cross-tabulation for Communication with other Distance Learners Based on Year of Study

			year of study			Total
			year 1	year 2	year 3	
communication with other distance learners	Not needed at all and	Count	17	10	30	57
	Slightly needed	Total %	3.9%	2.3%	6.8%	12.9%
	Very needed and	Count	117	152	115	384
	extremely needed	Total %	26.5%	34.5%	26.1%	87.1%
Total	Count		134	162	145	441
	Total %		30.4%	36.7%	32.9%	100.0%

Table 49: Year of Study, Observed and Expected Frequency, and Communication with other Distance Learners.

			year of study			Total
			year 1	year 2	year 3	
communication with other distance learners	Not needed at all and Slightly needed	Observed	17	10	30	57
		Expected	17	21	19	57
	Very needed and extremely needed	Observed	117	152	115	384
		Expected	117	141	126	384
Total			134	162	145	441

Table 50: Cross-tabulation for Communication with Faculty Staff Based on Year of Study

			year of study			Total
			year 1	year 2	year 3	
communication with faculty staff	Not needed at all and Slightly needed	Count	18	12	28	58
		Total %	4.2%	2.8%	6.6%	13.6%
	Very needed and extremely needed	Count	115	144	109	368
		Total %	27.0%	33.8%	25.6%	86.4%
Total		Count	133	156	137	426
		Total %	31.2%	36.6%	32.2%	100.0%

Table 51: Year of Study, Observed and Expected Frequency and Communication with Faculty Staff.

			year of study			Total
			year 1	year 2	year 3	
communication with faculty staff	Not needed at all and Slightly needed	Observed	18	12	28	58
		Expected	18	21	19	
	Very needed and extremely needed	Observed	115	144	109	368
		Expected	115	135	118	
Total			133	156	137	426

Table 52: Cross-tabulation for Communication with Learner Support Staff (regional centre staff) Based on Year of Study

				year of study			Total
				year 1	year 2	year 3	
communication with learner support staff (regional centre staff)	Not needed at all and Slightly needed	Count		9	12	21	42
		Total %		2.0%	2.7%	4.7%	9.5%
	Very needed and extremely needed	Count		126	150	125	401
		Total %		28.4%	33.9%	28.2%	90.5%
Total			Count	135	162	146	443
			Total %	30.5%	36.6%	33.0%	100.0%

Table 53: Communication with Learner Support Staff, Observed and Expected Frequency, and Year of Study

			year of study			Total
			year 1	year 2	year 3	
communication with learner support staff (regional centre staff)	Not needed at all and Slightly needed	Observed	9	12	21	42
		Expected	13	15	14	
	Very needed and extremely needed	Observed	126	150	125	401
		Expected	122	147	132	
Total			135	162	146	443

Table 54: Cross-tabulation for Guidance on How to Get Financial aid Based on Year of Study

				year of study			Total
				year 1	year 2	year 3	
guidance on how to get financial aid	Not needed at all and Slightly needed	Count		9	11	22	42
		Total %		2.0%	2.5%	4.9%	9.4%
	Very needed and extremely needed	Count		126	150	127	403
		Total %		28.3%	33.7%	28.5%	90.6%
Total		Count		135	161	149	445
		Total %		30.3%	36.2%	33.5%	100.0%

Table 55: Guidance on How to Get Financial Aid, Observed and Expected Frequency, and Year of Study.

			year of study			Total
			year 1	year 2	year 3	
guidance on how to get financial aid	Not needed at all and Slightly needed	Observed	9	11	22	42
		Expected	13	15	14	
	Very needed and extremely needed	observed	126	150	127	403
		Expected	122	146	135	
Total			135	161	149	445

Table 56: Cross-tabulation for Orientation Based on Year of Study

			year of study			Total	
			year 1	year 2	year 3		
orientation	Not needed at all and Slightly needed	Count	39	54	62	155	
		Total %	9.1%	12.6%	14.5%	36.1%	
	Very needed and extremely needed	Count	93	103	78	274	
		Total %	21.7%	24.0%	18.2%	63.9%	
Total			Count	132	157	140	429
			Total %	30.8%	36.6%	32.6%	100.0%

Table 57: Orientation, Observed and Expected Frequency, and Year of Study

			year of study			Total
			year 1	year 2	year 3	
orientation	Not needed at all and Slightly needed	Observed	39	54	62	155
		Expected	48	57	51	
	Very needed and extremely needed	Observed	93	103	78	274
		Expected	84	100	89	
Total			132	157	140	429

Table 58: Cross-tabulation for Involvement in Student Organisations Based on Year of Study

			year of study			Total
			year 1	year 2	year 3	
involvement in student organisations	Not needed at all and Slightly needed	Count	53	48	71	172
		Total %	13.7%	12.4%	18.3%	
	Very needed and extremely needed	Count	63	89	63	215
		Total %	16.3%	23.0%	16.3%	
Total		Count	116	137	134	387
		Total %	30.0%	35.4%	34.6%	100.0%

Table 59: Involvement in Student Organisations, Observed and Expected Frequency, and Year of Study

		year of study			Total	
			year 1	year 2	year 3	
involvement in student organisations	Not needed at all and Slightly needed	Observed	53	48	71	172
		Expected	52	61	60	
	Very needed and extremely needed	Observed	63	89	63	215
		Expected	64	76	74	
Total			116	137	134	387

Table 60: Cross-tabulation for Information about Course Registration Based on Location

		location		Total	
		Rural	Urban		
information about course registration	Not needed at all and Slightly needed	Count	32	17	49
		Total %	7.3%	3.9%	11.1%
	Very needed and extremely needed	Count	312	80	392
		Total %	70.7%	18.1%	88.9%
Total		Count	344	97	441
		Total %	78.0%	22.0%	100.0%

Table 61: Location, Observed and Expected Frequency, and Information about Course Registration

		location		Total	
		Rural	Urban		
information about course registration	Not needed at all and Slightly needed	Observed	32	17	49
		Expected	38	11	
	Very needed and extremely needed	Observed	312	80	392
		Expected	306	86	
Total		344	97	441	

**Table 62: Cross-tabulation for Communication with Learner Support Staff (regional centre staff)
Based on Location**

			Location		Total
			Rural	Urban	
communication with learner support staff (regional centre staff)	Not needed at all and Slightly needed	Count	20	22	42
		Total %	4.5%	5.0%	9.5%
	Very needed and extremely needed	Count	325	76	401
		Total %	73.4%	17.2%	90.5%
Total		Count	345	98	443
		Total %	77.9%	22.1%	100.0%

Table 63: Location/residence of Distance Learner, Observed and Expected Frequency, and Communication with Learner Support Staff (regional centre staff)

			Location		Total
			Rural	Urban	
communication with learner support staff (regional centre staff)	Not needed at all and Slightly needed	Observed	20	22	42
		Expected	33	9	42
	Very needed and extremely needed	Observed	325	76	401
		Expected	312	89	401
Total			345	98	443

Table 64: Cross-tabulation for Orientation Based on Location

			location		Total
			Rural	Urban	
orientation	Not needed at all and Slightly needed	Count	112	43	155
		Total %	26.1%	10.0%	36.1%
	Very needed and extremely needed	Count	222	52	274
		Total %	51.7%	12.1%	63.9%
Total		Count	334	95	429
		Total %	77.9%	22.1%	100.0%

Table 65: Location , Observed and Expected Frequency, and Orientation.

			location		Total
			Rural	Urban	
orientation	Not needed at all and Slightly needed	Observed	112	43	155
		Expected	121	34	
	Very needed and extremely needed	Observed	222	52	274
		Expected	213	61	
Total			334	95	429

Table 66: Time of Study (away from residential session) Learner Support Need, Pearson Chi-square (value, Degrees of freedom (df) and Asymptotic Significance

	Learner Support Need	Pearson Chi-Square		
		Value	df	Asymp. Sig. (2-sided)
TIME FOR STUDY (AWAY FROM RESIDENTIAL SCHOOL)	Academic advising	2.134	3	.545
	Library services	6.987	3	.072
	Course work tutoring	6.791	3	.079
	Information for getting textbooks / course units	1.735	3	.629
	Information about assignments	3.960	3	.266
	Information about CATs	3.337	3	.343
	Information about examinations	.920	3	.821
	Communication with course tutors	1.553	3	.670
	Access to course tutors	1.313	3	.726
	Access to study groups	2.511	3	.473
	Communication with other distance learners	3.390	3	.335
	Communication with faculty staff	.453	3	.929
	Access to personal student records / personal files	3.560	3	.313
	Information about course registration	1.315	3	.726
	Communication with learner support staff / regional staff	2.193	3	.533
	Guidance on how to get financial aid	1.199	3	.753
	Career counselling	1.207	3	.751
	Computer technical support	2.570	3	.463
	Personal(mental health) counselling services	1.230	3	.746
	Orientation	.881	3	.830
	Non-course related educational programmes	2.164	3	.539
	Involvement in student organisations	4.942	3	.176
	Student governance / leadership	1.526	3	.676
	Student activities	1.176	3	.759

*significant at 0.05 level of significance

(Exact sign. (2 sided) and Exact sign. [1 sided])

Learner Support Needs	Fisher's Exact Test	
	Exact sign.(2 sided)	Exact sign.(1 sided)
Academic advising	.491	.300
Library services	.099	.099
Course work tutoring	.800	.410
Information for getting textbooks / course units	1.000	.538
Information about assignments	.800	.399
Information about CATs	.446	.214
Information about examinations	1.000	.739
Communication with course tutors	.322	.232
Access to course tutors	1.000	.584
Access to study groups	.073	.052
Communication with other distance learners	.071	.047
Communication with faculty staff	.372	.204
Access to personal student records / personal files	.147	.096
Information about course registration	.522	.281
Communication with learner support staff / regional staff	.497	.281
Guidance on how to get financial aid	.307	.173
Career counselling	.801	.421
Computer technical support	.576	.354
Personal(mental health) counselling services	.913	.473
Orientation	.167	.094
Non-course related educational programmes	.329	.178
Involvement in student organisations	.070	.042
Student governance / leadership	.588	.297
Student activities	.090	.051

*significant at 0.05 level of significance

PARTICIPATION IN GROUP DISCUSSION N

Table 68: Possession of a Separate Room for Private Study at Home, Expressed Learner Support Needs, Fisher's Exact Test (Exact sign.(2 sided) and Exact sign.[1 sided])

Learner Support Needs	Fisher's Exact Test		
	Exact sign.(2 sided)	Exact sided)	sign.(1 sided)
Academic advising	.667	.393	
Library services	.117	.101	
Course work tutoring	1.000	.579	
Information for getting textbooks / course units	.596	.368	
Information about assignments	.154	.103	
Information about CATs	1.000	.576	
Information about examinations	.122	.122	
Communication with course tutors	.346	.224	
Access to course tutors	1.000	.570	
Access to study groups	.645	.354	
Communication with other distance learners	.395	.213	
Communication with faculty staff	.326	.191	
Access to personal student records / personal files	.371	.240	
Information about course registration	.880	.440	
Communication with learner support staff / regional staff	.420	.241	
Guidance on how to get financial aid	.197	.119	
Career counselling	.235	.136	
Computer technical support	.593	.316	
Personal(mental health) counselling services	.409	.215	
Orientation	.269	.145	
Non-course related educational programmes	.538	.279	
Involvement in student organisations	.759	.397	
Student governance / leadership	.681	.345	
Student activities	.688	.344	

POSSESSION OF SEPARATE ROOM FOR PRIVATE STUDY AT HOME

*significant at 0.05 level of significance

Table 69: Cross-tabulation for Academic Advising Based on Support from Family Members for Academic Pursuit and Academic Advising

		Have support from family members for academic pursuit			Total
			yes	No	
Academic advising	Not needed at all and slightly needed	Count	13	9	22
		Total %	2.9%	2.0%	4.9%
	Very needed and extremely needed	Count	350	77	427
		Total %	78.0%	17.1%	95.1%
Total		Count	363	86	449
		Total %	80.8%	19.2%	100.0%

Table 70: Academic Advising, Observed and Expected Frequency, and Support from Family Members for Academic Pursuit.

		have support from family members for my academic pursuit			Total
			Yes	No	
Academic advising	Not needed at all and Slightly needed	Observed	13	9	22
		Expected	18	4	
	Very needed and extremely needed	Observed	350	77	427
		Expected	345	82	
Total			363	86	449

Table 71: Cross-tabulation for Coursework Tutoring Based on Support from Family Members for Academic Pursuit

		have support from family members for my academic pursuit		Total
		Yes	No	
course work tutoring	Not needed at all and Slightly needed	Count 10	8	18
		Total % 2.2%	1.8%	4.0%
	Very needed and extremely needed	Count 352	80	432
		Total % 78.2%	17.8%	96.0%
Total		Count 362	88	450
		Total % 80.4%	19.6%	100.0%

Table 72: Coursework Tutoring, Observed and Expected Frequency, and Support from Family Members for Academic Pursuit.

		have support from family members for my academic pursuit		Total
		Yes	No	
course work tutoring	Not needed at all and Slightly needed	Observed 10	8	18
		Expected 14	4	
	Very needed and extremely needed	Observed 352	80	432
		Expected 348	84	
Total		362	88	450

Table 73: Cross-tabulation for Information about Assignments Based on Support from Family Members for Academic Pursuit

			have support from family members for my academic pursuit		Total
			Yes	No	
information assignment	Not needed at all and Slightly needed	Count	10	8	18
		Total %	2.2%	1.8%	4.0%
	Very needed and extremely needed	Count	354	80	434
		Total %	78.3%	17.7%	96.0%
Total		Count	364	88	452
		Total %	80.5%	19.5%	100.0%

Table 74: Information about Assignments, Observed and Expected Frequency, and Support from Family Members for Academic Pursuit.

			have support from family members for my academic pursuit		Total
			Yes	No	
information assignment	Not needed at all and Slightly needed	Observed	10	8	18
		Expected	14	4	
	Very needed and extremely needed	Observed	354	80	434
		Expected	350	84	
Total			364	88	452

Table 75: Cross-tabulation for Access to Course Tutors Based on Support from Family Members for Academic Pursuit

			have support from family members for my academic pursuit		Total
			Yes	No	
access to course tutors	Not needed at all and Slightly needed	Count	15	9	24
		Total %	3.3%	2.0%	5.3%
	Very needed and extremely needed	Count	347	78	425
		Total %	77.3%	17.4%	94.7%
Total		Count	362	87	449
		Total %	80.6%	19.4%	100.0%

Table 76: Access to Course Tutors, Observed and Expected Frequency, and Support from Family Members for Academic Pursuit.

			have support from family members for my academic pursuit		Total
			Yes	No	
access to course tutors	Not needed at all and Slightly needed	Observed	15	9	24
		Expected	19	5	
	Very needed and extremely needed	Observed	347	78	425
		Expected	343	82	
Total			362	87	449

Table 77: Cross-tabulation for Communication with Learner Support Staff/regional Centre Staff Based on Support from Family Members for Academic Pursuit

			Count	have support from family members for my academic pursuit		Total
				Yes	No	
				communication with learner support staff (regional centre staff)	Not needed at all and Slightly needed	
		Total %	6.3%	3.2%	9.5%	
	Very needed and extremely needed	Count	330	71	401	
		Total %	74.5%	16.0%	90.5%	
Total		Count	358	85	443	
		Total %	80.8%	19.2%	100.0%	

Table 78: Communication with Learner Support Staff/regional Centre Staff, Observed and Expected Frequency, and Support from Family Members for Academic Pursuit.

			have support from family members for my academic pursuit		Total
			Yes	No	
			communication with learner support staff (regional centre staff)	Not needed at all and Slightly needed	
		Expected	34	8	
	Very needed and extremely needed	Observed	330	71	401
		Expected	324	77	
Total			358	85	443

Table 79: Cross-tabulation for Orientation Based on Support from Family Members for Academic pursuit

Orientation		Count	have support from family members for my academic pursuit		Total
			Yes	No	
Not needed at all and Slightly needed	Observed	116	39	155	
	Total %	27.0%	9.1%	36.1%	
Very needed and extremely needed	Observed	229	45	274	
	Total %	53.4%	10.5%	63.9%	
Total	Count	345	84	429	
	Total %	80.4%	19.6%	100.0%	

Table 80: Orientation, Observed and Expected Frequency, and Support from Family Members for Academic Pursuit.

orientation			have support from family members for my academic pursuit		Total
			Yes	No	
Not needed at all and Slightly needed	Observed	116	39	155	
	Expected	125	30		
Very needed and extremely needed	Observed	229	45	274	
	Expected	220	54		
Total	Count	345	84	429	
	Total %	80.4%	19.6%	100.0%	

Table 81: Cross-tabulation for Access to Personal Student Records/Personal Files Based on Course of Study

			course of study		Total
			B.Ed.(Arts)	B.Ed.(Science)	
access to personal student records- personal files	Not needed at all and Slightly needed	Count	7	9	16
		% of Total	1.6%	2.1%	3.7%
	Very needed and extremely needed	Count	309	106	415
		% of Total	71.7%	24.6%	96.3%
Total	Count	316	115	431	
	% of Total	73.3%	26.7%	100.0%	

Table 82: Access to Personal Student Records/Personal Files, Observed and Expected Frequency, and Course of Study.

			course of study		Total
			B.Ed. (Arts)	B.Ed.(Science)	
access to personal student records- personal files	Not needed at all and Slightly needed	Observed	7	9	16
		Expected	12	4	
	Very needed and extremely needed	Observed	309	106	415
		Expected	304	111	
Total		316	115	431	

Table 83: Cross-tabulation for Guidance on How to Get Financial Aid Based on Course of Study

			Course of study		Total
			B.Ed.(Arts)	B.Ed.(Science)	
guidance on how to get financial aid	Not needed at all and Slightly needed	Count	38	3	41
		% of Total	8.9%	0.7%	9.6%
	Very needed and extremely needed	Count	278	110	388
		% of Total	64.8%	25.6%	90.4%
Total	Count	316	113	429	
	% of Total	73.7%	26.3%	100.0%	

Table 84: Guidance on How to Get Financial Aid, Observed and Expected Frequency, and Course of Study.

			course of study		Total	
			B.Ed.(Arts)	B.Ed.(Science)		
guidance on how to get financial aid	Not needed at all and Slightly needed	Observed	38	3	41	
		Expected	30	11	41	
	Very needed and extremely needed	Observed	278	110	388	
		Expected	286	102	388	
	Total			316	113	429

Table 85: Case Processing Summary

Case Processing Summary^{a,b}

Cases						
Valid		Missing		Total		
N	Percent	N	Percent	N	Percent	
24	100.0	0	.0	24	100.0	

a Squared Euclidean Distance used

b Average Linkage (Between Groups)

Table 86: Agglomeration Schedule

Stage	Cluster Combined		Coefficients	Stage Cluster First Appears		Next Stage
	Cluster 1	Cluster 2		Cluster 1	Cluster 2	
1	5	6	162.000	0	0	5
2	8	9	173.000	0	0	6
3	2	7	214.000	0	0	4
4	2	4	273.000	3	0	5
5	2	5	299.667	4	1	7
6	3	8	333.500	0	2	7
7	2	3	358.067	5	6	8
8	2	13	371.625	7	0	10
9	10	11	378.000	0	0	14
10	1	2	384.778	0	8	13
11	22	23	432.000	0	0	16
12	14	15	443.000	0	0	17
13	1	18	475.900	10	0	17
14	10	12	519.000	9	0	19
15	19	20	531.000	0	0	20
16	22	24	532.000	11	0	22
17	1	14	535.864	13	12	18
18	1	16	559.923	17	0	19
19	1	10	595.071	18	14	23
20	17	19	727.500	0	15	21
21	17	21	779.667	20	0	22
22	17	22	936.917	21	16	23
23	1	17	1160.958	19	22	0

PRE-TEST

Student Learning Self-efficacy

Table 87: Sub-items on Student Learning Self-efficacy, Group, Number, Mean Rank and Sum of

Ranks

Sub-items	Group	N	Mean Rank	Sum of Ranks
I can manage to solve difficult problems if I try hard enough	A	153	137.40	21022.00
	B	132	149.49	19733.00
	Total	285		
I am certain that I can accomplish my goals	A	153	141.40	21634.50
	B	132	144.85	19120.50
	Total	285		
I am confident that I could deal efficiently with unexpected events	A	153	146.35	22391.50
	B	132	139.12	18363.50
	Total	285		
I can remain calm when facing difficulties because I can rely on my coping abilities	A	153	141.62	21668.50
	B	132	144.59	19086.50
	Total	285		
When I am confronted with a problem, I can find several solutions	A	153	148.95	22789.50
	B	132	136.10	17965.50
	Total	285		
Whatever comes my way, I will usually be able to handle it	A	153	143.56	21964.50
	B	132	142.35	18790.50
	Total	285		
I can understand the most difficult material presented in readings	A	153	137.02	20963.50
	B	132	149.94	19791.50
	Total	285		
I am able to manage my time well	A	153	138.49	21189.50
	B	132	148.22	19565.50
	Total	285		
I am usually able to deal with exam anxiety	A	153	149.12	22815.00
	B	132	135.91	17940.00
	Total	285		

Table 87 continued

Sub-items	Group	N	Mean	Sum	of
			Rank	Ranks	
When writing an assignment, I usually know the right procedure and format to use	A	153	135.46	20725.50	
	B	132	151.74	20029.50	
	Total	285			
I am sufficiently equipped in planning my career	A	153	141.54	21656.00	
	B	132	144.69	19099.00	
	Total	285			
When I have any academic or administrative issues, I am able to sort them out fast	A	153	140.76	21536.00	
	B	132	145.60	19219.00	
	Total	285			
If I need to search for a job, I will do so successfully	A	153	140.47	21492.00	
	B	132	145.93	19263.00	
	Total	285			

Table 88: Sub-items on Student Learning Self-efficacy, Mann-Whitney U, and Assymptotic Significance (2-sided)

Sub-items	Mann-Whitney U	Assymp. Sig(2-tailed)
I can manage to solve difficult problems if I try hard enough	2874.000	0.825
I am certain that I can accomplish my goals	2800.000	0.571
I am confident that I could deal efficiently with unexpected events	2912.000	0.953
I can remain calm when facing difficulties because I can rely on my coping abilities	2469.500	0.065
When I am confronted with a problem, I can find several solutions	2802.500	0.590
Whatever comes my way, I will usually be able to handle it	2863.500	0.802
I can understand the most difficult material presented in readings	2809.500	0.643
I am able to manage my time well	2702.000	0.346
I am usually able to deal with exam anxiety	2871.000	0.806
When writing an assignment, I usually know the right procedure and format to use	2840.500	0.730
I am sufficiently equipped in planning my career	2779.500	0.567
When I have any academic or administrative issues, I am able to sort them out fast	2816.000	0.665
If I need to search for a job, I will do so successfully	2822.500	0.683

Student Motivation

Table 89: Sub-items on Student Motivation, Group, Number, Mean Rank and Sum of Ranks

Sub-items	Group	N	Mean Rank	Sum of Ranks
When studying, I work as hard as possible	B	77	73.81	5683.00
	A	76	80.24	6098.00
	Total	153		
I learn the things I need to learn pretty fast	B	77	79.07	6088.50
	A	76	74.90	5692.50
	Total	153		
When studying, I keep working even if the material is difficult	B	77	74.30	5721.00
	A	76	79.74	6060.00
	Total	153		
I put aside distractions when I am studying	B	77	76.21	5868.00
	A	76	77.80	5913.00
	Total	153		
When studying, I put in my best effort	B	77	77.00	5929.00
	A	76	77.00	5852.00
	Total	153		
I do not postpone challenging work	B	77	77.13	5939.00
	A	76	76.87	5842.00
	Total	153		
My academic goals are realistic and I work hard to achieve them	B	77	74.86	5764.50
	A	76	79.16	6016.50
	Total	153		
I cope with any personal problems in the course of my studies	B	77	73.55	5663.50
	A	76	80.49	6117.50
	Total	153		
I can manage any amount of stress in the course of my studies	B	77	73.82	5684.00
	A	76	80.22	6097.00
	Total	153		
I expect to do very well in my studies	B	77	76.68	5904.50
	A	76	77.32	5876.50
	Total	153		

Table 89 continued

Sub-items	Group	N	Mean Rank	Sum of Ranks
When studying, I do my best to acquire the knowledge and skills taught	B	77	78.48	6043.00
	A	76	75.50	5738.00
	Total	153		
I am so nervous during a test that I cannot remember facts I have learned	B	77	79.43	6116.00
	A	76	74.54	5665.00
	Total	153		
I like what I am learning in this course	B	77	78.19	6021.00
	A	76	75.79	5760.00
	Total	153		
I am sure I can do an excellent job on the problems and tasks assigned for this course	B	77	76.89	5920.50
	A	76	77.11	5860.50
	Total	153		
I think what I am learning in this course is useful for me to know	B	77	79.10	6091.00
	A	76	74.87	5690.00
	Total	153		

Table 90: Sub-items on Student Motivation, Mann-Whitney U and Asymptotic Significance (2-sided)

Sub-items	Mann-Whitney U	Asymp. Sig(2- tailed)
When studying, I work as hard as possible	2680.000	0.313
I learn the things I need to learn pretty fast	2766.500	0.518
When studying, I keep working even if the material is difficult	2718.000	0.393
I put aside distractions when I am studying	2865.000	0.806
When studying, I put in my best effort	2926.000	1.000
I do not postpone challenging work	2916.000	0.969
My academic goals are realistic and I work hard to achieve them	2761.500	0.484
I can cope with any personal problems in the course of my studies	2660.500	0.288
I can manage any amount of stress in the course of my studies	2681.000	0.334
I expect to do very well in my studies	2901.500	0.914
When studying, I do my best to acquire the knowledge and skills taught	2812.000	0.617
I am so nervous during a test that I cannot remember facts I have learned	2739.000	0.475
I like what I am learning in this course	2834.000	0.702
I am sure I can do an excellent job on the problems and tasks assigned for this course	2917.500	0.972
I think what I am learning in this course is useful for me to know	2764.000	0.472

Student Satisfaction

Table 91: Sub-items on Student Satisfaction, Group, Number, Mean Rank and Sum of Ranks

Sub-items	Group	N	Mean Rank	Sum of Ranks
Guidance on time management	B	77	82.23	6332.00
	A	76	71.70	5449.00
	Total	153		
Guidance on study skills	B	77	79.11	6091.50
	A	76	74.86	5689.50
	Total	153		
Guidance on how to write assignments/term papers	B	77	78.01	6007.00
	A	76	75.97	5774.00
	Total	153		
Guidance on how to handle exam anxiety	B	77	75.79	5835.50
	A	76	78.23	5945.50
	Total	153		
Library resources and services	B	77	80.92	6231.00
	A	76	73.03	5550.00
	Total	153		
Information on formation and benefits of study groups	B	77	79.60	6129.50
	A	76	74.36	5651.50
	Total	153		
Information about campus life from the student handbook	B	77	80.20	6175.50
	A	76	73.76	5605.50
	Total	153		
Academic advising services	B	77	78.94	6078.50
	A	76	75.03	5702.50
	Total	153		
Student orientation	B	77	80.60	6206.00
	A	76	73.36	5575.00
	Total	153		
Personal counselling services	B	77	78.65	6056.00
	A	76	75.33	5725.00
	Total	153		

Table 91 continued

Sub-items	Group	N	Mean	Sum of
			Rank	Ranks
career planning services	B	77	77.93	6000.50
	A	76	76.06	5780.50
	Total	153		
Information on opportunities for involvement in university student organisations and events	B	77	78.77	6065.50
	A	76	75.20	5715.50
	Total	153		
Information on fees structure for my course of study	B	77	82.53	6355.00
	A	76	71.39	5426.00
	Total	153		
Career guidance	B	77	80.75	6218.00
	A	76	73.20	5563.00
	Total	153		
Information on job search(e.g. writing a C.V., interview)	B	77	78.37	6034.50
	A	76	75.61	5746.50
	Total	153		
Online counselling services	B	77	79.94	6155.00
	A	76	74.03	5626.00
	Total	153		
Information on tutors and how to contact them	B	77	76.48	5889.00
	A	76	77.53	5892.00
	Total	153		

Table 92: Sub-items on Student Satisfaction, Mann-Whitney U and Asymptotic Significance (2-sided)

Sub-items	Mann-Whitney U	Assymp. Sig(2-tailed)
Guidance on time management	2523.000	0.103
Guidance on study skills	2763.500	0.512
Guidance on how to write assignments/term papers	2848.000	0.758
Guidance on how to handle exam anxiety	2832.500	0.716
Library resources and services	2624.000	0.237
Information on formation and benefits of study groups	2725.500	0.434
Information about campus life from the student handbook	2679.500	0.343
Academic advising services	2776.500	0.565
Student orientation	2649.000	0.268
Personal counselling services	2799.000	0.623
Career planning services	2854.500	0.779
Information on opportunities for involvement in university student organisations and events	2789.500	0.590
Information on fees structure for my course of study	2500.000	0.100
Career guidance	2637.000	0.259
Information on job search(e.g. writing a C.V., interview)	2820.500	0.677
Online counselling services	2700.000	0.376
Information on tutors and how to contact them	2886.000	0.878

POST-TEST

Student learning self-efficacy

Table 93: Sub-items on Student Learning Self-efficacy, Group, Number, Mean Rank and Sum of Ranks

Sub- items	Group	N	Mean Rank	Sum of Ranks
I can manage to solve difficult problems if I try hard enough	A	61	61.77	3768.00
	B	70	69.69	4878.00
	Total	131		
I am certain that I can accomplish my goals	A	61	61.09	3726.50
	B	70	70.28	4919.50
	Total	131		
I am confident that I could deal efficiently with unexpected events	A	61	65.94	4022.50
	B	70	66.05	4623.50
	Total	131		
I can remain calm when facing difficulties because I can rely on my coping abilities	A	61	69.01	4209.50
	B	70	63.38	4436.50
	Total	131		
When I am confronted with a problem, I can find several solutions	A	61	64.03	3906.00
	B	70	67.71	4740.00
	Total	131		
Whatever comes my way, I will usually be able to handle it	A	61	64.75	3950.00
	B	70	67.09	4696.00
	Total	131		
I can understand the most difficult material presented in readings	A	61	70.78	4317.50
	B	70	61.84	4328.50
	Total	131		
I am able to manage my time well	A	61	72.05	4395.00
	B	70	60.73	4251.00
	Total	131		
I am usually able to deal with exam anxiety	A	61	69.02	4210.00
	B	70	63.37	4436.00
	Total	131		

Table 93 continued

Sub- items	Group	N	Mean Rank	Sum of Ranks
When writing an assignment, I usually know the right procedure and format to use	A	61	75.62	4613.00
	B	70	57.61	4033.00
	Total	131		
I am sufficiently equipped in planning my career	A	61	65.45	3992.50
	B	70	66.48	4653.50
	Total	131		
When I have any academic or administrative issues, I am able to sort them out fast	A	61	72.28	4409.00
	B	70	60.53	4237.00
	Total	131		
If I need to search for a job, I will do so successfully	A	61	68.13	4156.00
	B	70	64.14	4490.00
	Total	131		

Student Motivation

Table 94: Sub-items on Student Motivation, Group, Number, Mean Rank and Sum of Ranks

Sub- items	Group	N	Mean Rank	Sum of Ranks
When studying, I work as hard as possible	A	61	70.15	4279.00
	B	70	62.39	4367.00
	Total	131		
I learn the things I need to learn pretty fast	A	61	63.36	3865.00
	B	70	68.30	4781.00
	Total	131		
When studying, I keep working even if the material is difficult	A	60	64.78	3886.50
	B	69	65.20	4498.50
	Total	129		
I put aside distractions when I am studying	A	61	63.74	3888.00
	B	70	67.97	4758.00
	Total	131		
When studying, I put in my best effort	A	61	65.43	3991.00
	B	70	66.50	4655.00
	Total	131		
I do not postpone challenging work	A	61	67.74	4132.00
	B	70	64.49	4514.00
	Total	131		
My academic goals are realistic and I work hard to achieve them	A	61	63.16	3853.00
	B	70	68.47	4793.00
	Total	131		
I cope with any personal problems in the course of my studies	A	61	64.26	3920.00
	B	70	67.51	4726.00
	Total	131		
I can manage any amount of stress in the course of my studies	A	61	68.70	4190.50
	B	70	63.65	4455.50
	Total	131		

Table 94 continued

Sub- items	Group	N	Mean Rank	Sum of Ranks
I expect to do very well in my studies	A	61	59.54	3632.00
	B	70	71.63	5014.00
	Total	131		
When studying, I do my best to acquire the knowledge and skills taught	A	61	56.51	3447.00
	B	70	74.27	5199.00
	Total	131		
I am so nervous during a test that I cannot remember facts I have learned	A	61	65.11	3972.00
	B	70	66.77	4674.00
	Total	131		
I like what I am learning in this course	A	61	60.87	3713.00
	B	70	70.47	4933.00
	Total	131		
I am sure I can do an excellent job on the problems and tasks assigned for this course	A	61	61.19	3732.50
	B	70	70.19	4913.50
	Total	131		
I think what I am learning in this course is useful for me to know	A	61	60.34	3680.50
	B	70	70.94	4965.50
	Total	131		

Student Satisfaction

Table 95: Sub-items on Student Satisfaction, Group, Number, Mean Rank and Sum of Ranks

Sub- items	Group	N	Mean Rank	Sum of Ranks
Guidance on time management	A	61	73.60	4489.50
	B	70	59.38	4156.50
	Total	131		
Guidance on study skills	A	61	76.51	4667.00
	B	70	56.84	3979.00
	Total	131		
Guidance on how to write assignments/term papers	A	61	74.73	4558.50
	B	70	58.39	4087.50
	Total	131		
Guidance on how to handle exam anxiety	A	61	78.73	4802.50
	B	70	54.91	3843.50
	Total	131		
Library resources and services	A	61	63.30	3861.00
	B	70	68.36	4785.00
	Total	131		
Information on formation and benefits of study groups	A	61	78.31	4777.00
	B	70	55.27	3869.00
	Total	131		
Information about campus life from the student handbook	A	61	81.60	4977.50
	B	70	52.41	3668.50
	Total	131		
Academic advising services	A	61	79.25	4834.50
	B	70	54.45	3811.50
	Total	131		
Student orientation	A	61	81.11	4948.00
	B	70	52.83	3698.00
	Total	131		
Personal counselling services	A	61	73.34	4474.00
	B	70	59.60	4172.00
	Total	131		

Table 95 continued

Sub- items	Group	N	Mean Rank	Sum of Ranks
Career planning services	A	61	76.41	4661.00
	B	70	56.93	3985.00
	Total	131		
Information on opportunities for involvement in university student organisations and events	A	61	75.39	4599.00
	B	70	57.81	4047.00
	Total	131		
Information on fees structure for my course of study	A	61	74.90	4569.00
	B	70	58.24	4077.00
	Total	131		
Career guidance	A	61	76.81	4685.50
	B	70	56.58	3960.50
	Total	131		
Information on job search(e.g. writing a C.V., interview)	A	61	75.34	4595.50
	B	70	57.86	4050.50
	Total	131		
Online counselling services	A	61	72.02	4393.00
	B	69	59.74	4122.00
	Total	130		
Information on tutors and how to contact them	A	61	60.54	3693.00
	B	70	70.76	4953.00
	Total	131		

APPENDIX E: SCREEN SHOTS OF THE LEARNER SUPPORT SYSTEM

The screenshot shows a Mozilla Firefox browser window displaying the Learner Support System website for the University of Nairobi. The browser's address bar shows the URL <http://learnersupport.uonbi.ac.ke/index.php/module= default>. The website header features the title "LEARNER SUPPORT SYSTEM" and "University of Nairobi" alongside four small images. The main content area is divided into three columns:

- Left Column:** Contains a "Login" section with fields for "Username:" and "Password:", a "Login" button, and a link for "forgot your password? HELP". Below this is a "Registration" section with a "Register" link.
- Middle Column:** Titled "Learner Support System", it contains the following text:

The goal of this Learner Support System is to help make your experience with distance learning at the University of Nairobi as enjoyable as possible.

To do that we have worked hard to provide you with a variety of learner support services.

All our learner support services can be accessed here or from the menu bar at the top.

Our learner support services are designed to ensure your success throughout your course of study. If you find something missing, please send us an [email](#).

If you have forgotten your user ID and password, just use the link to your left written forgot your password? or click [here](#).

You can also register yourself [here](#).

Posted by **Administrative User** on **2005-04-20**

What is Learner Support Services?

Learner support services include the many forms of assistance that are intended to both remove barriers (situational, institutional, dispositional and informational) and promote academic success.

It is the totality of the provision by an institution to support the learner other than generic teaching
- Right Column:** Features the W3C XHTML 1.0 logo, the text "University of Nairobi", a link to visit the website (<http://www.uonbi.ac.ke>), and a section titled "Webusoft ELE" with a link to visit by clicking [here](#).

The browser's status bar at the bottom shows "Done", the system tray with "start", "Learner Support - Mo...", and "nero" icons, and the time "3:55 PM".

Learner Support Mozilla Firefox

File Edit View History Bookmarks Yahoo! Tools Help

http://learnersupport.uonbi.ac.ke/index.php?module=contentpostlogin

Most Visited Getting Started Latest Headlines

Search Web Mail Shopping Personals My Yahoo! News Games Travel France

Do you want Firefox to remember this password? Remember Never for This Site Not Now


LEARNER SUPPORT SYSTEM

University of Nairobi

Home Resources User Admin Logout

Home > Course Postlogin

Patricia Muchiri



My site groups:
 Site Admin
 My courses as (lecturer)
 Academic Advising and Communication
 Personal and Social Services
 Student Communities
 Orientation and Administrative Services

Login Stats

Number of logins: 330

My courses Other courses

009 - Academic Advising and Communication

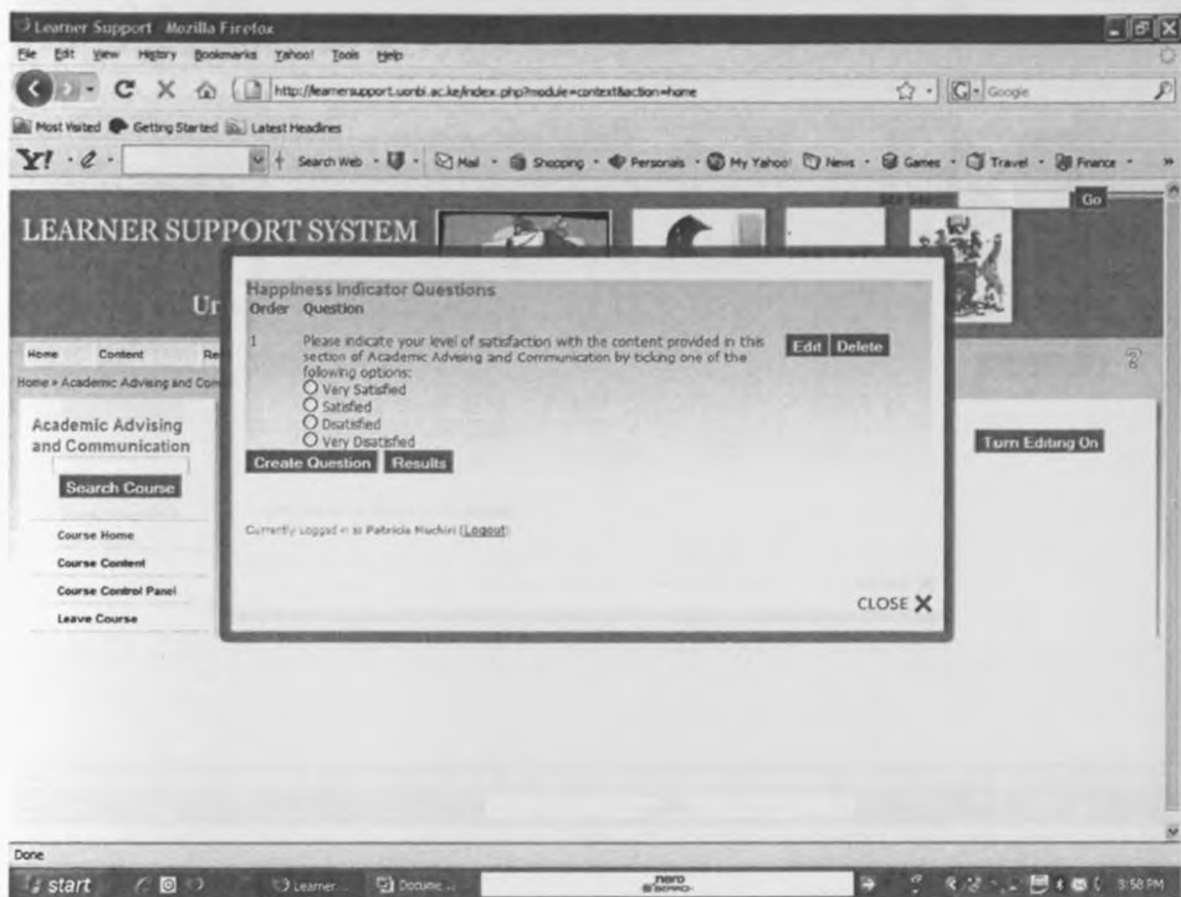
lecturers : Administrative User, Naomi Muturi, Patricia Muchiri, Paul Mungai

010 - Student Communities

lecturers : Administrative User, Naomi Muturi, Patricia Muchiri, Paul Mungai

011 - Orientation and Administrative Services

lecturers : Administrative User, Naomi Muturi, Patricia Muchiri, Paul Mungai



Learner Support Mozilla Firefox

File Edit View History Bookmarks Yahoo! Tools Help

http://learnersupport.uonbi.ac.ke/index.php?module=content&action=home

Most Visited Getting Started Latest Headlines

Search Web Mail Shopping Personals My Yahoo! News Games Travel Finance

LEARNER SUPPORT SYSTEM

Ur

Home Content Re

Home > Academic Advising and Communication

Academic Advising and Communication

Search Course

Course Home
Course Content
Course Control Panel
Leave Course

Happiness Indicator Results

Please indicate your level of satisfaction with the content provided in this section of Academic Advising and Communication by ticking one of the following options:

Very Satisfied	: 33.3333333333333%
Satisfied	: 50%
Dissatisfied	: 16.6666666666667%
Very Dissatisfied	: 0%
Total Responses	: 6

Back

Currently logged in as Patricia Muehri ([Logout](#))

Currently logged in as Patricia Muehri ([Logout](#))

Turn Editing On

CLOSE X

Done

start Learner... Docume... 3:58 PM

SMS Enquiries via SMS - Mozilla Firefox

http://learnersupport.uonbi.ac.ke/index.php/module=news&action=viewstory&id=gen1751v0line10_5295_125

LEARNER SUPPORT SYSTEM
University of Nairobi

Home Content Resources User Admin Logout

Home » News » General » SMS Enquiries via SMS

Event Page
General

RSS Feeds
RSS Top Stories Feed

SMS Enquiries via SMS

17 September 2008

As a Student at the University of Nairobi, you can request for your fees statement, transcript, fees balance through an sms (Short Message Text through the Mobile Phone) from the University Student Management Information System (SMIS).

- To get your fees statement sms statement#regno
- To get your transcript sms transcript#regno
- To get your fees balance sms balance#regno
- Send to 4441

Source:
University of Nairobi

[Edit Story](#) : [Delete Story](#) : [Add Story in this Category](#) : [List Stories in this Category](#) : [Edit Category](#)

Done

start SMS E... Doorme... 9:00 PM

Learner Support - Mozilla Firefox

File Edit View History Bookmarks Yahoo! Tools Help

http://learnersupport.uonbi.ac.ke/index.php?module=news

Most Visited Getting Started Latest Headlines

Search Web Mail Shopping Personals My Yahoo! News Games Travel France

LEARNER SUPPORT SYSTEM

University of Nairobi

Home Content Resources User Admin Logout

Home » News

Front Page

- General

RSS Feeds

- RSS** Top Stories Feed

News Options

- Manage News Categories
- Add News Story

STORY VIEW MAP TIMELINE THEME CLOUD PHOTOS

Latest News

SMS Enquiries via SMS
 As a Student at the University of Nairobi, you can request for your fees statement, transcript, fees balance through an sms (Short Message Text... [Read Story](#))

Latest Poll
 Please rate the importance of the information/news in this section to you as a distance learner

- Very important
 - Important
 - Not important

Cast Vote

[View Previous Polls](#) / [Add Poll](#)

Done

start Learner... Docume... 4:01 PM

Learner Support Mozilla Firefox

File Edit View History Bookmarks Yahoo! Tools Help

http://learnersupport.uonbi.ac.ke/index.php?module=news&action=previouspolls

Most Visited Getting Started Latest Headlines

Search Web Mail Shopping Personals My Yahoo! News Games Travel France

LEARNER SUPPORT SYSTEM

University of Nairobi

Home Content Resources User Admin Logout

Home » News » previouspolls

Event Page

- General

RSS Feeds

RSS Top Stories Feed

News Options

- Manage News Categories
- Add News Story

Website Polls

Please rate the importance of the information/news in this section to you as a distance learner

Option	Votes	Percentage
Important	1	9.09%
Not important	0	0%
Very important	10	90.91%

Add Poll

Done

start Learner... Doome... 4:01 PM

Learner Support Mozilla Firefox

File Edit View History Bookmarks Yahoo! Tools Help

http://learner-support.uonbi.ac.ke/index.php?module=logger

Most Visited Getting Started Latest Headlines

Search Web Mail Shopping Personals My Yahoo! News Games Travel France

LEARNER SUPPORT SYSTEM

University of Nairobi

Home Content Resources User Admin Logout

Home > Logger

Menu

- ▣ [Statistics by module](#)
- ▣ [Page statistics per Course](#)
- ▣ [Academic Advising and Communication Statistics](#)
- ▣ [Student Communities Statistics](#)
- ▣ [Orientation and Administrative Services Statistics](#)
- ▣ [Personal and Social Services Statistics](#)

Statistics By Module

Module name	file	Number of users	
blog	18	2	View module description
cms	38	2	View module description
cmadmin	140	2	View module description
contextcontent	1011	31	View module description
geonames	9	7	View module description
groupadmin	279	2	View module description
logger	2658	16	View module description
modulecatalogue	176	3	View module description
poll	497	20	View module description
simplemap	11	9	View module description
stories	63	1	View module description

Done

start Learner ... Documents

4:04 PM

Learnner Support Mozilla Firefox

http://learnnersupport.uonbi.ac.ke/index.php?module=logger&action=userstatsbycontext&userId=2442081213

University of Nairobi

Home Content Resources User Admin Logout

Home » Logger » userstatsbycontext

Menu

- ▣ [Statistics by module](#)
- ▣ [Page statistics per Course](#)
- ▣ [Academic Advising and Communication](#)
- ▣ [Statistics](#)
- ▣ [Student Communities](#)
- ▣ [Statistics](#)
- ▣ [Orientation and Administrative](#)
- ▣ [Services Statistics](#)
- ▣ [Personal and Social](#)
- ▣ [Services Statistics](#)

History Of Pages Visited

Full Name: mercy ndege
 First Login: 2008-12-13 11:12:13
 Academic Advising and Communication

Total Number of Accesses: 8
 Last Login: 2009-03-04 17:06:14

No.	Page Name	Time of Access
1	Ten Proven Steps to Successful Test Taking	2009-03-04 17:07:15
2	Introduction	2009-02-04 12:44:37
3	Introduction	2009-02-06 12:01:04
4	A few tips	2009-02-06 12:05:40
5	Planners	2009-02-06 12:07:30
6	A few tips	2009-02-06 12:08:47
7	Planners	2009-02-06 12:09:00
8	A few tips	2009-02-06 12:09:56
9	A few tips	2009-02-06 12:10:41
10	Introduction	2009-02-06 12:10:50
11	A few tips	2009-02-06 12:11:22
12	Planners	2009-02-06 12:11:41
13	1. What is exam anxiety	2009-02-06 12:15:19
14	1. What is exam anxiety	2009-02-06 12:17:26
15	2. Do I have exam anxiety	2009-02-06 12:19:26
16	1. What is exam anxiety	2009-02-07 09:47:53
17	2. Do I have exam anxiety	2009-02-07 09:49:53
18	3. How TO reduce exam anxiety	2009-02-07 09:53:37
19	1. Effective studying	2009-02-07 09:54:07
20	2. Healthy lifestyle	2009-02-07 09:54:36
21	3. Accurate information	2009-02-07 09:55:29
22	4. Exam-taking preparation	2009-02-07 09:56:26
23	5. Attitude upgrading	2009-02-07 09:58:11
24	6. Rational (instead of irrational) thinking	2009-02-07 09:58:42
25	7. Test-taking strategies	2009-02-07 10:04:32
26	8. Anxiety reduction techniques	2009-02-07 10:05:19

Done

start | Learner... | Document... | 4:07 PM

UNIVERSITY OF NAIROBI
 EKUYU LIBRARY

Learner Support - Mozilla Firefox

http://learnersupport.uonbi.ac.ke/index.php?module=internal

LEARNER SUPPORT SYSTEM
University of Nairobi

Home Content Resources User Admin Logout

Home > Orientation and Administrative Services > Internal Email

Internal email

Inbox

Folder	Unread	Total		From	Subject	Date sent
Inbox	0	8	<input type="checkbox"/> - Select -	ALLAN ALOMO [Allan]	No Subject	2009-04-18 13:39:56
Drafts	0	0	<input type="checkbox"/>	EVELYN OPERE [EVELYN]	No Subject	2009-04-16 16:05:02
Sent items	6	6	<input type="checkbox"/>	AMBROSE AMTALLAH [amtallah]	No Subject	2009-03-25 18:42:18
Trash	0	0	<input type="checkbox"/>	PATRICIA MUCHIRI (Patricia Muchiri)	Use of Learner Support System	2009-03-22 00:18:26
			<input type="checkbox"/>	AMBROSE AMTALLAH [amtallah]	No Subject	2009-03-21 14:37:30
			<input type="checkbox"/>	JOHN TARUS [Jktarus]	No Subject	2009-03-10 16:38:33
			<input type="checkbox"/>	PAUL ODERO [derwecey]	No Subject	2009-03-09 15:29:01
			<input type="checkbox"/>	PATRICIA MUCHIRI (Patricia Muchiri)	none	2009-03-05 16:16:33

start | Research Proposal... | Screen shots - Miro... | Learner Support - Mo... | 1:51 PM