LEARNING STYLE AMONG FULL- TIME AND PART - TIME: BACHELOR OF SCIENCE IN AGRICULTURAL EDUCATION AND EXTENSION STUDENTS. A CASE OF EGERTON UNIVERSITY, KENYA

STELLA JEPKORIR KIBET

A Thesis Submitted to the Graduate School in Partial Fulfilment of the Requirements for the Master of Education Degree in Educational Foundations of Egerton University

EGERTON UNIVERSITY

OCTOBER, 2020

DECLARATION AND RECOMMENDATION

Declaration

This research thesis is my original work and has not been submitted for an award of a diploma or degree in any other university.

Signature  Date 23 /09 /2020

Stella Jepkorir Kibet

EM 17/ 2992/11

Recommendation

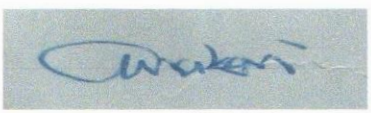
This thesis has been submitted for examination with our approval as University Supervisors.

Signature:  Date :**24/9/2020**

Prof. Micah C. Chepchieng,

Department of Psychology, Counselling and Educational Foundations,

Egerton University

Signature:  Date **23/9/2020**

Dr. George Makori,

Department of Psychology, Counselling and Educational Foundations,

Egerton University

2021/114722

DEDICATION

This thesis is dedicated to my family, Moses, Stacy and Matthew who helped me financially and morally throughout my coursework.

ACKNOWLEDGEMENTS

I acknowledge the Almighty God for his grace, the gift of good health and giving me the opportunity to complete my study. Secondly, I acknowledge Egerton University for providing a platform where I was able to study and do my research. I also thank the Department of Psychology, Counselling and Educational Foundations of Egerton University. I wish to acknowledge my supervisors Prof. M. C. Chepchieng and Dr. G. Makori for their support, patience, encouragement, corrections and guidance accorded in the research process and also taught me some of the course unit. My heartfelt gratitude goes to my dear husband Moses Chumo and children Stacy and Matthew who stood by me as I pursued my studies. They were always a source of strength throughout the study period. I also thank my father Peter Chesaro, mother Martha Chesaro and siblings Ruth, Daisy, Faith, Bernard, Mercy and Emmanuel for their unwavering support. May God bless them abundantly.

ABSTRACT

Learners use different approaches to acquire knowledge or skills. Understanding learning styles of students may help implement better teaching strategies resulting in higher quality of education. This study examined the preferred learning styles among fulltime and part-time university students in Egerton University, Njoro Campus. Specifically, the study examined visual, auditory, and kinaesthetic learning styles and established whether differences exist in their preferences among fulltime and part-time students. The study was guided by the Experiential Learning Theory. It employed the comparative research design where 176 full-time and 62 part- time students were selected through stratified random sampling from the population of 2nd, 3rd and 4th year of Agricultural Education and Extension students within Njoro campus, where 226 students responded to the questionnaire. Purposive sampling was used to select 6 interview participants who were AGED class representatives. Data collection was done through questionnaire and in-depth interviews. Piloting was carried out on 24 AGEDstudents who formed 10% of the sample size. The test-retest method was used to test the reliability of the questionnaire, which gave a reliability coefficient of 0.784 indicating that the questionnaire was reliable. Once data was collected, quantitative data was analysed using descriptive statistics such as percentages and means as well as inferential statistics which included t-tests and Chi-square. Statistical Packages for Social Sciences (SPSS) version 22.0 was used for data analysis. Results showed that there were no statistically significant differences in preference for visual ($t=.397$, $p>0.05$) and kinaesthetic($t=.693$, $p>0.05$) learning styles between full time and part time students. However, there was statistically significant difference in the preference for auditory learning ($t=2.024$, $p>0.05$) between the two groups with full time students exhibiting greater preference for auditory learning than part time students. The fulltime students' perceived that installation of sound systems, frequent discussion of topical issues, and being given opportunities to ask questions were some of the aspects that were important to their learning. Findings led to the conclusion that mode of study has some impact on the preferred style of learning of university students. The study recommended that the university management should consider installing sound systems in lecture halls in order to enhance learning experiences. Lecturers should also encourage classroom discussions and give opportunities for students to ask questions during teaching.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS AND ACRONYMS

AGED	:	Agricultural Education and Extension
E.L.T	:	Experiential Learning Theory
H.B.D.I	:	Herman Brain Dominance Instrument
H.E	:	Higher Education
L.S.I	:	Learning Style Inventory
M.B.T.I	:	Myers- Briggs Type indicator
S.P.S.S	:	Statistical Package for Social Sciences
V.A.K	:	Visual, Auditory, and Kinaesthetic

CHAPTER ONE
INTRODUCTION

1.1 Background of the Study

Learning styles is a general concept that brings together various schools of thought which share the belief that students learn best when they are given the opportunity to learn, deal with information, and communicate in a manner that they feel most comfortable with (Pallof & Pratt, 2003). Consequently, diverse models of learning have been developed to explain these individual differences in learning. There are about 13 major models of learning styles in the existing literature (Coffield, Moseley, Hall & Ecclestone, 2004). The study was anchored on Fleming's Learning Styles Model. Fleming (2001) classifies learning styles into three: Visual, Auditory and Kinaesthetic. The model posits that visual learners mostly depend on visual information; auditory learners mostly understand learning through hearing, while kinaesthetic learners learn best through touch and movement. Classification by Fleming is quite clear and there are demarcations between one learning style and the other.

Studies conducted in the United States of America showed that students prefer different modes of learning styles. For instance, a survey conducted by the University of Illinois (2009) reported that about 65%, 25% and 10% of learners surveyed preferred visual, auditory and kinaesthetic learning styles respectively. An earlier survey by University of Alabama (2005) revealed that 65%, 30% and 5% of the learners surveyed preferred visual, auditory and kinaesthetic styles of learning respectively. William, (2011) showed that 65%, 5% and 30% of the learners covered preferred visual, auditory and kinaesthetic learning styles respectively. Visual, auditory, and kinaesthetic styles were preferred by 86%, 6% and 8% of the learners (Jessica, 2011). Although Jessica's findings differ markedly from those of the University of Illinois (2009), University of Alabama (2005), and William (2011), the findings of her study nonetheless confirm that visual learning was the most preferred style of learning. Although different students preferred different learning styles, some instructors employ teaching styles, which are inconsistent with the students' learning styles (Letele, Alexander, & Swanpoel, 2013; Kidanemariam, Atagana, & Engida, 2014).

It is clear from the above studies that different learners prefer different learning styles. What remains unclear is whether such preferences also run across disciplines and learners' modes of study. While empirical evidence on the preference of learning styles across disciplines is still limited, a study by Ogbo and Alade (2014) in Lagos, which examined learners' learning style preferences in selected universities, reported that majority of students pursuing

chemistry which is a science oriented subject preferred visual learning style. Visual learning style was also preferred by students pursuing business and engineering disciplines (Arslan, 2003). However, most students pursuing linguistics and related disciplines were reported to prefer auditory learning style. Although more studies may be necessary to provide definitive conclusion on the relationship between field of study and learners' preferred style of learning, it is, however, clear from the available studies that most students pursuing science-based disciplines tend to prefer visual learning styles while those pursuing non-science disciplines prefered auditory learning style. With regard to learners' gender, male learners have been reported to prefer visual styles while females tend to prefer auditory learning style (Eiszler, 1982).

In addition, there is a mismatch between methods of teaching and students' preferred style of learning. For instance, a study by Kidanemariam, Ataganaand and Engid (2014) reported variation in learning styles of about 12% among chemistry students in Ethiopia. In their study, Letele, Alexander and Swanepoel (2013) reported a 74.6% mismatch between methods of teaching and learning styles in Lesotho. Similarly, Kang'ahi, Indoshi, Okwach and Osodo (2012) found that in Kenya there was a mismatch between learning and teaching styles, which forced teachers to periodically modify their teaching styles to match the preferred mode of learning of their students. Although Kang'ahi *et al.* (2012) have not emphatically explained why it is important for teachers to modify their teaching styles to match learning styles of students, their study holds that matching is important since it can influence learning outcomes.

Studies such as Felder, Felder, and Dietz (2002), Dunn (2009), and Jiraporncharoen, Angkurawaranon, Chockjamsai, Deesomchok, and Euathrongchit (2015) have reported a significant association between learning styles and students' outcomes, others such as Almigbal (2015) and Nzesei (2015) has found no significant association between the two variables. It is also instructive to note that most of the studies on the preferred learning styles have been done at basic education level notably primary and secondary schools. Styles to accommodate varying learning preferences, there was improvement in students' test scores. Most of the studies that have been carried out in Kenya have mostly focused on data from primary and secondary school students (Tella, Indoshi, & Othuon, 2010). These studies have not focused on learning styles at institutions of higher learning specifically at the university level as it has been done elsewhere.

In Kenya, demand for university education has increased in the 21st century (Hellen, 2016). The increase in the number of students seeking placemnts in university has promoted most institutions to develop new modes of learning such as part-time learming and online learning in order to accommodate more students (Kagondu & Marwa, 2017). These new modes of learning are also viewed as strategies for increasing universities revenue streams by making university education accessible to working students who are not sponsored by the government. Gudo, Olel, and Oanda (2011) observed that universities in Kenya have not matched the increased intake of students by improving physical teaching and learning facilities. The problem is more pronounced in public universities where 43.5% of the respondents expressed dissatisfaction with the availability of teaching and learning resources. Hellen (2016) also observed that the expontential growth of students enrolment in Kenyan universities has had a negative impact on quality of education being offered as the large number of students has given rise to numerous challenges including inadequate human resources, crumbling infrastructure, and overcrowding.

McCowan (2018) noted that one of factors affecting quality of learning in Kenyan university amidst the growing numver of students is the existing pedagogical culture. McCowan (2018) noted that many university has not evolved its pedagogical methods in line with demands and characteristics of the diverse groups of students that are currently joing universities. Kagundu and Marwa (2017) asserts that Kenyan universities now need to focus on students and put theor needs at the centre of what they do. At Egerton University, the Agricultural Education and Extension (AGED) programme is offered through both part-time and full-time mode. AGED is a science based disciplined with a significant aspect of the program being practical based. Students pursuing AGED through full-time or part-time program may prefer different modes of learning hence the need for an examination into preferred learning styles. The discipline also deals with diverse fields notably practicing teachers and field extension officers. These students are practical oriented than theoretical oriented in their approach to learning. AGED is one of discipline that apart from attracting high population of students also has both full-time and part time mode of study.

1.2 Statement of the Problem

Understanding students preferred style of learning is vital to the development of effective teaching strategies and approaches. Most of the studies on learning styles have not only been done in other countries but have also been anchored on models proposed by other scholars and not that of Fleming. Although a limited number of studies on learning styles have been in

Kenya, they have largely focused on basic education with no reference on Kenya's institutions of higher learning. The centrality of learning styles to students' outcomes coupled with scarcity of empirical studies about learning styles on Kenya's institutions of higher learning occasions the need for an examination of the learning styles that are preferred by students in institutions of higher learning. The study examined preferred learning styles by students pursuing Bachelor Agricultural Education and Extension on full-time and part-time program at Egerton University. Findings of this study provided a better understanding regarding learning styles that have greatest impact on students knowledge in the two modes of study.

1.3 Purpose of the Study

The purpose of the study was to establish the preferred learning styles, among full- time and part-time AGED students at Egerton University, Njoro Campus. The learning styles investigated were visual learning style, auditory learning style and kinaesthetic learning style.

1.4 Research Objectives

The study was guided by the following specific objectives:

i. To compare the preference of visual learning style between full-time and part-time Agricultural Education and Extension students at Egerton University.

ii. To compare the preferences of auditory learning style between full-time and part-time Agricultural Education and Extension students at Egerton University.

iii. To compare the preferences of kinaesthetic learning style between full-time and part-time Agricultural Education and Extension students at Egerton University.

1.5 Research Hypotheses

The following hypotheses were tested at $\propto = 0.05$:

H_{01}. There was no statistically significant difference in the preference of visual learning style between full-time and part-time Agricultural Education and Extension students at Egerton University.

H_{02}. There was no statistically significant difference in the preference of auditory learning style between full-time and part-time Agricultural Education and Extension students at Egerton University.

H_{03}. There was no statistically significant difference in the preferences of kinaesthetic learning style between full-time and part-time Agricultural Education and Extension students at Egerton University.

1.6 Significance of the Study

This study generates insights regarding how mode of study influence the preferred learning style of university students in Kenya with specific reference to students pursuing AGED at Egerton university. This is knowledge is useful to several stakeholders including policy-makers in the Ministry of Education, Egerton and other universities in the country, and researchers and scholars in the field of education.

For policy-makers in the Ministry of Education, this study provides them with evidence for guiding policies that govern the various modes of studies offered in Kenyan University. The knowledge may also guide development of policies governing the curriculums and teaching methods in Kenya University.

For Egerton and other universities, the knowledge on how mode of study influence students learning facilitate the development of effective teaching strategies and facilities for students using different modes of learning. Particularly, the findings emphasize the need to develop teaching strategies and facilities that cater to need of auditory learners when dealing with full-time students.

Lastly, this study benefits scholars and learners by enriching theories and empirical literature on the subject of learning style by demonstrating how it relates to the mode of study of university students. Particularly, the study advances the Fleming model of learning style by demonstrating it applicability in examining the learning style of university students in Kenya.

1.7 Scope of the Study

The study was conducted in Egerton University, Njoro Campus. The study was limited to Fleming's Learning Styles Model notably visual, auditory and kinaesthetic learning styles. It involved second, third and fourth year students of Egerton University pursuing Agricultural Education and Extension among full time and part time students.

1.8 Limitations of the Study

The study was confined to one course which was AGED. The findings of the study may be generalized to other courses with similar characteristic with caution.

1.9 Assumptions of the Study

The study assumed the following:

i. There was variation of learning styles among students enrolled in full time and part time modes of study.

ii. The respondents gave truthful information especially on their preferred learning styles.

1.10 Operational Definition of Terms

This study had the following operational definition of terms:

Auditory Learning Style: Auditory learning is a learning style in which a person learns through listening. An auditory learner depends on hearing and speaking as a main way of learning (Northey, 20005; Heacox, 2002). Auditory learner learns information through class discussion, listening keenly and asking question

Full-time students: In this study refers to students who pursue their education full time as per the universities calendar.

Kinaesthetic Learning Style: Kinaesthetic learning style is a learning style in which learning takes place by the students carrying out physical activities, rather than listening to a lecture or watching demonstrations (Heacox, 2002). Kinaesthetic learner learns by demonstration, academics trip and having group assignments.

Learning Style: Learning styles refer to a range of competing and contested proportions attempts to explain the differences in individuals' learning (Vincent and Ross, 2001. This study was based on Fleming (2001) model, which categorize learning styles into; visual, auditory, and kinaesthetic.

Part-time Students: In this study are those students who take intensive university studies during the evening, weekends or when on vacations.

Preference: In this study it is the student's inclination when it comes to gathering, processing, and comprehending information.

Visual Learning: In this study visual learning styles involves the use of seen or observed things including taking notes, sitting position in lecture hall, writing assignment and reading on their own. Visual learner learns by seeing figures, diagrams, films and maps.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This section begins with a review of empirical literature related to the preferred learning styles among university students. The section also presents and discusses the theoretical framework that guided the study. The section concludes with a presentation of the conceptual framework, which has largely been informed by the study objectives, literature review and theoretical framework.

2.2 Overview of Learning Styles

In the beginning of the 20th century, theoretical and experimental research studies were carried out in the United States of America and Western Europe which contributed to the development of models set out for determining learning styles (Kolb, 1984). As a result, several different instruments have developed which allow students' learning styles to be investigated such as Myers-Briggs Type Indicator (MBTI) (Jung, 1993); Index of Learning Styles (ILS) (Felder & Silverman, 1998); Learning Style Inventory (LSI) (Kolb, 1984); and Learning Style Questionnaire (LSQ) (Honey &Mumford, 1986), among others. Empirical research has also provided accurate evidence indicating an existence of learning styles among students (Abidin, Rezaee, Abdullah, & Singh, 2011). Felder, Felder and Dietz (2002) summarizes alignment between students' learning styles and an instructor's teaching style leads to better recall, understanding, as well as to more positive post-course attitudes. Ültanir, Ültanir and Temel (2012) further suggest that individual differences in channels of perception lead to differences in learning tendencies.

The Myers- Briggs Type indicator (MBTI) classifies learners according to preferences on scales derived from Carl Jung's theory of psychological types (Jung, 1993). Accordingly, learners may be categorized as extroverts or introverts; sensors or intuitors; thinkers or feelers; judgers or perceivers. These types of preferences can then be combined in different ways to form at least sixteen different learning style types. The Herman Brain Dominance Instrument (HBDI), on the other hand, groups learners according to their preference for thinking in four modes based on the task specializing functioning of the brain. Thus, a learner can be: left-brain, cerebral (logical, analytical, quantitative, factual, and critical); left brain, limbic (sequential, organized, planned, detailed, structured); right brain, limbic (emotional, interpersonal, sensory, kinaesthetic, symbolic) and right brain, cerebral (visual, holistic,

innovative). Thus, simply stated, people may be one of four types: theorists; organizers; innovators; or humanitarians (Coffield *et al.*, 2004).

According to Kolb (1984), a four-stage learning process is proposed to consist of concrete experience, reflective observation, abstract conceptualization, and active experimentation. The logic behind this cycle is clear. Immediate concrete experiences provide the learner with a starting point for observations and reflections. As these are understood and assimilated, it can be applied to abstract concepts which can then be tested in new situations. However, Kolb's work has been criticized as lacking in empirical support for construct and predictive validity. Based on the Kolb's work, Honey and Mumford (1986) identified four learning styles: Activist, Reflector, Theorist, and Pragmatist which received significant commercial success, though empirical support for the Learning Style Questionnaire (Kappe, Boekholt, den Rooyen, & Van der Flier, 2009).

Another model developed to explain learning styles in the Felder- Silverman Learning Styles Model. This model consists of five dimensions: sensing or intuitive learners; visual or verbal learners; inductive or deductive learners; active or reflective learners; and sequential or global learners. The model is widely utilized in education and training circles in learning and teaching styles in engineering education (Felder & Silverman, 1998). According to Dunn (1984), learning preferences may change over time as they are developmental and alter with maturity. This could be due to motivation levels, responsibility, and the fact that for many people, visual and auditory perceptual elements strengthen with age.

In spite of the importance of learning styles to education, its history is fraught with unfulfilled promises with clear disagreements regarding how to classify the learning styles. The simplest and most common used way of identifying different learning styles is based on the senses (Fleming, 2001). Commonly called the VAK model, this framework describes learners as visual, auditory, or kinaesthetic. Visual learners most effectively process visual information; auditory learners understand best through hearing; and kinaesthetic/tactile learners learn through touch and movement. A study conducted by Specific Diagnostic Studies found that 29% of all students in elementary and secondary schools are visual learners, 34% learn through auditory means, and 37% learn best through kinaesthetic/tactile modes (Miller, 2001). Classification by Fleming is quite clear and there is demarcation between one learning style and the other. Unlike the other models whose classification are not only numerous but also tend to overlap.

2.3 Visual Learning Style among University Students

Visual learning is teaching and learning style in which ideas, concepts, data, and other information are associated with images and techniques (Westbrook, 2011). It is one of the three basic types of learning styles proposed by Fleming, with others being auditory and kinesthetic styles (Westbrook, 2011). Jiraporncharoen *et al.* (2015) observe that visual learners learn by seeing figures, diagrams, films, and maps. Nel and Nel (2013) also observe that visual learners prefer a learning environment that covers content by means of diagrams, graphs and other methods to present information. It is clear from the definition of visual learning that visual learners learn best through their sense of sight. It is also clear that visual learning styles have to involve the use of visual aid or objects that are seen or observable by the learners.

It is estimated that visual learners make up the largest group in any classroom or teaching program (Fleming, 2015). Although all visual learners learn best through their sense of sight, Bosman and Schulze (2018), distinguishes two types of visual learners. These are linguistic and spatial visual learners. The author understands linguistic visual learners as those who like to learn through written language such as reading and writing tasks (Bosman and Schulze, 2018). Linguistic visual learners remember what has been written down, even if they do not read it more than once. These learners also write down directions and pay better attention to instructors if they watch them. Spatial learners on the other hand are those who have difficulty with the written language and do better with charts, demonstrations, videos, and other visual materials. They easily visualize faces and places by using their imagination. Bosman and Schulze (2018) distinction of the two types of visual learners is important since it expands our knowledge of visual learners.

Visual features are determined by the level of natural and artificial light available in the classroom. Visual features also refer to the way by which the classroom environment is arranged such as being visually interesting, creating a favourable atmosphere and any unwanted disruptions such as windows overlooking playgrounds. Like any other form of learning, visual learning has learning aids that are unique to it. Some of the visual aids according to Westbrook (2011) include but not limted to pictures, diagrams, demonstrations, handouts, films, flip- charts and overhead projectors. A casual reading of a list of visual learning aids provided by Westbrook (2011) gives the impression that all disciplines use or require the same visual learning aids. However, the current study was of the view that some disciplines may require some unique visual aids for effective learning. It was therefore

important for the current study to establish whether full time and part time learners in the field of AGED required certain unique visual aids based on their mode of study.

While on the surface it appears that visual learners need any visual aid, scholars observe that for effective learning, visual aid must have some attributes. For instance, Coffield *et al.* (2004) observe that any visual material provided must be those that learners can process with ease through reading, writing and observing. Contributing on the same Dunn (2009) also observe that materials that contribute to effective learning through visual learning style must be those that are illustrative and have a variety of colours and graphics. It is true that every learning material must bear certain characteristics so as to enhance not only its appeal to the learners but also pass knowledge in a way that is easy to comprehend. It is clear here that mere availability of visual learning aids does not in itself translate into effective learning. On the contrary, visual learning aids must bear certain characteristics that are both appealing and promotes learning learning.

Although there are no specifications on the quality of physical environment that makes visual learning effective, Dunn (2009) had long observed that effective learning can only occur in a quiet place, and a place that is fairlly well lit. Although light is necessary for proper visibility of visual aids hence the need for a well lit place, the current study holds that the need to for a quiet learning environent may have been informed by the need to encourage learners' concentration on the learning. A noisy environment can serve as a major distraction to learners' concentration. As suggested here, it is possible that the learning environment where visual aids are used must have sufficent light and serenity.

It has also been established that effective visual learning is dependent on classroom and management and learner positioning in the classroom (Gilakjani & Ahmadi, 2011). The authors further observe that visual learners prefer instructors who employ nonverbal means of communication while teaching. The instructor's body language has been found to have a bearing on visual learners' ability to comprehend what is being taught. In terms of classroom positioning, it has been established that visual learners prefer sitting in the front of the classroom (Gilakjani & Ahmadi, 2011). The fact that in front of the classroom can only accommodate a given number of students means that some visual learners may find themselves occupying positions that do not allow them to effectively participate in learning. This implies that instructors must offer strong classroom leadership. The contributions of

Gilakjani and Ahmadi (2011) are essential to this study since it highlights on classroom issues that may enhance or undermine visual learners.

2.4 Auditory Learning Style among University Students

Auditory learning is a learning style in which a person learns through listening. An auditory learner depends on hearing and speaking as the main way of learning (Vaishnav and Chirayu, 2013). Fleming (2015) estimates that auditory learners account for about 20% of the learners in any given group of learners. Auditory learners prefer information that is spoken and heard (Nel and Nel, 2013). Auditory learners also learn well through lectures, stories, songs and group-discussions (Juškevičienė and Kurilovas, 2014). Although auditory learners generally prefer learning that is conducted through the spoken word, instructors should employ tonal variations for effective learning (Northey, 2005). The author also observes that effective teaching demands of instructors to employ tonal variations so as to provide emphasis and relief at appropriate moments. It is therefore important as suggested by Northey (2005) for instructors to employ tonal variations in order to keep the students attentive and captured to what is being taught. It can indeed be very boring and monotonous if an instructor were to employ a flat voice for the entire learning session, where some lessons take as much as three hours in institutions of higher learning.

It is evident from the definition of auditory learning style that rather than merely reading materials, auditory learners prefer questioning and listening to explanations being given by the instructors. Implied here is that auditory learners are most likely to prefer teachers who explain issues in details, providing relevant illustrations verbally and offering students opportunity to seek from them further explanations on issues that may not be clear to them. It is also clear here is that instructors must be individuals who pay attention to details if auditory learners are to have effective participation in learning. While it is possible that some instructors provide detailed discussions on issues, others are known to be a bit shallow and appear not so well prepared to meet the needs of auditory learners.

Other than tonal variations the current study holds that instructors must be equally loud enough for all the students to hear them wherever they are seated within the classroom. It is equally important to observe here that some classes are normally large that instructors need the aid of sound equipment such as the microphone and loud speakers in order to be heard by all students. AGED are some of the courses that attract some of the highest number of students at the university. The large number of students can indeed bring challenges of

audibility and this can significantly affect students with auditory learning styles. It was therefore necessary for the current study to establish students' views on what can be done to improve the learning experience of auditory learners in such large classes.

In an examination of students' characteristics and preference for learning styles, Dunn (2009) noted that auditory learning styles was most preferred by high achievers. The author further observed that low achievers tended to have poor auditory memory, which discouraged them from auditory learning style. According to the author, unlike the low achievers, high achievers have greater ability to remember information through lecture, discussion, or reading, which contributes to high achievement especially in traditional classroom environment where teachers dominate and students mostly listen or read. As suggested here some students may not find it easy to freely participate in class discussion either because they are shy or simply they have little understanding of the issues under discussion. Some students who participate least in class discussions have performed well in their academics. Similarly, some students who participate highly discussions may also perform poorly in their academics. Therefore, Dunn (2009) assertion that low achievers tend to have very minimal participation in class discussions, which contributes to their low achievement may not hold in all situation.

The fact that auditory learners learn through listening implies that the learning must be conducted in a quiet environment devoid of external noise. While considering classroom as one of the learning resources essential for the execution of learning activities, Sapna, Sianna, Victoria and Andrew (2014) identify key features of a classroom that support auditory learners. These are acoustic and thermal features. Acoustic features relate to the ability of the classroom to enhance audibility and control disruptive noise from unwarranted quarters. Thermal features relate to the heating and ventilation of the classroom. Thermal features play a fundamental role in making classroom atmosphere favourable and comfortable for learning. While it is a requirement for institutions of higher learning to have classrooms for their learners, it is exactly not clear how conducive these facilities are for auditory learners hence the current study.

A study by Karen, Chan, Chimeili, Estella, Edwin, Yiu, Bradley and McPherson (2015) has shown that noise has direct negative effects on student learning, with language and reading development particularly being affected. The study further found that noise adversely affect learners' attention, memory and motivation during lessons. Although teachers may be forced

to speak loudly in order to compensate for the noise level in classrooms, the authors observed that such a speaking habit may lead to voice disorders in teachers. The study called upon on the management of learning institutions to address the background noise in classrooms so that both students and teachers may learn and work in a healthy environment.

Auditory learners often talk to themselves. They also may move their lips and read out loud. They may have difficulty with reading and writing tasks. They often do better talking to a colleague or a tape recorder and hearing what was said. According to Dunn (2009) low achievers tend to have poor auditory memory. These individuals discover information through listening and interpreting information by the means of pitch, emphasis and speed. These individuals gain knowledge from reading out loud in the classroom and may not have a full understanding of information that is written (Gilakjani & Ahmadi, 2011). According to Winebrenner (1996), auditory learners are logical, analytical and sequential thinkers. This type of learner may be most successful in traditional classrooms since their style is accommodated in most school tasks.

The fact that auditory learners prefer learning through speaking and hearing, It implies that instructors should engage in practices that enable students to remain active throughout the learning sessions. One of the ways through which instructors can capture the attention of auditory learners is through developing rapport with their students and demonstrating warmth and openness, reinforcing student participation, and show clear organization (Wanzer, Frymier & Irwin, 2014). It is indeed possible as suggested by the authors that instructors should provide an environment that encourages learners to be active participants. Learners are likely to feel at ease asking and responding to questions from an instructor who has good rapport with them.

The use of humour during lectures has also been suggested by Webb and Barrett (2016) as one way of encouraging learners to be active participants in class. Humour can include funny stories and comments, appropriate jokes, or professional humor (Frymier, Wanzer & Woitaszcyk, 2008). Instructors may employ humour to help clarify the content, which, in turn, may increase students' capability to process the information being delivered. The current study concurred as suggested by the authors that indeed humour can aid in building rapport with students. Humour can make the instructors more approachable and encouraging to interact with them. Although the current study finds humour as an important instrument of building rapport with students, it should be used sparingly and only under relevant

circumstances. Otherwise, humour should not be overused since lecturers may not at times be seriously taken by their students.

The use of lecture notes is yet another strategy that instructors can employ to generate the interest of auditory learners is through provision of lecture notes. A study by Landrum (2016), which focused on faculty and student perceptions of providing instructor lecture notes to students found that 83% of the students considered being given lecture notes as important to their training. The study also found that students had greater interest and enthusiasm in courses being taught by lecturers who gave them lecture notes. The study also found that 60% of the lecturers gave students notes through chalkboard or whiteboards while 40% gave notes through power point projections.

Auditory learners may also be motivated by their instructors through the provision of assignments, which can either be done individually or in groups (Evrim, Orhan and Mehmet, 2015). Assignments especially group assignments enable students to work and solve problems in the company of others. This may help in sharpening one's own understanding by listening seriously to the insights of others, especially those with different backgrounds and life experiences. The current study also hypothesized that assignment writing enhances students' knowledge about the subject through increased writing skills, logical arguments and critical thinking. However, the extent to which assignments were preferred by students pursuing AGED program through full time and part time mode of study needed to be explored.

It has been empirically established that assignments contribute to better students' academic performance. For example, a study by Latif and Miles (2011) whose examination of the impact of assignments on academic performance did not only find that majority of students reported that assignments were important in their training but also that assignments had a significant positive impact on their learning outcomes. Students reported that assignment writing enhances their knowledge about the subject through increased writing skills, logical arguments and critical thinking.

2.5 Kinaesthetic Learning Style among University Student

Dunn (2009) defines kinaesthetic learning as the process that results in new knowledge (or understanding) with the involvement of the learner's body movement. This movement is performed to establish new (or extending existing) knowledge. Kinaesthetic has also been

understood as a style of learning in which learning takes place by the students carrying out physical activities, rather than listening to a lecture or watching demonstrations (Bennett, 2013). While contributing to the concept of kinaesthetic learning, Juškevičienė and Kurilovas (2014) observed that kinaesthetic learning is established when the learner uses language (their own words) in order to define, explain, resolve and sort out how his or her body's movement reflects the concept explored. The author gives the example of a student using movement to find out the sum of 1/2 plus 3/4 via movement, and then explaining how their motions in space reflect the mathematical process leading to the correct answer. Şimşek (2014) observes that in kinaesthetic learning, learners are more interested in manipulating objects through touching, demonstrations and even movements. While distinguishing kinaesthetic learning from other forms of learning, Gregory and Chapman (2002) argues that as opposed to visual and auditory learning, in kinaesthetic learning, learners become physically involved in learning activities that are meaningful and relevant in their lives.

Leopold (2014) distinguishes two channels of kinaesthetic learning. These are kinaesthetic (movement) and tactile (touch). It is clear here that kinaesthetic learners prefer a learning environment that permits movement as well as touch. Any learning environment that does not permit movement is likely to make learners bored and disinterested in what is being taught. It is also possible that kinaesthetic learners lose concentration if there is little or no external stimulation or movement. Although some kinaesthetic learners prefer taking notes in a learning situation, such note taking is seen by these learners as a form of movement and just mere note taking (Leopold, 2014). Further, while some kinaesthetic learners may value reading in a learning environment as their visual learning counterparts, their readings are more detailed and interpretive unlike their visual learners who may be casual and shallow in their readings (Leopold, 2014). Although kinaesthetic learners are more hands on that their visual and auditory learners, most of the time kinaesthetic learners have a difficult time staying on target and can become unfocused effortlessly (Gilakjani & Ahmadi, 2011).

Marilee (2008) categorizes kinaesthetic learners into whole body learners, hands-on learners, doodlers, students learning through emotional experiences. Marilee argues that although these learners are generally kinaesthetic, they prefer different learning approaches. For example, mind mapping, story mapping, webbing, drawing can be used to enhance the learning of a doodler. For the hands-on learner, role play, clay, building and math manipulative can be used. The whole body learner can learn better through role-playing, body mapping, puzzles and use of computer technology which allows for certain movement while learning. Students

who learn through emotional experience prefer being engaged in group activities and activities which involve bodily movement such as dance, drama, sports can be used to nurture their learning.

There are several strategies that can be used to satisfy the needs of kinaesthetic learners. One of these strategies is called action-based classes: Vaishnav and Chirayu (2013) note that a kinaesthetic learner has a strong drive to explore material through doing and to move periodically. For both of these reasons, the authors observe that kinaesthetic learners thrive in classes that involve activity, such as those that include laboratory experiments, role playing and field trips. Through these means, they can physically sense what is being studied, experience abstract ideas brought to life through examples and applications and interact with others in the process (Vaishnav & Chirayu, (2013).

Kinaesthetic learners are also said to thrive well in classroom settings that incorporate movements as part of the learning process (Dunn, 2009). While recognizing that some classes are more stationary, Dunn argues that kinaesthetic learners should still be helped to engage in some motion. This can be achieved by either allowing learners to sit in a location where they will not be a distraction if they move, stretch out or fidget or perhaps be allowed to sit near the door so they can come and go more easily now and then if this is feasible. In addition, their desire for movement can be channelled by letting them help with tasks that are necessary anyways like passing things out or moving chairs. Although is important to allow motion during learning to suit the needs of some kinaesthetic learners, the practicability of this in large classes such as those of AGED needs to be explored. It will equally be significant to understand whether kinaesthetic learners believe that their lecturers understand and value their style of learning and therefore do not view their desire for movement as a disturbance but rather as a perfectly healthy expression of their nature.

Another strategy of teaching kinesthetic learners is to incorporate group discussions and team work in the learning process. Gilakjani and Ahmadi (2011) observe that working together more so with someone of the same learning style, opens up even more avenues of possibility for taking advantage of these kinaesthetic learning activities. Indeed, some lecturers organize students into groups for purposes of giving students group assignments, which in some cases are accompanied by oral presentations in class. There is need to understand whether students value group and class presentations and how their academic performances have been influenced by these approaches to learning.

Although instructor-student rapport plays a critical role in classroom climate as suggested by Gilakjani and Ahmadi (2011), student-student rapport may also contribute as well. Frisby and Martin (2013) advocate for the nurturing of a connected classroom climate especially student-to-student connectedness. While lending support to Frisby and Martin (2013) advocacy, Sidelinger, Bolen, Frisby and McMullen (2015) argue that teaching and learning do not occur only between the instructor and students, but also among students themselves. It is therefore important for instructors to nurture positive interactions between and among students. Although the aforementioned authors have not stated exactly how instructors can encourage interaction between and among students, the current study hypothesized that such interaction can be nurtured through group work, class presentations and class discussions.

Kinesthetic learners prefer a learning environment that encourages them to interact and practice what is learnt in class in real life situation (Greene, Kisida & Bowen, 2013). Greene *et al.* (2013) considers taking students for academic trips is often cited as one of the ways of enabling students put what has been learnt in class into practice. Indeed, a study by Mahgoub (2014) found that majority of the students had a favourable view of academic excursions. Academic excursions involve instructors and the students identifying a firm, place or institutions where they can gain field experience of what has been learnt in class. Excursions also require adequate time and resources. One academic trip may take as many as three days depending of the distance between the site of study and learning institution, and issues to be learnt in the field. Students are also expected to write academic report of the excursions. Full time and part students have different training schedules. While full time students have as many as 12 weeks of study in a semester, their part time colleagues may have as few as three weeks to cover the same issues.

Although not all students preferred academic excursions, those preferred stated that it contributed to their learning outcome. A study by Greene *et al.* (2013) particularly found that academic excursions contributed to increased thinking skills and overall knowledge of the subject under study. The current study hypothesized that if well planned, academic excursions can offer students the opportunity to witness a real life location and perceive what is learnt in class within the everyday context. This may enable students to gain practical knowledge of what is learnt in class. Academic excursions may also offer students the opportunity to interact with potential employers. Such interaction with the outside world may reinforce students' interest in their field of study thereby contributing to favourable learning outcomes.

2.6 Modes of study

Institutions of higher learning the world over have developed learning programs to accommodate learners from diverse social classes. Such programs allow such persons to pursue education while simultaneously attending to other responsibility. Therefore, these institutions have allowed such learners to pursue their education through part-time programs. Part-time programs allow learners to attend classes after work in the evening, during weekends or when on the vacations. Others have been permitted to take their classes through distance learning and similar arrangements. Statistics from the United States show that part-time learning is emerging as the most preferred mode of learning for married employed students. For instance, Glass and Rose (1994) about two decades ago established that about 50% of college and university enrolments in the United States were those in marital relationships. Glass and Rose (1994), however, cautioned that the numbers could even be more and further projected that the numbers of married students in post-secondary learning institutions would even much higher in future as such institutions embark on flexible learning programs.

Kenya's institutions of higher learning including Egerton University offers evening, weekend and vacation classes. While there is no comprehensive and nationwide data on the number of students on part-time program, a survey by APHRC (2009) on selected districts in Kenya for instance found that about 3% or 10,000 teachers were undertaking part-time studies during their vacations (APHRC, 2009). Similarly, personnel records at Egerton University show that about 5% of the non-teaching staff were taking part-time studies at the institution. While these classes are available to all qualified learners regardless of their marital status, married students are thought to constitute the highest percentage of these learners on part-time program. The pressure for employability and improved quality of life has seen many students globally enrolling for part-time studies. Part-time study program is preferred because it allows married students to continue earning a living while at the same time taking care of other responsibility (Chen & Charoll, 2007).

The study by Yunus, Mustafa, Nordin, and Malik (2014) observed that there were fundamental differences in the emotional intelligence of part-time and full-time students. The study employed a descriptive research design and used structured questionnaires to collect data from 36 full-time and 31 part-time Bachelor of Education students in public university in Selangor, Malaysia. Results revealed that part-time students had a significantly higher

emotional intelligent mean score that their full-time counterparts. Yunus *et al.* (2014) pointed out that the difference in emotional intelligence could be attributed to the fact that part-time students are more mature in terms of age and experience. Higher emotional intelligence gave them greater self-efficacy, internal locus of control, and persistence when it comes to learning. The study by Yunus *et al.* (2014) provided strong evidence that there are striking differences in the characteristics of part-time and full-time university students. Their study did not however examine whether the differences also apply to the learning styles of these students. The present study sought to address this gap.

Butcher and Rose-Adams (2015) noted that the rationale of part-time mode of learning is to reach hard to reach individuals. For most learners who choose this mode of learning, the choice is usually between part-time learning or no learning at all. The voices of the part-time distance learning students are often ignored when it comes to the policies and practices of universities.To improve the quality of learning for these students, there is a need to understand their motivation and preferred ways of learning. Swain and Hammond (2011) observed that part-time students in higher education are mainly motivated by intrinsic factors such as proving oneself or personal development. This is unlike most full-time students who are usually motivated by extrinsic factors particularly making themselves marketable in the job market. This difference in motivation suggest that there might be striking differences in the learning style preferred by the two groups of students. This study has investigated these differences.

2.7 Theoretical Framework

This study was informed by Experiential Learning Theory (ELT). This theory was developed by Kolb and Dunn. ELT considers learning as constituting a combination of experience, cognition, perception and behaviour (Kolb & Dunn, 1984). Potentially, learning styles use both a process and content strategy. There is a process component to learning styles best seen in models such as Kolb (1976). The Kolb (1976) model is seen by Kolb as a learning process, defined and explained by a four-stage learning cycle: concrete experience (CE), reflection on experience (RO), abstract conceptualization (AC), and active experimentation (AE).

CE occurs when the learner engages in activities that he or she has never done before. In the academic contexts, these activities may include reading a new book/ article, watching a video, lab work, or a field trip. The activities give rise to a new experience that is followed by reflection on that experience (RO). The ELT asserts that without reflection we would simply

continue to repeat our mistakes. The reflection is followed by the development of general rules describing the experience, or the application of known theory to it. This process is what is referred to as abstract conceptualization (AC). AC then leads to the construction of ways of modifying the occurrence of the experience, called active experimentation (AE). Teaching and learning activities should give full value to each stage of the process. For Kolb, the idea is to develop skills in all the four areas. Individuals will have a preference for certain styles, which need to be developed so as all four roles are fulfilled. They are, however, polar opposites and these tensions need to be managed for growth.

The experiential learning process can begin at any stage and is continuous. Based on the above, Honey and Mumford identified four learning styles: Activist, Reflector, Theorist, and Pragmatist (Honey & Mumford, 1986). However, the model has been criticized that it has had little evidence that matching improves academic performance in further education in addition to its complexity (Pheiffer, Holley, & Andrew, 2005). Dunn and Dunn Learning Style Model was developed by Marie Carbo, Rita Dunn and Kenneth Dunn. It describes three styles of learning: Auditory, Visual, and Tactile/ Kinaesthetic. It is commonly referred to as VAK (visual, auditory, kinaesthetic). According to Winebrenner (1996), people use all three to receive information, but one or more of these styles can be dominant. This model falls within the perceptual modality as it is primarily concerned about how the information is processed. It can be said to be based on biologically based reactions to the physical environment.

There are four factors that significantly differ between groups and among individuals according to this model (Ellis, 2001). The first factor is age. According to Dunn (2001), learning preferences may change over time as there are certain aspects that are essential to learning that change with maturity. Examples of such aspects include motivation levels and responsibility. For many people, visual and auditory perceptual elements strengthen with age. The second factor involves global versus analytical thinking styles. The third factor is gender, implying that males and females learn differently. The perceptual strengths of males tend to be visual, tactile and kinaesthetic while females tend to be more auditory. The fourth factor indicates that high and low academic achievers tend to learn in statistically different ways. However, there are several dissenting voices who question the quality and validity of research undertakings within this learning style model. Yet the models main advantage is derived from its simplicity.

2.8 Conceptual Framework

A conceptual framework is a graphical representation of the study variables and the relationship between them (Brown, 2006). Figure 2.1 presents the conceptual framework for the study:

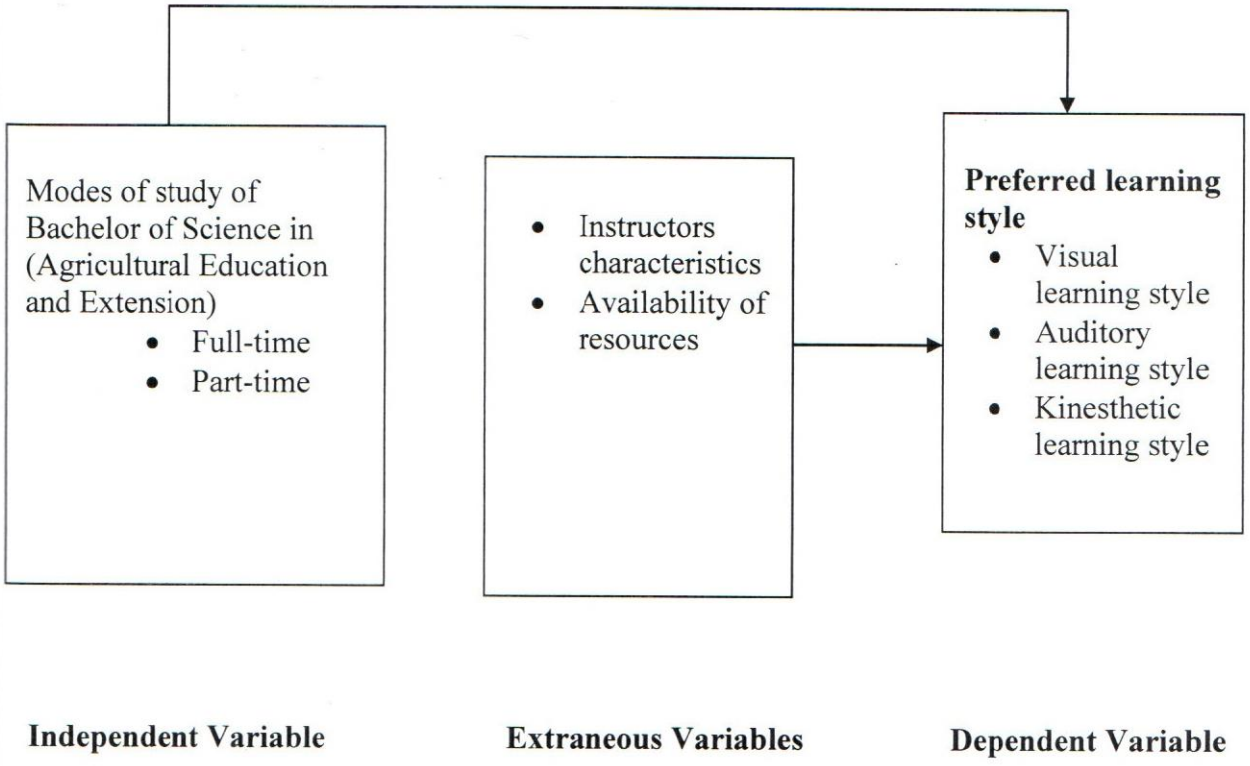


Figure 1: Conceptual framework

As illustrated in Figure 2.1, the independent variable in this study was the modes of study. Modes of study were classified as full-time and part-time. The dependent variables in this study was preferred learning style with study examining the three styles of learning proposed by Fleming model: visual learning style, auditory learning style, and kinaesthetic learning styles. Visual learning style is examined in the context of writing and observation; auditory learning was examined in the context of listening, discussions and questioning, and kinaesthetic learning style was examined in areas of demonstrations, touching, and movement.

This study holds that visual learners learn mainly through writing and observations. Auditory learners learn through listening, discussions and questioning. Kinaesthetic learners mainly learn through demonstrations, touching and movements. For effective learning, an auditory learner needs a classroom environment that is well lit to enable them clearly visualize issues being presented to them through visual aids. Auditory learners preferred a learning

environment that is quiet with minimal disturbance to enable them hear clearly what is being taught. Kinaesthetic learners required a learning environment that is well designed for demonstrations and one that also allow his/her movement when necessary.

It is therefore held here that a visual learner preferred a learning environment that allows and encourages writing, observations and also supplied by sufficient visual aids. Further, the physical setting of such an environment must also be in a place that is well lit by both natural and artificial lights. However, a learning environment that discourages writing and observations stand to demoralize a visual learner leading to low academic performance. An auditory learner will most likely attain high performance in a learning environment that promotes listening, discussions and questions. The physical setting of such learning environment must also be devoid of unnecessary noise that may interfere and distract an auditory learner. However, a learning environment that discourages listening, discussions and questioning may discourage an auditory learner leading to low learning outcomes. Similarly, a classroom that is located in a noisy environment may interfere with students' attention leading to low learning outcomes

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This chapter covers the study area, research design, target population and sample size sampling procedure, methods of data collection, data analysis procedures, and the ethical considerations.

3.2 Research Design

The study employed the comparative research design. This design focuses on examining the differences in variables in two or more groups that occurs in the natural setting (Creswell, 2014). In particular, this study sought to examine the difference in learning style preferences between full-time AGED students and part-time AGED students. The goal was to determine whether the difference in the mode of study of the two groups of students influence their preferred learning style.

3.3 Location of the Study

This study was carried out at Egerton University, Njoro Campus, which is located in Njoro Sub-County of Nakuru County. The location was purposively selected due to its accessibility by the researcher. This study targeted AGED students because this programme has been in existence for a long time; hence, has been subjected to many reviews on content delivery.

3.4 Population of the Study

The study population consisted of 589 second, third and fourth year students of AGED at Egerton University Njoro Campus. Second-year, third-year and fourth-year students were selected because they had been in the system much longer, therefore they could easily identify the most preferred learning style (Table 1).

Table 1: Population of the study

Year of study	Full time	Part time	Total Population
2nd	142	40	182
3rd	150	52	202
4th	145	60	205
TOTAL	**437**	**152**	**589**

Source: Department of Agricultural Education and Extension, Egerton University (2017).

3.5 Sampling procedure and Sample Size

The study used purposive and stratified sampling methods. Stratified random sampling was used to select respondents. The students' year of study and mode of study was treated as

strata. Purposive sampling was used to select 6 interview participants who were the class representatives. Class representative in the university system officially represent their class acting as a link between students and lecturer at the course level.

The total number of second year, third year and fourth year students pursuing AGED at Egerton University Njoro Campus was 589. From this population, a sample of 238 students was selected for purposes of administering the questionnaires. The sample size was spread proportionately across the categories in all subgroups involving students in second, third and fourth year's students. This is to ensure that there is representative sample from various sub groups. This study used Kathuri and Pal (1993) to determine the sample size.

$$n = \frac{X^2 * N * (1-P)}{(ME^{2*}(N-1) + (X^2 * P * (1-P))}$$

Where :

n = Sample size

X^2 =Chi-square for the specified confidence level at 1 degree of freedom

N = Population Size

P = population proportion (50 in this table

ME = desired Margin of Error (expressed as a proportion

* = multiplication

$$\frac{3.841 \times 589\ (0.5)\ (1-0.5)}{(0.05)^2\ (589-1) + (3.841 \times 0.5)\ (1-0.5)}$$

$$\frac{565.59}{1.425 + 0.954}$$

$$\frac{565.59}{2.38} = 238$$

Table 2: Sampling plan

Year of Study	Proportion		Sample Size
	Full-time	Part Time	
2nd	57	17	74
3rd	62	21	83
4th	57	24	81
Total	**176**	**62**	**238**

Source: Department of Agricultural Education and Extension, Egerton University (2017).

3.6 Instrumentation

This study used both qualitative and quantitative approaches of data collection. Questionnaires were the main instrument of data collection. Questionnaires contained open and closed ended questions to enable collection of standardized responses while simultaneously providing the respondents with the opportunity to articulate issues without restrictions. The questionnaire had two sections. The first section gathered data relating to the background of the respondents. The second section had questions relating to the independent variables of the study. Qualitative data was obtained through the use of in-depth interviews. A semi-structured interview was used to guide the interview sessions (Appendix II).

3.7 Validity of Instrument

Validity is the extent to which a test measures what it is supposed to measure (Kombo & Tromp, 2006). A research instrument is valid if its content is relevant and appropriate to research objectives. Validation of the instruments was done before the commencement of the actual research. The instruments were presented to experts at the Department of Psychology, Counselling and Educational Foundations and Faculty of Education and Community Studies for scrutiny and examination. Their suggestions and recommendations were incorporated to improve the validity of the instruments before their administration.

3.8 Reliability of Instrument

Kombo and Tromp (2006) defined reliability as a measure of consistency of the results from a test. To determine reliability of the research, a pilot study was carried out on 24 students (10% of the sample size for the main study) of Bachelor of Science in Agricultural Education and Extension at Laikipia University. The test-retest method was used to test for reliability, which entailed administering the questionnaire on the same group of students twice at an interval of two weeks and then comparing the data from the first wave with that of the second wave using the Pearson correlation method (Zywno, 2003). The test gave a correlation coefficient of 0.784, indicating the students' responses in the first wave of data collection had strong similarity to the responses in the second wave. This implied that the questionnaire had a high level of reliability.

3.9 Data Collection Procedures

The researcher obtained researcher approval from the office of the Director Graduate School at Egerton. The researcher then applied for research authorization from National Commission for Science, Technology and Innovation (NACOSTI) through the school of post graduate

studies of Egerton University. Copies of the research authorization letter from University Ethical Committee and NACOSTI permit are included in the document as Appendix III and IV respectively. Once the permit was obtained, the researcher met with second, third and fourth year AGED students to explain to them about the purpose of the study and ask for the consent. Separate meetings were arranged for each year with assistance of class representatives. The researcher randomly distributed to questionnaires among the students in line with the sampling plan. The researcher explained how to fill the questionnaires. Upon completion the researcher collected the completed questionnaire with help of class representatives. Six class representatives were interviewed for 20 minutes for both full-time and part-time. The interview took place in Egerton University, Njoro campus, and open ended questions were asked on a face to face basis in order to allow discussions and explanations.

3.10 Data Analysis

The researcher scored the instruments to generate quantitative data which was then analysed. Quantitative data was analysed both descriptively and inferentially. Descriptive statistics used were frequencies and percentages. Using T-test, the null hypotheses were tested at $\alpha = 0.05$, level of significance. The T-test was used to establish whether there was a statistically significant difference between the preferred learning styles in the two modes of study. Cross-tabulation and chi-square were used to compare components that were categorical in nature. Qualitative data was analysed using the thematic technique, which entails identifying themes that relate to the study objective from participants' narrations.

Table 3: Summary of data analysis

Objective	Dependent Variable	Independent Variable	Statistical Tests
To compare the preference of visual learning style between full-time and part-time Agricultural Education and Extension students at Egerton University	Visual Learning ▪ Writing ▪ Observation ▪ Reading	▪ Full-time ▪ Part-time	• Mean • Standard Deviation • T-Test
To compare the preferences of auditory learning style between full-time and part-time Agricultural Education and Extension students at Egerton University.	Auditory Learning ▪ Listening ▪ Discussions ▪ Questing	▪ Full-time ▪ Part-time	• Mean • Standard Deviation • T-Test • Chi square
To compare the preferences of kinaesthetic learning style between full-time and part-time Agricultural Education and Extension students at Egerton University.	Kinaesthetic Learning ▪ Demonstrations ▪ Movements ▪ Group work ▪ Academic trips	▪ Full-time ▪ Part-time	• Mean • Standard Deviation • T-Test

3.11 Ethical Considerations

The consent process ensures that students who participated in the research were vividly aware of their learning styles. This study informed participants about the purpose of the research and expected duration. Upholding individuals' rights to confidentiality and privacy is a central tenet of every research work. Consequently, this study held high level of confidentiality during field work and assured the participants that the results of the study would be used for academic and policy issues only. The study has not revealed the identity of

any of the participants. This study also accorded participants the discretion and freedom to choose how much information about themselves and the issues under inquiry they were willing to reveal and under what circumstances.

CHAPTER FOUR
RESULTS AND DISCUSSION

4.1 Introduction

This study examined selected learning styles preferred by full time and part-time students pursuing degree program in Agricultural Education and Extension of Egerton University, Kenya. The study was guided by the following objectives; a) to examine whether visual learning style was preferred by students pursuing degree program in Agricultural Education and Extension of Egerton University, b) to establish whether auditory learning style was preferred by students pursuing degree program in Agricultural Education and Extension of Egerton University, and c) to assess whether Kinaesthetic learning style was preferred by students pursuing degree program in Agricultural Education and Extension of Egerton University. This chapter presents the results of this study and the discussions of the results in relation to other related studies, according to the objectives. The following are therefore the results of the study based on the objectives highlighted above.

4.2 Background Information

The study assessed a number of background information about the respondents including their age and gender. According to Robinson, McMichael, and Hernandez (2017), analysing respondents' background traits helps the research to determine the representativeness of the sample. This information also assists in generalization of findings as it enables research consumers to determine whether the findings of the study would apply in their contexts.

4.2.1 Age of the Respondents

The ages of respondents were analysed by categorizing the participants into four age brackets (Below 21, 22-23, 24-25, and over 25 years. Results are presented in Table 4.

Table 4: Age of the Respondents

Age	Frequency(f)	Percent (%)
Below 21 Years	53	23.5
22-23 Years	131	58.0
24-25 Years	37	16.4
Over 25 Years	5	2.1
Total	**226**	**100.0**

As Table 4 illustrates, the majority of the surveyed students (58%) were between 22 and 23 years. However, the sample was inclusive of students of other age groups with 23.5% being in 20-21 years' brackets, 16.4% being between 24 and 25 years, and 2.1% being over 25 years. These results reflect the current age composition of universities and most tertiary education institutions in Kenya. According to Statistics from UNESCO (2017), the majority of students in Kenyan tertiary education institutions are between the ages of 18 and 22 years. Since the current study targeted third and fourth year students, little representation of individuals who were younger than 20 years of age was expected.

4.2.2 Gender of the Respondents

The gender of respondents was also assessed. Results are presented in Figure 2.

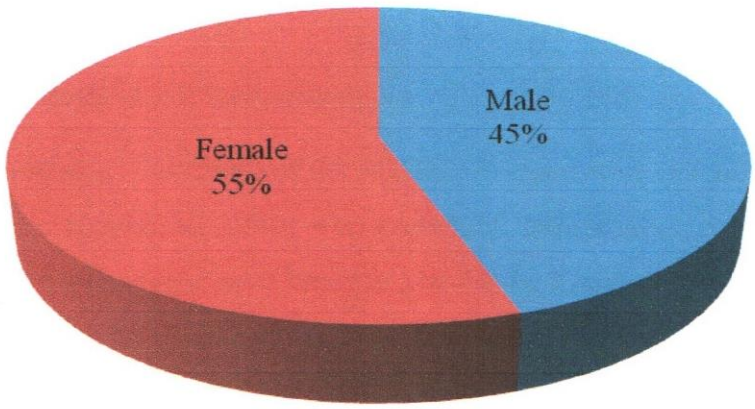


Figure 2: Gender of the Respondents

As Figure 2 shows, 124 (55%) of the students engaged in this study were females while males were 102 (45%). Expansion of education opportunities to females through affirmative action and the fight against retrogressive cultural practices such as early marriages has seen an improvement in girls' performance at basic education level (Kibui & Mwaniki, 2014). This has resulted in a higher transition of females to tertiary institutions including the universities but also more females unlike before are attaining grades that permit them to get admitted into science based courses such as AGED that were previously dominated by males. It was therefore not surprising to this study that a significant proportion of the students pursuing AGED were female student.

4.2.3 Mode of Study of the Respondents

The respondents' mode of study in terms of whether the respondent was a full time or part time student was also assessed. This information was important because mode of study was the independent variable in this research. Results are summarized in Figure 3.

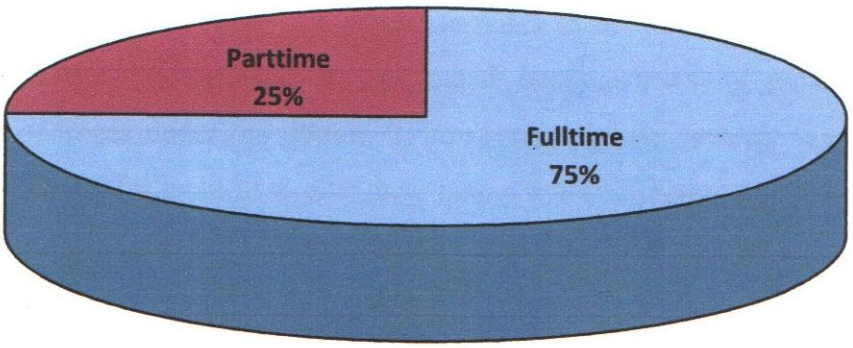


Figure 3: Mode of Study of the Respondents

As Figure 3 demonstrates, 170 (75%) of the students engaged were pursuing their studies on a full time program, against 56 (25%) who undertook their studies on a part time basis. Although part-time programmes have become popular in Kenyan universities due to their ability to accommodate working and married students, these programs are mainly widespread in campuses located in urban areas where people can easily access them after work or easily get to their homes after classes (Chen & Charoll, 2007). This study was conducted in Egerton University main campus located in peri-urban area thus it was not surprising that the majority of the sampled students were full time learners.

4.3 Visual Learning Styles

The first objective of this study was to examine whether visual learning style was preferred by students pursuing degree program in AGED. To achieve this objective, the following aspects were analysed and discussed; respondents view on the importance of giving notes during lectures, mode of giving lecture notes preferred by students, the extent to which students were up to date in taking lecture notes, sitting position preferred by students during lectures, the importance of lecturers giving students assignments and significance of lecturers encouraging students to undertake own reading. The following are therefore the results and

discussions of the study on whether visual learning style was preferred by students pursuing degree program in Agricultural Education and Extension of Egerton University.

4.3.1 The Importance of being given Lecture Notes by Lecturers

In this question, the study sought to establish the level of importance students attached to the idea of being given lecture notes by their lecturer. It is important to note that lecturers at the university level are not compelled to give lecture notes to the students. However, in many cases, a lecturer goes out of their way to give lecture notes as a way of enhancing learners' comprehension of issues under discussion. It, however, remained unclear whether students considered it important for lecturer to give them notes. It was therefore necessary to establish the level of importance students attached to the idea of given notes by their lecturer. The results of the study on the importance of lecturers giving notes to their students are presented in Table 5.

Table 5: The Importance of being given Lecture Notes by Lecturers

Importance	Frequency (f)	Percent (%)
Very Important	69	30.7
Important	119	52.8
Somehow Important	30	13.4
Least Important	6	2.5
Not Important	2	.6
Total	**226**	**100.0**

The results of the study in Table 5 shows that 30.7% and 52.8% of the students engaged in this study considered being given notes by their lecturers as very important and important respectively. Further, 13.4% of the students considered being notes by their lecturers as somehow important. Another 2.5% of the students engaged in this study considered being given notes by their lecturers to be least important.

The findings of this study, which shows majority of students, considered being given lecture notes as important resonates well with a study by Landrum (2016), which focused on faculty and student perceptions of providing instructor lecture notes to students. The study found that 83% of the students did not only consider being given lecture notes as important but also

expected their lecturers to give them notes. The study also found that 60% of the lecturers gave students notes through chalkboard or whiteboards while 40% gave notes through power point projections. While students generally appreciated the idea of being given lecture notes, it emerged that some students took the opportunity of being given notes to miss lectures. A class representative of one of the AGED groups covered in this study was concerned that some students do skip lectures knowing quite well that they will still get the notes from their colleagues who attend lectures.

This study also sought to establish the mode of giving notes by the instructors that were preferred by students. This question was also neccesitated by the fact that lecturer prefers various modes through which they can use to give notes to their students. These mode include but not limited to dictation, photocopying and electronic means. The results of the study on the mode of giving notes most prefered by students are presented in Figure 4.

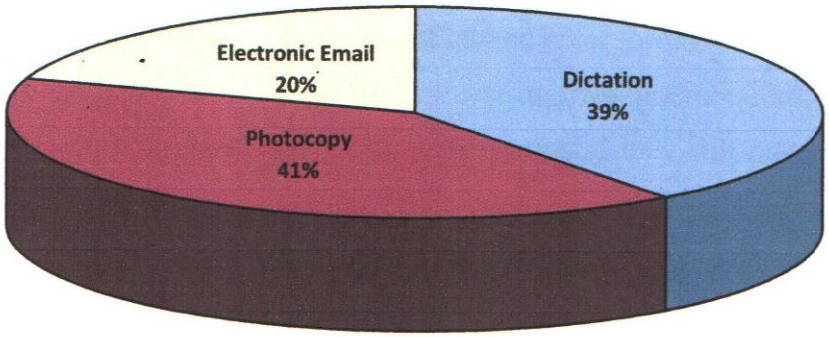


Figure 4: Mode of Giving Notes preferred by Students

As evident from the study results in Figure 4, majority of the students preferred lecturers to give them notes through dictations and photocopying. Sending students lecture notes through electronics was the least preferred by students. Students who preferred dictation as a mode of giving them lecture notes accounted for 39% of the students engaged in this study. Photocopying and electronic delivery of notes was preferred by 41% and 20% of the students respectively.

Although dictation may slow the pace at which lectures are delivered, it is a more effective way of providing notes to the students. It also gives lecturers room to explain concepts and other key issues while giving the notes (Tron, 2012). Dictation also allows students to seek explanations from their lecturers on issues that are not clear to them. The effectiveness of

dictation requires students to be fast and efficient in note taking. It also requires lecturers to be audible and willing to re-read when called upon by students some parts of the notes and write on the board concepts and terms just to ensure that students get the spellings right. However, dictation can be disadvantageous to students who are slow in note taking. It may also be undesirable to shy students who find it hard to raise any concern about the note taking with their lecturers (Tron, 2012). However, despite the demerits of highlighted, students preferred to receive notes through dictation.

Provision of lecture notes through photocopying/ handouts can be done before or after the delivery of lectures. Lecturers who provide notes through photocopying are likely to cover the syllabus faster because they only spend time on explaining the issues (Soudarssanane, 2006). Students on their part must have money to photocopy the work. Although photocopying is a quick way of getting the notes, it is replete with the danger of some students not getting the notes because of cost implication. Some students may find it expensive to cater for the cost of photocopying especially where every lecturer elects to provide notes through photocopy. Provision of lecture notes through electronic means is more efficient in institutions that students have access to free internet services (Betz, 2013). However, even where students can access internet freely, they still have to download and print the notes. Printing can pose even a greater financial challenge to the students more than the notes. This study therefore attributes the low popularity of photocopying and electronic means as modes of providing notes to the cost that they have to incur in accessing the notes.

Results of the study in Figure 4 showed that there were modes of giving notes that students preferred. These were dictation, photocopying and through electronic means. However, the results mentioned before does not reveal much the mode of giving notes were preferred by students pursuing their degree program through full time and part time basis. It was therefore necessary for this study to undertake further analysis to ascertain students' preference based on their mode study. The results of the study in Table 6 shows mode of giving lecture notes based on their mode of study.

Table 6: Cross-tabulation of Mode of Study by Mode of Giving Notes

		Mode of giving notes			
		Dictation	Photocopying	Electronic Mail	Total
Mode of	Full time	72	68	30	170
Study		42.4%	40.0%	17.6%	100.0%
	Part Time	17	24	15	56
		30.4%	42.9%	26.8%	100.0%
Total		**89**	**92**	**45**	**226**
		39.4%	**40.7%**	**19.9%**	**100.0%**

Chi-square= 3.391, df=2, p= .184

Results in Table 6 show that dictation was the most preferred modes of giving notes among the full time students followed with 42,4% of these students indicating that they prefer this method. Photocopying was preferred by 40% of the fulltime students while only 17.6% preferred the use of electronic mail. On the other hand, photocopying was the most preferred method of giving notes among the part time students with 42.9% of these students indicating that they prefer this method. About 30.4% preferred dictation while only 26.8% preferred electronic mail. These results illustrate that there some differences in the preferred mode of giving notes between the two groups of students. However, the chi-square test showed that this difference is not statistically significant (X^2=3.391, p >0.05)

4.3.2 Sitting Position Preferred by Students during Lectures

Courses such as Agricultural Education and extension are popular and as such attract a large number of students. Further, some course units in Agricultural Education and extension program are borrowed from other related disciplines, which imply that students of Agricultural Education and extension are mixed with students taking other degree programs for some course units. Consequently, some course units in Agricultural Education and extension have to be convened in large lecture halls. Holding lectures in large lecture halls make some students prefer to sit at certain positions with the lecture hall that they consider strategic enough. A lecture hall has three possible sitting positions namely front, middle and behind. It was thus important for this to establish from the students, the position in the lecture hall they preferred to sit during lectures. Figure 5 shows the result of the study on sitting position preferred by students during lectures.

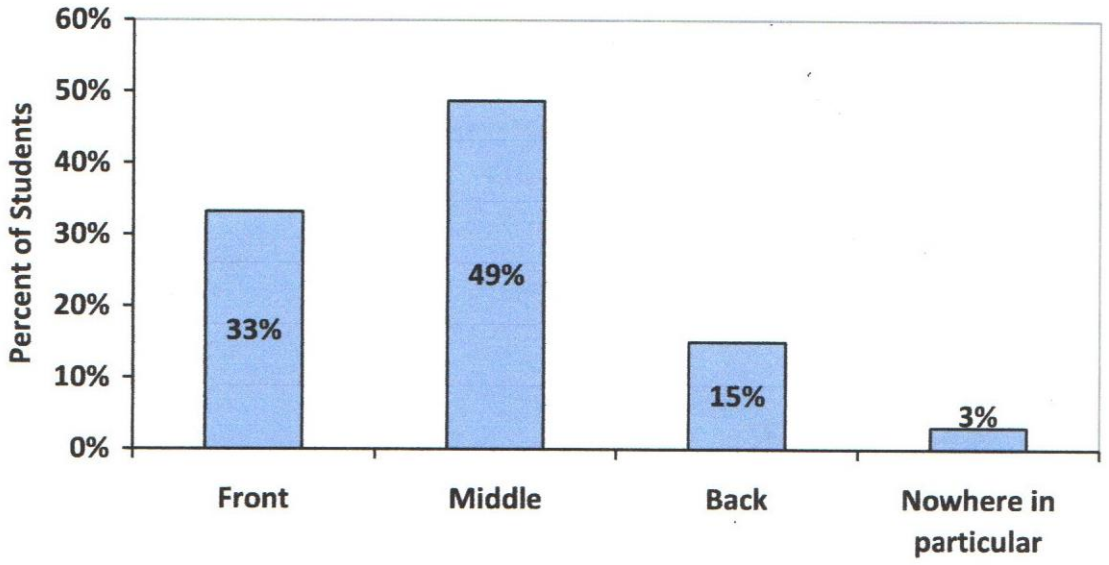


Figure 5: Sitting Positions Preferred by Students during Lectures

Majority of the students preferred to sit in the middle of the lecture hall during lectures according to the results of the study in Figure 5. Closer examination of the results reveals that 49% of the students engaged in this study preferred to sit in the middle of the lecture hall during lectures. The front sitting position is preferred by 33% of the students while 15% indicated that they preferred to sit at the back of the hall. It is, however, important to note that some students had no preferred sitting position during lectures. Students who indicated that they had no preferred sitting position during lectures accounted for 3% of the students engaged in this study. In terms of classroom positioning, it has been established that visual learners prefer sitting in the front of the classroom (Gilakjani & Ahmadi, 2011). Therefore, majority or 51.5% of the students engaged in this were visual learners given their propensity to sitting in front of the lecture halls.

Although students preferred various sitting positions during lectures, it was important for this study to establish whether students had any preferred sitting positions based on their mode of study. The following is therefore the result of the analysis on the sitting position preferred by full time and part time students.

Table 7: Cross-tabulation of Mode of Study by Sitting Position

		Sitting position				
		Nowhere in particular	Back	Middle	Front	Total
Mode of Study	Full time	6	24	82	58	170
		3.5%	14.1%	48.2%	34.1%	100.0%
	Part Time	1	10	28	17	56
		1.8%	17.9%	50.0%	30.4%	100.0%
Total		**7**	**34**	**110**	**75**	**226**
		3.1%	**15.0%**	**48.7%**	**33.2%**	**100.0%**

χ^2= 1.012, df= 3, p=.798

The study results in Table 7 show that Middle is the most preferred sitting position by both full time and part time students with 48.2% of full time students preferring this position and 50% of part time students preferring it. The Front was the second most preferred sitting position by both group of students with 34.1% of full time students preferring this position and 30.4% of part time students preferring it. Since preference for front sitting position is associated with visual learners, this result suggests that there were more visual learners in the full time group than in the part time group. The chi-square test however indicates that there is no statistically significant difference in the sitting position preferred by the two groups of students (χ^2=1.012, df=3, p > 0.05).

It is important to note here that full time program attracted a higher number of students compared to part time students. Full time students had an average of 150 students compared to about 40 for part time students per class. The high population of full time students attending lectures at any one sitting requires these classes to be held in large lecture halls. Many full time students therefore prefer to sit in front in order for them to avoid distractions and clearly hear their lecturers and also to clearly see what is written on the white board during lectures. This study therefore attributes full time students' preference to sit in front due to large classes, which may interfere with lecturer's audibility and other forms of distractions if they were to sit at the back of the lecture hall. Given the small class size of part time classes, they are likely to be held in relatively smaller lecture halls. The close proximity between the lecturer and the students in small lecture halls means that students can clearly hear the lecturer and also see what is written on the white board when seated at any position

within the lecture hall. This explains why fewer students on part time program find it necessary to take front sitting position during lectures.

When asked to state why they prefer sitting in front, three out of six students interviewed in this study pointed that sitting in front enables them to clearly hear the lecturer and also see clearly what is written on the white board. They also pointed out that they experience fewer distractions during lectures when they sit in front. However, some students stated that they only sit in front of the class during course units are taught by lecturers they consider as interesting. The findings of this study are consisted to studies by Rayneri, Gerber and Wiley (2003) and Tiirkniiklii and Galton (2001), which equally found that majority of students prefer sitting in front during lessons. These studies have further found that student who sit in the front of the class outperform their counterparts who sit in other positions in the classroom (Rayneri *et al.,* 2003). Although some students would prefer to sit at the back, a study by Tiirkniiklii & Galton (2001) found these students recorded increased performance when they are brought up to the front. Students' sitting position in a classroom also reflected their interest and attitude towards the course.

A study by Benedict and Hoag (2004) for example, found that students who sat at the back of the classroom had less interest in the lesson and created a major problem for the teachers during lessons. Further Kaufman (2005) asserted that students who are interested in a particular course tend to sit closer to the front of the room, while those who are not interested tend to sit towards the back. This study attributes better performance of students who sit in front of the classroom to their possible increased class participation, proximity to instructor proximity, increased eye contact, fewer distractions and higher concentration.

4.3.3 The Importance of Lecturers Giving Students Assignments

Assignments provide students with the opportunity to explore issues in depth, demonstrate their writing and presentation skills. However, it was not clear whether students considered assignments as an important component of their assessment. This study thus found it necessary to establish the extent to which students appreciated assignments as a core component of their training. The results of the study on the importance of lecturers giving students assignments are presented in Figure 6.

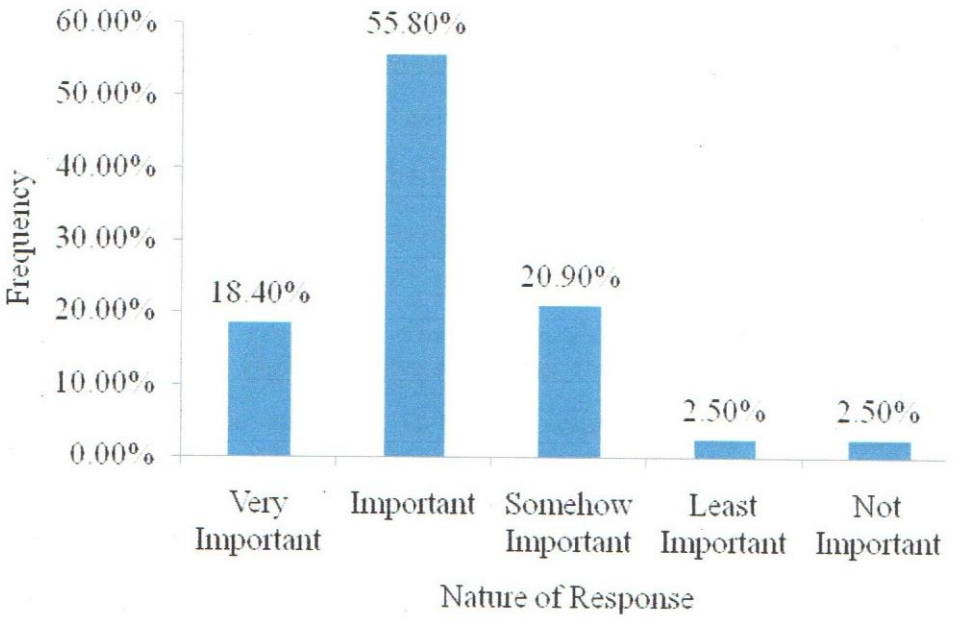


Figure 6: The Importance of Lecturers giving Students Assignments

Although most of the students held that it was important for lecturers to give them assignments, it was only 18.4% of the students who considered it very important. The results of the study shown in Figure 6 also indicate that 55.8% and 20.9% of the respondents considered being given assignments by their lecturers as important and somehow important respectively. While 2.5% of the students engaged in this study appreciated the importance of lecturers giving students assignments, they noted that the practice was least important to them. The idea of lecturers giving their students assignment was considered not important by 2.5% of the students engaged in this study.

The results of this study is similar to that of Latif and Miles (2011) whose examination of the impact of assignments on academic performance did not only find that majority of students reported that assignments were important in their training but also that assignments had a significant positive impact on their academic performance at university level. Assignment writing enhances students' knowledge about the subject through increased writing skills, logical arguments and critical thinking. A student who has deeper knowledge of the subject under study, possess good writing skills, can argue objectively and logically and think critically stand a better chance of performing in the subject unlike their counterparts that lack some or all the above.

When probed further to explain why they considered writing assignments as an important aspect of their training, students observed that assignments help them in developing their analytical ability, innovative and diverse ways of responding to questions in examinations.

Assignment being time bound imply that students have to complete them within the deadline. Since students have to come up with some goals to complete the assignment within the deadline, students noted that assignment writing helps them in time management. Students also noted that assignments prevent them from indulging in other activities that are detrimental to their academic work such as alcoholism, partying and joining unhelpful social groups.

The results of the study in Figure 6 reveal that all the students save for 2.5% of them considered assignments to be important to their training although with varying degree of importance. However, the above results did reveal how much importance full time and part students attached to the assignments being given to them by their lecturers. This study thus found it necessary to undertake further analysis of the results of the study in order to ascertain students' preference of assignments based on their mode of study. The findings of the study on the importance of assignments based on students' mode of study are presented in Table 8.

Table 8: Importance of Assignment based on Mode of Study

Mode of Study	N	Mean	Std. Deviation	Mean Difference	t	p
Full time	170	3.8765	.83703	.00147	.011	.991
Part Time	56	3.8750	.85413			

Both modes of study considered assignments to be important to their learning process with full time students giving the importance of assignment a mean rating of 3.8765 and part time students giving it a mean rating of 3.8750. Given that the issue of assignment was measured on a five-point scale (1-not important, 2- least important, 3- somehow important, and very important), the mean ratings given by both groups of students would round off to 4 suggesting that the majority of these students perceive assignments to be important in learning. Full time students had a marginally higher mean rating that part time students with the difference in the mean rating for the two group being 0.00147. The independent sample t-test showed that this difference is not statistically significant ($t=.011$, $p>0.05$)

It should be recalled that part time students in AGED program pursue their studies during school holidays. It is expected of students on part time program to cover in just about four weeks what their full time counterparts do cover in about twelve weeks. This means that part time students have to study for longer hours each day. Many times, they are also required to take classes on weekends. Therefore, the tight teaching schedule for part time students may

have made them perceive assignments as an additional burden to their already heavy workload hence their less enthusiasm towards the assignments.

4.3.4 The Significance of Lecturers Encouraging Students to Undertake Own Reading

Although lecturers are required to cover the entire curricula, students too are required to play an active role in the implementation of the curricula. Students undertaking own reading on topical issues is one of the ways through which lecturers involve students in curricula implementation. However, effective involvement of students in curricula implementation through own reading depends largely on the students' appreciation of the significance of their involvement. This study therefore found it important to establish the extent to which students considered their involvement in curricula implementation through engaging in own reading of topical issues in various course units. Figure 7 shows the results of the study on the significance of lecturers encouraging students to undertake their own reading of certain issues in the various course units.

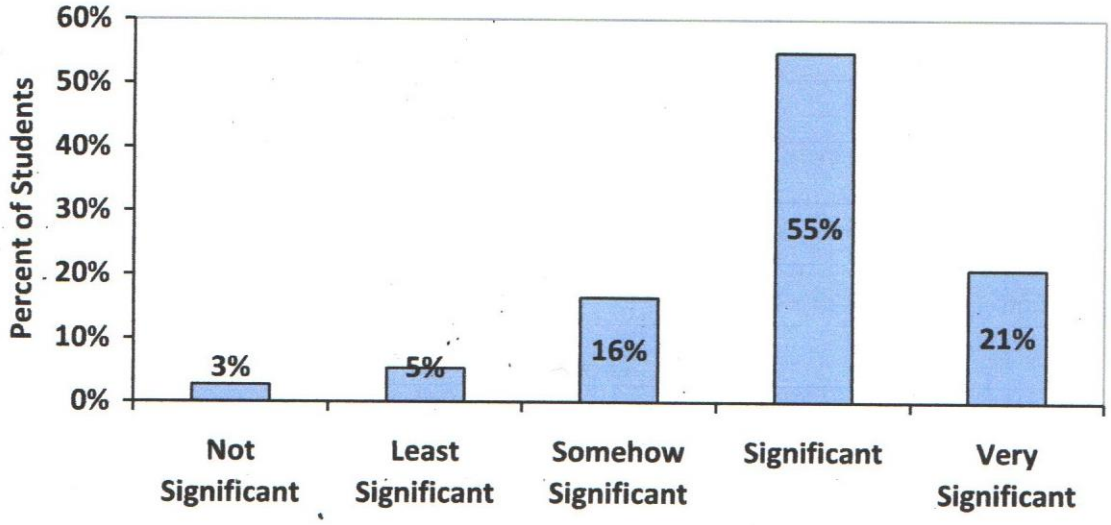


Figure 7: Significance of Encouraging Own Reading

Majority of the students (55%) generally held that it was significant for lecturers to encourage students to undertake own reading on some areas instead of everything having to be taught in class. This position was, however, contradicted by 3% of the students as shown in Figure 7. About 21% and 55% of the students considered undertaking own reading as very significant and significant respectively. Students who considered own reading as somehow significant and least significant accounted for 16% and 5% respectively of the students engaged in this

study. However, 2.5% of the students who participated in this study considered own reading of topical issues not significant.

Majority of the students based on the results of the study were linguistic visual learners. Rakap (2010) defines linguistic visual learners as those who like to learn through written language such as reading and writing tasks. Linguistic visual learners remember more issues through writing and reading. Such students are likely to prefer a teaching environment that encourages them to undertake extensive reading and writing of issues they are being trained on. Such students also remember well issues that they have written down even if they do not read them often. These learners also write down directions and pay better attention to instructors if they watch them.

The results of the study in Figure 7 show that the students who participated in this study considered reading on their own as a significant aspect of their training. However, there was need for further analysis of the results to establish how much significance students pursuing Agricultural Education and Extension through various mode of study attached to reading on their own. The results of the study in Table 9 are a summary of data analysis on the significance of students reading on their own based on their mode of study.

Table 9: The Significance of Own Reading based on Mode of Study

Mode of Study	N	Mean	Std. Deviation	Mean Difference	t	p
Full time	170	3.8294	.07081	-.11702	-.845	.399
Part Time	56	3.9464	.10937			

The results in Table 9 was considered to be more significant by the part time students (Mean=3.9464) than the full time students (Mean= 3.8294). However, the mean rating given by the two group of students were in the same range. Since the significance of own reading was rated on a five-point scale (1- not significant, 2- least significant, 3-somewhat significant, 4-significant, and 5-very significant) the mean rating given by both groups would round off to 4 suggesting that students in the two groups perceived own reading be significant. The difference in the mean rating between part time and full time students was 0.11702. The independent sample t-test showed that this mean difference was not statistically significant ($t=-.845$, $p>0.05$).

It is impossible for lecturers to cover everything that is enshrined in the curriculum of AGED through lectures. Students are thus expected through the guidance from their lecturers to read some topics or sub-topics on their own. It is also expected of students to create to critically read even the areas that they have covered in class. By undertaking their own reading students gets the opportunity to understand issues from diverse perspectives as conceptualized by different authors and authorities. Own reading also enables students to expand their knowledge of issues already covered in class and also gain familiarity with areas not covered in class. Own reading also helps students in developing analytical mind, which may be essential when responding to questions during examinations. Own reading may also help students develop time management skills since they have to include as part of their daily academic activities. This study therefore views no significant difference between full time and part time students in their preference for own reading, to the critical role reading plays in the academic and intellectual development of the students. Consequently, all students regardless of their mode of study considered own reading as being essential and significant to their academic development.

4.3.5 Overall Difference in the Preference of Visual Learning styles

To address the first research objective, it was essential to analyze the overall difference in the preference of visual learning between full time and part time aged students. The students mean rating of the four individual components for visual learning were combine to obtain a cumulative mean. The independent sample t-test was then used to assess the difference in the cumulative means of the two groups of students. Results are presented in Table 10.

Table 10: Overall Difference in the Preference of Visual Learning

Mode of Study	N	Mean	Std. Deviation	Mean Difference	t	p
Full time	170	3.7397	.43714	.02096	.397	.692
Part Time	56	3.7188	.30549			

From results presented in Table 10, full time students had higher preference for visual learning that part-time students. The cumulative mean for full time students was 3.7397 as compared to 3.7188 for part time students. The difference in the mean scores of the two groups was 0.02096. The independent sample t-test showed that this difference is not statistically significant ($t=.397$, $p>0.05$). The null hypothesis was therefore not rejected and

conclusion made that there was no significant difference in the preference of visual learning style between full-time and part-time Agricultural Education and Extension students at Egerton University

4.4 Auditory Learning Styles

The second objective of this study was to establish whether auditory learning style was preferred by students pursuing degree program in Agricultural Education and Extension of Egerton University. To achieve this objective, the following issues were analyzed and discussed; significance of active listening by students during lectures, the level at which students actively listen during lectures, the extent to which lecturers were audible while teaching, the importance of using sound equipment to enhance lecturers' audibility, the extent to which quality sound systems are installed in large lecture halls, the significance of lecture halls being situated in serene places, the importance of discussions on topical issues to students' learning, the frequency with which class discussions were held on topical issues, the importance of students asking questions during lectures, adequacy of time accorded students to ask questions during lectures, and the adequacy of responses given by lecturers to questions raised by students during lectures. The following is therefore the results and discussions of the study on whether auditory learning style was preferred by students pursuing degree program in Agricultural Education and Extension of Egerton University.

4.4.1 Significance of Active Listening by Students during Lectures

While students may be physically present in during lectures, some may be distracted from what is being taught by concentrating on their cell phones, chatting with colleagues and attending to other things that have nothing to with what is being taught. Therefore, the physical presence of a student during lectures is not a guarantee that the concerned student actually comprehends what is being taught. Although it may take some students several revisions of what has been taught in order to clearly understand some issues, some of the issues being taught can be understood right away through active listening. The centrality of active listening in learning is what prompted this study to establish the level of significance students attached to active listening. The views of the respondents on the significance of active listening are presented in Figure 8.

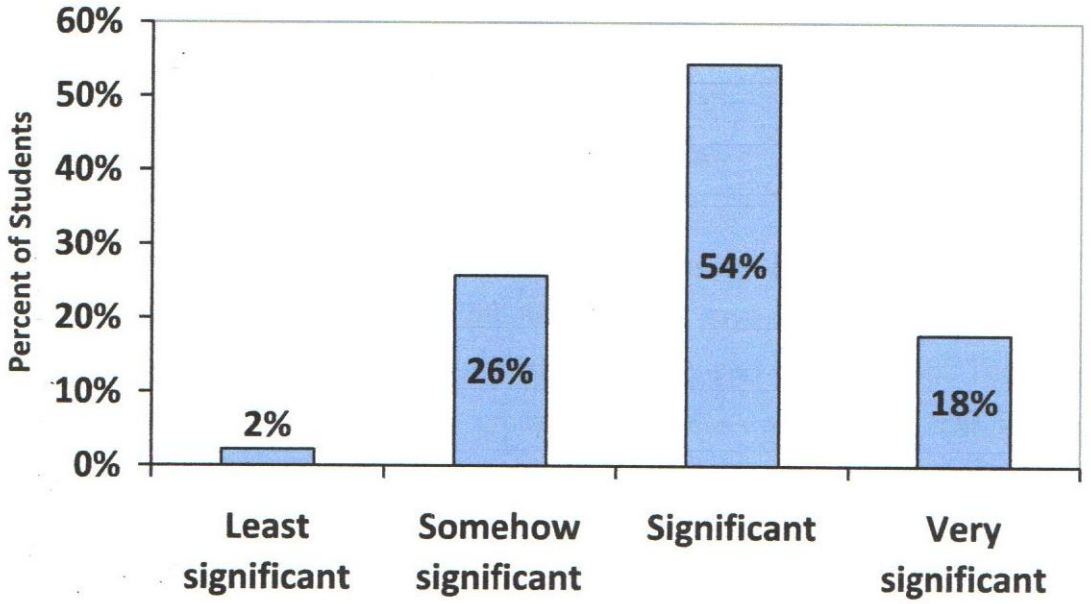


Figure 8: Significance of Active Listening by Students during Lectures

As shown in Figure 8, the majority of the students (54%) considered active listening to be significant whole 18% considered it to be very significant. Active listening during lectures was considered as being somehow significant and least significant by 26% and 2% of the students respectively. The results of the study presented in Figure 8 shows that majority of the students engaged in this study were auditory learners. An auditory learner depends on hearing and speaking as the main way of learning (Northey, 2005). Auditory learners learn best by processing information through what they hear (Heacox, 2002). Active listening is perhaps one of the ways through which students can clearly hear what is being stated by the instructors. Active listening therefore becomes a critical component of learning for the auditory learners.

All the students engaged in this study appreciated the significance of active listening during lectures although with varying degree of significance (Figure 8). However, there was need to establish the nature of this appreciation based on students' mode of study. The results of data analysis on the significance of active listening during lectures according to the students' mode of study are presented in Table 11.

Table 11: Significance of Active Listening based on Mode of Study

Mode of Study	N	Mean	Std. Deviation	Mean Difference	t	p
Full time	170	3.9000	.71873	.09643	.877	.382
Part Time	56	3.8036	.69856			

As results in Table 11 illustrates, full time students perceived active listening to be more significant than part time students. The full time students have active listening a mean rating of 3.9 as compared to the mean rating of 3.8036 given by part time students. The difference in the mean ratings given by the two groups of students was 0.09643. The independent sample t-test showed that this difference was not statistically significant ($t=.877$, $p>0.05$). This implies that the perception of the two groups regarding the significance of active listening was more or less the same. Students in all both groups appeared unanimous in their appreciation of the significance of active listening during lectures given the marginal difference in the mean scores of full time and part time students on this subject. Given that the significance of active listening was measured on five-point scale (1- not significant, 2-least significant, 3-somewhat significant, 4-significant, and 5-very significant) the mean rating by both groups rounds off to 4 suggesting that students in the two groups perceived active listening to be significant.

Active listening enables students to critically question the explanations being given by the instructors. Students who listen actively during lectures will most likely prefer lecturers who explain issues in details, provide relevant illustrations verbally. Students who engage in active listening are also likely to prefer lecturers who offer them the opportunity to seek from them further explanations on issues that are not clear to them. These students stand also to benefit in a teaching environment where lecturers offer students the opportunity to contribute to issues raised by their colleagues in form of responses. Active listening enables students to have a better comprehension of issues being taught because they concentrate fully while in class. Through active participation in class such students may also develop a good rapport with the instructors as well as positive attitude towards the subject. Students who listen actively in class also stand a better chance performing well in the subject. Active listening and participation may also help students develop their public speaking skills and boost self-esteem.

4.4.2 The Extent to which Lecturers are Audible While Teaching

Audibility of instructors remains one of the key concerns in auditory learning style. This implies that learners expect their instructors to be audible enough in order for them to clearly hear what is being said by the instructor. The significance of audibility in auditory learning style made it necessary for this study to determine whether lecturers were audible enough while delivering lectures. Figure 9 therefore presents the responses of the students when asked to either agree or disagree that their lecturers were audible enough while teaching.

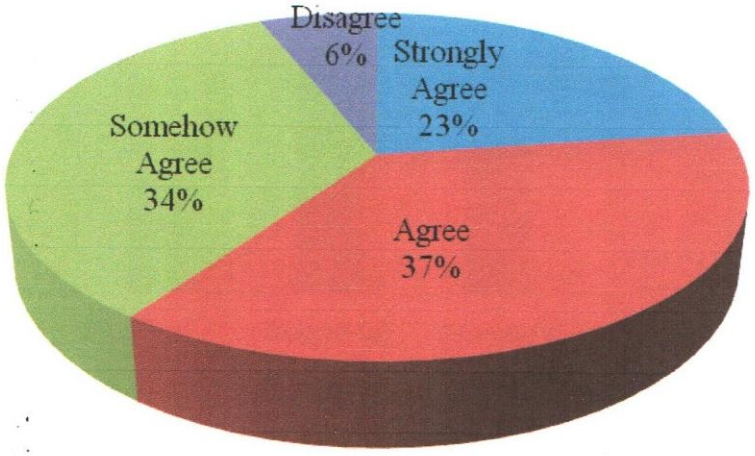


Figure 9: The Extent to which Lecturers are Audible while Teaching

When asked to state whether lecturers were audible enough while delivering lectures, majority of the students responded in the affirmative. Students who strongly agreed that lecturers were audible enough while teaching, accounted for 23% of the respondents. According to results of the study in Figure 9, 37% and 34% of the students agreed and somehow agreed that their lectures were audible enough. However, 6% of the students engaged in this study felt that their lecturers were not audible enough while delivering lectures.

4.4.3 The Importance of Installing Sound Systems in Lecture Halls

Some course units especially those that are taken by students from diverse academic programs normally have a large number of students. These course units in view of the huge number of students taking them have to be taught in equally large lecture halls. It is extremely difficult if not impossible for lecturers taking students in such course units to be heard by students especially those sitting at the back without the aid of sound system.

Although in many institutions of higher learning big, lecture halls have sound systems installed to enhance lecturers' audibility, it is possible that they are lacking in some institutions. The importance of sound system being installed in lecture halls needed to be established from the students using such lecture halls. The results of the study on the importance of installing sound systems in lecture halls are presented in Figure 10.

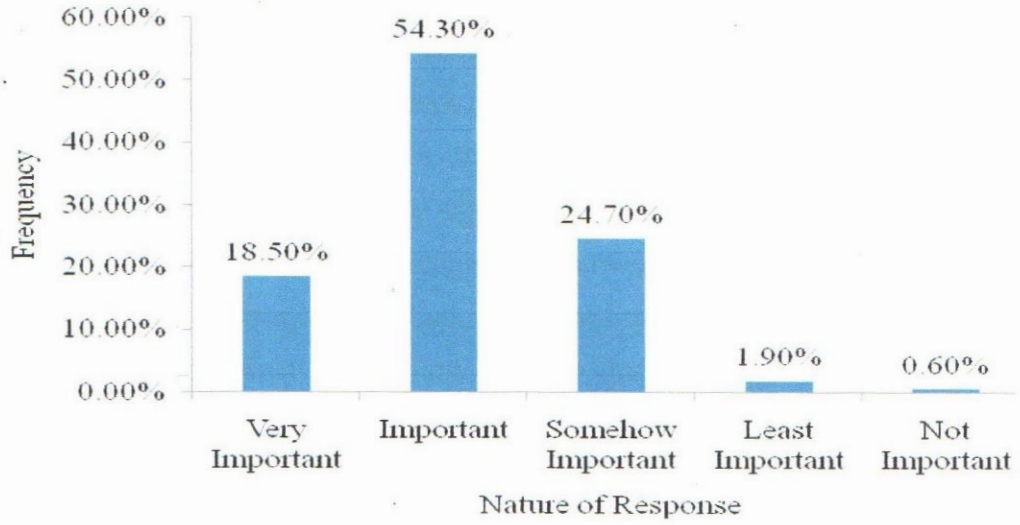


Figure 10: The Importance of Installing Sound Systems in Lecture Halls

Students overwhelming considered the installation of sound systems in lecture halls as being important in enhancing lecturers' audibility while delivering lectures. An examination of the study results in Figure 10 reveals that 18.5% of the students considered the installation of sound systems as very important in enhancing audibility of lecturers. Students who considered the installation of sound systems in lecture halls as being important and somehow important in the delivery of quality lectures constituted 54.3% and 24.7% of the students who participated in this study. Although 1.9% of the respondents acknowledged that it was important for sound systems to be installed in the lecture halls, they, however, considered the move as least important.

The difference in the rating of the importance given to the use of sound system between the two groups of students was analyzed using the independent sample t-test. Results are presented in Table 12.

Table 12: Importance of Sound Systems based on Mode of Study

Mode of Study	N	Mean	Std. Deviation	Mean Difference	t	p
Full time	170	3.9647	.73697	.33971	3.052	.003
Part Time	56	3.6250	.67588			

From the results presented in Table 12, full time students considered sound system to be more important' when compared to part time student. Full time student gave the importance of sound system a mean rating of 3.9647 as compared to a mean rating of 3.6250 given by part time students. The difference in mean ratings by the two groups of students was 0.33971. The independent sample t-test showed that this difference is statistically significant ($t=3.052$, $p <0.05$). This result implies that there is significant difference in the appreciation of the importance of having sound systems in lecture halls between the two groups of students with full time student having greater appreciation. This result may support the view that full time students have greater preference for auditory learning that part-time students. The effect of the difference in the class sizes of the two groups on the importance they have given to sound systems can however not be ignored.

The high population of full time students attending lectures at any one sitting requires these classes to be held in large lecture halls. Students seated at the back of the large lecture halls may not hear clearly the lecturer stationed in front of the hall. Lecturers taking such large classes may therefore need the help of sound systems so as to enhance their audibility especially to the students seated at the back. The distant proximity between the lecturer and the students at the back in large lecture halls means that students at the back cannot clearly hear the lecturer unless they use sound system. This explains why more students on full time program favour the installation of sound systems in their lecture halls. However, given their inferior numbers, part time programs can be held in small lecture halls where lecturer's audibility is achievable without the aid of sound systems. It is for this reason that very few students on part time program favored the installation of sound systems in their lecture halls.

A huge proportion of the students considered it important for lecture halls especially those that accommodate a large number of students to be installed with sound systems to enhance audibility of lecturers (Figure 10). This study therefore found it necessary to establish whether lecture halls where students taking AGED program have sound system. The results of the study on the availability of sound systems in lecture halls are as presented in Figure 11.

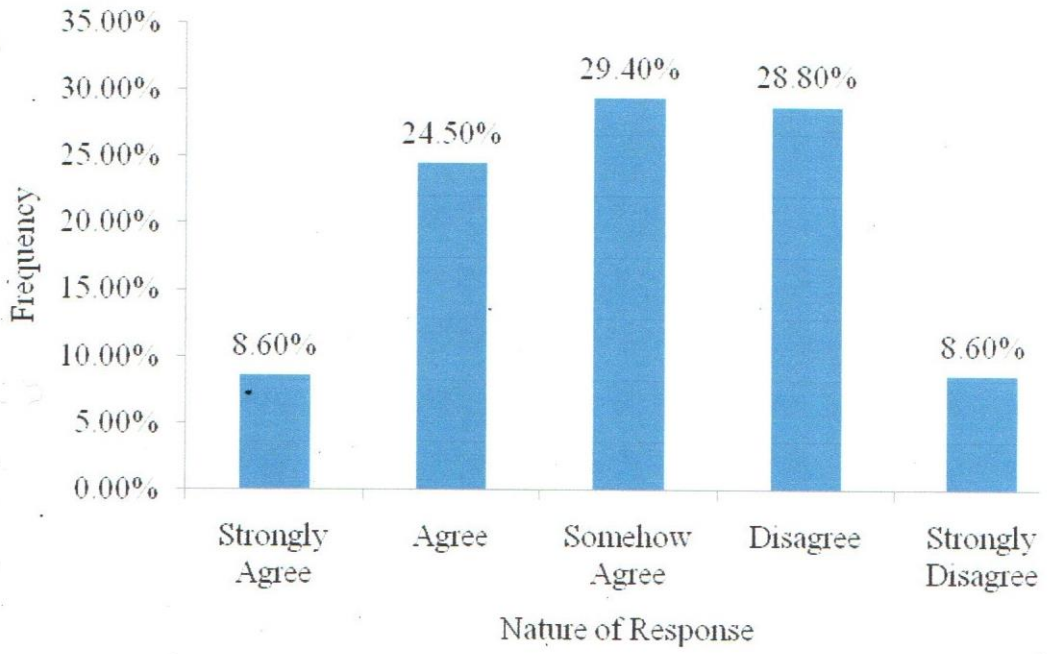


Figure 11: Extent to which Sound Systems should be Installed

When asked to state whether large lecture halls should be installed with sound systems to aid lecturers' audibility, majority of the students responded in the affirmative as shown in Figure 11. As evident in the results of the study in Figure 11, 8.6% of the students who participated in this study strongly agreed that sound systems should be installed in lecture halls. Respondents who agreed and somehow agreed that sound systems were available in large lecture halls to aid lecturers' audibility accounted for 24.5% and 29.4% respectively of the students engaged in this study. However, 37.4% of the students disputed the assertion of their colleagues that lecture halls had sound systems. In particular, 28.8% and 8.6% of the students disagreed and strongly disagreed that sound systems were available in large lecture halls.

4.4.4 The Significance of Lecture Halls Being Situated in Serene Places

Lecture halls should generally be located in an area, which is conducive for learning. Although there are many issues that constitute a conducive learning environment, a location that is peaceful and devoid of unnecessary noise is no doubt one of the indicators of a conducive environment. A serene learning environment is important since it enhances lecturers' audibility, and reinforces students' concentration and attention to what is being taught. Prompted by the importance of lecture halls being situated in a serene environment, this study sought to understand how much significance students attached to the serenity of the locations of their lecture halls. The following Table 13 is a summary of the study results on the significance of lecture halls being situated in a serene environment.

Table 13: The Significance of Lecture Halls Being Situated in Serene Places

Significance	Frequency (f)	Percent (%)
Very Significant	24	10.4
Significant	104	46.0
Somehow Significant	72	31.9
Least Significant	21	9.2
Not Significant	5	2.5
Total	**226**	**100.0**

The results of the study on students' response on the signficance of situating lecture halls in serene locations as presented in Table 13 show that 10.4% and 46% of the students held that it was very significant and signficant respectively for lecture halls to be located in serene places. Further examination of the study results in Table 13 reveals that 31.9% and 9.2% of the students believed that it was somehow signficant and least signficant for lecture halls to be located in quiet envronments. However, as noted earlier, a small proportion (2.5%) of the students never considered it signficant for lecture halls to be located in serene places.

While it is important for institutions of higher learning to have lecture halls for their students, these facilities should be conducive for learning. A conducive lecture hall is one that has visual, acoustic and thermal features (Basit, 2005). These are visual, acoustic and thermal features. Visual features relate to the quality of lighting in different parts of the classroom. Visual features are determined by the level of natural and artificial light available in the lecture hall. Visual feature also refers to the way by which the lecture hall environment is arranged such as being visually interesting, creating a favourable atmosphere and any unwanted disruptions such as windows overlooking playgrounds. Acoustic features relate to the ability of the lecture hall to enhance audibility and control disruptive noise from unwarranted quarters. Thermal features relate to the heating and ventilation of the lecture hall. Thermal features play a fundamental role in making lecture hall atmosphere favourable and comfortable for learning.

In one of the discussions with some class representatives, they were consisted that a lecture should be situated in a quiet place since noise affected their concentration and audibility of

their lecturers while delivering lectures. This observation by students is similar to the finding of a study by Taylor and Vlastos (2009), which found that the condition of learning resources had a bearing on the effectiveness of teachers as well as academic performance of learners. Taylor and Vlastos (2009) study found that students who were taught in well-lit and warm classrooms performed better than their counterparts learning in poorly lit and cold classrooms. Students who were taught in classrooms situated in a serine environment were also found to outperform their colleagues who were being taught in classrooms situated in a noisy environment. The study by Taylor and Vlastos (2009) also found that teachers who taught in well-lit and warm classrooms, which were situated in quiet environment, were punctual, rarely missed lessons and were also closer to their students unlike their counterparts who taught in poorly lit and cold classes situated in noisy environments.

4.4.5 The Importance of Discussions on Topical Issues to Students Learning

Class discussions on specific and general issues can help students improve on their oral presentations, self-confidence, academic tolerance and reasoning among others. Academic discussions are important to students' academic growth thus lecturers are encouraged to inculcate culture and incorporate class discussions in their lectures. However, whether such discussions achieve their purpose goals it depends on among the extent to which students considered such discussions important to their training. When asked to state how important academic discussions held in class were to their training, the responses of the students were as reported in Figure 12.

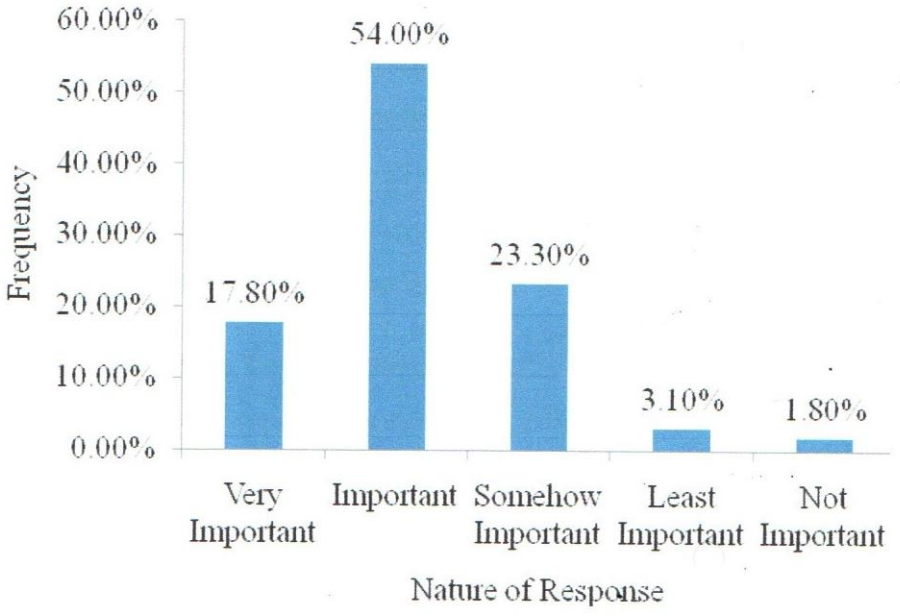


Figure 12: The Importance of Discussions on Topical Issues to Students Learning

On the question as to whether it was important for lecturers to give students some topics to discuss in groups, most of the students held that it was indeed important albeit with varying degree of affirmation as shown in Figure 12. It was considered very important for lectures to give students some topics to discuss in groups according to 17.8% of the students. Giving students topics to discuss in groups was considered important and somehow important by 54% and 23.3% respectively of tahe students engaged in this study. Although, 3.1% of the students engaged in this study held that it was important for lecturers to give students topics for group discussions, they, however, felt that it was least important. The idea of lecturers giving students topics for group discussions was considered not important by 1.8% of the students who participated in this study.

The difference in the perceived importance of discussion on topical issues between full time and part time students was assessed using the independent sample t-test. Results are presented in Table 14.

Table 14: The Importance of Discussion based on Mode of Study

Mode of Study	N	Mean	Std. Deviation	Mean Difference	t	P
Full time	170	3.8471	.80686	.00777	.063	.950
Part Time	56	3.8393	.78107			

From the results in Table 14, full time students had a higher rating of the importance of discussion than part time students. Full time students gave the importance of discussion a mean rating of 3.84671 as opposed to the 3.8393 given by part time students. The difference in the mean ratings of the two groups of students was 0.00777. The independent sample t-test showed that this difference is not statistically significant ($t= .063$, $p >0.05$). The results here suggest that both full time and part time students appreciated almost in equal measure the critical role of class discussions in their academic and intellectual development.

Class discussions have intellectual and social benefits to the students. Intellectually, class discussions offer students the opportunity to have a critical or analytic stand on specific and general issues within their field of study. Further, discussions enable students to situate and appreciate the role, challenges and opportunities their field of study has within the wide realm of societal development. Discussions also afford students the opportunity to query underlying

arguments, assumptions and world views of specific and general issues in their field of study. At the social level, discussions offer students the opportunity to bond and inculcate the culture of intellectual tolerance. It also enables students to nurture their public speaking skills. Students who participate actively in class discussions also stand a better chance of developing a good rapport with their colleagues and instructors. This study therefore attributes the no significant difference between full time and part students in their appreciation for the importance of class discussions in their training, the intellectual and social benefits of the discussions.

Although class discussions on specific and general issues can help students improve on their oral presentations, self-confidence, academic tolerance and reasoning among others, the kind of impact it has on students could depend on the frequency with which such discussions were held. There was therefore need to establish the frequency with which lecturers organized class discussions for students. The results of the study presented in Table 15 shows the frequency with which class discussions were held on topical and general issues.

Table 15: The Frequency with which Class Discussions are Held on Topical Issues

Frequency of Discussions	Frequency (f)	Percent (%)
Very Often	44	19.6
Often	123	54.6
Rare	46	20.2
Very Rare	12	4.9
Not at all	1	.6
Total	**226**	**100.0**

When asked to state the frequency with which group discussions were held, 19.6% of the students reported that the discussions were held very often. It is also clear from results in Table 15 that group discussions were held often according to 54.6% of the students who participated in this study. However, 20.2% and 4.9% of the students stated that group discussions were held rarely and very rarely respectively. Group discussions were never held at all according to 0.6% of the students engaged in this study.

4.4.6 The Importance of Students Asking Questions during Lectures

Lecturers should give students the opportunity to ask questions on general and specific issues on the course unit. Opportunity to ask questions enables students to seek clarifications on

issues that are unclear to them and also build a good rapport with their lecturers. By giving students the opportunity to ask, lecturers get to understand issues in the course unit that have not been understood well by the students. However, the extent to which students considered it important for lecturers to offer opportunity to ask questions had not been explored hence the need for this question. Figure 13 is therefore the result of the study on the importance of the students asking questions during lecturers.

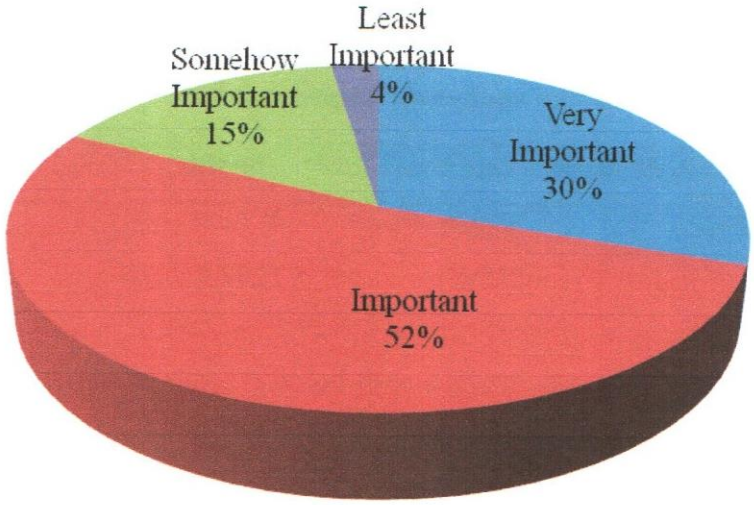


Figure 13: The Importance of Students Asking Questions during Lectures

All the students who participated in this study affirmed (albeit with varying degree of affirmation) that it was important for students to ask questions on areas that are not clear to them during lectures. According to the results of the study presented in Figure 4.16, 30% of the respondents stated that it was very important for them to ask questions during lectures. Asking questions on areas that are unclear during lectures was considered important and somehow important by 52% and 15% of the students engaged in this study. Although 4% of the respondents recognized the need for students to ask questions during lectures, they however considered least important as shown in Figure 13.

According to Arbuthnott and Kratzig (2015), the teacher asking question during class or giving students opportunity to ask questions enhances the learning experience of auditory learners because it creates an environment where the students can orally converse about the issues learned in class. Arbuthnott and Kratzig (2015) also argue that allowing students to ask questions help them to connect knew knowledge that they have learned in given lesson with what they knew previously. This approach results in a more meaningful learning experience for the students.

Although all the students who participated in this study believed that it was important for them to ask questions during lectures (Figure 13), however, there was need to understand how students pursuing AGED through various modes of study valued the importance of asking questions during lectures. Therefore, this study sought to establish the importance full time and part time students attached to asking questions during lectures. Table 16 is a summary of the study results on the importance of asking questions in class during lectures according to students' mode of study.

Table 16: The Importance of Students asking Questions based on Mode of Study

Mode of Study	N	Mean	Std. Deviation	Mean Difference	t	P
Full time	170	4.1176	.72832	.13550	1.179	.240
Part Time	56	3.9821	.79752			

Results presented in Table 16 show that full time students perceived asking questions to be more important when compared to part time students. Full time students gave the importance of asking questions a mean rating of 4.1176 while part time students gave a mean rating of 3.9821. The difference in the mean rating of the two groups was 0.1355. The independent sample t-test indicated that this differences was not statistically significant ($t=1.179$, $p>0.05$). This result suggests that all the students appreciated the importance of asking questions during lectures hence the marginal difference mean score of the two sets of students on this issue.

Interview with a selected full time and part students further supported the above study findings. For example, one full time student remarked " I like to ask questions while teaching is going on. Asking questions enables me to keep track of what is being taught in addition to understanding better issues that were not clear to me previously''. Some students while admitting that it was important for them to seek clarification on issues that are unclear to them regretted that they had never utilized the opportunity offered to them for asking questions.

4.4.7 Adequacy of Time Students are Accorded to Ask Questions during Lectures

All the students who participated in this study affirmed (although with varying degree of affirmation) that it was important for students to ask questions on areas that are not clear to them during lectures (Figure 13). It was therefore important to establish how adequate students considered the time given to them to ask questions during class. This study asked

students to state how adequate they considered the time accorded for them by their lecturers to ask questions during lectures. The results of the study on this question are present in Table 17.

Table 17: Adequacy of Time for Asking Questions during Lectures

Adequacy	Frequency (f)	Percent (%)
Very Adequate	32	14.1
Adequate	108	47.9
Somehow Adequate	69	30.7
Least Adequate	17	7.4
Total	**226**	**100.0**

The time allocated by lecturers for students to seek clarifications on issues that are unclear to them was considered adequate by all students according to the results of the study presented in Table 17. However, it was only 14.1% of the students that considered time allocated for them to ask questions as very adequate. Time allocated for students to ask questions during lectures was considered adequate and somehow adequate by 47.9% and 30.7% of the students respectively. However, 7.4% of the students considered time allocated for them by their lecturers to seek clarifications on some issues during lectures was least adequate.

While it is important for lecturers to give students the opportunity to ask questions or seek clarifications on issues that are unclear to them during lectures, it is equally important for the lecturers to give not appropriate but also adequate responses. The need to establish whether lecturers gave adequate responses to questions asked or issues sought by students prompted the study to ask students the adequacy of the responses given by their lecturers. Table 18 shows the study results on the adequacy of responses given by lecturers to questions or issues raised by students during lectures.

Table 18: Adequacy of Responses to Questions

Adequacy	Frequency (f)	Percent (%)
Very Adequate	40	17.8
Adequate	93	41.1
Somehow Adequate	66	29.4
Least Adequate	20	8.6
Not Adequate	7	3.1
Total	**226**	**100.0**

The responses given by lecturers to questions asked by students during lectures were considered very adequate and adequate by 17.8% and 41.1% of the students engaged in this study. However, 29.4% and 8.6% of the respondents described the responses to questions raised by students during lectures as somehow adequate and least adequate respectively. As shown in Table 18, 3.1% of the respondents asserted that the responses lecturers gave to questions raised by students during lectures were not adequate.

4.4.8 Overall Difference in the Preference of Auditory Learning styles

To address the second research objective, it was essential to analyze the overall difference in the preference of auditory learning between full time and part time aged students. The students mean rating of the all individual components for auditory learning were combine to obtain a cumulative mean. The independent sample t-test was then used to assess the difference in cumulative mean between the two groups of students. Results are presented in Table 19.

Table 19: Difference in the Preference of Auditory Learning

Mode of Study	N	Mean	Std. Deviation	Mean Difference	t	P
Full time	170	3.6876	.27490	.08537	2.024	.044
Part Time	56	3.6023	.2699			

Results in Table 19 indicate that full time students had greater preference for auditory learning when compared to part time students. Full time student had mean score of 3.6876 in this style of learning as opposed to a mean score of 3.6023 for part time students. The difference in the mean scores of the two groups was 0.08537. The independent sample t-test showed that this difference was statistically significant ($t= 2.024$, $p >0.05$). The null hypothesis was therefore rejected and the conclusion made that there was a significant

difference in the preference of auditory learning style between full-time and part-time Agricultural Education and Extension students at Egerton University.

4.5 Kinesthetic Learning Styles

The third objective of this study was to assess whether Kinesthetic learning style was preferred by students pursuing degree program in Agricultural Education and Extension of Egerton University. To achieve this objective the following issues were analyzed and discussed; the extent to which learning through demonstrations was important to students, the frequency with which illustrations/demonstrations were given during lectures, the extent to which lecturers taught while moving freely in lecture hall, description of the spaciousness of lecture halls, the importance of academic excursions to students' learning, the frequency with which academic excursions were organized for students, the significance of group assignments to students' learning, and the extent to which students were given assignments to do in groups. The following is therefore the results and discussions of the study assessed whether kinesthetic learning style was preferred by students pursuing degree program in Agricultural Education and Extension of Egerton University.

4.5.1 The Extent to which Learning through Demonstrations was Important to Students

Some academic programs may require demonstrations/illustrations incorporated as part of the teaching. Demonstrations/illustrations may help in clarifying and simplifying some issues that would ordinary appear complex to the students. There was need to establish from the students whether demonstrations/illustrations have been employed by lecturers in their training. When asked to either agree or disagree that they were learning through demonstrations/illustrations, the respondents stated as reported in Figure 14.

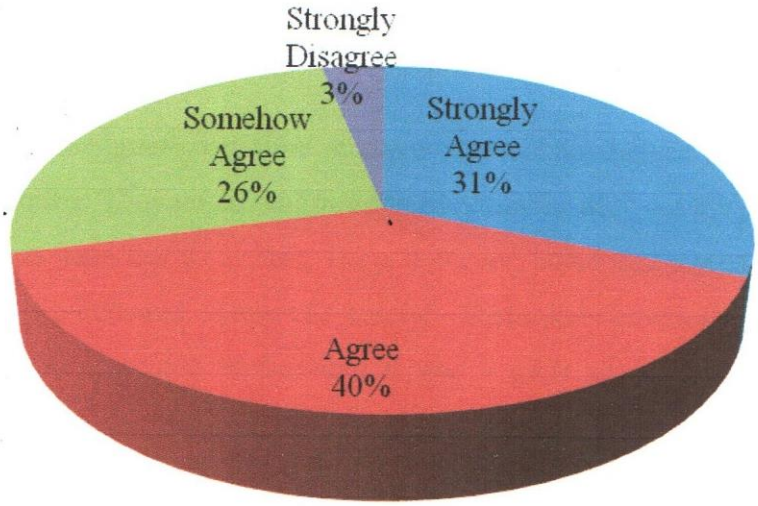


Figure 14: Importance of Learning through Demonstrations

Specifically, 31% of the respondents strongly agreed that demonstration was an important aspect of learning. Further, 26% of the respondents somehow agreed that demonstrations were important if incorporated during their training. However, demonstrations were not in any way an important aspect of learning according to 3% of the respondents as shown Figure 14.

An overwhelming 97% of the respondents agreed that learning through demonstrations or illustrations was important (Figure 14). However, the above results could not show students' preference of demonstrations based on their mode of study. This study conducted further analysis of the results in order to ascertain students' preference of demonstrations based on their mode of study. Table 20 is a summary of students' views on the importance of demonstrations/illustrations based on their modes of study.

Table 20: Importance of Demonstration/ Illustration based on Mode of Study

Mode of Study	N	Mean	Std. Deviation	Mean Difference	t	P
Full time	170	3.3529	1.09551	.31723	1.880	.061
Part Time	56	3.0357	1.09485			

From the result in Table 20, full time students perceived demonstration/ illustration to be more important as compared to part time students. Full time student gave the importance of demonstration/ illustration a mean rating of 3.3529 while part time student gave a mean rating of 3.0357. The difference in the mean ratings by the two groups was 0.31723. The independent sample t-test indicated that this difference was not statistically significant

(t=1.880, p >0.05). These results imply that the preference for demonstration/ illustration of full time and part time students was more or less similar.

Like their full time colleagues, part time students also acknowledged that illustrations are essential in their training. They noted that through illustrations they get the opportunity to put into practice what has been learnt in class. They, however, noted that it was only possible for them to engage in limited and extremely crucial illustrations/practicals given their tight training schedules. They pointed further that it was a great strain even to undertake the limited number of crucial illustrations. Students taking practicals must be personally present, undertake the practicals, write and present a report of the practicals. The demanding nature of practicals coupled with the tight training schedules may have contributed to a higher proportion of part time students become apathetic to illustrations.

The training schedule for full time students is relatively relaxed compared to that of their colleagues in the part time program. Full time students can therefore undertake practicals without experiencing much strain like their counterparts in the part time program. A relatively lighter workload may have influenced a higher proportion of full time students' preference for illustrations. This study therefore attributes the significant difference between full time and part time students on their preference for practicals to academic workload and training schedule.

4.5.2 Description of the Spaciousness of Lecture halls

Places designated for lecture halls should be spacious enough to allow free movement of students, well ventilated and generally comfortable for learning. This study sought to understand whether lecture halls students of AGED were taking their classes were spacious and comfortable. When asked to describe how spacious their lecture halls were, the respondents were as reported in Table 21.

Table 21: Description of the Spaciousness of Lecture Halls

Spaciousness of Halls	Frequency (f)	Percent (%)
Very Spacious	39	17.3
Spacious	88	38.9
Somehow Spacious	61	27.2
Congested	32	14.2
Very Congested	6	2.5
Total	**226**	**100.0**

A closer examination of the results reveals that only 17.3% and 38.9% described the lecture halls as very spacious and spacious respectively. Although 27.2% of the respondents generally concurred with their colleagues that the rooms were spacious, they were not assertive on their response and such described the rooms as somehow spacious. The lecture halls were congested and very congested according to 14.2% and 2.5% of the respondents as shown in Table 21.

A spacious lecture hall permits the lecturer to move freely while delivering lectures. Although it is not a compulsory requirement for lecturers to move within the lecture hall while delivering lectures, movement helps in capturing students' attention. A student who is attentive stands a good chance of comprehending better issues that are being taught. Attentive student is also likely to participate more during lectures through responding to questions raised by lecturers and also seeking clarifications on issues that are not clear to them. Students also experience lesser incidences distractions such as movement of seats, walking into and outside of the lecture hall in a spacious lecture hall. Spacious lecture hall also allows free circulation of air, thereby making the hall fresh and conducive for learning. A spacious lecture hall also permits easier evacuation of students in case of emergencies such as fire. A spacious lecture hall therefore has both academic and health benefits.

The need for a spacious lecture hall and its contribution to students' academic and health development has also been supported empirically. For instance, a study by Chaney and Lewis (2007), found that poorly built and overcrowded classrooms affected students' academic

achievement negatively. The study requires institutions of learning to ensure that teaching is done in spacious, warm and well lit classrooms so as to enhance students' participation in class and development of a favourable attitude towards learning.

4.5.3 The Importance of Academic Excursions to Students' Learning

The study also sought the respondents' views regarding the importance of academic excursions to the learning process. Their views are summarized in Figure 15.

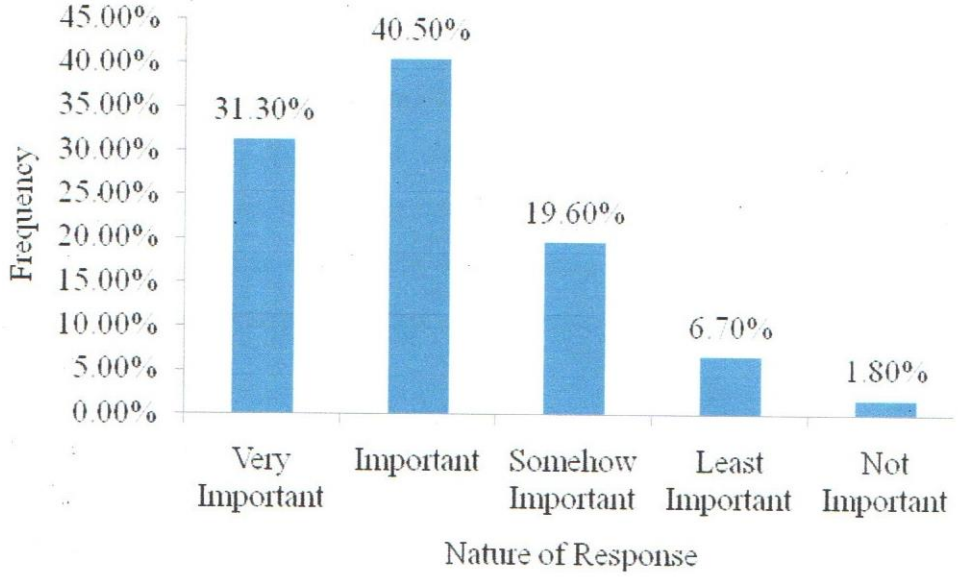


Figure 15: The Importance of Academic Excursions to Students' Learning

As Figure 15 illustrates, 40.5% of the respondents generally held that excursions were important while 31.3% indicated that they were very important. Another 19.6% indicated that the excursions were somehow important in the learning process. On the contrary, 6.7% of the surveyed students believed that academic excursions were least important while 1.8% felts that they were not important at all.

Academic excursions offer students the opportunity to witness a real life location and perceive what is learnt in class within the everyday context. This enables students to gain practical knowledge of what is learnt in class. Academic excursions may also offer students opportunity to interact with their potential employers. Such interaction with the outside world may reinforce students' interest in their field of study, which also lead to favourable learning outcomes.

The findings of this study is consistent with those of Greene, Kisida and Bowen (2013), Patrick (2010) and Mahgoub (2014), which found that majority of the students had a

favourable view of academic excursions. These studies also found that academic excursions contributed positively to students' critical thinking and academic performance. For example, a study by Greene *et al.* (2013) found that academic excursions contribute to the development of students' critical thinking skills and increase their overall knowledge of subject of study. Patrick (2010) found a significant difference between academic achievement and students that had participated in academic excursions and those who had participated in such academic activities. The author concluded that academic excursion experience significantly improved students' motivation and attitude toward their field of study. This subsequently influenced and increased their overall achievement in their subject of study. Similarly, a study by Mahgoub (2014), which examined the impact of field trips on students' creative thinking and practices in Arts Education, found that students who went for academic trips regularly performed significantly higher than their counterparts who either never went for academic trips or were irregular in their attendance of academic trips. Based on these findings, the author recommended that learning institutions should consider providing more academic excursions to their students.

The extent to which students appreciated the importance of academic excursions based on their mode of study needed to be understood. Consequently, this study carried further data analysis on the importance of academic excursions based on students' mode of study and the results, presented in Table 22.

Table 22: Importance of Academic Excursion based on Mode of Study

Mode of Study	N	Mean	Std. Deviation	Mean Difference	t	P
Full time	170	3.9118	1.01374	-.17752	-	.246
Part Time	56	4.0893	.92002		1.162	

Results in Table 22 indicate that part time students perceived academic excursion to be more important when compared to full time students. Part time student gave the importance of academic excursion a mean rating of 4.0893 while full time students gave a mean rating of 3.9118. The difference in the mean ratings by the two groups was 0.17752. The independent sample t-test showed that this difference is not statistically significant. This means that the two groups of students had relatively similar perceptions regarding the importance of academic excursion.

Academic excursions involve instructors and the students identifying a firm, place or institutions where they can gain field experience of what has been learnt in class. Excursions require careful planning since adequate time and resources must be set aside for an effective

field work to be realized. Full time students may have enough time at their disposal to plan, attend and write reports about their field due to availability of study time in the course of the semester. Part time students on the other hand may suffer from time constraints owing to their tight academic schedule. One successful academic excursion may take up to three days depending on the destination and issues to be studied during the trips. It is very hard for planners of academic trips to secure three days from the teaching program of part time students owing to the tight schedule. Lack of time adequate time for academic excursions may have contributed to part time students' lack of interest on academic excursions, a position best captured by the following response from one of the class representatives.

> John (not his real name) stated "we would really wish to go for trips just like the full time students. But where is the time. Our classes run between 7am and 8pm. Sometimes we don't have even have lunch breaks. In the evening we do the assignments, hold group discussions and take personal preps. Some of classes are also scheduled for weekends. So tell me where can we get time to go these trips? It is just not possible."

4.5.4 The Significance of Group Assignments to Students' Learning

Group assignments expose students to team work. Some students may also develop the skills on logical arguments and presentations, which may further boost their self-esteem leading to better academic outcomes. Understanding how much significance students attached to group assignments was yet another important issues interrogated by this study. Figure 16 shows the result of the study on the significance of group assignments to students' learning.

Table 23: The Significance of Group Assignment based on Mode of Study

Mode of Study	N	Mean	Std. Deviation	Mean Difference	t	P
Full time	170	3.7353	.92656	-.19328	-	.173
Part Time	56	3.9286	.89152		1.366	

Results in Table 23 illustrate that part time students perceived group assignment to be more important when compared to full time students. Part time students gave the significance of group assignment a mean rating of 3.9286 while full time students gave a mean rating of 3.7353. The difference in the mean ratings by the two groups was 0.19328. The independent sample t-test showed that this difference was not statistically significant ($t=-1.366$, $p >0.05$). These results imply that full time and part time students have relatively similar views regarding the significance of group assignments.

Group assignments afford students the latitude to divide different assignment tasks among members of the group. Students are therefore likely to spend less time in undertaking the assignment. It is, however, important to observe here that timely completion and quality of group assignments requires high levels of self-discipline and commitment among group members. Lack of self- discipline and commitment can make group work tedious leading to delay in assignment completion or low quality work out put. It should be recalled that most of the students on part time program are mature, with some already in employment. Maturity and work experience may serve as an important incentive for part time students in coordinating group work and instilling the necessary discipline. Part time students preferred group rather than individual assignments owing to less time spent by each student towards writing the assignment and also their ability to effectively work in groups.

4.5.5 Overall Difference in the Preference of Kinaesthetic Learnimg styles

To address the third research objective, it was essential to analyse the overall difference in the preference of kinaesthetic learning between full time and part time aged students. The students mean rating of the all individual components for kinaesthetic learning were combine to obtain a cumulative mean. The independent sample t-test was then used to assess the difference in cumulative mean between the two groups of students. Results are presented in Table 24.

Table 24: Difference in the Preference for Kinaesthetic Learning Style

Mode of Study	N	Mean	Std. Deviation	Mean Difference	t	P
Full time	170	3.6456	.52290	.0563	.693	.489
Part Time	56	3.5893	.54026			

Results in Table 24 shows that full time students had higher preference for kinaesthetic learning when compared to part time students. Full time students had a mean score of 3.6456 in this learning style while part time students had a mean score of 3.5893. The difference in the mean scores of the two groups was 0.0563. The independent sample t-test showed that this difference is not statistically significant ($t=.693$, $p > 0.05$). The null hypothesis was therefore not rejected and conclusion made that there was no significant difference in the preferences of kinaesthetic learning style between full-time and part-time Agricultural Education and Extension students at Egerton University.

CHAPTER FIVE
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a summary of the key findings of the study. It also discusses the conclusions that the study has made based on the findings. Further, it makes recommendations to different stakeholders.

5.2 Summary of Findings

The aim of the study was to examine the preferred learning style among full-time and part time students at Egerton University Njoro Campus. The study involved 226 third and fourth year AGED students comprising of 170 full time and 56 part-time students. Quantitative data was collected using self-administered questionnaires, which were analysed using descriptive and inferential statistics. The descriptive statistics used were frequencies and percentages. T-test was used to test the study's hypotheses. Qualitative data was obtained through interviews with selected students and analysed through thematic synthesis. The following are the summary of the findings of the study according to the objectives the study.

5.2.1 Preference of Full and Part Students of Agricultural Education and Extension for Visual Learning Styles

Preference for visual learning was measured using various indicators including preference for modes of giving notes, sitting position, assignment, and own reading. The study found that the majority of the full-time students preferring getting notes through dictation while most of the part-time students preferred photocopying. However, the difference in preference for mode of giving lecture between the two groups was not statistically significant. There were no differences between the two groups in terms of preferred sitting position with most of the students in both groups indicating that they preferred to sit at the middle of class. There were also no major differences in the student appreciation for assignment and own reading. Overall, the study found that there is no statistically significant difference in the preference for visual learning between full time and part time AGED students and thus the null hypothesis was not rejected.

5.2.2 Preference of Full and Part Students of Agricultural Education and Extension for Auditory Learning Styles

Preference for auditory learning was measured using various indicators including active listening, preference for sound system, class discussion, and asking questions. There were no significant differences between full time and part time students in respect to active listening,

class discussion, and asking questions. Both group of students had similar preferences for these aspects of auditory learning. However, there was a statistically significant difference in preference for installation of sound systems in lecture halls between full time and part time students. Full time students had greater preference for installation of sound system when compared to part time students. Overall, the study found that there was a statistically significant difference in preference for auditory learning between full time and part time students and thus the null hypothesis was rejected.

5.2.3 Preference of Full and Part Students of Agricultural Education and Extension for Kinaesthetic Learning Styles

Preference for kinaesthetic learning was measured using four indicators including preference for: demonstrations/ illustrations, spacious lecture hall that allow movement, academic excursions, and group discussion. It was found that full time students had greater preference for demonstrations/ illustrations while part time students had greater preference for academic executions. Part time students also had greater preference for group assignments. However, the differences in preference for all the four indicators of kinaesthetic learning between full time and part time learners were not statistically significant. The null hypothesis was thereby retained.

5.3 Conclusions

Findings of the study led to the following conclusions:

i. Regarding the first objective, the study concludes that there is no statistically significant difference in the preference for visual learning between full time and part time students. Results showed that both group of students had almost similar preference in relation to mode of giving notes, sitting position, assignment, and own reading.

ii. On the second objective, the study concludes that there is a statistically significant difference in preferences for auditory learning between full time and part time students. The most significant difference was noted in the students' preferences for sound system where full time students recorded high mean rating for this component of auditory learning as compared to part time students.

iii. On the third objective, the study concludes that there is no statistically significant difference in preference for kinaesthetic learning between full time and part time students. It was noted that full time student had greater preference for

demonstrations/ illustrations while part time students had greater preference for academic excursions and group assignment. However, the difference between the two groups of students in these components of kinaesthetic learning was not statistically significant.

5.4 Recommendations

The study makes the following general and policy recommendations that need to be considered so as to cater for students with diverse preference of learning styles. This study has also made recommendations on areas which may require further research.

5.4.1 General Recommendations

i. In view of this, the current study recommends that Lecturers should provide adequate time for students to ask questions and engage in class discussions.

ii. This study thus recommends that Lecturers undertake basic assessment of students learning styles. Lecturers may use the results of the assessment to make appropriate adjustments to their teaching methods in order to minimize any mismatch between their teaching styles and students' learning styles.

5.4.2 Recommendation for Policy

i. This study recommends that University should install appropriate sound systems to enhance instructors' and students' audibility.

ii. It recommends that University that engages in teacher training should establish a flexible training program for part time students so that it is easier for them to have adequate practicals and academic excursions.

5.4.3 Areas for Further Research

i. This study largely focused on the learning styles preferred by students pursuing AGED program based on the students' mode of study. It may be important for a similar study to be extended to other programs and also institutions of higher learning that have full time and part time study programs for better generalization of findings.

ii. While it is clear based on the findings of the current study the various learning styles preferred by students, there is need also to understand the various teaching style preferred by various teachers. This study therefore recommends for further study on the

- various teaching styles preferred by lecturers teaching full time and part time students. This will lay bare whether there is a mismatch between teaching and learning styles.

REFERENCES

Abidin, M., Rezaee, A., Abdullah, H., & Singh, K. (2011). Learning Styles and Overall Academic Achievement in a Specific Educational System. *International Journal of Humanities and Social Science , 1 (10),* 143-152.

African Population and Health Research Centre. (2009). *Improving Mathematics Performance in Kenya.* Nairobi, Kenya: APHRC

Almigbal, T. (2015). Relationship between the learning style preferences of medical students and academic achievement. *Saudi Medical Journal, 36(3),* 349-355.

Arbuthnott, K., & Kratzig, G. (2015). Effective teaching: Sensory learning styles versus general memory processes. *Comprehensive Psychology,27(2),* 360- 372.

Arslan, B. (2003). A Descriptive Study on Learning Style Preferences of the Engineering Students at METU. *Education and Science 31(141),* 83-91.

Bakahwemama, J. (2009). *What is the different in achievement of larners in seected Kiswahili and English medium primary schools in Tanzania?*. Oslo: University of Oslo .

Bansilal, S. (2015). Exploring Student Teachers' Perceptions Of The Influence Of Technology In Learning And Teaching Mathematics. *South African Journal of Education, 35(4),* 1-9

Basit, A. (2005). *Classroom Management Techniques at Secondary Level and Developing a Model for Urban Schools for District Peshawar.* (M.Phil Thesis, Faculty of Education), Allama Iqbal Open University Islamabad. pp. 16-17

Benedict, M., & Hoag, J. (2004). Seating location in large lectures: A reseating preferences or location related to course performance?. *Journal Economics and Education, 35(21),* 5-231

Bennett, T. (2013). *Teacher proof.* London: Routledge.

Benzion, M. (1999). Learning styles and adaptive flexibility. *Management Learning, 33(1),* 5-33.

Betz, A. (2013). Use of email in student-faculty interaction: Implications for university instruction in Germany, Saudi Arabia, and Japan. *Jalt Call Journal, 9(1),* 23- 57.

Bosman, A., & Schulze, S. (2018) Learning style preferences and Mathematics achievement of secondary school learners. *South African Journal of Education, 3(1),* 1-8

Brown R. B (2006). *Doing Your Dissertation in Business and Management: The Reality of Research and Writing.* UK: Oxford Brookes University.

Brown, T., Cosgriff, T., & French, G. (2008) Learning styles Preferences of occupational therapy. physiotherapy and speech pathology students: A comparative study. *The Internet\ Journal of Allied Health Sciences and Practices, 6(3),* 1540-1580.

Butcher, J., & Rose-Adams, J. (2015). Part-time learners in open and distance learning: Revisting the critical importance of choice, flexibility and employability. *The Journal of Open, Distance and e-Learning, 30*(2), 127- 137.

Chaney, K. & Lewis, M. (2007). *Building education: the role of the physical environment in enhancing teaching and learning - issues in practice*. London: Institute of Education.

Chen T., Charoll, K. (2007). The Nigerian teacher's ethos and educational communication. suggestions for enhancing classroom. The Counselor an official. *Journal of the counseling. Association of Nigeria,19 (1),*18-24.

Coffield, F., Moseley, D., Hall, E., & Ecclestone, K. (2004). *Learning styles and pedagogy in post-16 learning:A systematic and critical review.* London: Learning and Skills Research Centre.

Cornelius, L., & Owen-DeSchryver, J. (2008). Differential effects of full and partial notes on learning outcomes and attendance. *Teaching of Psychology, 35(1),* 6-12.

Creswell, J. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches.* New York: SAGE.

Cummins, J. (2007). Pedagogies for the poor? Realigning reading instruction for low-income students with scientifically based reading research. *Educational Researcher,36(9),* 564-573.

Dunn, A. (2004). Approaches to learning: The revised approaches to studying inventory. *Active Learning in Higher Education,5 (1),* 56–72.

Dunn, R. (1984). Learning style: State of science. *Theory into Practice,2* (3),11-19.

Dunn, R., Doolan L.S., Honigsfeld, A. & Tenedoro H. (2009). Impact of Learning-Style Instructional Strategies on Students' Achievement and Attitudes: Perceptions of Educators in Diverse Institutions. *The Clearing House 82(3),* 135-140

Dunn, R., Beaudry, S., & Klavas, A. (2002). Survey of research on learning styles. *California Journal of Science Education ,2(2),* 75-96.

Dunn, R.(2001). *Synthesis of the Dunn and Dunn Learning style Model research.* New York, NY: St John's University, Center for the Study of Learning and Teaching Styles.

Eiszler, C. F. (1982). Perceptual Preferences as an Aspect of Adolescent Learning Styles. *Education Resource Information Center,103(3),* 231-241

Ellis, A. (2001). *Research on Educational Innovations.* Princeton Junction, NewJersey: Eye on Education.

Evrim, U., Orhan, E. & Mehmet, K. (2015). The effects of students' learning style preferences on their academic achievement in science and technology class. *The Journal of Academic Social Science Studies, 41(12),* 199-206.

Felder, R., & Henriques, E. (1995). Learning and teaching styles in foreign and second language acquisition. *Foreign Language Annals, 28*(1), 12-31.

Felder, R., & Silverman, L. (1998). Learning and teaching styles in engineering education. *Engineering Education , 78* (7), 674-681.

Felder, R., & Solomon, B. (2001). *Index of learning styles questionnaire.* Raleigh, North Caroline, United State: North Carolina State University.

Felder, R., Felder, G. & Dietz, E. (2002). The effects of personality on engineering student performance and attitudes. *Journal of Engineering Education ,9 (1),* 3-17.

Fleming, N. (2001). *Teaching and learning styles: VARK strategies.* New Zealand: Christchurch

Fleming, N. (2015). *"The VAK modalities".* Available at: www.vark-learn.com. Accessed on 1st March 2015

Frisby, B. N. & Martin, M. M. (2013). Instructor-student and student rapport in the classroom. *Communication Education,59(2),* 146–164.

Frymier, A., Wanzer, M., & Woitaszczvk, A, (2008). Assessing students' perceptions of inappropriate and appropriate teacher humor. *Communication Education,57(2),* 266–288.

Gilakjani, A., & Ahmadi, S. (2011). The Effect of Visual, Auditory, and Kinaesthetic Learning Styles on Language Teaching. *International Conference on Social Science and Humanity, 5(2011),* 469-472.

Glass S. P., & Rose, T. L. *Mother's education and the intergenerational transmission of human capital: evidence from college openings and longitudinal data.* Los Angeles: University of California.

Greene, J., Kisida, B. & Bowen, D. (2013) "The Educational Value of Field Trips". *Education Next, 14 (1).*780-86

Gregory, G., & Chapman, C. (2002). *Differentiated instructional strategies: One size doesn't fit all.* Thousand Oaks, Calif: Corwin Press.

Gudo, C., Olel, M., & Oanda, I. (2011). University expansion in Kenya and issues of quality education: Challenges and opportunities. *International Journal of Business and Social Science, 2*(20), 203- 214.

Hawk, T., & Shah, A. (2007). Using learning style instrument to enhance student learning. *Decision Sciences Journal of Innovative Education , 5 (1),* 1-19.

Heacox, D. (2002). *Differentiating instruction in the regular classroom: How to reach and teach all learners, grades 3-12.* Minneapolis, MN: Free Spirit Publishing Inc.

Helen, Y. (2016). Challenges facing higher education in management of privately sponsored student programmes in Kenya. *British Journal of Education, 4*(8), 52- 62.

Honey, P. & Mumford, A. (1986). *The manual of learning styles.* Maidenhead: Peter Honey

Hutchison, M., Follman, D., Sumpter, M., & Bodna, G. (2006). Factors influencing self efficacy beliefs of first-year engineering students. *Journal of Engineering Education , 95 (1),* 39-47.

Jessica, K. (2011). A factor analytic comparison of four learning styles instruments. *The Journal of Cooperative Education, 28,* 56-67.

Jiraporncharoen W., Angkurawaranon C., Chockjamsai M., Deesomchok A., & Euathrongchit J. (2015). Learning Styles and Academic Achievement among Undergraduate Medical Students in Thailand. *Journal Educational Evaluation for Health Professionals, 12 (38),* 1-7

Jung, C. (1993). *Psychological types, or, the psychology of individuation* . London: Kegan Paul, Trench, Trubner.

Juškevičien, A & Kurilovas, E. (2014). On recommending Web tools to personalize learning. *Informatics in Education, 13(1),* 17–31.

Kagondu, R., & Marwa, S. (2017). Quality issues in Kenya's higher education institutions. *Journal of Higher Education in Africa, 15*(1), 23-42.

Kakhnovets, R. & Terry, M. (2008). *The influence of providing instructor notes on student awareness.* Boston: Presented at the American Psychological Association

Kang'ahi, M., Indoshi, F., Okwach, T. & Osodo, J. (2012). Teaching styles and learners' achievement in kiswahili language in secondary schools. *International Journal of Academic Research in Progressive Education and Development,1(3),* 62-87.

Kappe, F. R., Boekholt, L., Rooyen, C. & Van der Flier, H. (2009). A predictive validity study of the learning style questionnaire (LSQ) using multiple, specific learning criteria. *Learning and Individual Differences,19,(2009),* 464-467.

Karen, M. K., C., ChiMei, L., Estella, P.M., Edwin, M.L.Y. & Bradley, P. (2015). Noise levels in an urban Asian school environment. *Noise Health, 17(74),* 48-55.

Kathuri, J. N., & Pals, D. A. (1993). *Introduction to Educational Research.* Egerton, Kenya: Egerton University.

Kaufman, R. (2005). The contribution of classroom setting and quality of instruction to children's behavior in kindergarten classrooms. *The Elementary School Journal, 105(4),* 377-394

Kibui, A. & Mwaniki, B. (2014). Gender equity in education development in Kenya and the new constitution for Vision 2030. *International Journal of Scientific Research and Innovation Technology,1(2),* 21- 34.

Kidanemariam, D., Atagana, H., & Engida, T. (2014). Do learning styles influence students' understanding of concepts and academic performance in Chemistry?. *Mediterranean Journal of Social Sciences,5(16),* 256-260.

Kolb, D. (1976). *The Learning Style Inventory: Technical Manual* Boston, MA: McBer.

Kombo, K., & Tromp, A. (2006). *Proposal and Thesis Writing: An introduction.* Nairobi: Pauline Publications Africa.

Landrum, R. (2016). Faculty and Student Perceptions of Providing Instructor Lecture Notes to Students: Match or Mismatch? *Journal of Instructional Psychology,*37*(3),*122-133

Latif, E & Miles, S. (2011). The Impact of Assignments on Academic Performance *Journal of Economics and Economic Education Research, 12(3).1-12*

Leopold, L. (2014). Prewriting tasks for auditory, visual and kinaesthetic learners. *TESL Canada Journal, 29(2),* 96-102.

Letele, M., Alexander, G. & Swanepoel, Z. (2013). Matching/mismatching of teaching and learning styles in rural learning ecologies of Lesotho: Does it enhance academic achievement. *Journal of Human Ecology,41 (3),* 263-273.

Liew SC., Sidhu J. & Barua A. (2015). The relationship between learning preferences (styles and approaches) and learning outcomes among pre-clinical undergraduate medical students. BMC Med Educ,*15(44),* 1186-12909

Mahgoub, Y. (2014). The Impact of Field Trips on Students' Creative Thinking And. Practices In Arts Education. *Journal of American Science,10(1),* 46-50

Marilee S. (2008). *Differentiation through Learning Styles and Memory.* New Delhi: SAGE Publication.

McCowan, T. (2018). Quality of higher education in Kenya: Addressing the conundrum. *International Journal of Educational Development, 60*(1), 128- 137.

Miller, P. (2001). *Learning styles: The multimedia of the mind. Creative Education, 4(10),*627-632.

Mugenda, O.M. & Mugenda, A.G. (2003). *Research methods: quantitative and qualitative approaches.* Nairobi: African Centre for Technology Studies.

Muola, J., & Mwania, J. (2013). Emerging need for academic advising in schools, colleges and universities in Kenya. *International Journal of Asian Social Science, 3(7),* 1535-1545.

Nel, M.N., & Hugo, A. (2012). *A Learner support in a diverse classroom: A guide for Foundation, Intermediate and Senior Phase teachers of language and mathematics.*

Ngugi, D., Isinika, A., Temu, A. & Kitalyi, A. (2002). *Agricultural education Kenya and Tanzania.* Regional Land Management Unit (RELMA), technical report no.25.

Nieswiadomy, R. M. (2002). *Foundations of nursing research (4th ed.).* Upper Saddle River, NJ: Pearson Education.

Northey, S.S., (2005). *Handbook on differentiated instruction for middle and high schools.* Larchmant, NY: Eye on Education Inc.

Nzesei, M. (2015). *A correlation study between learning styles and academic achievement among secondary school students in Kenya* (Unpublished Masters' Thesis).Nairobi: University of Nairobi.

Odundo, P., & Gunga, S. (2013). Effects of application of instructional methods on learner achievement in business studies in secondary schools in Kenya. *International Journal of Education and Research,1(5),* 1-22.

Ogbo, A. & Alade O. (2014) A comparative study of chemistry students learning styles preferences in selected public and private schools in Lagos Metropolis. *Journal of Research & Method in Education 4(1),* 45-53

Olg, D. (2012). *Examination of the Learning Styles of Brazilian Senior High School students attending public and private schools in a metropolitan area of Brazil.* Alabama: Auburn University.

Oyedele, V., Rwambiwa, J., & Mamvuto, A. (2013). Using educational media and technology in teaching and learning processes: A case of trainee teachers at Africa University. *Academic Research International,4(1),* 292-300.

Palloff, R. M., & Pratt, K. (2003). *The virtual student: A profile and guide to working with online learners.* San Fransisco: Jossey-Bass.

Patrick. O.A. (2010). "Effects of Field Studies on Learning Outcome in Biology". *Journal of Human Ecology, 31(3),* 171 - 177.

Pheiffer, G., Holley, D., & Andrew, D. (2005). Developing thoughtful students: Using learning styles in an HE context. *Education and Training, 47(6),* 422-431.

Rakap, S. (2010) Impacts of learning styles and computer skills on Adult students learning on line. *Education Resources Information Center, 9(2),* 108-115

Rayneri, L. J., Gerber, B. L. &Wiley, L. P. (2003).Gifted achievers and gifted under achievers: The impact of learning style preference in the classroom. *The Journal of Secondary Gift Education, 14(4),* 197-204.

Robertson, L., Smellie, T., Wilson, P., & Cox, L. (2011). Learning styles and fieldwork education: Students' perspectives. *New Zealand Journal of Occupational Therapy, 58 (1),* 36 40.

Robinson, J., Mcmichael, A. & Hernandez, C. (2017). Transparent reporting of demographic , characteristics of study participants *JAMA Dermatology*, 153(3), 263-254

Sapna C., Sianna A, Victoria, C. & Andrew, N. (2014). Designing classrooms to maximize student achievement. *Policy Insights from the Behavioral and Brain Sciences, 1(1*), 4-12.

Saunders, M, Lewis, P, Thornhill, A, (2007). *Research Methods for Business Students.* Edinburgh, Harlow: Finance Time Prentice Hall.

Sidelinger, R. J., Bolen, D. M., Frisby, B. N. & McMullen, A. L. (2013). When instructors misbehave: An examination of student to student connectedness as a mediator in the college classroom. *Communication Education,60(3),* 340–361.

Simsek, I. (2014). Developing decision support system to determine learning styles. *Journal of the Hasan Ali Yucel Faculty of Education, 11(21),* 47-54.

Soudarssanane, M. (2006). Effective use of handouts in the teaching of public health administration. *Indian Journal of Community Medicine, 31(4),* 306- 307.

Srichanyachon, N. (2012). Relationships between Learning Styles and Motivation for Higher Education in EFL student. *Theory and Practice in Language Studies,4(6), 1232-1237*

Sternberg, R., & Zhang, L. (2000). *Perspectives on cognitive, learning, and thinking styles.* NJ: Lawrence Erlbaum.

Sywelem, M., Al-Harbi, Q. & Fathema, N. (2012). Learning Style Preferences of Student Teachers: A Cross-Cultural Perspective. *Institute for Learning Styles Journal,1(3),* 10-24.

Swain, J., & Hammond, C. (2011). The motivations and outcomes of studying for part-time mature students in higher education. *International Journal of Lifelong Education, 30*(5), 591- 612.

Taylor, A. (2009). Linking Architecture and Education: Sustainable Design for learning Environments. *Children, Youth and Environments 20(2),* 1546-2250

Tella, J., Indoshi, F. & Othuon, L. (2010). Relationship between students' perspectives on the secondary school english curriculum and their academic achievement in Kenya. *Journal of Educational Research,1(9),* 382-389.

Tiik I. & Galton, M. (2001). Students' misbehaviours in Turkish and English primary classrooms. *Educational Studies,27(3),* 291 -305.

Traci, L. & Mike, K.(2010). *The Kinesthetic Classroom: Teaching and Learning Through Movement.* New Delhi:Corwin Publisher.

Tron, B. (2012). Note dictation in classrooms at the secondary school level: Its implications. *The Internet TESL Journal, 8(3),* 122- 126.

Ültanir, E., Ültanir, Y., & Temel, G. (2012). The Examination of University Students' Learning Styles by Means of Felder-Silverman Index. *Education and Science,37 (163),* 29 42.

UNESCO(2017).Kenya: Education and Literacy. Retrieved http://uis.unesco.org/country/KE.

University of Alabama. (2005). Individual learning styles and the learning process. *Journal of Experiential Learning and Simulation*, 2, 145-152.

University of Illinois (2009). Learning styles: *Implications for improving educational practices.* Prinecton, Illinois: Educational Testing Service

Vaishnav, R. S. & Chirayu, K. C. (2013). Learning style and academic achievement of secondary school students. *Voice of Research, 1(4),* 1-4.

Vincent, A. & Ross, D. (2001). Learning Style Awareness: A basic for developing teaching and learning strategies. *Education Resources Information Centre, 33(5),* 1–10.

Visser, S., McChlery, S. & Vreken, N. (2006). Teaching styles versus learning styles in the accounting sciences in the United Kingdom and South Africa: A comparative analysis. *Meditari Accountancy Research,14(2),* 97-112.

Wanzer, B., Frymier, A. B., & Irwin, J. (2014). An explanation of the relationship between instructor humor and student learning: Instructional humor processing theory. *Communication Education, 59(1),* 1–18.

Webb, N. G. & Barrett, L. O. (2016). Student views of instructor student rapport in the college classroom. *Journal of the Scholarship of Teaching and Learning, 14(2),* 15-28.

Westbrook, A. (2011). *The effects of differentiated instruction by learning styles on problem solving in cooperative groups,* (Unpublished Master of Education Thesis). LaGrange, Georgia: LaGrange College.

William, D. (2011). The importance of learning style in end-user training. *Journal of Experiential Learning and Simulation, 14(1), 101-119*

Winebrenner, S. (1996). *Teaching kids with learning difficulties in the regular classroom.* Minnesota: Free Spirit Publishing Inc.

Yamane, T. (1973). *Statistics, an Introductory Analysis* (3rd ed.). New York: Harper and Row.

Yunus, F., Mustafa, S., Nordin, N., & Malik, M. (2014). Comparative study of part-time and full-time students emotional intelligence, psychological well-being and life satisfactions in the era of new technology. *Procedia-Social and Behavioural Sciences, 170*(2015), 234- 242.

Zimmerman, B. (2002). Becoming a self-regulated learner: Overview. *Theory into practice, 41 (2),* 64-70.

Zimmerman, B., & Cleary, T. (2006). *Adolescents' development of personal agency: The role of self-efficacy beliefs and self-regulatory skill.* Scottsdale, AZ: Information Age Publishing.

Zywno, M. (2003). A Contribution to Validation of Score Meaning for Felder-Soloman's Index of Learning Styles. *Proceedings of the 2003 American Society for Engineering Education Annual Conference & Exposition.* Toronto: American Society for Engineering Education.

APPENDICES

Appendix 1: Students Questionnaire

This questionnaire is designed to obtain information on the preferred learning style among university students of Bachelor of Science in Agricultural Education and Extension of Egerton University, Kenya. Respondents' involvement will be of great value to the study. All responses will be treated with utmost confidentiality and used only for study purposes. Please ensure that you respond to all the questions. Any additional information may be recorded in a separate paper, if the spaces provided are not adequate. The researcher and or the assistants will be available to offer necessary assistance as the situation may demand.

Part A: Respondents' Profile

1. State your age
   - ☐ Below 21 Yrs
   - ☐ 22-23 Yrs
   - ☐ 24-25 Yrs
   - ☐ Over 25 Yrs
2. State your gender
   - ☐ Male
   - ☐ Female
3. State your mode of study
   - ☐ Full Time
   - ☐ Part Time

Part B: Visual Learning Style

4. To what extent would you agree that it is important for lectures to give students notes during lectures?
   - ☐ Very important
   - ☐ Important
   - ☐ Somehow important
   - ☐ Least important
   - ☐ Not important

5. Which mode of giving notes do you prefer lecturers to adopt when giving notes to students?
   - ☐ Dictation in classroom
   - ☐ Photocopying
   - ☐ Electronic mailing
   - ☐ Others. State.....
6. Which position in the lecture hall do you prefer to sit during lectures?
   - ☐ In front
   - ☐ Middle
   - ☐ Behind
   - ☐ Nowhere in particular

   Briefly explain your response in 6 above.....
   .....
7. How important would you say it is for lectures to give students assignments to write?
   - ☐ Very important
   - ☐ Important
   - ☐ Somehow important
   - ☐ Least important
   - ☐ Not important
8. How significant would you say it is for lecturers to give students some areas in their courses for students to read on their own?
   - ☐ Very significant
   - ☐ Significant
   - ☐ Somehow significant
   - ☐ Least significant
   - ☐ Not significant

Part C: Auditory Learning style

9. How significant would you say it is for students to listen keenly during lectures?
   - ☐ Very significant
   - ☐ Significant
   - ☐ Somehow significant
   - ☐ Least significant
   - ☐ Not significant

10. To what extent would you agree that lecturers are audible enough while teaching?

- ☐ Strongly agree
- ☐ Agree
- ☐ Somehow agree
- ☐ Disagree
- ☐ Strongly disagree

11. How important would you say it is for sound equipment to be installed in the lecture halls to enhance lecturers' audibility?

- ☐ Very important
- ☐ Important
- ☐ Somehow important
- ☐ Least important
- ☐ Not important

12. To what extent would you agree that lecture halls hosting large number of students should be installed with quality sound equipments?

- ☐ Strongly agree
- ☐ Agree
- ☐ Somehow agree
- ☐ Disagree
- ☐ Strongly disagree

13. How significant would you say it is for lecture halls to be located in quiet and serene places?

- ☐ Very significant
- ☐ Significant
- ☐ Somehow significant
- ☐ Least significant
- ☐ Insignificant

14. How important would you say class discussions on topical issues are to your learning?

- ☐ Very important
- ☐ Important
- ☐ Somehow important
- ☐ Least important
- ☐ Not important

15. How often would you say class discussions are held on topical issues in your class?

- ☐ Very often
- ☐ Often
- ☐ Rare
- ☐ Very rare
- ☐ Not at all

16. How active would you say you are doing class discussions?

- ☐ Very active
- ☐ Active
- ☐ Somehow active
- ☐ Passive
- ☐ Very passive

17. How important would you say it is for lectures to allow students to ask questions during lectures?

- ☐ Very important
- ☐ Important
- ☐ Somehow important
- ☐ Least important
- ☐ Not important

18. Which of the following describes the adequacy of time given by lecturers for students to ask questions during lectures?

- ☐ Very adequate
- ☐ Adequate
- ☐ Somehow adequate
- ☐ Least adequate
- ☐ Inadequate

19. How would you describe the adequacy of responses given by your lecturers when students ask questions during lectures?

- ☐ Very adequate
- ☐ Adequate
- ☐ Somehow adequate
- ☐ Least adequate
- ☐ Not adequate

Part D: Kinesthetic Learning Style

20. To what extent would you agree that it is important for students to learn through demonstrations?
    - ☐ Strongly agree
    - ☐ Agree
    - ☐ Somehow agree
    - ☐ Disagree
    - ☐ Strongly disagree
21. How spacious would you say lecture halls are to permit free movement of the lecturers and students during lectures?
    - ☐ Very spacious
    - ☐ Spacious
    - ☐ Somehow spacious
    - ☐ Congested
    - ☐ Very congested
22. How important would you say field academic trips are to your learning?
    - ☐ Very important
    - ☐ Important
    - ☐ Somehow important
    - ☐ Least important
    - ☐ Not important
23. How significant would you say it is for students to be given group assignments?
    - ☐ Very significant
    - ☐ Significant
    - ☐ Somehow significant
    - ☐ Least significant
    - ☐ Not significant

Appendix II: Interview Schedule

1. Do you think it is important for lecturers to give students notes during lectures? Explain your answer?
2. What mode of giving notes do you prefer lecturers to adopt when giving notes to students?
3. Do you think it is important for sound equipment to be installed in the lecture halls? Explain your answer
4. How important are class discussions on topical issues?
5. How significant would you say it is for students to be given group assignment
6. Do you think field academic trips are important to your learning
7. To what extent do you think demonstration is important to student learning?
8. Which position in lecture hall do you prefer to sit during lectures?

Appendix III: Research Authorization Letter from Egerton University

EGERTON
Tel: Pilot: 254-51-2217620
254-51-2217877
254-51-2217631
Dir.line/Fax 254-51-2217847
Cell Phone

UNIVERSITY
P.O. Box 536 - 20115
Egerton, Njoro, Kenya
Email: bpgs@egerton.ac.ke
www.egerton.ac.ke

OFFICE OF THE DIRECTOR GRADUATE SCHOOL

Ref: EM17/2992/11 Date: 5th September, 2018

The Director General
National Commission for Science Technology and Innovation,
P. O. Box 30623-00100
NAIROBI.

Dear Sir,

RE: REQUEST FOR RESEARCH PERMIT – MS. STELLA JEPKORIR KIBET REG. NO. EM17/2992/11

This is to introduce and confirm to you that the above named student is in the Department of Psychology, Counseling & Educational Foundations, Faculty of Education and Community Studies, Egerton University.

She is a bona-fide registered M.Ed student in this University. Her research topic is **"Preferred Learning Styles Among University Students: A Comparative Study of Full-Time Bachelor of Science in Agricultural Education and Extension Students of Egerton University, Kenya."**

She is at the stage of collecting field data. Please issue her with a research permit to enable her undertake the studies.

Your kind assistance to her will be highly appreciated.

Yours faithfully,

DIRECTOR, BOARD OF POST GRADUATE STUDIES
11 SEP 2018
EGERTON UNIVERSITY, P.O. Box 536-20115 EGERTON

Prof. Nzula Kitaka
DIRECTOR, BOARD OF POSTGRADUATE STUDIES

NK/vk

Appendix IV: Research Authorization Letter from NACOSTI

NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone:+254-20-2213471,
2241349,3310571,2219420
Fax:+254-20-318245,318249
Email: dg@nacosti.go.ke
Website : www.nacosti.go.ke
When replying please quote

NACOSTI, Upper Kabete
Off Waiyaki Way
P.O. Box 30623-00100
NAIROBI-KENYA

Ref No. **NACOSTI/P/18/93140/25517**

Date: **4th October, 2018**

Stella Jepkorir Kibet
Egerton University
P.O. Box 536-20115
NJORO

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"Preferred learning styles among university students: A comparative study of full- time and part- time bachelor of science in agricultural education and extension students of Egerton University, Kenya"*** I am pleased to inform you that you have been authorized to undertake research in **Nakuru County** for the period ending **3rd October, 2019.**

You are advised to report to **the Vice Chancellor, Egerton University, the County Commissioner and the County Director of Education, Nakuru County** before embarking on the research project.

Kindly note that, as an applicant who has been licensed under the Science, Technology and Innovation Act, 2013 to conduct research in Kenya, you shall deposit **a copy** of the final research report to the Commission within **one year** of completion. The soft copy of the same should be submitted through the Online Research Information System.

BONIFACE WANYAMA
FOR: DIRECTOR-GENERAL/CEO

Copy to:

The Vice Chancellor
Egerton University.