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UNIVERSITY OF YAOUNDE I
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The Influence of Information and Communication Technologies on Classroom Management: the case of some ICT tools in CA2D, IRIC-Yaounde.

A dissertation submitted in partial fulfilment of the requirements for the award of a
Masters Degree in Educational Management.

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DEDICATION

To my beloved parents:

Mr. Abel YOUGWEN

and

Mrs. Elisabeth NGOROJI

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LIST OF TABLES

LISTS OF BAR CHATS

LIST OF ABBREVIATIONS

CC: Contingency Coefficient

CCS: Centre for Chinese study

CDB: China Development Bank

CMC: Computer Mediated Communication

ESSD: Education Sector Strategic Document

FETSA: Faculty of Engineering and Technology

ICT: Information and Communication Technology

IRIC: International Relation Institute of Cameroon

KHL: Kids Help Line

NCLB: No Child Left Behind

NCHE: National Commission on Higher Education

NIPI: National Information and Communication Infrastructure

ODF: Online Discussion Forum

OECD: Organisation for Economic Cooperation and Development

PBS: Public Broad casting System

UK: United Kingdom

SMS: Short Message Sent

UNESCO: United Nations Education, Culture and Scientific Organisation

UNDP: United Nations Development Program

USA: United State of America

USQ: University of South Queen

WWW: World Wide Web

LISTS OF ACRONYMS

ACOT: Apple Classroom of Tomorrow

CA2D: Cooperation for Sustainable Development

COTECH: College of Technology Student's Union

CRF: Continuous Reinforcement Schedule

LISTS OF SYMBOLS

Ha= Affirmative hypotheses

Ho=Null hypotheses

ABSTRACT

The present study entitled, *the influence of ICTs on Classroom Management: Case of Some ICT tools in CA2D, IRIC-Yaounde,* is aimed at determining the extent to which ICTs can ameliorate the quality of classroom management in CA2D. The main objective of this study is to determine the degree to which effective use of ICT contributes significantly to the amelioration of the quality of classroom management in CA2D. The main idea behind this research is that, the integration of ICTs in classroom activities in CA2D and IRIC in general is not effective. This is because policies put in place to guide the full integration of ICT in IRIC are inadequate. The research design used in this study is both the qualitative and the quantitative research design. The research was carried on in IRIC and the sample population is CA2D. Data were gathered by the use of two techniques; questionnaire and administration of interviews. The Chi square technique was used to analyze the quantitative data. Data collected for this research were analyzed and hypotheses were verified. The results obtained from the verification of hypotheses 1,2, 3 and 4 gave a contingency correlation of 0.8, 0.82, 0.9 and 0.83 respectively, indicating that there is a high relationship between ICTs and classroom management in CA2D.

Key words: Influence, ICT, Classroom management.

RÉSUMÉ

Cette étude intitulée, « *the influence of ICTs on Classroom Management: Case of Some ICT tools in CA2D, IRIC-Yaounde* », a pour but de déterminer jusqu'à quel point le TIC pourrait améliorer la qualité de la gestion de la classe.

Cette recherche est basée sur « Innovation Diffusion Theory » de Rogers (2003), et l'idée générale de cette recherche est que l'intégration du TICs dans les activités des classes en CA2D en L' IRIC n'est pas effective en générale. Ceci parce que, les politiques mises en place pour l'intégration effective ne sont pas adéquates. Les types de recherches utilisées dans cette étude sont qualitatives et quantitatives. Cette recherche a eu lieu a L'IRIC et la population Cibles est celle de CA2D. Les données ont été collectées par l; utilisation de deux techniques, le questionnaire et le guide d'entretien. La techniques Chi carré a été utilisée pour analyser les données. Les données collectées ont été analysées et les hypothèses vérifiées. Les résultats obtenus de la vérification des hypothèses 1, 2, 3 et 4 donnaient respectivement une corrélation contingence de 0.8, 0.82, 0.9 et 0.83, qui indiquent qu'il y a une forte relation entre TICs et la gestion des classes en CA2D.

Mots Cles: l'influence, TICs, Classroom management.

GENERAL INTRODUCTION

The growth of Information and Communication Technology (ICT) has influenced the development of many sectors of the world's economy, especially during the 20th and this 21st century. Its application has affected almost every institution in life including government, industry, finance, military, healthcare, education and many others.

Commenting on the issue, Kofi Annan in the last Summit of Information and technology in Tunisia (November, 2005) recalled that "we are living in a world of rapid transformation whereby technology occupies multiple aspects of life. Like researchers as well as teachers, we have the responsibility to accompany and to facilitate the process of changes that ICT brings in teaching, learning, life, work and to succeed in life".

Inspiration from the review of this scholar has caused many states and their institutions to come out with legal and policy framework aimed at introducing or reinforces the integration process of ICTs into their educational system.

Cameroon is one of the countries in Africa where these comments on the integration of ICT into the education system were taken into consideration. It should however be noted that some schools started using ICT since the 1990s, but officially it was integrated into the educational system in February, 2001 during the head of states speech to the Youths (11th February 2001).This integration had as legal base the presidential Decree No 2002/004 of 4th January 2002 and law No 65s/88/MINEDUC of 18th February 2001 of the Minister of National Education.

Since its official integration in the educational system, ICT has played a great role in education management and administration and in pedagogic activities, especially in higher institutions like the International Relation Institute of Cameroon (IRIC).

In school, ICTs is used in the following for searching of information, for communication, for entertainment, for publicity and for organization and management of school.

As to what concerns its use in searching for information, ICT assumes a crucial role in the areas of language study, research, resource center and retrieval and sharing of information.

Its use in education is mainly for the retrieval and sharing of data, research, and as a resource center for both teachers and students (Kumar and Kaur, 2006; Purcell, Heaps, Buchanan, & Friedrich, 2013 and Simons, 2014).

Concerning Communication, ICT is used for interaction between peers, in creating and send electronic mail, read messages posted on an Internet discussion group/board.

Equally the internet is used in education-related chat room, in Conducting, in videoconferencing, drafting collaborating projects, in international copyright. This is the case of internet.

As to what concerns ICT as a tool for organization and management in schools, we are referring to ICT as a tools for organizing and coordinating school activities. By school activities we are referring to activities like online conferences, coordinating arguments and discussion in visual classes and online evaluation.

To the administration, the use of ICT has helped in holding online meetings and conferences. It has also helped institutional heads in supervising the subordinates and so on.

To crown it all, ICT plays a very crucial role in a school milieu, but it is very surprising that its impact has not been felt in classroom management in some departments in the International Relations Institute of Cameroon (IRIC). In other words, ICT, a tool for communication, a tool for the organization of classroom environment, a tool for the planning and presentation of lessons and a tool for evaluation has not been felt in some departments in IRIC like International Cooperation, sustainable development and Humanitarian Action (CA2D), and this has affected the performance of many students.

The use of ICTs in classrooms has a great influence on classroom management. And classroom management as viewed in this research include; management of online classroom (Virtual Classes) environment, management of time, management of students behavior, management of communication.

Generally, when a teacher use ICTs effectively in managing his or her classroom, the ways of managing the classroom improve and when classrooms are well managed, a conducive learning environment is created.

It is from the failures of ICT to ameliorate the quality of classroom management that the researcher decided to coin his research topic; the influence of ICTs on classroom management: the case of some ICT tools in CA2D, IRIC- Yaounde.

The main objective of this study is to determine the degree to which effective use of ICT contributes significantly to the amelioration of the quality of classroom management in CA2D. The main idea in this research is that, the use of ICTs in classroom management in CA2D is not effective, reason being that, the integration process of ICTs in classroom activities in IRIC in general is not effective. Data collected for this mixed research were gathered and analyzed using the Chi Square technique. The results show that there is a high relationship between ICTs and classroom management in CA2D.

This research is going to be structured into five different chapters. Chapter I is made of the background of study, the theoretical background, contextual framework, the problem statement, objective of research, research question, research hypothesis, delimitation of study, interest of study, justification of research and definition of key concept. Chapter II is Literature Review and Theoretical framework. Chapter III is Research Methodology. Chapter IV is Data analysis, verification of Hypotheses and chapter V is interpretation of results, discussion of findings, Recommendation and conclusion.

CHAPTER 1

1.0. Introduction

This chapter constitutes the background of study under which is the historical background, the theoretical framework, contextual framework, the problem statement, and objective of research, research question, research hypothesis, and delimitation of study, interest of study, justification of research and definition of key concept.

1.1. Background of the Study

1.1.1: Historical background

The 21st century, (a century of globalization) is one of the centuries that has experienced the ever-increasing needs of individuals and societies, thereby placing a heavy burden on established educational institutions. At the same time, traditional structures and modes of teaching appear less and less responsive to the challenges of our modern times. This has led to a call for technological innovation and transformation among educators everywhere, especially in higher education, the most crucial stage in the development of a human competence.

It is in this sense that we are in this first part going to see the advent of ICTs in education. To better understand the advent of ICTs in education, it will be advisable to look at it under the advent of technology in education as a whole.

The advent of technology in education

It is very difficult to trace the origin of technology in education but according to some authors it was for the first time seen with the introduction of modern library and the pencil in the mid-1600s. Since then, the evolution of technology in education has undergone a good number of stages which we are going to group into phase's base on two significant timeline. The first phase is the period between the 1800s and the end of the 20th century, while the second phase is from the 21st century to date.

The period between the 1800s

Technology during this period started with the advent of the blackboard which is one of the most ancient technologies introduced in classroom. It was locally used as a tool for writing until the 1800s when the slate was added to it to prevent its edges from breaking. By then, students used pieces of chalk to write on it in the place of pen and paper.

However, it was later discovered that this type of blackboard(slates) were not very convenient for longer assignments since they could only be used to solve short equations after which they had to be erased so that new equations can be solved. It should be noted that, slate was the material of choice due to its broad availability throughout the world during the 19th century when mining provided abundant access. However, it was later discovered that chalk dust posed potential health risks which is one of the reasons why they were gradually replaced by the whiteboard as we know today.

From the invention of the slate in 1800s we now move to the 1900s when the stereoscope was being released in the market. The stereoscope provided a way to view images in three dimensions. At first, it was a popular device for home entertainment and was later marketed to schools for education purposes. Classroom which were equipped with stereoscopes were used to view three dimensional in images that emphasized points being made by the teacher during a particular lesson.

Still within this period, there was the introduction of the film projector in classroom (1925). The projector displayed still images from a film strip accompanied by an audio recording. The images of this projector had to be manually changed as you advanced through the film strip. This type of technology remained in the classroom until the early 1980s and was used to study a particular topic or timeline of events.

It was also during 1925 that the radio saw a green light in education. During this period some schools used the radio to broadcast lessons to other schools using a specific radio station. The first lesson was sent over the radio by the Board of Education in New York City in 1925.

In the 1930s, the first overhead projector was introduced to the classroom prior to being widely used by the military during World War II. After its introduction, the overhead projector became widely used in the classroom which provided teachers with a more convenient alternative to the blackboard. This overhead projector used transparent sheets

which could be written on with an erasable marker. The teacher could write on the reusable transparency while facing the class. The notes were reflected on a screen during the classroom presentation.

In the later part of the 1930s, the ballpoint pen was introduced in classroom environments. Although it was officially invented in the late 1880s, it was not made widely available until the late 1930s and was used by students to take notes and complete assignments.

After this era was the advent of the mimeograph (1940s). The mimeogram was used by teachers to print classroom materials. Additionally, school office staff used them to print out various documents used for daily operations within the school. The copies were created by manually cranking the ink filled drum which forced the ink through a stencil and onto the paper.

In description, stencil on a mimeograph machine was made of waxed mulberry paper which later became paper immersed in a coating of long fibres. The stencil was then wrapped around the drum and when turned, forced the ink onto sheets of paper that were drawn between the drum and a pressure roller. The mimeograph was commonly referred to as a *ditto machine*.

This evolution continued in the 1950s when headphones were introduced in the classroom and installed in listening stations. By listening to audio tapes through the headphones, students could easily review lessons and reinforce concepts to be learned. The listening stations were commonly called language labs which have since been replaced with computers and headphones in the present day.

It was also during the 1950s that the slide ruler was used in the classrooms more than ever before. The slide ruler was the precursor to the calculator and was commonly used to make scientific calculations. This device was still being used in the 1960s when calculators were just beginning to appear in classrooms.

After that, the use of the videotape in the classroom also emerged during the 1950s when the first videotape demonstration occurred in California. The videotape was shown using an Ampex tape recorder that kept the narrow tape redeploying at 360 inches per second. It was not until a few years later that the wider magnetic videotapes were put into use.

This period also marked the advent of the Skinner Teaching Machine in classroom. This machine was introduced by B.F. Skinner. It was designed to enable student learn at their own pace, using a specific instruction program. The device was designed to issue a set of standardized questions. Each time the student answered the question correctly, the machine would dispense a piece of candy as a reward.

Beside the skinner teaching machine that was introduced in the 1950s was the photocopier machine invented by Xerox during the last quarters of the 1950s. This machine helped teachers to create copies of classroom materials easier and faster than the mimeograph machine. After that, educational television began to become more popular with more than fifty different channels that delivered educational programming.

Down the 1960s, the individual filmstrip viewer was introduced to libraries and educational institutions. The device provided a way for students to view individual filmstrips at their own pace. The device was also used in libraries to search through newspaper archives and other publications for research.

It was also during the 1960s that Liquid paper was introduced and widely used with the typewriter. Students who took typing class or used the typewriter to complete assignments and research papers could dip the brush into the liquid and then apply it to the paper to correct a typing error.

In the 1970s, there was the transition to hand held calculator in the classroom environment. Despite the fact there was concern over the loss of basic learning skills such as long division, manual multiplication, and other skills, the hand held calculators became a widely used device and was the precursor to the calculators used in the present day classroom.

Another educational technology that was introduced during the 1970s was the Scantron which was used to grade multiple choice exams. The device used imaging technology to read the answer sheet which had dots that were colored in with a pencil. The purpose of the device was to save teachers time when grading multiple choice exams.

The 1970 also marked the advent of Public Broadcasting System (PBS) to homes and classrooms. This allowed educational programming covering a wide variety of topics to be viewed on a television in the classroom or in the home environment.

In 1977, Apple released the Apple II desk computer which allowed students to learn Geography and Maths problems using computer games. The Apple II utilized floppy disks for viewing various types of content and did not have access to the internet.

In the early 1980s, International Business Machines (IBM) came out with the first personal computer. Additionally, the Plato computer was an early computer that was introduced to the education market as well. Although schools did not yet have access to the Internet, the computer began to be used for a variety of learning purposes and as an eventual replacement for the typewriter when creating and completing reports and assignments.

Away from the 1970s was the introduction of the first CD-ROM in the educational milieu (mid 1980s). For the first time, students could store video and audio, as well as an entire encyclopedia on a single compact disk. The CD-ROM is still used with current computer and paved the way to flash drive for storage.

During the same time, the graphing calculator was introduced in the classroom and allowed students to calculate advanced Maths problems easier. The graphing calculator was hand held and provided a way to do complex equations, create pins and points on a graph and more.

In the early mid-1990s, the Internet was made available to the general public. Prior to this time, it was solely used by the military, academic institutions and NASA. It was first introduced as a dail-up connection which occupied telephone line. It was also a very slow connection unlike the broadband connection of today and incapable of efficiently handling video.

As more people caught on the potential of the Internet and the value it could add to learning, it began to be used in education. In most cases, the connection was limited to a specific area of the building via an Ethernet cable unlike the widespread Wi-Fi availability we know today.

By the late 1990s, the blackboard was gradually getting replaced with an interactive whiteboard. When first introduced, the whiteboard consisted of a white screen, computer and projector not yet being widely used since many were unfamiliar with how to use it for classroom learning. But nevertheless, it was gradually starting to make its way into classroom around the world.

Technology in the 21st classroom

This period is one of the eras that have experienced a rapid evolution of modern technology in the education milieu. Some of these technologies are YouTube that was discovered in 2004 as a useful tool for classroom learning. This tool allowed teachers to easily share free instructional videos some of which are associated with classroom projects.

It was at this same time that the Clicker became a popular classroom tool for teachers. The device allowed teachers to easily poll students during a lesson and receive the result in real-time. At this point, schools were also beginning to include student laptops in their technology budget.

Between 2007 and 2010, smart phones were beginning to increase in popularity and were widely used by students. At this time, they were still not accepted as a classroom learning device until the inception of the Pad in 2010 which brought Wi-Fi and this enabled mobile device to the forefront as a learning tool in the classroom.

As of 2015, interactive mobile apps have become the centre of effective classroom learning. The wide availability of low cost apps empowers teachers to provide better learning opportunities and simultaneously reach a variety of different learning styles.

1.2. THEORETICAL BACKGROUND

The theoretical background of this research is based on the fact that, ICTs has been applied in the African societies with the idea that as a pedagogic tool, it will better prepare citizens for the challenges of the third millennium. This is because ICT has for the past decades played a fundamental role in the political, economic and social conditions industrialized countries especially those of Latin America and Asia.

The utilization of ICT in education help in a multidimensional way, and theoretically, we can group them into six main directions: ICT as a teaching and learning support, and critically assess the data gathered by networks; ICT as a potential for information processing tools and networks to develop educational competencies; ICT as a tool to identify and communicate information using pertinent and varied forms of multimedia; Use of ICT to carryout research, interpret and communicate information and to solve problems; Use of ICT to build networks

for exchange and continuing education in specific subject areas for teachers, learners and pedagogical practitioners; ICT as an opportunities for learning and assessment activities.

In the higher educational institutions in Cameroon and Africa at large, ICT integration appears to be considered a necessity both for university students and teachers, but it is very surprising that the impact of their usage has not been felt in some domains due to problems related to ICT policy.

ICT utilization for online learning (e-learning) is one of the ways to address this situation. In fact if not of this lack ICT we would have provided broader access to higher learning.

Also, consistent delivery of content is possible with asynchronous, self-paced e-learning, and expert knowledge can easily be communicated, but more importantly captured, with good e-learning and knowledge management systems.

Along with other aforementioned benefits to students, particular advantages of e-learning include: on-demand availability enables students to complete training conveniently at off-hours or from home, self-pacing for slow or quick learners reduces stress and increases satisfaction; interactivity engages users, pushing them rather than pulling them through training, confidence that refresher or quick reference materials are available reduces burden of responsibility of mastery. (e.g. Karsenti and Charlin, 2009).

ICT can also enhance the delivery of education in many ways (Depover, 2009; Karsenti and Charlin, 2009) such as in higher education and teacher training where adult learners in communities or faculties can fosters self-training and successful cyberspace that extend tutoring and interaction with mentors to new approaches to the concept of time units, independent of learning locations and learning activities. For instance the contact encouraged using email or even mobile continued education content, or contact with a lecturer.

Aside from all this, online learning allows International Cooperative Teacher Training. It also promotes national and international exchanges between teachers and contributes to the fine-tuning of pedagogical practices.

This research also goes in line with the study of Visscher, Wild, Smith and Newton (2003) who reported that very few studies have been carried out on the use of information and communication technology in the schools despite the fact that schools all over the world have

adopted information technology systems. To this effect, they suggested that for these systems to be designed and used to full-effect, knowledge is urgently needed on the implementation, use and effects.

In relation to the effectiveness of information and communication technology, Becta,(2004) pointed out that direct causal effects are not always easily identifiable and drawing clear conclusions on the effects of ICT from the range of research evidence and reports available can be problematic.

According to him, factors such as differences in sample sizes, methodologies and effects limit effective comparisons. To him, the effectiveness of ICTs in the education milieu especially when it comes to classroom management has a very significant influence on the performances of the stakeholders. Several studies have reported positive impacts of the effective usage of ICTs in classroom management and have shown that media and ICTs are not mere vehicles to deliver instruction but transformers of classroom milieu.

Davis, Desforges, Jessel, Somekh, Taylor and Vaughan (1997) are of the opinion that information technology tools are currently revolutionalising school administration and in the future will revolutionalise school structure, breaking down classroom walls to virtual classrooms and Open University.

Lim, Pek and Chai (2005) shared this idea of ICT in education and argued that when the ICT-mediated lesson is well-managed, a conducive learning environment is created. In other word, when teachers use ICT to mediate lessons effectively, it creates a learning very conducive environment for learners.

Lim and Co, (2005) asserted that the essential elements in a well-managed ICT-mediated lesson are the establishment of rules and procedures, supporting ICT and non-ICT tools for the ICT-mediated activities and the division of labor among the teachers, students and technical assistant.

The Organisation for Economic Cooperation and Development (OECD) in 2006 demonstrated that this lack of basic network infrastructure and international connection might be blamed on the more pronounced digital divide in the world's lowest income areas. In concrete terms, apart from countries at war, the West and Central African countries are lagging the furthest behind the Western World in this respect. For instance, Niger regularly ranks at the top of the

list in two categories: poorest countries in the world and countries where information and communication technologies are particularly slow to arrive.

Schibeci, MacCallum, Cumming-Potvin, Durrant, Kissane and Miller (2008) stated that the more teachers are familiar with student–ICT interaction the better they are able to modify their class management approaches accordingly. In relation to ICT related pedagogical competency, many teachers adopted student-centred and collaborative, inquiry-oriented teaching practices (Ilomäki, 2008). Having student-directed learning in this process, different management problems are likely to occur (Schibeci et al., 2008).

In their study Myrick, R.D. and Sabella. R.A. (1995) saw online colleges, chat rooms, and electronic groups respectively as important ICT components that are being used to do exploit in the fields of counseling and counselor education

In spite all the advantages it brings, many higher institutions in Cameroon and developing countries at large have not succeeded to effectively integrate ICT in their system, and this has created a technology gap between the develop and the developing countries.

In fact, many developing countries, which are also some of the poorest on the planet, are increasingly living in a world of technological deficiency that includes lack of access to knowledge that is available to everyone else via the Internet.

Collins and wende,(2002) model strive to predict the variables that influence the integration of ICT in an institution, the way in which educational delivery approach identifies environmental conditions and setting, policy, implementation, practice, experience and effect as the predictor variables.

Environmental conditions and settings consist of the institution's history, culture and its particular demographics, and leadership. This model has two components namely, ICT and educational delivery (outcome variables) and predictor variable.

Two main lines of change in educational delivery in higher education can be identified. One relates to the issue whether the University should move towards strengthening itself as a home base for its learners, or move towards a situation in which its students rarely or never come to the home campus. A second line of development relates to how the program and

content should be offered to clients and obtained, either as total programs, individual courses or as portions of courses (Collis and Wende, 2002).

According to Collis and Wende, (2002) after considering the environmental conditions of the institution and the policies that reflect those conditions, the next factor is implementation aspects. These aspects relate to the provisions made available in the institution to support instructors and students in their use of technology. They also relate to incentives for instructors to embark on a technology-related change process.

Policy dictates the sorts of technical infrastructure available, ranging from hardware access, software licensing, and network access to types of software applications available. Relating to the predictor variable practice, Collis and Wende,(2002) pointed out that even though an institution establishes various support structures or partnerships, it does not mean that they are all taken up into daily practice. Technologies may be available but little or never used. Instructional practice may or may not make use of technologies even if the institution supports these.

Experiences and effects are also considered as predictor variables for an institution's ICT and educational delivery. The combination of environmental characteristics, policy, implementation support, and actual use in practice of technologies for educational purposes can lead to perceived results such as the perceived importance of technology use on the strategic goals of the institution and working practices**.**

1.3. CONTEXTUAL FRAMEWORK

One of the greatest evolutions that have characterized the world this last two decade of the 21st century is the rapid growth of globalization. A major outcome of this globalization is the birth and spread of technology. This technology has affected every sector of life, and one which is the educational sector. Special note should be taken that the type of technology in education and which we are going to be focusing on in this research is Information and Communication Technology (ICT).

In the educational milieu, it has come to our noticed that most schools have adopted the use of ICTs in their system, and the level of development at which most schools are now is thanks to the advent of ICTs. This is because ICTs such as Internet, computers mobile phones and ODF in platform plays a crucial role in educational development as science has proven. In

education, ICTs help in the administration of school affairs, in the teaching and learning (pedagogy), in entertainment and classroom management.

However, it has been noted by the researcher that, the act of using ICTs to manage classrooms is being practiced in most schools in Cameroon just like any other country of the developing world, but it is very surprising that its impact in this domain has not been felt in CA2D.

Science has proven that when stakeholders use ICTs effectively in managing the classrooms, the nature of classroom management can be improved.

The context of this research holds that, ICT has been introduced in IRIC but lecturers have not been using it effectively in classroom management. Tools like internet that can enhance classroom management are underutilized. Lecturers (in CA2D) have not been using it constantly in managing communication, coordinating group discussions in Virtual classes and so on.

For tools like computer, our research holds that most lecturers (in CA2D) have not been using it in classroom management effectively. Most of them still use the traditional method of teaching talk less of using it in managing classrooms while those who use it have not been using it constantly.

Concerning mobile phones, the context of our research holds that it can be used in communication but lecturers in CA2D have not been using it in communicating or to manage student's behaviors.

As for ODF, this research holds that, when they are used effectively, teacher's roles in classrooms can be shifted from instructors to facilitator.

The context of our research holds that, the reason why the use of ICTs is ineffective is because the implementation process ICTs is not full.

1.4. PROBLEM STATEMENT

In Cameroon today, a lot of technological initiatives have been put in place to enhance classroom management so that student academic performances can be improved to meet up with the challenges of the current millennium.

At the international level, the world Bank in it ICT task force policy has raised the concept of cyber education in the global school system to promote the development of computer technology to improve the accessibility of learners to information technology, and to encourage digital inclusion in developing countries.

In Cameroon, the head of state in his message to the youth (11th February 2001) called on the integration of ICT in the educational system of Cameroon (République du Cameroun, 2007c: 3).

In the later years of the 2000s, policies introducing ICT in education in Cameroon were put in place in the various education ministries, and to ensure its effective implementation, national documents with key strategies were drafted:

Firstly, in the year 2004 key strategies on the use of ICT in education were highlighted in the first official draft of the Cameroon National Information and Communication Infrastructure (NIPI) policy and plan (prepared by the government with support from the United Nations Development Program (UNDP) and the United Nations Economic Commission for Africa). In this document, the government recognized ICT as a national priority.

Secondly, in 2005, the Education Sector Strategic Document (ESSD), which outlined the objectives for the integration of ICT in education (to ameliorate the efficiency and quality of educational services) was drafted. This objective in it development calls for the will of the state to promote the usage of ICT in education in Cameroon (promote access to new information in the training system (p.122)).

As if that was not enough, strategic guidelines for the development of ICT in schools or smooth introduction, implementation and adaptation were provided in Growth and Employment Strategic Paper (2009).

Consolidating the head of state's speech, government's efforts and the World Bank's initiative, IRIC in 2001 created a Multimedia Resource Center (MRC). Later on in the preceding years, ICT and other technological innovations like internet connection, video projector, computer, a common website, discussion forum and other social media group were put in place to enhance classroom management so that students' performances can be improved.

Despite all these, classrooms in the department of CA2D are still poorly managed. This incident occurred in the academic year 2012/2013, 2013/2014 and 2014/2015. According to reports from the computer center, in the academic year 2012/2013 only 40 student out of 95 validated the course Sustainable Development (a course where the lecturer use ICT in classroom management) as against 70 in cooperation for Development (where the lecturer use traditional method to manage the classroom).This gives a percentage of 42.2% as against 73.7% respectively. In the year 2013/2014, only 43 students out of 95 validated the course above as against 71students on the other hand. This amounts us to a percentage of 45.3% is to 74.8 respectively. A similar case happened in the academic year 2014/2015 where only 39 out of 90 students validated the course above as against 75 on the hand, giving a percentage of 43.3% as against 83.3% respectively. This incident has caused many students to either repeating masters I while other receive insufficient grades in end of course certificated that cannot usher them admission in to the PhD, thereby ending their educational career at the level of masters.

The ideas behind this unexpected is that, the use of ICTs that was officially introduced in the educational system of Cameroon is not effective in CA2D.

Bekele, (2004) in his study in some higher institutions in Europe and America argued that the role of ICT in education is impressive but the lack of policy frameworks has caused the integration process to be very ineffective in higher institutions. To him, these policies are needed in universities and other higher education institutions today for the positioning of universities in the marketplace, to accelerate growth in demand by students and staff for access to educational technologies, to increase the acceptance of learner-centred (self-pace, self-directed) and more social interaction and communication settings and to improve efficiency/effectiveness of students.

Hew and Thomas, (2007), also shared this idea. In their review, they stated that the lack of School ICT policies affects the effective ICT integration in the classroom.

In real sense, ICT has been integrated in higher institutions in Cameroon (Tchombe,2006). To her, the integration and use probably must have been as a result of bold claims that ICT as new tools used in new ways has the potential to enhance the quality of education and also because of the irresistible role of technology in today's globalised society.

Being a National with the objective to improve the quality of education and learning (Education Sector Strategic Document of 2005), ICT was supposed to help students in CA2D validate their courses with good grades. Science has proven that if effectively used ICT can ameliorate the way in which classrooms are being managed which will in return improve students' academic performances.

Karsenti, Collins and Harper-Merret, (2012) in their review argued that the use of ICT in education has a positive impact on students' academic performances.

Edwards,(2000),in his review argued that the use of ICT tools in classroom management requires a different set of classroom management techniques that consist of ways to empower students to regulate their own classroom activities responsibly which can improve their academic performances.

Lai and Pratt,(2008) also reasoned in the same direction that the most important effects of ICT use for teachers is to improve efficiency of management and administration of teaching, accessing resources for preparing teaching materials and presenting lessons.

It is from the spirits of these reviews on the influence of ICT on classroom management and it impact on students' performances that the researcher directed his research on why students performances are poor in courses where lecturers use ICT tools in managing classrooms than in courses where it is based on the traditional method. This research however, hopes to bridge the gap that exists between the ideal influence of ICTs in classroom management and its actual state, so that quality education can be achieved.

Reason why the statement of our problem in this research is centered on the question; can effective use of ICTs like internet, computer, mobile phones and Online Discussion Forum ameliorate classroom management in CA2D?

This research is based on Rogers Innovation Diffusion Theory, (2003).This is because our research is focused on ICTs as an innovation put in place to foster pedagogic activities in IRIC. This theory tries to explain five stages through which ICTs as new ideas can be adopted in school. The various stages are; the awareness stage, interest stage, the evaluation stage, the trial stages and the adoption stage. It is the smooth transition from all the stages that makes the integration of ICT effective in school, and that is the central idea behind this research.

1.4. OBJECTIVE OF THE RESEARCH.

In this research there is a general objective and specific objectives.

1.4.1. General Objective.

The main objective of this research is to determine the degree to which effective use of ICT contributes to the amelioration of classroom management in CA2D.

1.4.2. Specific Objectives.

Our specific objectives in this research are four in number. These objectives are:

- To determine the level at which internet connection contributes to the amelioration of classroom management in CA2D.
- To evaluate the degree to which computer can contributes to the amelioration of classroom management CA2D.
- To assess the role of mobile phones in the improvement of classroom management in CA2D.
- To examine the degree to which Online Discussion Forum in CA2D can ameliorate the quality of classroom management.

1.5. RESEARCH QUESTIONS

Just like the objectives, the research question is made of a principal research question and specific research questions.

1.5.1. General research question

Our principal research question is; to what extent can the effective use of ICT influence the amelioration of the quality of classroom management in CA2D?

1.5.2. Specific research questions

Our specific research question just like the specific objective is four in number.

- The first is to explore the degree at which effective use of internet connection can significantly influence the quality of classroom management in CA2D?
- The second is to examine the extent to which effective use of computer can significantly influence classroom management in CA2D?
- The third is to determine, to what level can the effective use of mobile phone significantly influence the quality of classroom management in CA2D?
- The fourth is to determine to what degree can effective Online Discussion Forum significantly influence the quality of classroom management in CA2D?

1.6. RESEARCH HYPOTHESES

In this section of our research just like the objective and the research question, there is major hypothesis and four alternative hypotheses.

1.6.1. General Hypothesis

The effective use of ICT contributes significantly to the amelioration of classroom management.

1.6.2. Specific Hypotheses

Our specific Hypotheses just like the specific objective and research questions are four in number.

- Effective exploration of internet to communicate with class delegates contributes greatly to the amelioration of the quality of classroom management.
- Effective exploitation of the computer to communicate with class delegates contributes significantly to the improvement of quality of classroom management.
- Effective exploration of mobile phones to communicate with class delegates contributes significantly to the quality of classroom management.
- Effective exploitation of the Online Discussion Forum to assign task contributes significantly to the improvement of quality of classroom management.

1.7. DELIMITATION OF RESEARCH

Our research will be delimited spatially, thematically and time

1.7.1. Spatial delimitation

This work is going to be carried out in IRIC and particularly the department of CA2D. This department is otherwise referred to as International Cooperation, Sustainable Development and Humanitarian Action. It is subdivided into three sub departments which are: International Cooperation, Sustainable Development and Humanitarian Action, International Cooperation, Decentralized Cooperation and Environmental Management. This department was introduced in 2010 and today it is in its 7th batch. From birth, the selection into CA2D has been through file studies.

1.7.2. Thematic Delimitation

Thematically, this research is limited within the use of some ICT tools which include internet, computer, mobile phones and Online Discussion Forum in the school milieu and how it can be used in managing classrooms. Classroom management was limited at the level of; management of physical environment, virtual classes, lesson planning and presentation, management of time, management of relationship and communication, management of curriculum. We limited our problem on the fact that the reason why classrooms are not effectively managed is because there is no clear policy to guide the use of ICT in pedagogic practices and precisely in classroom management.

Coming back the level of our discipline, we chose to work on the influence of ICT on classroom management because our project is to be presented to the faculty of Science of Education and precisely under the specialty (Management of Education), and this specialty is based on how educational institutions can be effectively managed so as to meet up with maximum output.

Equally, many debates have come up in this discipline (Science of Education) on the influence of ICT on educational practices and it is in this light that we limited our work on classroom management.

1.7.3. Time factor

As far as delimitation of time is concern, our work is delimited from 2001 upward (when ICT was officially integrated in the educational system in Cameroon). In IRIC, we delimited our time from 2001 when the multi-media center was created till date. As to what concerns the department of CA2D we delimited our period from the academic year 2012/2013 to academic year 2015/2016.

As to what concerns our field work on the other hand it was within the period September 2017 and November 2017.

1.8. INTEREST OF RESEARCH

In this section of our research, we are going to look at the theoretical interest and the practical interest.

1.8.1. Theoretical interest

To science of education in general and the department of Management of Education. in particular, the theoretical part of this research is going to help highlight the importance of ICT in teaching, learning, classroom management, and school management. As a young department that is looking forward to fully integrate ICT in it system, the importance of ICT in solving the problem of the 21st century and the current millennium is going to give the stakeholders the anxiety to hesitate with the process so as to benefit from the advantage it brings to the education society.

Secondly, this research is going to alert stakeholders of the discipline science of education on the various barriers that effective integration of ICT face in higher institutions in Africa, so that by the time they fully integrate ICT in their system stakeholders should not repeating the same mistakes others did.

Thirdly, this research is going to help the Faculty of Education to overcome the challenges they are facing with the few ICT tools that have been introduced to enhance teaching and learning. While at the same time provide sub-departments such as Management of Education with knowledge on how it can be used to manage administrative and Classroom affairs.

In the same light, it is also going to help student researchers in the sub-department of Management of Education with research materials on ICT as a pedagogic tool which is going to help them enrich their end of course projects.

1.8.2. Practical interest

The practical part of this research goes to the targeted institution. This research is going to help IRIC and the department of CA2D in particular to revalorize ICT as a pedagogic tool to enhance classroom management.

To the administration, the recommendations of this research are going to revamp their spirit on the need to rethink their strategies and adopt new ICT policies to reinforce the use of ICT in classroom activities.

To the staff members, the way forward of this research is going to re-ignite their effort towards ICT, making them to revisit their methodologies.

1.9. JUSTIFICATION OF STUDY

ICT has contributed a lot to the socio-economic, cultural and political life of Cameroon especially during these two decades of the 21st century. It is from its contributions to economic growth and development, and its omnipresence in the life of modern societies that the head of state in his message to the youths (11th February 2001) called on the integration of ICT in the educational system of Cameroon. In response to this, international bodies, the government, education ministries, educational institutions as well as individuals have invested a lot of effort just to make sure that the integration process of ICT is complete, effective and efficient. However, the state of technology and techno pedagogic gap observed in our society today is a clear indication that the project is inefficient, and most researchers have attributed this inefficiency to lack of powerful ICT policies.

1.9.1. Personal justification

It is as a result of this that the researcher, conscious of the indispensability of ICT in contemporary societies decided to write on ICT and classroom management.

The foundation of this research is based on the fact that the use of ICT in classroom activities in IRIC is very stagnant at a time when students who are future workers needs ICT

competence to carry the country to vision 2035. In other words, the use of ICT is still ineffective at a time when classroom in the android generation as the head of stated needs to move from analogue to a digital environment. He based his argument on the fact that, 16years after the official integration of ICT, educational institutions, especially the higher level are still lacking adequate policies to reinforce the integration process. The government and educational institutions have not come out with powerful policies that can sustain the integration of ICT in schools.

This lack of a clear ICT policies have led to the prevalence of other barriers such as lack of a good network system to connect the various educational stakeholders, frequent power failure, lack of training for teachers, lack of infrastructure and so on.

1.9.2. Scientific Justification

From the scientific point of view, the researcher based his justification on the fact that many researchers such as Becta,(2012) have proven that ICT has contributed enormously in the performance of schools in the developed world, and that most higher institutions in Africa and Cameroon in particular has the enough of ICT potential such as Multimedia Resource Centers, internet connection, online discussion forum, computers and mobile ICT devices such as Smart phones and fixed phones at their disposals, yet not significant change.

In his review Tchombe, 2006, outlined that ICT is integrated in Cameroon schools and is being used as tools for educational processes. The integration and use probably must have been as a result of bold claims that ICT as new tools used in new ways has the potential to enhance the quality of education and also probably because of the irresistible role of technology in today's globalize society. This is in the sense that ICT in education has the potential to enhance student's learning processes, the teaching process of the Lecturers, classroom management and the administration process. Surprisingly, it use in classroom management in CA2D has not yield any significant Change.

1.10. DEFINITION OF KEY TERMS

Influence

According to Foulque,(1997:257) influence is a simple action that can become very deep, exercise on another by people or things. To him it is all about and event that can change the behavior of an individual. For example the influence of familial atmosphere on the concentration of the student.

According to Boudon and Baurricaud,(1982), influence in a wide sense can be defined as any form of A (influencer) exercise in an effective way on B (influenced). To them to influence somebody is not constraint against him to bring his whole.

In this work we defined influence as the manner I which one variable (independent Variable) cause the nature of the other variable (dependent variable) to change.

Information and Communications Technology in Education (ICTE)

According to SER, (1997) ICT is a generic term referring to technologies which are being used for collecting, storing, editing and passing on information in various forms.

According to the United Nations Education, Cultural and Scientific Organization (UNESCO, 2004) ICTs in an educational context refers to a set of combined technologies that enables not only information processing but also its transmission for purposes of learning and educational development. ICT is an expansion on the term information technology (IT) designed to stress that communications technology such as the Internet is an important component of the field.

Influence of ICTs

The influence of ICT is way in which ICTs as pedagogic tools affects the purpose for which they were introduced positively or negatively.

Classroom

According to Wikipedia a classroom is a learning space, a room in which both children and adult learn about things, classrooms are found in educational institutions of all kinds, from pre-school to universities. It may also be found in other places where education and training is

provided such as cooperative, religious and humanitarian organizations. Classroom attempt to provide the space where learning can take place un-interrupted by outside distraction.

Our definition in this research is in line with the definition above but with an adage that the space can be a physical space where students gather or online environment where students/lecturers meet and interact with each other.

Management

According to Wikipedia, management is the administration of an organization either because it's a business a not-for-profit organization or government body. Management include the activities of setting the strategy of an organization and coordinating the efforts of the employees and volunteers to accomplish its objective through the application of available resources such as financial technical, human and material resources.

Classroom management

According to Sabanci, (2008) Classroom management can be defined as the skills required to organize the instruction in the classroom effectively.

To Ming-Tak and Wai-Shing, (2008) classroom management is the art of establishing a good climate and managing instruction effectively.

To Jessica Classroom management is a teacher's method of operating the classroom to help students succeed. This involves keeping them on task, focused, organized, and able to make good choices.

In like manner, we can in our context define classroom management as the way in which a lecturer plan, organize, control and coordinate the classroom environment for effective transfer of knowledge.

Influence of ICT on classroom management

We can in our own word define the influence of ICTs on classroom management as the ways in which the use of new technologies has cause; a change in the management of physical environment of the classroom, change in time management, change in lesson planning and

presentation, communication and interaction amongst educational peers as well as change in the evaluation of students during test or exams.

1.11. Conclusion

This chapter was comprised of the background information of the study, theoretical framework, contextual background, statement of the problem, the objective of the study the research question, the research hypotheses, delimitation of the study, the interest of the study, justification and the definition of keywords.

CHAPTER 2
LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.0. Introduction

This chapter is made of the literature review and the theoretical framework. After that we are going to see the hypotheses of the research and the synoptic table. As to what constitute the literature review, we are going to see reviews on the notion of ICTs, the notion of Classroom management, pedagogic integration of ICT, types of pedagogic integration of ICT, objectives integrating ICTs in school, factors that affects the integration of ICTs in school, uses of ICT in school, influence of ICT in Classroom management, influence of the various ICT tools on students' performances, influence of ICT on teaching, barriers to successful integration of ICTs in school and strategies for effective usage of ICT. As to what concerns the theoretical framework, we are going to see kohn's student directed learning theory, skinners behaviorist theory, Social constructivism by Lev Vygosky and Williams Grasser's choice theory.

2.1. LITERATURE REVIEW

2.1.1. The Notion of Information and Communications Technology (ICT)

ICT is an expansion on the term information technology (IT) designed to stress that communications technology such as the Internet is an important component of the field. ICT is a generic term referring to technologies which are being used for collecting, storing, editing and passing on information in various forms (SER, 1997).

According to many documents and authors Karsenti and Larose, 2001; UNESCO, 2004), ICT in an educational context refers to a set of combined technologies that enables not only information processing but also its transmission for purposes of learning and educational development.

The field of Information and Communication Technology (ICT) in this work combines science and technology. It includes the full range of computer hardware and software, telecommunication and cell phones, the Internet and Web, wired and wireless networks, digital still and video cameras, robotics, and so on.

2.1.2. The notion of classroom management

Ming-Tak and Wai-Shing, (2008) on their part perceived classroom management as the art of establishing a good climate and managing instruction effectively. In other word, it is about how a teacher establishes his/her authority by offering interesting lessons.

Basar, (2001) in his study discussed five major areas under which the discussion of classroom management can be easily understood.

The first aspect here mentioned is the management of time. The way the time is allocated, non-instructional routine, procedures, transitions between activities or classes, school wide interruptions, type of seating arrangement, the types of spaces decided for group and ongoing activities, individual workspaces and permanent storage of materials and records, placement of the teachers' desk affect the use of time .

Secondly he made mentioned of mention of is the management of relations and communications. To him Communication is crucial to good relationships and it requires teachers to display appropriate verbal and non-verbal behavior to promote understanding and the first step of effective classroom management is to establish a positive classroom climate based on mutual trust, respect and caring.

Thirdly, he mentioned is management of the curriculum. A well prepared curriculum which balances students' diverse interests and needs with appropriate instructional methods may result with a well-managed classroom.

The fourth aspect here is the management of physical environment. According to him teachers should aim to provide a secure, welcoming context for learning which facilitates social contact among teachers and pupils to increase pupils' knowledge, confidence and skills in human relationships. The way in which the physical aspects of the classroom are arranged should reflect the goals and values the school wishes to promote.

The last aspect he made mentioned of is management of students' behaviors. Teaching standards, rules and procedures have been discussed among the most important aspects of classroom management. Once the curriculum has been reviewed, strategies can be considered. In a well-managed classroom students must know precisely what to do, have opportunity to

oral discussion and study with peers cooperatively and study in an enjoyable learning environment.

Having discussed what ICT and classroom management is the next thing is to bring the two concepts together and the process of introducing ICT in classroom activities will take us to what we call pedagogic integration of ICT.

2.1.3. Pedagogical integration of ICT

According to Karsenti, Savoie-Zjac and Larose, (2001), pedagogical integration of ICT does not necessarily mean introducing these technologies as a new curriculum subject and instructing students in its operation. Rather, it means students and teachers who are actively engaged in real-life learning contexts in order to support and improve the teaching and learning experiences and make them more meaningful should use ICT habitually and regularly.

Isabelle, (2002) in her review also pointed out that pedagogical integration of ICT into schools means the appropriate, habitual and sufficiently regular use of ICT that produces beneficial changes in educational practices and improves students' learning. To her, this type of integration implies the routine use of ICT in the teaching and learning processes. The pedagogical integration of ICT must therefore be understood as integration such that the student learns and socializes through a multitude of interactive and communication channels. It cannot be reduced to mere physical integration, which is nonetheless imperative.

Punie, Zinnbauer and Cabrera, (2006) on their part emphasized that pedagogic integration is not just a matter of pressing a button. But that successful integration of new technology and practices in schools required; ICT included in strategic planning, as part of school culture, teaching and learning methods facilitating participation and leading to empowerment, flexible curriculums, high investments in communication, optimum leadership and management and strong teaching staffs.

Taken as a whole, pedagogical integration of ICT means not only the implementation of networks and equipment, but also the use of a set of innovative technological techniques audiovisual, information processing and telecommunications to enhance learning at schools and in continuing education programs and for economic, social and cultural development.

2.1.4. Types of pedagogic integration of ICT

Raby, (2004) in his review outline two types of pedagogic integration if ICT. According to him these are: physical integration and pedagogical integration.

According to him, Physical integration includes making technological equipment available to teachers and students and promoting its use for occasional pedagogical needs. Physical integration is therefore understood as a process that leads to the introduction and/or deployment of technologies in the educational institution.

As to what concerns pedagogical integration of ICT, he looked at it in six ways which are:

Adopt a critical and discerning attitude toward the pros and cons of ICT as a teaching and learning support, and critically assess the data gathered by networks;

Identify and evaluate the potential for information processing tools and networks to develop educational competencies;

Identify and communicate information using pertinent and varied forms of multimedia;

Use ICT effectively to research, interpret and communicate information and to solve problems;

Use ICT effectively to build networks for exchange and continuing education in specific subject areas for teachers, learners and pedagogical practitioners;

Tap into ICT opportunities for learning and assessment activities.

2.1.5. Objectives of Integrating ICTs in Education

The following are the aim and objectives of integrating new technology or ICT as an innovation in educational environments:

To implement the principle of life-long learning education.

To increase a variety of educational services and medium method.

To promote equal opportunities to obtain education and information.

To develop a system of collecting and disseminating educational information.

To promote technology literacy of all citizens, especially for students.

To develop distance education with national contents.

To promote the culture of learning at school (development of learning skills, expansion of optional education, open source of education).

To support schools in sharing experience and information with others.

2.1.6. Factors that affect the integration of ICT in school

For ICT to be successfully introduced in an educational milieu, a good number of factors need to be taken into serious consideration.

Possibility for one to develop professionally:

According to International society for technology in education (2000) when teachers are trained on how to teach with the use of ICT tools, it gives the administration the anxiety to integrate ICT. In order word, the more teachers have the possibility to be trained on how to use ICT in teaching, the more ICT in school.

Policies link to the use of ICT:

According to Karsenti et al, (2012), for the integration of ICT to operate effectively in every educational system, the must be strong policies put in place to guide the introduction, use in pedagogic activities

Organization of teachers' tasks:

For the integration of ICT to succeed in a school milieu, the tasks of the teachers who are the main users need to be modulated. In addition, the faculty needs to acknowledge the willingness of the teacher to live an exemplary life in the utilization of ICT in the school milieu.

2.1.7. Literature review on the use of ICT in school

According to Fisbbein and Ajzen, (1975) in different societies and institutions, lecturers embrace ICTs in teaching differently. Their perception is on either the nature of ICTs (that is, characteristics) or ICTs functionality, what they called attitudes towards an object and attitude towards the behavior of the object. The views and perceptions of faculty in the use of ICTs in teaching are mixed with some encouraging it and other discouraging, while others think it should be blended with the traditional way of teaching. For instance, academics and

practitioners a like aim to better understand how to choose from among the multitude of possibilities afforded by information technology those particular design features that will contribute most to user acceptance and performance.

SER, (1998), in their review point out the following function of ICT as an innovation in schools.

ICT as object. It refers to learning about ICT. Mostly organized in a specific course. What is being learned depends on the type of education and the level of the students. Education prepares students for the use of ICT in education, future occupation and social life.

ICT as an 'assisting tool. ICT is used as a tool, for example while making assignments, collecting data and documentation, communicating and conducting research. Typically, ICT is used independently from the subject matter.

ICT as a medium for teaching and learning. This refers to ICT as a tool for teaching and learning itself, the medium through which teachers can teach and learners can learn. It appears in many different forms, such as drill and practice exercises, in simulations and educational networks.

ICT as a tool for organisation and management in schools. This refer to ICT as a tools for organizing and coordinating school activities. By school activities we are referring to activities like online conferences, coordinating arguments and discussion in visual classes and online evaluation.

According to Oliver (2003), the world is rapidly moving into a digital media and information, and the role of ICTs in education is becoming more and more important and this importance will continue to grow and develop in the 21st century. He further asserted that fields of medicines, tourism, travel business, law, banking, engineering, and architecture have greatly changed as compared to the past decades thanks to ICTs. However, education has not been keeping this pace. Still, he says that not long from now, we will soon realized a change in the way education is planned and delivered as a consequence of the opportunities and the affordances of ICTs. The current trends of ICTs in education reveal that the traditional mode of courses build around textbooks, delivery of content for rehearsal will all be affected by different competence and performance through what is learnt? Where? When? and how?

This type of setting will require access to varied information sources, forms and types; information access and inquiry-based student-centered learning settings; problem-centered and teachers as mentor or coaches (Oliver 2003). Teachers wishing to use this type of settings have faced several barriers and contrary to what Oliver says that these barriers have been eliminated, these barriers are still highly prevailing in the context of Third world universities. Developing world reality is contrary to the situation present by Oliver, which is a reflection of the North, when he says the barriers to the integration of ICTs have changed. It is however, true in this study's context that the costs of using ICTs in teaching is exceptionally higher than presumed and this is acting as an impediment. But, given the importance of these devices in the society and education today, it is essential that universities procure and use them.

Fleonora and Fasano (2004) carried a study on teachers‟ perception and use of ICTs in two universities in Italy and realized that in-service and pre-service mathematic teachers have different views in the use of ICTs in teaching. In-service teachers think that ICTs are motivating tools enabling students understanding while pre-service teachers do not think that they can bring a great support in creating new knowledge and attracting learning environments. Both however, do not think that they need these devices in teaching and consequently not being able to use ICTs means nothing to them. They however, accepted that ICTs could help students to solve intriguing problems collaboratively. Their perceptions here were based on the ethos of their discipline as these authors concluded.

Similarly, faculty perception of ICTs in higher education can also be linked to socio-cultural context in which the individual is working, as Shelton (2006) says, in describing the differences in lecturers‟ beliefs and the potential implications of ICTs, we need to take account of the social and cultural context within which these individuals are working. University teaching might be understood as operating within multiple cultures that interact dynamically. In particular, individual lecturers operate within departmental, institutional and subject disciplinary spheres and each of these can potentially influence the individuals practice with technology (Ibid).

A study carried out by Lindfors (2007) on reflection and perspectives of ICTs by teachers in Europe revealed mixed views of teachers on ICTs in education. This author reiterated that how much or the degree to which students use ICTs in studies depends on the teachers' confidence to use it, and teachers are keys persons who either bring ICTs to teaching or

leave it out. This study revealed four ways in which teachers view or perceive ICTs in teaching. These were the value of using ICTs in teaching, ICT competences, pedagogical challenges of ICTs in teaching and the future of ICT use in teaching.

Teachers have mixed views about the values of ICTs in teaching. For example, Lindfors (2007) still quotes from data collected that participants said you can do a lousy job with computers; I think face-to-face is necessary and it is important to find equilibrium between this method and those based on web-learning, the use of ICT gives meaningful experiences to students. They then prefer a blended method. About the ICT competences of teachers, teachers show their attitudes and skills by indicating that students live a virtual society (by being on the internet throughout, sending and receiving SMS, MSN, IRC, etc, while teachers try to cope and start to understand. The pedagogical challenges of using ICT in teaching show two scenarios of morale and academic development. Teachers fear that computer-based learning will help students to plagiarise as well as it will make then learn more. Lastly, the future makes use of ICT in pedagogical use students learn more on their own. Views of teachers about ICTs are different depending on motivation, social system, and the communication channel that these devices take.

2.1.8. Influence of ICT on Classroom management

As to what concerns ICT in classroom management, Means and Co, (1997) in their reviews suggested that technology in the classroom can provide authentic learning opportunities to at-risk students. Teachers can draw on technology applications to simulate real-world environments and create actual environments for experiments, so that students can carry out authentic tasks as real workers would, explore new terrains, meet people of different cultures, and use a variety of tools to gather information and solve problem.

Farrell (1999), review argued that a competent teacher is a teacher who controls his classes and mediates all kinds of the interactions in the classroom. In this sense, by means of using ICT in the classrooms teachers can create online discussion groups where student exchange and share ideas on particular course content, while the teacher act as facilitator. Through this and other ICT social media devices, students can interact between themselves sharing with each other on a particular course content while the teacher or lecturer just intervene as a facilitator to coordinate the discussion.

Edwards (2000) outlined that, the used of ICT in classroom requires a different set of management techniques. These techniques consist of ways to empower students to regulate their own classroom activities responsibly. Meaning that with use of ICT in classrooms by teachers in classroom management approach is upgraded in such a way that student are being empowered to learn at their own past.

Warschauer, Sabanci and Co, (2000) in their study under-pin that single-class computer-mediated communication is beneficial in many ways. Firstly, computer-assisted discussion tends to give students opportunities for more equal participation than face-to-face discussion. Second, computer-assisted discussion allows students to incorporate the input from others' messages into their own messages. Third, computer-assisted discussion allows more planning time than in face-to-face talks. Finally, since computer based discussion can take place outside of the classroom, it provides students increased opportunities to communicate in the targeted language.

Hudson and Notman,(2001) in their literature suggested that, ICT leads to successful management of classroom but for a successful classroom management in language classes, teachers at the start of the lesson should exert greater control on entry to the computer room. During lessons, students should move their seats away from their computers to encourage eye contact and listening. After initial instructions have been given, teachers should go round to each student to check that they understand what they are doing and ensure that they are engaged on task.

Marilyn (2003) gave an outline of the history of ICT use in counseling. According to these researchers, suicide tendencies were so much prevalent in young Australian children aged 4 to 17 years. It was difficult to reach out and help these children with the traditional face-to-face counseling until alternative ICT-related techniques were incorporated into the system. To buttress this point, Kids Help Line (KHL); an Australian based organization that provides telephone and online counseling services for young people posted its first website in 1996 and began providing e-mail counseling by 1999.

Schulz-Zander, Butcher and Dalmer (2002) in their review claimed that due to different competencies in the handling of ICT, the number of potential roles that students can take up in lessons is increased. In fact it was often observed that students, whose subject-related performance was rather below average, could take up functions as tutors in this field due to

their ICT competencies. The best that could be said for the role of ICT in the traditional classroom is that, even if ICT are used only to further traditional outcomes and even if it produces only moderate improvements in basic literacy and science this would still be a valid enterprise.

According to Lim, Pek and Chai (2005) when the ICT-mediated lesson is well-managed, a conducive learning environment is created. To them, when ICT tools like online forum discussions, computer to project lessons to the projector are effectively managed in a classroom, the learning environment is conducive. By conducive it means the level of students understanding is increased which can ameliorate their performances. This because the use of ICT in pedagogic practices makes teaching and learning flexible and therefore easy to understand.

Lim and Co. (2005) also reasoned in the same direction and listed that some essential elements in a well-managed ICT-mediated lesson are the establishment of rules and procedures, supporting ICT and non-ICT tools for the ICT-mediated activities and the division of labor among the teachers, students and technical assistant. This is because with the use of ICT to mediate lessons, there is the tendency for teachers to divide tasks into groups which can be virtual classes. Also with the use of CT tools like internet connection, students can share group assignments and submit to group leader for harmonization without necessarily coming together face-to-face.

Ilomäki (2008) showed that ICT were used mainly as tools: 1) for delivering material or for practicing a specific learning content, 2) for supporting collaboration or knowledge creation, 3) for structuring teaching/learning processes, which was a change from the teacher's management practices.

Schibeci, MacCallum, Cumming-Potvin, Durrant, Kissane and Miller (2008) in their study posted that the more teachers accustom themselves with student through ICT interaction, the better they are able to modify their class management approaches accordingly. In other word, when teacher get familiar with ICT, it can makes them to easily modify their approach of managing their classroom. In relation to ICT related pedagogical competency, many teachers adopted student-centred and collaborative and inquiry-oriented teaching practices. Which means that teachers can easily modify their methods of managing the classroom from teachers –centered to students-center in order to suit the situation at hand, and when changes are being

made to suit a particular situation in management, performances are likely to increase since the changes are meant to respond to particular situations.

According to Courts and Tucker (2012) as new technologies emerge, both students and educators are often eager to find methods of assimilating these technologies in their college classroom experience. On the students' part, the use of new technologies allows students to engage in the types of online communication and research which will be paramount for success in their academic and professional pursuits.

2.1.9. Influence of specific tools used in this project on students' performances

In this section we are going to outlining the influence of internet, computer, Mobile phone and ODF and their influence on student's performances.

2.1.9.1. Influence of internet on students' academic performances

In his review Riel (1998) hold that the use of Internet for instruction makes it possible for students to form partnerships with peers around the world, while collaborating to complete tasks, through such programmed as Learning Circles, which are based around cross-classroom collaboration, or tele-collaboration. Wireless networks can encourage teachers/students in the use of social computing tools such as e-mail and messaging by supporting flexibility in access, and hence extending collaboration.

Hirsch buhl and Bishop (2000) pointed out that the Internet, PowerPoint and interactive computer-based multimedia are transforming schools and colleges and the way students learn. Regular use of ICT across different curriculum subjects (across the curriculum) can have a beneficial motivational influence on students' learning.

Technological advancements, global telecommunication, and automation have greatly contributed to economic growth in the world over the past fifteen years. In the past, the tradition has been teachers planning and leading students through a series of instructional sequences to achieve a desired learning outcome. This tradition is changing and will continue to change. Indeed, ICTs have been identified in many spheres of life including higher education, as driver and enablers for economic development. ICTs are a force that has changed many aspects of the way in which we live (Oliver, 2003).

Carswell, Thomas, Petre, Price, and Richards (2000) in their work outlined that the advent of the Internet in recent years has brought with it new possibilities for instructors to creatively deliver effective course instructions to students. This is because with the internet teachers have access to online materials that can be used to enrich lesson. And the end point of this is that when students receive notes whose content are very rich, they tend to perform well in class exams than when course materials are not enriched. This is because their level of understanding is increased when lessons content the necessary materials.

Becta, 2005), have demonstrated that technologies are likely to have greater impact when integrated pedagogically, providing the following benefits: better mastery of basic competencies, better mastery of the technologies themselves, better skills preparation for the knowledge society, higher motivation for school learning and advancement to higher learning

Brignall and Valey (2005) has extensively focused on the influence of the Internet and social networks on either student academic performance or face-to-face communication (social engagement). This is because with the internet, teachers can easily access materials to enrich course contents, post assignments to students, and pass information on class activities and so on. On the other hand, with the internet, students can easily access research materials to enrich class assignment.

Brophy and Bawden (2005) compared Google as an internet search engine with academic library resources in their study. Surprisingly, their finding showed that while Google is superior for coverage and accessibility, library systems are superior for quality of results, and that precision is similar for both systems. Finally, they concluded that using them together for a good coverage is important because both have many unique items.

Karsenti and Co,(2005) in their work reviewed that ICT has a positive impact on student performances and Russell in 1999 supported the idea and added a series of online ICT tool that has impact on student performances. Under this he talks of tools of production, communication tools that are used in accessing information and knowledge and outils d'archivage.

Peng and Co (2006) in their study of university students' attitudes and self-efficacy towards the Internet demonstrated the relationship between perceptions of the internet and their internet attitudes and self-efficacy. Indeed, the advent of the Internet in recent years has

brought with it new possibilities for instructors to creatively deliver effective course instructions to students. They showed that there is a positive effect if the students use the Internet as a functional tool or functional technology. In real sense the use of internet connection in a school milieu provides students with access to online information and materials that can students use for research and to complete course content

Duart et al. (2008) argue that technology has been added to the traditional indicators of academic achievement, meaning the technological environment at institutional level, access to Internet and how students use it influence students' work in various levels and in different ways. An educational institution's technological environment, if properly established, is an important factor in the development of a culture of technological usage. Although this by no means guarantees academic success, it does enable the student to develop good practices that can contribute to achieving academic goals.

Chen and Peng (2008), in their study, examined the basic relationship between the internet use of university students and their academic performance, interpersonal relationships, psychosocial adjustment and self-evaluations. They prepared a questionnaire and collected 49,609 university juniors' comments about the questions. The results show that non-heavy internet users have better relationship with administrative staff, academic grades and learning satisfaction than heavy users. They claimed that the heavy internet users were likely than non-heavy users to be depressed. This study provoked us to search the raising trends in use trap sites among university students.

Barak and Sadovsky (2008) reviewed that internet use can have a positive effect on students' performance if it is properly used. When the internet is properly used to enhance teaching and learning in a school milieu, students' academic performances is improved. This is because with the internet, teachers can easily access materials to enrich course contents, post assignments to students, pass information on class activities and so on. On the other hand, with the internet, students can easily access research materials to enrich class assignment.

2.1.9.2. Influence of computer on students' performances:

Bork (1985) views computers as having an influential effect on the teaching and learning processes. They state that with the use of computers in the classroom, schools would become more student-centered and that more individualized learning would take place than ever

before. In the student-centered classrooms of today, with the aid of the computer, students are able to collaborate, to use critical thinking, and to find alternatives to solutions of problems.

But the shift from teacher-centered delivery to a student-centered model potentially leads to a resistance in change. Student-centered teaching is challenging educators to restudy their teaching methods and student learning methods.

According to the review of Dwyer, Ringstaff, and Sandholtz (1991), computers can be used in collaboration for all subject areas, but that teachers have to take into account the different styles of teaching and the student involved in this learning. This type of teaching requires a change in the teacher's method of teaching and learning, the amount of time needed to learn how to use the technology and the location of models that work with technology.

Baker, Gearhart, and Herman (1994) suggest that any student, including the at-risk student, who has technology integrated into the curriculum, could potentially see a positive change in student classroom grades, Grades Points and Averages, and attendance. Research, which examines constructivist teaching and learning models, indicates that technology brings complexity to the tasks that students perform and raises student motivation Computer brings about changes to the classroom roles and organization. It allows the students to become more self-reliant. Students may use peer coaching, and teachers may function more as facilitators than lecturers.

Negroponte, Resnick, and Cassell (1997) argue that digital technologies can enable students to become more active and independent learners. The Internet will allow new ''knowledge-building communities'' in which children and adults from around the globe can collaborate and learn from each other. Computers will allow students to take charge of their own learning through direct exploration, expression, and experience. This shifts the student's role from 'being taught to learning and the teacher's role from expert to collaborator or guide (p. 1).

The study conducted by Sandholtz and Co (1997) on the Apple Classrooms of Tomorrow (ACOT) over a 10-year period show changes in teacher and student interactions. Teachers are observed more as being guides or mentors and less as lecturers. The cooperative and task-related interactions among the ACOT students are spontaneous and more extensive than in traditional classrooms. Student interest in computers did not decline with routine use. Teacher peer sharing began to increase as students and teachers sought support from one another.

Subrahmanyam and Co (2001) stated in their reviews that computer resources such as games had a positive effect on spatial skills and memory, as well as developing visual and auditory capacities, thus stimulating overall student development.

In an article published in Contemporary Educational Technology, Tennyson (2010) noted that in the 1990s, the integration of the media artifact by the tutor or teacher in an e-learning system was the technological factor that improved online social interaction among group members in learning communities. Social online interaction in online learning communities and its analysis became an important domain of research (Tennyson, 2010).

2.1.9.3. The influence of mobile phone on students' performances

Machin and Co (2006), who estimate the impact of information and communication technology (ICT) investment on student outcomes in England, using changes in funding rules as an exogenous shock to investment. They find that ICT investment has a positive effect on student test scores in English and science, but not for mathematics (where computers were rarely used).

The recent technological advancements, the innovation of computer and other discoveries in the field of information technology bring about the introduction of the mobile phone and its multi functions ranging from voice calls, messaging, data use, multimedia, games (both online and offline) and other social media services. The mobile phone is used as means of interactions among people in which they create, share, and exchange information and ideas in virtual communities and networks (Blumstock and Eagle, 2010). It also uses a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0 that allows the creation and exchange of user-generated contents .

Furthermore, the mobile phone is used for storing different contents on the micro SD cards or the phones' internal memory (Meek, 2006).Over the past decade, technology has become increasingly important in the lives of adolescents. As a group, adolescents are heavy users of newer electronic communication forms such as instant messaging, e-mail, browsing,

Lu and Churchill (2014) in their study stated that the teacher plays a principal role in guiding students in online lectures. This study showed that the social interaction that helps construct and share knowledge is achieved through the pertinent role of the instructor; a decrease in the

frequency of interactive messages in online communities is triggered when the online tutor or teacher is not present with the group in the online community.

Other research in the field of mobile learning has found that online learners are using mobile educational technologies and are integrating it in online learning through learning communities and that the usefulness and ease of use of the mobile technology are the principal factors influencing students' participation and adoption of online interaction.

2.1.9.4.The influence of Online Discussion forum on students' academic performances.

Palloff and Pratt (1999) suggest that it is through the various interactions accommodated through online discussion forums that a constructivist approach is facilitated leading to the successful learning within the individual. As a result, online discussion forums represent a unique opportunity for teaching in a new way capable of stimulating an individualized form of learning at the higher levels of the cognitive domain. A second area of interest in regards to online discussion forums which is equally important to the facilitation of higher-order thinking and has received ample focus within educational research is the overall perception of student learning and attitudes towards online discussion forums.

Biggs (1999) in his review on the effects of Online Discussion Forum argue that active teaching methods which involve learning through active experimentation and reflective thinking encourage high-level of student participation in the learning process. This as opposed to passive teaching approach, like traditional classroom lecture challenges students to construct knowledge leading to higher cognitive outcomes. The various active teaching methods include case studies, panel discussion, simulation games, project studies and problem-based learning. This active method of teaching increases students' academic performances and attitude towards learning.

Lantis, Kuzma and Boehrer (2000) point out in their review that employing these active teaching methods (as in online forum discussion) increase the academic performance of the students and generate more positive attitude towards learning. This is because this method of teaching require high intellectual thinking, new knowledge construction that leads to high cognitive development.

According to Volery and Lord (2000), a rich medium should support both asynchronous and synchronous communications. Using web-based resources with face-to-face teaching can

engage students in communicative exchanges with other participants through multiple mediums and can provide a richer communication context than a traditional lectures approach alone. When students interact with each other on particular course content, they tend to understand their course content the more and goes a long way to ameliorate their academic performances.

Lock (2001) asserts that there is continuous growth in online courses in higher academics. Student interaction in asynchronous technology remains an important factor affecting students' learning experiences with online learning. The depth and nature of student interactions in the online environment differs greatly from face-to-face classes. While in physical classrooms, students can interact physically inside or outside the class; in the case of online courses, students may merely communicate with classmates via computer-mediated communication (CMC) like chat rooms. Discussion might allow participants to compare their progress with others, reflect more deeply, and explore topics. In one hand, online educators using the discussion board have estimated their interaction with students to be three times greater than face-to-face interaction; the same applies for student's interaction with their peers.

Karacapilidis and Papadias, (2001) in their review argued that the use of online discussion forum (ODF) has emerged as a common tool and an effective way of engaging students outside the classroom. They argued that ODF is an e-learning platform that allows students to post messages to the discussion threads, interact and receive feedback from other students and instructor, and foster deeper understanding towards the subject under study. In an ODF there is no loss of data as the students' written messages are stored in the virtual space, and can be retrieved and reviewed anytime. The use of online instructional tools can remove some of the communication impediments associated with the face-to-face lectures providing a forum to address issues through argumentative and collaborative discourse.

A well-structured online discussion forum can provide students with extensive practice in writing. The online forum allows opportunities for the facilitation of curricular objectives via modern technology. Online discussion forums provide an authenticity in writing and therefore serve as a meaningful supplement to the writing curriculum (Pauley 2001).

As Thomas (2002) noted, the online discussion forum provides significant opportunities for students to actively engage in their learning process through active participation. Studies

investigating the technology-rich classrooms found that the students demonstrated superior attitudes, involvement and engagement with the course content.

In concurrence with the statement, Yu (2002) affirmed that students were more comfortable and less aggressive when participating in online forums. Online forums also offered more equal opportunities for group members to voice their opinions.

Daniel Perayu (2002) argued that discussion forum and consultancy web page contributes to emergence of other forms of knowledge link to pedagogic practices and with this type there is nothing like a student dominating the whole class and It helps student to develop a critical spirit towards others.

Hentea, Shea and Pennington, (2003) in their study revealed that students who participate in "computer-mediated, collaborative, Web-based learning perform significantly better than the students using only Web-based learning methods. They therefore concluded that greater online presence by the instructor, thereby encouraging learner participation in collaborative learning processes, leads to greater success of the online student. This conclusion is supported by research indicating that greater numbers of students complete courses that require communication than the 25 percent who finish strictly self-paced online courses.

Redmon and Burger,(2004)the online environment is less intimidating, less prone to be dominated by a single participant and less bounded by convention. It also provides students the flexibility of time and place to reflect on the previous postings to the discussion thread and thus actively engages them in a meaningful and intellectual experience. With online environments like online forum discussion, students can intervene at any time and post at their own pastes. Since students are not pressurized, it gives them enough time to reflect on the course content before intervening in forum discussions.

According to Holmes (2004) online forums are beneficial in developing communication skills. He argued that the greatest potential for effective use of online communication as a learning tool is when the students are 'at a distance' from the school and their teachers. In his review, he acknowledged a period of increased communication between online participants of his study after 10 days of interaction on online forum and asserted that input from teachers or instructors during this period led to maximized learning opportunities.

In a study among twenty-five Chinese and Kiwi learners, Gerbric, (2005) encountered that online forums provide opportunities specifically for particular groups of students. Chinese students found the virtual and text-based nature of the medium allowed them to enter discussions more easily and they felt more comfortable with their written responses compared to face-to-face discussions.

According to Dennen and Paulus, (2005) peer-to-peer dialogue in distance learning provides "a rich opportunity for collaborative knowledge building". Using communication tools to foster this dialogue among students and encouraging collaboration and peer relationships through group projects and assignments, students more effectively explore existing knowledge and expand the knowledge base of the entire learning community. Although physical interaction, spontaneity, and humor factors of traditional classroom environments are lacking online, peer-to-peer interaction can be richer and lengthier in an online classroom. Successful online learning is driven by such interaction and the creation of online learning communities.

In his review, Gill (2005) argued that online communication tools provide opportunities for students to engage in the learning process, thus promoting higher levels of success. They also allow the instructor ways to interact more personally with every student in the class and to gain better control of the discussions occurring in their online classrooms. Active participation, effective management, and increased presence all promote an active learning environment which can improve retention, reduce attrition rates, and provide greater opportunity for student success in online learning. Implementing such communication practices into development of your online classroom benefits everyone involved.

In a study carried out by Schellens and Valcke (2006), asynchronous discussion forums attained a higher proportion of higher phases of knowledge creation compared to face to face discussions. This occurred due to the vast majority of communication in the asynchronous environment was task oriented

Dixson, (2006) in his review pinpoint that with online forum discussion, learning and collaborative thinking is much higher. They argue that with this type of teaching and learning, students can reflect upon their perceptions and ideas before they decide to share them in the class, which can lead to better reflective responses as well as deeper learning. A variety of other benefits to using discussion boards have been noted.

Peterson and Caverly (2006) in their study discovered that through online forums, teachers are able to document the growth of their students' ability to support a point in their messages. Students improved their ability to respond to a classmate and to make a point supported with evidence. Online forums are a good way of communicating, especially when the teacher or lecturer is unavailable. It is also a good way to communicate with everyone as it creates a good communication between students and school.

Research conducted by Yang (2007) shows that students demonstrated very high levels of interaction among group members. Online forums are regarded as a social interaction that reduces students' reliance on the face-to-face discussions.

Strijbos and Fischer (2007) noted that collaborative learning strategies are very useful to construct and share knowledge among students in collaborative and cooperative online courses in the presence of an instructor or tutor. The collaborative and cooperative learning activities achieved by students in the activity system help researchers find the cognitive outcomes of a learning activity and the processes of knowledge creation and sharing during the learning process.

Aileen (2008) in her study discovered that the implementation of the online forum appears to provide reinforcement tasks to enable students to practice their writing. Besides that, the online forum also facilitates collaborative learning. Students could share their ideas and opinions in order to produce better quality writing as compared to if the tasks were to be completed independence.

Scott and Ryan (2009) in their study discovered that online members become more engaged in discussions and interacted effectively when they were set appropriate tasks. For an example, a complex task that requires research and discussion is more suitable for small groups to work on collaboratively. When students are given problems related to their prior experience, the discussions show higher levels of interaction, and the participants show more passion for the topic which can improve students' performances.

According to Redecker, (2009) these tools/applications are used in formal education for opening up society for communication, advertising, making institutional process more transparent and information exchange, to reach wider community virtually, to opening up wider channels for gaining knowledge and enhancing skills in research. For exchange of

knowledge and material, to facilitate community building, to provide teachers and learners a social environment and platform to develop collaborative research environment and results. To increase academic excellence it is been used.

Schuetze (2010) conducted a research in the University of Victoria Canada and the University of Kiel in Germany. The study showed that most students of both universities felt comfortable writing online and they wrote more than ever before. They used the forum more actively than in a face-to-face classroom or chat. In turn, some students also mentioned that they liked to read what other students posted in online forums.

According to Odum. L. (2010), new technologies such as online forum are providing a constructivist user/student-friendly atmosphere and promotes and creates new opportunities for collaborative learning, creates a connection to today's students' real world, allows students to do authentic assessment and motivates learners. The web 2.0 applications like google applications for Education tools used for students collaboration and can also be used by an instructor to share documents with a colleague/students, possibly allowing them to co-author research in a much simple and efficient manner than ever before. It enables students to broaden their scope, horizons and collaborate with other students and staff from different parts of the world irrespective of language barrier, institutional walls, diverse culture, and traditions. Administration also benefits from use of such tools as they are cost saving, affordable, scalable also saves potentials. It stimulates new modes of inquiry, allows students to engage with new literacy and express themselves in different media, and encourages a proficiency in publication of contents which creates sense of ownership, audience engagement, peer assessment and informal learning. It fosters interaction, collaborative problem solving, and prompt feedback mechanism.

Song and McNary, (2010) reviewed that with the use of online forum discussion students tend to reflect on their perceptions and ideas before sharing. They added that this type of teaching and learning; build classroom dynamics by promoting discussion on different course topics; allow students to reflect deeply on course concepts. Students have more time to research, reflect, and compose their thoughts prior to participating in discussions; assist in learning by allowing students to look into and respond to the work of others; allow the participation of guest experts who can post information and respond to questions.

Castaño (2011) highlighted the benefits of student interaction for academic achievement, with the benefits accruing more to online students than to those who physically attended classes. Much of prior research has been done on comparing learning in face-to-face lectures and threaded discussions. The role of instructor in web-based forum student interactions in the virtual environment and assessment strategies of the discussion content. The area which requires further exploration is the linkage between participation, interaction and learning when ODFs are used as adjunct with traditional classrooms lectures. Furthermore, majority of research studies in the above stream have focused on the qualitative research approach in understanding the students' participation in an online discussion forum.

While the findings obtained from this research approach has been valuable, further empirical research is required to identify the important factors that influence interaction and learning in an ODF. Accordingly, the objective of the present investigation was to study the antecedents and outcomes of using ODFs with traditional classroom lectures.

In managing online discussion, an important requirement is in striking a balance in the interaction with students to make certain that the focus of the board is on learning. It has to be interesting enough that learners are pulled into conversation, but of course, it is important to keep in mind that the discussion should not be so complicated and dense that learners get overwhelmed. It is important to manage participants' interaction time and ensure that board interactions are relevant and enriching (Biggs, 2012).

Mercier and Higgins (2013) examined the adoption of online cooperative and collaborative learning strategies in online communities to support mathematics learning activities and found that a number of factors influencing students' participation in cooperative and collaborative communities. Students are motivated and positively oriented to participate in online communities to share knowledge related to mathematics courses.

2.1.10. Influence of ICT on teaching

Selwood and Pilkington (2005) in their review points out that the use of ICT in pedagogic activities can help teachers reduce their work load and make them more productive. This is in the sense that when teachers use ICT tools like online forum discussion where students are being given debate topics to argue on while the teacher acts like a mediator, the workload of the teacher is being reduced since from the online discussion forum student are carry out

research to back up their arguments. Equally, the use of online discussion makes students familiar with their course and this goes a long way to reduce the teacher's workload when teaching or explaining that particular lesson. With the use of this tool, students interact with each other and this interaction makes them to exchange and share knowledge that make them more productive.

Otero and Co, (2005) looked at integrating technology into teacher education and emphasized that technology continue to be very important to support and influence education as we move from an industrial to an information-based society. They added that teachers therefore, must be skilled in technology application and knowledge, using it to support instructions and to enhance and extend student learning. This is very essential because apart from benefiting the teachers, it will improve student achievement, promote student learning, and provide them with the skills needed in their future education and workplaces.

According to Lai and Pratt (2008) the most obvious effects of ICT use for teachers were not the change of teaching philosophy or pedagogy, as one might hope, but the improved efficiency of management and administration of teaching, accessing resources for preparing teaching materials and presenting lessons. To the use of ICT in pedagogic practices help in the following ways; Firstly, it helps the teachers to ameliorating the efficiency of classroom management. Secondly, it helps the school administrators to effectively administer teaching and other affairs of the school. To them it equally help teachers to access materials needed for enrichment of their course content.

2.1.11. Barriers to successful integration of ICTs in classroom activities.

Numerous barriers affect the successful integration of ICTs in classroom activities. These barriers are individual, institutional, national or technological. These barriers will be seen in the reviews below.

In 1999, the United Nations Economic Commission for Africa held the first Africa Economic Forum under the theme Challenge to Africa of Globalization and the Information Age. It realized that the continent's higher education institutions were hindered by external, internal and human obstacles to the integration of ICTs in education. According to this commission, external obstacles were: poor telecommunication infrastructures at the national level, high costs of ICTs and higher import tariffs, inadequate and irregular ICT provision, and funding

initiatives, absence of well-defined national ICT policy documents, unreliable electricity and limited Internet bandwidth, high license fees for new entrants, slow licensing procedures and high call charges.

According to them, internal obstacles linked to poor self-organization awareness and response to change, poor maintenance, incoherent and insufficient ICT policies, poor motivation for use and low ICT prioritization by leadership in terms of development and application.

Human obstacles on the other hand were associated to lack of training and human support staff, lack of motivation, lack of ICT systematic plans for integration in teaching and institutions inability to retain experts due to low pay packages. This commission however, concentrated only in some countries and there is need for a wider observation.

Rogers (2000) in his review argued that ICT use in education surmounts organizational, administrative, human, pedagogical, training, informational, technical support, funding, and technological problems. But the lack of training, time required to master technology and develop appropriate classroom courses, are major obstacles that educational institutions must overcome if they are to successfully adopt and integrate ICT into their system.

In his review Bibeau (1996), pointed out the integration of ICT in education can be affected by factors that are both that are organizational, administrative, and human. To him these factors include lack of vision and strategic planning, scattered efforts, disorganization and uncooperativeness between sectors and users, and poor organization.

Chenevez (2000) explains that the reason why the integration of ICT not successful in classroom is as a result of a good number of factors amongst which is the outdated teachers. He went further to explain that It is also true that ICT usually complicate teaching routines at the beginning, even though, after a certain adjustment period, the rewards may be great.

According to Lundall and Howell (2000), one of the major factors hinder educational institutions from using microcomputers as teaching and learning tools are numerous. According to them, these factors include insufficient funds, insufficient number of computers, lack of teachers with IT skills, teachers' inability to integrate the computer into the different subject areas, and lack of appropriate microcomputer teaching programs.

The World Bank (2000) in its review pointed there are many reasons why African schools cannot integrate ICT decently in their systems. To them, some of these factors include lack of electricity, lack of funds, insufficient accommodation capacity, lack of qualified staff, and insecurity. On top of that, very little of the equipment available nationally is allocated for ICT use in education, in schools. Furthermore, in sub-Saharan Africa, the low density of telephone lines and the high costs of installing and maintaining them constitute a major barrier.

James (2001) in his review outlined that one of the reason why most countries in sub-Saharan African countries have not successfully integrated ICT in their education system is that there is no clearly formulated national ICT policies. To him, Information technology is more or less lumped in with the official school programs, with no budget allocations for ICT. Funds for ICT equipment and operation generally come out of school fees, fundraising campaigns, and donations from national and international organizations and partners, and in countries like Nigeria and Cameroon, state funding.

Murphy, Anzalon, Bosch and Moulton, (2002), in their literature review outlined that it is as a result of lack of expertise and know-how needed for the maintenance of existing infrastructures that most educational institutions have not been able to integrate fully in their system. According to them, for ICT to be successful in all pedagogical contexts, the human factor is paramount. And if taught by a trained teacher's assistant, children might learn computer skills that are never or rarely used at school.

Olivers (2003) in his study reviewed it is because the cost of technology- related programs is so high that many educational stakeholders have not fully integrated it in their system. He also added that it is because of lack of knowledge and skills that many stakeholders in the academic milieu are still reluctant to use ICTs in delivering their matter to students.

Bekele (2004) in his study in some higher institutions in Europe and America outlined that the lack of ICT strategy is a major barrier to the integration of ICT. From his study commissioned by the Dutch Ministry of Education, Culture and Science in 1998 on the use of ICTs in higher education in The Netherlands, UK, Finland, Belgium, Australia and USA, discovered that most higher education institutions in Europe do not yet have an elaborate and coherent institutional policy concerning the role and use of ICTs in higher education. He argued that the role of ICT in education is impressive but many of these general activities are disconnected from the institutional framework in which they are occurring. According to him,

these policies are needed in universities and other higher education institutions today for the positioning of universities in the marketplace, to accelerate growth in demand by students and staff for access to educational technologies, to increase the acceptance of learner-centred (self-pace, self-directed) and more social interaction and communication settings and to improve efficiency/effectiveness of students. It also proposed that governments have to reconsider their roles and responsibilities in this area and, whether and how they should stimulate the initiative of ICT in higher education.

Barry and Co, (2007), conducted a similar study on the underutilization of information and communication technology-assisted collaborative project-based learning among international educators in Eastern Europe, Africa and North America and identified several barriers. These were miscellaneous, lack of ICT-related projects, lack of ICT support, unreliable Internet connections, lack of teacher training, nature of curriculum and programs and lack of ICT technical support.

Könings and Co (2007) outlined teacher's perspectives on innovations and implications for educational design in Holland to be the main barrier to ICT integration in schools. They realized that teachers perceive of larger class sizes, time, student characteristics, students lack of passion, teachers lack of technological skills, willingness to learn, lack of consciousness of teaching behavior, incomplete reflection, and dominant conceptions of teaching and learning as being the causes of this.

Cross and Adam (2007) in their study outline that one of the major barriers to the adoption of ICT in education is the lack of a National policy framework. In his study conducted in South Africa, he realized that even though South Africa has gone a long way in adopting an exemplary approach to adoption of ICTs in schools, it lacks a national policy framework concerning the role of ICTs higher education. These authors add that, this has made institutions to rely on a series of incoherent and fragmented statements scattered through several policy documents in higher education to make institutional choices aligned with national concerns. The study also indicates that given the diversity of national, institutional and international levels, institutions have opted for varied pathways in their effort to integrate ICTs in their curriculum design, delivery and research.

Looking at the barriers of ICTs in learning and teaching in Nigerian universities, Aguele (2007) asserted that these devices are more essential in all universities but their penetration

into those of developing nations and Africa has been very slow. The reason here is that some nations have developed ICT policies but some have not done so yet. While some governments have produced national policies on ICTs, many are yet to do so. Going beyond Nigeria, the study shows that countries like Ghana, Mozambique, Uganda and Tanzania are able to have home pages in their universities describing courses, faculties and admission procedures. The explosion of the WWW has made educationist to rethink about the teaching learning-transaction modes and settings.

He also specified that the integration of ICTs is sometimes very difficulties because the decision-makers academics themselves are so reluctant to change curricular and pedagogical approaches. The lack of incentives, lack of material and human resources, lack of funding are some of the problems of ICT within the university. Being a case study in the third world this review may reflects the study at hand, though barriers are not similar all through.

According to Loing (2005), one of the major problems to the integration of ICTS in education is lack of finance. To him, ICT has opened opportunities for access to education for those unable to attend school or college for economic or cultural reasons. This is why universities according to him are challenged to integrate those technologies into their strategies, their organization and their educational processes. In the developing countries, particularly Africa, this may not be the case. Notwithstanding assistance from some donor agencies, the issue of hardware and bandwidth provision still remains hard nuts to crack. ICT can enhance effective teaching, learning and research (Ibid).

In the study of Birch and Burnett (2009) in USQ academics were asked about their use of, and attitudes toward educational technology and what they perceived to be the motivations, enablers and inhibitors associated with the development of e-learning environments. Consequently, the institutional barriers identified here are a lack of academic leadership, clear vision and formal strategic planning, and the absence of clear institutional policies, processes and standards. Individual barriers uncovered are time and heavy workload on lecturers while pedagogical barriers are lack of well-fitted course designs. These authors indicate that interviewees complained of a lack of clear e-learning course design, strategic plans, policies, procedures, and processes. Looking at this study critically, one sees that it brings out the barriers of ICTs in teaching in an e-learning setting.

The study is however, not explicit in explanation of the issues raised or asked to their respondents. Views and perceptions are not actually clearly brought here. Secondly, from the look of things one is tempted to believe that study knew the results of this topic in USQ before carrying out investigation. The reason here is the pre-selection of the types of respondents for example “adopters, non-adopters and pioneers. There are ICTs users who may not necessarily be in the school setting, but at home or different places or instructions.

Bekele (2009) his literature review underlined that lack of training and high cost of Internet connections were the main inhibiting factors/barriers in Africa, while the other factors were slightly significant in all these cases. It is a general risk of large-scale innovations that educational designers develop a design or blueprint for a powerful learning environment that teachers subsequently do not or cannot fully implement in their teaching.

2.1.12. Strategies of effective usage of ICT.

According to Bailey and Luetkehans (1998), communication tools of ICTs (asynchronous and synchronous), provide opportunities for students to develop an online learning community which often allows them to collaborate and find their own answers to questions without relying solely on direct communication with the instructor for learning to take place. The instructor can then serve as a neutral facilitator in times of critical decision making or to provide focus and leadership in the discussions to keep them on track but does not have to be overwhelmed with a high-volume of individual correspondence with students.

According to Osberg (2002), for an effective integration of ICTs in school, students need a clear understanding of what they should expect from the course. The reason most often reported by high school counselors to virtual high school teachers for students dropping a course and becoming non-completers has been that the course was not what students had expected. Communication between instructors and students, frequently and in real-time, is essential to this process. A critical need of adult learners is the knowledge that they have properly understood and mastered the material presented; this knowledge can only be gained through feedback received from the instructor. Students who receive feedback faster have higher course completion rates and overall students expect to receive comprehensive feedback in as few days as possible. In general students expect the instructor to lead the course and to establish the requirements for student success. As a result, it is not surprising that in his 2001 self-study, Mock found that despite some surveys that indicated students might resent

mandatory assignments using communication tools, most of his students gave positive feedback (Mock, 2001). To be more effective, the instructor must establish the guidelines associated with the use of the tools. These guidelines may include general rules of etiquette, models for student postings, or specific topic and schedule information. By engaging students in the subject through the use of communication tools, course dropout rates are shown to decrease.

Visscher, Wild, Smith and Newton (2003), in their reviews reported that, very few studies have been carried out on the use of information and communication technology in the management and administration of schools despite the fact that schools all over the world have adopted information technology systems. To this effect, they suggested that for these systems to be designed and used to full-effect, knowledge is urgently needed on the implementation, use and effects of established computerized School Information System (SIS).

The majority of students in a recent study reported anxiety due to unclear course requirements resulting in negative feedback and a preference for traditional lecture-based face-to-face classroom environments (Green, van Gyn, Moehr, Lau, and Coward, 2004). The virtual classroom must therefore be designed in similar fashion to the traditional classroom with targeted skills and clearly stated objectives.

Hirschheim (2005) in his study revealed that in describing limitations of online learning environments, students miss the lectures, discussion, questions, assignments, group work, and the professor's views and perspectives, all part of traditional classes and that spontaneity is also an element of a lecture situation that is lost in the online format. Effective use of communication tools in the online learning environment can prevent such losses and in some cases may not only serve to add these components back into the online learning environment, but to do so in a greater capacity by requiring "every student to actively participate in the discussion.

To Saldivar (2005), it remains the responsibility of the instructor to maintain control of the conversation online, just as they would in a traditional classroom, and instructors must direct students to refrain from chatting about irrelevant or non-topic-related issues. Instructors can benefit from the asynchronous nature of online discussions as they are provided opportunity to look up facts and information not immediately recalled during a discussion, whereas, in a

traditional format, the instructor must have full command of the facts associated with the discussion due to time constraints which prevent the luxury of looking up information.

Angelino, Williams and Natvig, (2007) pointed out that to effectively manage a virtual classroom, the instructor must be present and provide individual feedback to the students. Clear and personal feedback from the instructor can reduce the feelings of isolation, confusion, anxiety, and frustration often reported by students in online courses.

In the same light, Sabaliauskas, Bukantaitė and Pukelis, (2006) in their review asserted that for ICT to be effective introduced in school, teachers should have; basic ICT competencies, technological ICT competencies, ICT policy competencies, competencies in the ethical area of ICT use, competencies of ICT integration into the teaching subject, competencies of didactical methods based on the use of ICT, competencies of managing teaching/learning process working with ICT.

2.2. THEORETICAL FRAMEWORK

In this research, we are going to use four management theories, each of which explains how a particular ICT tool can influence classroom management. These theories include Kohn's student directed learning theory, Skinners behaviorist theory, social constructivism by Vygosky and William Grasser's choice theory.

2.2.1. Kohn's student directed learning theory

To explain the influence of internet on classroom management we used Kohn's student directed learning theory

In his theory Kohn is very critical of the use of competition or any external factor as a motivator, whether that is in the home, the classroom, or the workplace. He believes that societies based on these extrinsic motives will inevitably be inefficient. Building on this critical view of competition, Kohn questions the effectiveness of hierarchical structures because they rely on the assumption that people will be competitive and want to move up the ladder and these structures make positions of authority unnaturally scarce. In the workplace, this overarching idea manifests itself in Kohn's belief that workers should be given more autonomy over their own work. In the family, Kohn's fundamental beliefs are visible as he argues that parent should utilize a cooperative, loving, guiding form of parenting which places

children on more equal footing with parents (Wikipedia, 2007). These fundamental beliefs are also clear in his many discussions of education.

The ideal classroom, according to Alfie Kohn, is one in which curiosity and cooperation are emphasized above all else. This is true throughout Kohn's discussions on standards, standardized testing, homework, and classroom management. He also believes that the students' curiosity should govern what is taught inside the classroom; therefore, if standards are necessary at all, they should be kept very general. Because of this belief, Kohn is critical of standardized testing. This sort of testing is extrinsic to real learning and also enforces a strict curriculum that is not flexible to students' interests and needs. Again, going back to Kohn's focus on curiosity and intrinsic rewards of education, Kohn feels that most homework serves to undermine these two goals as opposed to reinforcing them. His most recent book deals with this topic extensively. In addition to these ideas about curriculum, Kohn has made his thoughts clear on classroom management. He believes that most traditional methods of classroom management foster extrinsic motivation rather than intrinsic. Because of this, he is a proponent of what could be termed a very old type of management approach. He believes that if the classroom is run with cooperation in mind, and if the students' curiosity is being nurtured, then students will act appropriately and neither rewards nor punishments will be necessary. Overall, curiosity and cooperation should govern the classroom.

Linking the theory's assumption on classroom management to internet we can come out with the following explanations:

Firstly, the theory assumes that in classroom management, teachers need to allow students to explore the topics which interest them. He insists that teaching to the standards or teaching to the test are not effective ways to help students learn. Instead, students should be able to think and write and explore without worrying about how good they are (Kohn, 2004, p. 37).

This can be used to explain our topic in the sense that the with the internet teachers can evaluate students by giving them topics to research on after which the students are required to submit the assignments. Also this theory requires that students should be given topics to research on and with the aid of the internet this process in classroom management is easily accomplished. With the use of internet as a tool to manage the classroom students can easily carry out their individual research in the internet which they use to enrich research material. This is because the use of internet in educational settings, by itself acts as a catalyst for

change between educational peers. Internet by their very nature is a tool that encourages and support independent learning.

Equally the theory assumes that for an effective classroom, teachers should allow students learn at their own pace. Use of the ICT such as internet, however, has extended the scope of this activity and whereas previously off-campus delivery was an option for students who because of one reason or the other were unable to participate fully in classroom activities, today, and many more students are able to make this choice through internet-facilitated learning settings.

In line with geographical flexibility, technology-facilitated educational programs also remove many of the temporal constraints that face learners with special needs. Students are starting to appreciate the capability to undertake education anywhere, anytime and anyplace. This flexibility has heightened the availability of just-in-time learning and provided learning opportunities for many more learners who previously were constrained by other commitments.

With the internet, Learners are free to participate in learning activities when time permits and these freedoms have greatly increased the opportunities for many students to participate in programs that are very demanding.

This theory also emphasis on student-centered learning. This is a type of learning where there is cooperation between students and students in learning and teachers acted like facilitators. With the use of internet, lecturers can easily create online classroom environments such as discussion forums where students argue on particular course content in an online environment. This form of learning also helps the students to exchange knowledge on a particular topic. And this helps students to develop critical thinking. It also help student pursue learning based on their own individual interest as outlined by kohn in his directed learning theory.

Again, this theory emphasis those teachers should also avoid using positive reinforcement with their students. They can offer their students more specific feedback that is not as general as excellent work. Teachers should make an effort to communicate with their students and discuss both positive and negative behavior with their students. This will help the students

reflect on their own behavior and performance in a way that is more meaningful than if they just seek out the teacher's praise.

With the use of internet in social media such as WhatsApp groups, group e-mail and online discussion groups, lecturer can easily communicate to students, giving them feedbacks on particular cases where students need understanding, to control particular behaviors and to pass out information concerning classroom activities

Theorists who align with Kohn

There are many critical or radical theorists, modern and otherwise, who would agree with Kohn. Barbara Coloroso is one contemporary of Kohn's who shares many of his principles. Like Kohn, Coloroso gives students a lot of credit. Rather than approaching students as creatures capable of great destruction, needing to be controlled, she, according to Charles (1999), aims to treat students with respect and empower them with their own inner discipline (p.217). She seems to view the teacher's role as mentor and guide. This is a more authoritarian role than the title Kohn might give the teacher as a mere facilitator. Unlike Kohn, Coloroso also still has faith in natural and reasonable consequences and rewards.

Professional Critique

While many early classroom management theorists, like Redl and Wattenburg, Dreikurs, and Kounin, focused on the psychology behind misbehavior and how to control it, and many later 20th century theorists like Ginott, Canter, Jones, and Albert, looked at a mixture of reward, punishment, and environment, to create a certain controlled classroom setting, Alfie Kohn flies in the face of all of them with his theory of moving beyond discipline.

Kohn's ideas, published mostly from the 1990's on, seem very disconnected from earlier theories except that they provided a foundation for him to react against. As is summarized by Charles (1999), Kohn rejects all systems of reward and punishment in favor of community and student decision-making, saying that all systems of discipline assume students are troublemakers, learning occurs in quiet controlled places, and the teacher's role is to make students obedient, compliant, and above all quiet (p. 229). With Kohn's dramatic stance on dropping all previous discipline systems, it's no wonder that Fried (1998) comments, I suspect that over the years Alfie Kohn has made a lot of people angry (p. 264).

The central point behind this theory is that students should learn to be responsible for their own behavior whether or not it is recognized or rewarded by somebody else. From the criticism above one can say that kohn's in his directed learning theory has failed to understand human being have different personalities with complicated behaviors. This is to say that there are some students that no matter what the teacher do to adjust them they can never change.

2.2.2. Skinners behaviorist theory

To explain the influence of computer on classroom management, we used skinners behaviorist theory.

Skinner believed that the goal of psychology should be practical (Lieberman, 2000). As it relates to education, Skinner believed the goal of psychology should be to find ways to make education enjoyable and effective for all students. His learning theory relied on the assumption that the best way to modify behavior was to modify the environment. Skinner was a proponent for many instructional strategies that modern day progressive educational reformers advocate for: scaffold instruction, small units, repetition and review of instructions, and immediate feedback. Skinner did not approve of the use of punishments in school, or as a behavioral modification technique in general, and based these opinions on his own empirical research that found punishments to be ineffective (Lieberman, 2000). Skinner himself advocated for the frequent use of reinforcement (i.e. rewards) to modify and influence student behavior.

Skinner's primary contribution to behavioral management philosophy has been from his research on operant conditioning and reinforcement schedules. An operant is a behavior that acts on the surrounding environment to produce a consequence. As a result of the consequence, the operant's likelihood of reoccurring is affected. The operant is said to be reinforced if the consequence increases the likelihood of the behavior's occurrence. For example, an example of an operant in a typical classroom is staying in one's seat. A teacher may seek to reinforce this behavior by offering a reward to reinforce student behavior (e.g. recess or food).

Three characteristics of operant conditioning are particularly important to behavior management: a) the reinforcer, b) the reinforcement schedule, and c) the timing of the reinforcement. First, reinforcers have been placed in three categories . Primary reinforcers are

reinforcers that require no special training to be effective. These include food, water, and sensory stimulation. Secondary reinforcers are reinforcers whose reinforcing properties have been acquired through experience (typically through second order conditioning). An example of this is the use of a token economy. Many teachers use extrinsic rewards such as stamps, tickets, tokens, and play (or real) money to reinforce behavior. These rewards can be redeemed for prizes or privileges. Finally, social reinforcers are reinforcers whose reinforcing properties are derived from the behaviors of members of one's own species. These reinforcers are typically seen as a blend of primary and secondary reinforcers and include praise, affection, and attention.

In addition to their type, another important characteristic of reinforcers is their saliency, or degree to which an individual prefers the reinforcement. Reinforcers with a high degree of saliency are expected to produce a greater response in the frequency of the operant behavior.

Using this logic, David Premack developed a principle (the Premack principle), which argued that operant behaviors of low probability could be reinforced by using access to high-probability behaviors as a reinforcer (1965). For example, if sitting quietly during instruction was a low-probability behavior for a student, access to playing with a preferred toy (a high-probability behavior) could be used as a reinforcer for the operant behavior.

Using similar logic, Timberlake and Allison (1974) developed the response deprivation hypothesis, which states that if a high-probability (or highly salient) behavior is deprived, access to that behavior will be reinforcing. In the classroom, this is often used by the introduction of a game or privilege that students highly enjoy. Access to the game is restricted, unless certain behaviors (likely low-probability behaviors) are performed first. A primary conclusion from both of these hypotheses is that teachers looking to find a highly salient reinforcer should look for activities that students prefer to do in their free time (i.e. highly-probable behavior).

Skinner also developed the concept of the reinforcement schedule. Reinforcement schedules are divided into two categories: a) continuous reinforcement schedules (CRF), in which every desired behavior is reinforced every time it occurs, and b) partial reinforcement schedules in which behaviors are reinforced based on ratios (reinforced after so many occurrences) or intervals (a reinforcement delivered after a certain time interval). Partial reinforcement schedules may be fixed (i.e. a reinforcement after 3 behavioral occurrences (fixed ratio) or a

reinforcement after 3 minutes (fixed interval), or variable (i.e. the ratio or interval at which reinforcement is given is random, but averages to a specific amount). It has been found that variable partial reinforcement schedules are more effective in improving the frequency of an operant behavior and in limiting its extinction when reinforcement is no longer delivered. The later effect is particularly true when compared to continuous reinforcement schedules.

This finding suggests that teachers using reinforcements in their classroom suggests that teachers using reinforcements in their classroom should be cautious of seeking to reward students every time they perform a behavior. As many teachers using rewards have noted, students are less likely to perform desired behaviors when the rewards are not present

Finally, behavioral research has found that the timing of the reinforcer is very important. If there is much delay between the operant behavior and the reinforcer, improving the frequency of the desired behavior is less likely to happen. For instance, if a teacher said that if students were to turn in their homework they would receive extra recess, behavioral theory would argue that the closer the time the teacher allowed the students to have their recess was to the time the students turned in their homework (the operant behavior), the more likely students would be to turn in their homework regularly. If a teacher often forgot to give the reward, or waited later in the day to grant the reward, the less likely students would be to turn in their homework.

Applying skinners theory to explain the influence of computer on classroom management

The first thing we should note about skinners' theory is the fact that the environment in which learning takes place can influence the learners behavior towards learning. This is to say that in a classroom where teachers and students use computer in teaching and learning, the flow of instructed from teachers to student is facilitated and this increase student's level of understanding.

Skinners' theory is centered on the idea that in a classroom, teachers should make education enjoyable and effective for all students. This aspect of skinners' theory can be used to explain the influence of computer on classroom management in that with the use of computers that are connected to the internet, irregular students such as workers can participate fully in class activities that are going on in the online environment even when they are on mission. In order

word, the use of computer can help students participate in classroom activities like online forum discussion or other social media discussions which help them acquire knowledge that can be used to enrich their course contents.

Equally, the theory assumes that the best way to modify behavior was to modify the environment. So, to manage a classroom where students' behaviors towards learning are not encouraging, lecturers can modify the classroom environment into virtual classrooms where students are computer–mediated learning. With this type, lecturers pose to for students to interact on while the lecturer comes in to mediate discussions. This can be in the form of orientating students' discussion toward a set goal, clarifying concept for student to assimilate, controlling particular behaviors in the virtual class and so on. This form of learning improves the student's level of understanding which eventually influences their performances.

More so, the theory assumes that in the classroom, teachers/ lecturer should scaffold instruction. The use of internet- based computers such as teacher's laptop to disseminate information can improve the degree at which classroom are being managed.

This theory also assumes that in classroom management, teachers or lecturers should provide students with immediate feedback. With the help of internet-based computer lecturers provide students with immediate feedbacks on their various preoccupations. This can be a feedback to clarify students on the way they understand a particular concept or feedbacks on students test marks. These feedback help in building the self confidence of what the students know about a particular concept. When students are sure of what they know on a particular topic, it builds their confidence in the exams which eventually can improve their performances.

More to the above, skinners' classroom management theory assume that in classroom management, students behaviors towards learning should be managed. The use of computer in the classroom motive students' attitudes towards learning and this help in managing particular behaviors in class. When students use computer in learning they are intrinsically motivated to spend more time in studying and this can go a long way to improve their academic performances.

Ensure that positive reinforcement is immediate so that it can be associated with the positive behavior. This is crucial especially when secondary teachers see students for such a small portion of each day.

Recognize the unique instructional needs of individual students and individual periods and modify instructional material and methods appropriately.

Provide feedback as student's work, not just after they are finished with a particular task.

Ensure that students have mastered prerequisite skills before moving on, even if this puts different periods of the same class on different tracks.

Reinforce positive behaviors students' exhibit, either with problem students or with whole class to refocus problem students.

Professional Critique of Skinner's Theories

One major critic of Skinners' behavioral theories is Alfie Kohn, another prominent educational theorist. Kohn noted for his assertions supporting entirely intrinsic motivation for learning and behavior, feels that the rewards and punishment system of management so lauded by Skinner is actually a root cause American education's decline (Kohn, 1993, p. xii). Kohn suggests that rewards and extrinsic motivation yield compliance, which is not, as Skinner suggests, a natural behavior devoid of willful choice. Additionally, it trains humans to expect rewards to such a large extent that they fail to find motivation in the absence of a promised reward.

Kohn does not entirely negate the legitimacy of operant conditioning, but does stress the ability of humans to make moral and conscious judgments and decisions. What Kohn sees is a system of "carrot-and-stick" motivation that has permeated education throughout the United States largely due to the efforts of Skinner and his successors (Kohn, 1993, p. 15). Yet Kohn criticizes that rewards have become such a natural and expected part of the American classroom and workplace that citizens here have become conditioned to expect them. This avoids even the possibility of children learning to find intrinsic motivation in their educations; the more often rewards are used, the more humans become used to them and expect them, and the more they are needed.

Kohn acknowledge the history of rewards and punishment in behavioral psychology, but stresses that the majority of experiments, studies, and practices contributing to this history involved animals other than humans. Both Ayn Rand and Noam Chomsky echo this critique, posing Skinner's disbelief in conscious choice as preposterous. Rand debases the very

suggestion that memory is not influential in human choice, that humans can simply be conditioned to adapt to particular environmental factors. Chomsky echoes this sentiment and asserts that Skinner's empirical evidence is non-transferable to the complexity that exists in human's ability to communicate and respond to a variety of environmental influencers.

Hannah's Critique of Skinner's Theories

He argued that skinners theories make sense and are familiar to me as a teacher, but I also agree with arguments against his studies' reliance upon laboratory experiments with animals. Skinner relies heavily upon empirical evidence, but in reading his theories of classroom management specifically, I see little evidence to back his opinions aside from hearsay and casual observations.

Michael's Critique of Skinner's Theories

It is my belief that B.F. Skinner's theories are the most widely used and misunderstood of any psychological theories that have been applied to educational settings. As Hannah noted in her own reflection, many critics of Skinner and many developers of reward programs based on his theories, simplify his ideas to superficial systems of rewards and punishments. They neglect what is, in my opinion, the most revolutionary aspect of his theory, the influence of the environment on behavior. Skinner did not believe that elements of the environment do cause behavior (as classical conditioning would have it), but that they lead to the probability that a behavior may occur. This probability would depend on previous learning experience and its generalizations to the current environment, as well as genetics.

My own opinions diverge from Skinner's in the use of his theories to create school-wide, and to some degree classroom-wide, initiatives. I agree with critics such as Kohn who argue that these sorts of initiatives, which often focus on primary reinforcers like food, have a negative effect on educational aspiration and self-motivation. It is my opinion, that teachers should seek creative ways to make educational activities highly probable activities. I believe that intrinsic motivation is simply an internalization of the extrinsic motivation that is demonized in progressive educational literature. However, behaviors that are intrinsically motivated react to reinforcement in the same ways as those that are more extrinsic. What teachers should try to do is to move students from responding primarily to extrinsic rewards to understanding

how they are intrinsically motivated. Effective use of Skinner's ideas relies on individualizing the use of reinforcement to fit the specific interests of specific students.

In sum, students are not lab rats. They will not all push a lever to receive a food pellet. Most will push for a pizza party, or extra recess. However, teachers need to consider the fact that some will push for time to read their favorite book, time to research a topic on the internet, math worksheets, and word puzzles.

In our own way we can criticize this theory by saying that not all environments are conducive milieus where learning can take place. There are some learning environments that tend to distract learners instead of helping them learn.

2.2.3. Social Constructivism by Lev Vygosky

The foundations of constructivism are rooted in the ideas of educators and psychologists including John Dewey, Jean Piaget, and Lev Vygostky (Kivinen & Ristela, 2003). Constructivism is one interpretation of the complex process of learning from which a number of diverse educational theories have emerged.

Through the theory of constructivism, the process of learning is thus shifted from a teacher-centered to learner-centered and collaborative approach in which the students are responsible for constructing their own understanding by actively constructing knowledge rather than passively absorbing it. The student builds upon existing knowledge with foundations in personal ideas and experiences by assimilating and constructing new knowledge through social interactions with their peers. Two branches of constructivist thought, cognitive constructivism and social constructivism, are often recognized amongst psychologists and educators. The founding theorist for cognitive constructivism is Jean Piaget who described learning as a process of internal negotiation which occurs on the individual/personal level in a series of four stages: sensor motor stage, preoperational stage, concrete operational stage, and formal operational stage (Powell and Kalina, 2009). These four stages describe how knowledge is constructed within the individual as the individual interacts with their external environment from infancy to adulthood. When discussing student learning, Piaget used the terms assimilation and accommodation.

Assimilation may be defined as the point at which the learner brings in new knowledge to their own schemas, whereas, accommodation refers to the point at which the learner changes their schemas to accommodate the new information or knowledge (Powell and Kalina, 2009).

A schema may be defined as the local where information which is meaningful to the individual is stored within networks of connected facts or concepts (Cakir, 2008). Therefore, the learner constructs new knowledge when new information is acquired through experience and the child is capable of changing old information to fit the new information. In other words, it is through the reconstruction of old information to fit the new information that the student learns.

The other branch of constructivism, social constructivism, is based upon the theories of Lev Vygotsky who argued that social interaction is imperative to cognitive development. Vygotsky (1978) proposed that learning is a social process in which students learn through collaboration with more capable peers including instructors, other students, or qualified persons who allow the individual student to progress into a zone of learning referred to as the zone of proximal development. It is through the acquisitions of new concepts and information that the individual is able to expand upon their zone and learn (Powell and Kalina, 2009). For the purposes of this study, the focus will largely be on learning as a social process as is suggested through social constructivism.

All theories of constructivism are grounded in two common beliefs: a) learning is an active process of constructing rather than acquiring knowledge; and b) instruction is a process of supporting that construction rather than communicating knowledge (Duffy and Cunningham, 1996). The knowledge of any individual can be defined as a network of comprehensive constructs of facts, concepts, experiences, emotions, values, and their relationships with each other (Baviskar, Hartle and Whitney, 2009). If comparing one's knowledge to information gathered from the external environment results in conclusions which are incorrect or insufficient, the individual will experience a form of cognitive dissonance which will act as a motivator to reject the new information or integrate it into his or her own construct (Lorsbach and Tobin, 1993). Therefore, in order for changes in the knowledge construct to remain permanent, the learner must apply the altered construct to novel situations, receive feedback about the validity of the construct, and establish further connections to other elements in the construct (Baviskar et al., 2009). Four critical elements can be identified within the theory of constructivism which must be addressed in the development and implementation of activities,

structure, content, or context in order for a lesson or course to be considered constructivist in nature .The four elements include: 1) eliciting prior knowledge of the student; 2) creating cognitive dissonance; 3) application of the knowledge with feedback; and 4) reflection on learning.

The first element requires that the instructor elicits the prior knowledge of the student. If a mechanism is not afforded for eliciting prior knowledge of the student, the new knowledge cannot be presented in a way which will lead to the incorporation into the student's construct or the learner will either ignore or incorrectly incorporate the new knowledge. A variety of pedagogical tools exist which may be useful in eliciting the prior knowledge of the student including: formal pre-tests, informal questioning, formal interviews, or activities such as concept-mapping which draw from the application of basic knowledge. The activity must assess the learner's prior knowledge and relate it to the new knowledge while simultaneously identifying misconceptions.

The second element is for the instructor to create cognitive dissonance within the student by creating awareness that a difference exists between the student's prior knowledge and the new knowledge. It is through the process of identifying the differences, that the student is able to create new knowledge.

The third element is the application of the knowledge with feedback. If the student is unable to interpret and modify their prior knowledge in the context of the new knowledge, misinterpretation or rejection of the new knowledge is likely to occur. Application of the new construct could be presented in the form of quizzes, presentations, group discussions, or other activities where students compare their constructs with the constructs of their peers.

The final element is reflection on learning.

The last element is that in order for the new knowledge construct to be made permanent, the student must be aware that the learning has taken place.

Reflection can be attained through traditional assessment techniques including presentations, papers, or examinations. Instructors who instill the theory of constructivism in their philosophy of teaching may be seen as coaches and facilitators rather than dictators of knowledge (Brandon and Co, 2010). If constructivist ideals are to be implemented into the

instructional strategies of the learning environment, the following assumptions and criteria as defined by Bednar, Cunningham, Duffy, and Perry (1992) must be adhered to:

Learning is constructed: Knowledge is constructed from experience.

Learning is a constructive process in which the learner is building an internal representation of knowledge.

Interpretation is personal: There is no shared reality and learning is a personal interpretation of the world and experiences.

Learning is active: Learning is an active process in which meaning is developed on the basis of experience.

Learning is collaborative: Meaning is negotiated from multiple perspectives. Intellectual growth comes from the sharing of perspectives, or internal representations.

Learning is situated: Learning should occur in realistic settings or contexts.

Testing is integrated: Testing should be integrated with the task, not a separate activity. The measure of learning is how instrumental the learners' knowledge structure is in facilitating thinking (pp. 21-30).

The four elements and the above principles of constructivist learning theory are relevant to instructional design because instructors with a constructivist philosophy of teaching can incorporate strategies that guide the student in actively exploring topics which will direct them into critical thinking (Ertmer and Newby, 1993). Such strategies might include an increase in student collaboration which allows for the integration of multiple perspectives, student interactivity, and social negotiation in class discussions or debates; reflection and articulation supported through discourse or dialogue; self-reflection and articulation through the creation of a personal portfolio; or scaffolding which can assist the student in constructing new knowledge (Brown, Collins, and Duguid, 1989. Asynchronous communication tools such as online discussion forums have the potential to support the principles of constructivist learning theory.

Applying this theory explain how mobile phones can enhance classroom management process.

Mobile technology like Smart phones when integrated in school to carry out individual research helps the student to construct knowledge on their own and this is in line with the first assumption above. In other word, when students effectively use smart phones in learning, new knowledge is being developed and this help them ameliorate their learning process that can be useful to them when need arises. Makes students readily engaged with the simulation which is found to be a rewarding and stimulating experience.

Equally this theory emphasis on collaborating learning and with the use of smart phone or Ipads in the classroom milieu, students have the tendency to intervene of classroom discussions that are going online in the virtual class. When student interact with the use smart phone or Ipads, it helps them share ideas on a particular topic which goes a long way to improve their performances in class evaluation. Mobile phones facilitate normal interactions between the students the devices augmented rather than replaced normal channels of communication, and hence provided unobtrusive technology support students were able to test out experimental hypotheses within the simulation after observing specific behaviors.

Equally, this theory posits that learning should be active. With the use of ICT tools like mobile phones to interact in online discussion forum, students tend to exercise active participation.

More to the above, this principle emphasis that learning should be personal. Mobile wireless technology devices such as the PDA, smart phone, iPod touch and many other devices will have access at school district and university libraries, lecture halls, cafeterias, and research centers. This information reveals that mobile technology infrastructure is expanding and reaching out into the classroom.

Limits of the theory

Work we can criticize the theory of constructivism by saying that student cannot understand some topics when learning on their own unless somebody is there to guide them. In this sense new knowledge is not constructed but rather what student get concerning a particular topic can tend to be a virus to their understanding on that particular topic.

2.2.4. William Grasser's choice theory

This theory tries to explain the relationship between Online Discussion Forum and Classroom management. This theory posits that students are motivated by four basic needs; belonging, power, freedom and fun. It posits that if teachers can create environment to satisfy these need, students will be able to exercise self-control thereby eliminating the use of discipline by teachers in classroom management. This theory assumes that; teachers should create learning environment that are conducive, teachers should expose students to different ideas and guide students in exploring areas of interest, explore concepts that motivates them and their intrinsically interest, accept teachers' guidance in understanding the choice they make, lecturers should provide students with different option thereby benefiting exceptional learners, teachers should implement a clear structure and organization to their classroom, every facet of classroom environment is controlled, Teachers expectations are known and explicitly stated, Acknowledgement and praise to reinforce positive behaviors in student

Applying this theory to explain the influence of online discussion forum on classroom management.

To the teachers, this theory posits that teachers should create learning environment that are conducive. With the use of ICT tools such as online discussion forum which are very suitable learning environments where students interact with each other to share or exchange knowledge on a particular topic.

This theory also assume that teachers should expose students to different ideas and guide students in exploring areas of interest, and with the use of ICT tools like Online Discussion Forum students are given the opportunity to explore topics given the way it interest them and the lecturer only comes in to mediate or facilitate the discussion so that expectations can be attained. The theory also argues that lecturers should provide students with different option thereby benefiting exceptional learners. This is in the light of providing options of where and when to learn and with the use of online discussion forum, students are given the privilege those pose where ever and whenever they are free, and this makes learning optional. It also give students the opportunity to explore concept that motivates them or where they are interested most.

In classroom, the theory assumes that students behaviors should be reshaped through the use of reinforcement provide complains, approval and encouragement. With the use of online discussion forum lecturers can easily management students' especially in case where the students act very aggressive in their posting.

Limits of the theory

Carl Rogers founder of humanistic education belief in learners- centered teaching whereby students are empowered to and self-discipline is cultivated through reflective listening teachers / students development trust and mutual respects which prevent behavior discipline issues.

Jacob Kounin determines that best teachers prevent problem in the environment of the classroom kept student busy at all time and planned carefully for transitions.

At our own level we criticize the choice theory based on the argument that the theory outline that teacher should allow students explore topics the way they want and base on their areas of interest. This is however difficult because lessons in the 21st century follow well defined syllabus and scheme of work. So when students are given the liberty they can explore materials even out of syllabus. But above all, the choice theory can be appreciated for one or two reasons.

HYPOTHESES

In this section, we have the affirmative hypothesis represented by (H1) and the null hypothesis represented by (H0). These hypotheses are also divided into major hypothesis and specific hypotheses.

General Hypothesis

H1=Effective use of ICT contributes significantly in classroom management in ca2d. This is in the sense that if effectively used it classroom management can be improved and this can influence the academic performances of the students. Many literature reviews have given credit to the use of ICT in classroom management especially in developed countries where there exist strong and powerful policies to support the integration of ICT in schools.

Specific Hypotheses

H1=Effective exploration of internet to communicate to delegate contributes greatly in the amelioration of quality of classroom management.

This is in the perspective that with the availability of internet connection in the school milieu can search information online to enrich course content, create students' platforms where he shares the class into virtual classes and topics are being given to students to argue on while the lecturer acts like a facilitator. Equally with the internet in school, lecturers can easily contact students to know and improve their level of understanding a particular lesson or to supervise student's behaviors.

As if that was not enough, with internet connection lecturer can easily pass out information or communicate to students on recent updates concerning classroom activities. On the side of the students the use of internet can help students Google research materials to enrich course contents, complete and submit course assignment, share knowledge and information on classroom activities, and so on. So, from it role on the teachers in managing the classroom and the students in learning one can be tempted to say if effectively explored the internet can contribute significantly to quality of classroom management.

H1=Effective exploitation of the computer to communicate to class delegate contributes significantly in the improvement of quality of classroom management.

This is in the sense that with the help of internet connection in school, lecturers can use computers like laptop or desktops placed at their disposal to supervise students in their individual or collective research works.

Equally, with the aid of internet connection, computer can help lecturers coordinate students' discussion in a virtual class and this goes a long way to broaden their level of understanding on the course content.

With the aid of internet connection, effective use of a computer can also help teachers/lecturers post and collect assignment to students. It also helps teachers/lectures pass out information to student on classroom events.

Apart from that effective use of computer help lecturers/students in editing information , to store information, to analyze and interpret data in a research, to records student's personal, academic and financial information, to inscribe students online , to make decision and so on. This can go a long way to increase students' performances.

H1=Effective exploration of mobile phones to communicate to class delegate contribute significantly in the quality of classroom management.

This is in the sense that effective use of mobile phone influence classroom management in many ways; in communication between students and lecturer through SMS. It also helps lecturers in carrying out research on course materials; to intervene in online discussion forums, to council students on particular behaviors.

In the nutshell, reviews have proven that the effective exploration of mobile phones can greatly influence classroom management which can go a long way to influence students' academic performances.

H1=Effective exploration of the Online Discussion Forum to assign tasks contributes significantly in the improvement of quality of classroom management.

It is in the direction that creating a learning platform where student can interact between each other, sharing and exchanging knowledge while that lecturer act as a facilitator can influence the quality of classroom management . This is in the sense that splitting the classroom into virtual classes or online discussion group help lecturer to partition task (division of labour), coordinate classroom activities, and communicate to students concerning recent classroom events. With this type of learning environment, lecturers can easily receive questions from students and give them feedback which can be very vital to the students learning processes. With online test that is strongly associated with this type of learning, students receive instant feedbacks that can motivate them in their learning activities. It also permit student download test questions from the system that can be of guide to their reading process.

CHAPTER 3
METHODOLOGY OF THE RESEARCH

3.0. Introduction

This chapter deals with the research method used in gathering the data. It treats the research design, the population of the study, the sample and sampling techniques, data management and data analysis which includes the following: research instrument and administration, data analysis technique, hypotheses of the study, variables and indicators of the study and a synoptic table.

3.1. Type of research

The type of research used in this study is the exploratory research. This research is both quantitative and qualitative. According to Amin (2000), qualitative research is one whose data is basically descriptive in nature. Meaning that, the data to be obtained are ordinarily expressed on non-numerical terms. In order word, qualitative research is one in which he inquirer often makes knowledge claims based primarily on constructivist perspective (that is the multiple meanings of individual experience, meaning socially and historically constructed with an intent of developing theory or patterns) or advocacy/participatory perspectives (that is, political issues oriented, collaborative, or change oriented) or both.

Quantitative research on the other hand is involves collection of numerical data in order to explain, predict and control phenomena of interest, data analysis being mainly statistical. It involves collecting data in order to test hypotheses or answers questions concerning the current status of the subject of the study. It is applied in order to describe current conditions or to investigate relationships, including cause-and-effect relationship.

The reason why we used the mixed approach is because data collected for this research was both numerical (that seeks to explain the link between the independent variable and the dependent variable) and non-numerical (that seeks to describe the variables).

3.2. Research Design

Research design according to Nworgu, (1991) is a plan or blue print which specifies how data relating to a given problem should be collected and analyzed. It provides the procedural outline for the conduct of a given investigation.

According to Nwana (1985), it is the strategy used by a scientist to collect and analyze the data necessary to test hypothesis. Formulating a research design entails choices about fundamental units of analysis, basic research method to be used, time ordering of the variables, procedures for acquiring data and techniques for analysis.

In this work we coined our definition of research design based on the definitions above. According to the researcher, research design is simply the method used by the researcher to collect and analyze data need to test research hypotheses.

In this work, the research design adopted by the researcher to collect and analyze data is the survey design. It was adopted because of it economic advantage over other research designs. This can be explained by the fact that it allows the study of representative samples which permits inference from the population that would be too expensive to study as a whole. The researcher also found out that the most appropriate design to be used is the survey design because it provides procedural outline for the conduct of any given investigation. Equally, it is because the survey design is the systematic means of data collection. This design was also adopted in order to determine administrators and lecturers opinions about ICTs in education and to inquire if it has an impact on classroom management.

Survey designs are procedural in quantitative research in which investigators administer a survey to a sample or to an entire population of people to describe the attitude, opinion, behaviors or characteristics of the population. In this procedure, survey researchers collect quantitative, numbered data using questionnaires or interviews and statistically analyze the data to describe trends about responses to questions and to test hypotheses. They also interpret the meaning of data by relating results to statistical test back to research studies. In this exploratory research, a survey was conducted to gather information from students in CA2D by means of structured questionnaires.

This study adopted a descriptive survey design. Sapsford (2007) defined survey research as the collection of quantifiable data from a population for purpose of description on identify

verification that may point to causal relationship. This design was appropriate for the study because it captured students, lecturers and administrators opinion on ICTs and classroom management.

The descriptive survey design is useful in the sense that it involved the collection of information, which was followed by assessment and finally, described the data analysis regarding the influence of ICTs in classroom management.

3.3. Area of Study

The area of study refers to the geographical location covered by the study. This study was conducted in the International Relations Institute of Cameroon (IRIC) and the discipline selected is the International Cooperation, Humanitarian Action and Sustainable Development (CA2D). The rationale for choosing this particular discipline was due to a number of reasons.

Firstly, IRIC is one of the higher institutions in Cameroon where the impact of ICTs in pedagogic activities has not been able to produce quality classroom management. During our research the researcher came in contact with students from the department of CA2D who are victims of low GPA scored during exams. These are students who need know-how to confront the challenges of the digital generation.

Secondly, IRIC is one of the most renounce institutions in Cameroon that both the Cameroon government and international bodies have invested a lot in terms of ICT and are counting a lot for accomplishment of vision 2035.

Lastly, IRIC is one of the most renounce institutions in central Africa where student receive training in international Relations of different domains and the less of it mistake on its products give a negative image to outsiders about the educational system of the country.
Geographically, IRIC is situated in Yaoundé, precisely in Yaounde VI. Yaounde in itself is situated in the central region of Cameroon and is the political and administrative capital of Cameroon. It is made up of seven sub divisions, that is, Yaoundé 1, 2, 3, 4, 5, 6 and 7. Yaoundé is situated in the Southern part of the country between latitude 3^0, 47^0, and 3^0, 56^0 in the North, and longitude 11^0 and 10^0 and 14^0, 45^0 East of the country after Douala. It is the second largest town in Cameroon after Douala in terms of population.

As to what concerns IRIC, it is one of the higher institutions under the University of Yaounde II (SOA) particularly under the faculty of law. It is made of 5 departments which are the department of Diplomacy and Professional study, the Department of International Law, the Department of International Economics, the Department of Integration and Development Cooperation and the Department of International Politics. Some of these departments are also subdivided into specialties. For example the department of Development Cooperation is divided into Humanitarian Action, Decentralizing Cooperation and Environmental Management. It has a total number of 1300 students.

3.4. Population of the Study

According to Amin (2000:13), the term population refers to "the complete collection (or universe) of all the elements (units) we are interested in a particular investigation".

He also defined a population as the aggregate or totality of objects or individuals, having one or more characteristics in common that are of interest to the researcher and where inferences are to be made in as sampling study.

The population of this research is all post-graduate students doing Masters in International Relations in Yaoundé. These are students that have Bachelor's Degree and are now reading International Relations. They include Master's students reading International Economics, International Politics, International Cooperation, International Law, and International Diplomacy and other international disciplines in Yaoundé town.

3.5. Targeted population

According to Greswell (2012), a targeted population is the group of individuals with some common defining characters that the researcher can identify and study.

According to this research, targeted population is the population to which the researcher alternately wants to generalize the results. It is sometimes called the parent population.

The targeted population from whom the researcher carried out this research is post-graduate or Masters student in International Relations institute of Cameroon (IRIC) -Yaounde. This include postgraduate students in the 5 departments of IRIC which are the department of Diplomacy and Professional study, the Department of International Law, the Department of

International Economics, the Department of Integration and Development Cooperation and the Department of International Politics. IRIC has a total of 1500students and it is this students and lecturers/administrators that make up the targeted population of this research.

3.6. The Accessible Population

The accessible population is the population from which the researcher is able to make use of in his study.

In the case of this research, the accessible population drawn from the targeted population is Masters Students, 16 lecturers and 8 administrator of the department of International Cooperation, Sustainable Development and Humanitarian Action (CA2D). This department has a population of 280 students and 16 lecturers. It is also subdivided in to three specialties which are; Humanitarian Action (100 students), Decentralized Cooperation (80students) and Environmental Management (100 students).

3.7. Sample

Amin (2000:13) defines a sample as a representative collection of some elements of a population. He also defined it as the portion of the population whose results can be generalized to the entire population.

In our own word, sample is the group of people that represent the whole population and whose results can be generalized to the entire population.

Sampling therefore, is a process of extracting a portion of the population from which generalization to the population can be made. It can also be the process of selecting elements from a population in such a way that the sample elements selected represent the population.

As to what concerns the sample, the researcher picked 140 students, of the 6^{th} and 7th batch of the various options of CA2D (Department of Humanitarian Action, Decentralizing Cooperation and Environmental Management). He also involved 4 lecturers (especially those who use ICT teaching), and 4 members of administration in his sample.

3.8. Sampling Technique

A sampling technique is a plan which specifies how elements should be drawn from a population. The sampling technique used in this research was the random sampling technique.

With this technique, the researcher picked available students, lecturers and administrators haphazardly irrespective of their civil and financial. In an explicit manner, half of the number of students of each specialty as outlined above were haphazardly picked and sampled. They constitute masters I students of the 7th badge, masters II students of the 6th badge, some lecturers and administrative members.

On the side of lecturers and administrators, the researcher picked a 25% of the number of accessible lecturers of CA2D (4) and 50% of accessible number of administrators (4). This was based on their availability.

Table 1: Distribution of sampled students per option.

Selected Discipline	**Total number of students**	**Total number of students per option**		**Total number of sampled students**	**Total number of students selected per option**	**Total number of students selected per level**	
						Masters I	**Masters I I**
CA2D	280	Humanitarian Action	100	140	50	25	25
		Environnemental Management	100		50	25	25
		Decentralized Cooperation	80		40	20	20
Total			280		140	70	70

The Table above shows the sample of selected students per options in CA2D. The criteria for this selection were based on the fact that this department is one of the departments where ICT is being used in classroom management.

Secondly, it was based on the fact that a lot of time, money, and material resources have been invested in this department just to make sure that lecturers as well as students produce the best of their result.

Thus, the researcher visited all the three options of CA2D to get responses from some 140 students.

Table 2: Distribution of sampled lecturers and administrator in CA2D

Population	Number of lecturers /administrators of CA2d(accessible)	Number of sampled lecturers and administrators	Total (in Percentage)
Lectures	16	4	25%
Administrators	8	4	50%

According to Table above, 4 lecturers and 4 administrators were sampled and giving a total of 25% and 50% respectively.

The criteria for selecting this sample of lecturers were based on their attitude towards the use of ICT in classroom management. In other word, it was based on their tradition in using ICT during their lectures.

Secondly, it was based on how they prepare the mind of the students by giving topics to be argued in online discussion forums before lessons on that particular topic.

3.9. Research Instruments

Research instruments are the various tools used by the researcher to collect information from respondents. The main research instruments used for this study were the questionnaires and interview guide.

Questionnaire

Instruments are the tools or materials that are used during any research. The instruments used during this research were questionnaire and the interview guide.

According to Nworgu (1991;83), the questionnaire is by far most frequently used instrument in educational research.

In this research, a set of questionnaires were designed by the researcher in collaboration with his supervisor. The questionnaires were constructed in conformity with the independent and the dependent variable and their indicators, research question, research hypothesis, and

literature review. All of the questions were closed ended. The questionnaires were scaled in line with Likert scale of four, which are; Agree, Strongly Agree, Disagree, and Strongly Disagree.

The reasons for choosing a questionnaire with closed ended questions was because the researcher wanted to judge the extent to which effective use of ICT tools influence classroom management in a more coherent manner. In other word, the researcher wanted to judge responds from respondents base on the extent to which they answered the questionnaires.

Equally, it was simply to have precise answers from respondents. Also this type of questionnaire does not take time to administer and it is a reliable instrument for any survey research.

In addition to the above, it was because the sampling technique used by the researcher in this research (Chi Square) easily goes with questionnaires that are scaled on four.

The questionnaires which the researcher designed for students and lecturers were composed and stratified in sections. The questionnaires were composed and structured in 6 sections eliciting the following types of questions: Section A comprised identification question. Under this section, the research asked questions relating to personal profiles such name, option, level of study, gender, age, date and the place where the questionnaire was administered. Section B comprised questions relating to the internet, and under it the researcher asked questions relating to the need for internet connection in classroom activities, how regular is the flow of internet connection on IRIC campus, the disposition of internet connection to the users, frequency in the usage of internet connection and the fastness of internet connection in IRIC. Section C comprised questions relating to the computer. Under the computer, the researcher asked questions related to the necessity of computer in classroom activities, the disposition of computer to user, frequency in the usage of computer and the quality of computer used by students.

Section D comprised questions relating to the mobile phone. In this section of our questionnaire, the researcher asked questions relating to the use of mobile phones in class, frequency in the usage of mobile phone in classrooms, the quality of mobile phones and the number of applications needed to accomplish individual tasks. Section E comprised questions relating online discussion Forum. In line with this section, the researcher asked questions relating to the existence of an Online Discussion Forum, it accessibility, its effectiveness and security, students level of understanding when they use Online Discussion Forum, frequency in its usage and the availability of material to be downloaded by researchers. Section F on its part was made of questions relating to classroom management and under it the researcher

asked questions relating to how communication can influence the quality of classroom management, how time management can influence the quality of classroom management, how lesson planning can influence the quality of classroom management, and how students' performances can be influenced by classroom management.
The combination of all these gave a total of 31 questions for students.

Interview guide

As to what concerns the interview guide the researcher asked a series of open ended questions to class delegates, some lecturers and administrators. The questions where related to their understanding about ICTs and Classroom management, how they use ICTs in their day to day activities, how they get ICT materials, the difficulties they face in when using ICTs, the mechanisms they have put in place to remedy the situation, their views about policies put in place to guide the integration of ICTs in IRIC, their own views about the contribution of ICTs in classroom management the their own recommendations on how to ameliorate the state of ICT in IRIC and other institutions at large (For students' delegate and lecturers).
As to what concern the interview guide for administrators, the researcher asked questions relating to the integration of ICTs, how do user use ICTs, how they get them, policies put in place by the state and IRIC towards ICTs usage as pedagogic tool, challenges they and the institution is facing when using ICTs, strategies put in place by the administration to resolve the situation, contribution of ICTs in classroom management and their personal recommendation about ICT in IRIC.
The reason why the researcher added interview guides to student/ lecturers questionnaire is because he wanted to get some details descriptions about ICTs that cannot be gotten from a mere questionnaire.
It was also for this reason that the researcher used interview guides to collect data from some administrators.

3.10. VALIDATION AND RELIABILITY OF THE RESEARCH INSTRUMENTS

Validity of instrument refers to the extent to which a measurement instrument measures what the researcher intends to measure (Grolund, 1988).In this study, the instrument was subject to the Face and Content Validity.

Validity

The purpose of validity is to examine the accuracy with which an instrument measures what it intends to measure**.** To validate the instrument, the researcher gave the instruments to some persons in the field of education and to his supervisor for cross examination and scrutiny. As a result, some items were dropped, some rephrased and some retained respectively. All of these were done to avoid ambiguity and to ensure clarity of questions in order to enable respondents answer with ease.

After the operationalization of the variables, the researcher identified the indicators from where he constructed the instrument. The instrument was then handed to the researcher's supervisor to examine the validity of the contents. This is known as the content validity which is the extent to which the research questions correspond to the variables of study and measures what they are supposed to measure.

Reliability

To establish the reliability of the instrument, the researcher used test and retest reliability type. The researcher first administered the questionnaire to a group of 10 students,4 lecturers and 3 administrator. He re-administered it again to them after two weeks. The scores of the two questionnaires were computed to obtain a coefficient of stability of 8.02. It was significant and high indicating that the instrument had good test-retest reliability. The two weeks interval for the second set of questionnaire to be administered was simply to avoid a situation where the respondents could easily recall their former responses, and also due to the fact that when the time interval is too long, the responses might differ because of maturation, experiences and intervening learning.

3.11. ADMINISTRATION OF RESEARCH INSTRUMENTS

The questionnaires were personally administered by the researcher to stakeholders in three sub departments of CA2D. After taking a document from the Faculty of Education permitting the researcher to carry out research. The researcher went to the deputy director of IRIC, and collect a pass which enabled the researcher to access the various sub departments. While in the schools, the researcher contacted the authorities of the school and explain the purpose of his visit after which, the researcher approached the students in their classes or elsewhere, lecturers/ administrators in their office and appealed to them to provide the necessary

information. The instructions in the questionnaires were properly explained to the students and they were permitted to ask questions where they are clear or not. The exercise required the movement from one sub department to the other.

The return rate was only known after the researcher went down to the field to administer the questionnaires.

Table 3: Return rate of questionnaires by respondents

Options in CA2D	Number Administered	Number Returned	Total in Percentage
Humanitarian Action	50	50	100%
Decentralizing Cooperation	40	40	100%
Environmental Management	50	50	100%
Total	140	140	

3.12. VARIABLES

The major variables employed in this study are the dependent and independent variables. .

Dependent variable

The dependent variable is also known as the criterion variable. The researcher's goal is to understand and describe some dependent variable, explain its variability or predict it. In our study the dependent variable is classroom management which we measured in terms of student performances.

Independent variable

An independent variable on the other hand is also known as the predictor variable or explanatory some variable. It is the one that influences the dependent variable and it is the presumed cause of the variation in the dependent variable(s). It explains or accounts for variation (s) in the dependent variables. It this study the independent variable is ICTs.

Indicators of variables.

These are various statistical values that together provide an indication of the condition or direction of a phenomenon monitored. The indicators of our independent variable; the internet, computer, mobile phones and online forum discussion can be seen from how effective it is been used.

In his review Riel (1998) hold that the use of Internet for instruction makes it possible for students to form partnerships with peers around the world, while collaborating to complete tasks, through such programmed as Learning Circles, which are based around cross-classroom collaboration, or tele-collaboration. Wireless networks can encourage teachers/students in the use of social computing tools such as e-mail and messaging by supporting flexibility in access, and hence extending collaboration.

Hirschbuhl and Bishop (2000) pointed out that the Internet, PowerPoint and interactive computer-based multimedia are transforming schools and colleges and the way students learn. Regular use of ICT across different curriculum subjects (across the curriculum) can have a beneficial motivational influence on students' learning.

Ilomäki (2008) in his research showed that ICT tools like internet were used; 1) for delivering material or for practicing a specific learning content, 2) for supporting collaboration or knowledge creation, 3) for structuring teaching/learning processes, which was a change from the teacher's management practices.

Bork (1985) views computers as having an influential effect on the teaching and learning processes. They state that with the use of computers in the classroom, schools would become more student-centered and that more individualized learning would take place than ever before. In the student-centered classrooms of today, with the aid of the computer, students are able to collaborate, to use critical thinking, and to find alternatives to solutions of problems.

But the shift from teacher-centered delivery to a student-centered model potentially leads to a resistance in change. Student-centered teaching is challenging educators to restudy their teaching methods and student learning methods.

According to the review of Dwyer, Ringstaff, and Sandholtz (1991), computers can be used in collaboration for all subject areas, but that teachers have to take into account the different styles of teaching and the student involved in this learning. This type of teaching requires a change in the teacher's method of teaching and learning, the amount of time needed to learn how to use the technology and the location of models that work with technology.

Lu and Churchill (2014) in their study stated that the teacher plays a principal role in guiding students in online lectures. This study showed that the social interaction that helps construct and share knowledge is achieved through the pertinent role of the instructor; a decrease in the frequency of interactive messages in online communities is triggered when the online tutor or teacher is not present with the group in the online community.

Karacapilidis and Papadias, (2001) in their review argued that the use of online discussion forum (ODF) has emerged as a common tool and an effective way of engaging students outside the classroom. They argued that ODF is an e-learning platform that allows students to post messages to the discussion threads, interact and receive feedback from other students and instructor, and foster deeper understanding towards the subject under study. In an ODF there is no loss of data as the students' written messages are stored in the virtual space, and can be retrieved and reviewed anytime. The use of online instructional tools can remove some of the communication impediments associated with the face-to-face lectures providing a forum to address issues through argumentative and collaborative discourse.

Warschauer, Sabanci and Co.(2000) under-pin single-class computer-mediated communication projects to be beneficial in many ways. Firstly, computer-assisted discussion tends to give students opportunities for more equal participation than face-to-face discussion. Second, computer-assisted discussion allows students to incorporate the input from others' messages into their own messages. Third, computer-assisted discussion allows more planning time than in face-to-face talks. Finally, since computer based discussion can take place outside of the classroom, it provides students increased opportunities to communicate in the targeted language.

According to Lim, Pek and Chai (2005) when the ICT-mediated lesson is well-managed, a conducive learning environment is created. To them, when ICT tools like online forum discussions, computer to project lessons to the projector are effectively managed in a classroom, the learning environment is conducive. By conducive it means the level of students understanding is increased which can ameliorate their performances. This because the use of ICT in pedagogic practices makes teaching and learning flexible and therefore easy to understand.

Lim and Co. (2005) asserted that the essential elements in a well-managed ICT-mediated lesson are the establishment of rules and procedures, supporting ICT and non-ICT tools for the ICT-mediated activities and the division of labor among the teachers, students and technical assistant. This is because with the use of ICT to mediate lessons, there is the tendency for teachers to divide tasks into groups which can be virtual classes. Also with the use of CT tools like internet connection, students can share group assignments and submit to group leader for harmonization without necessarily coming together face-to-face.

As Thomas (2002) noted, the online discussion forum provides significant opportunities for students to actively engage in their learning process through active participation. Studies investigating the technology-rich classrooms found that the students demonstrated superior attitudes, involvement and engagement with the course content.

Hentea, Shea and Pennington, (2003) in their study revealed that students who participate in computer-mediated, collaborative, Web-based learning perform significantly better than the students using only Web-based learning methods. They therefore concluded that greater online presence by the instructor, thereby encouraging learner participation in collaborative learning processes, leads to greater success of the online student.

Strijbos and Fischer (2007) noted that collaborative learning strategies are very useful to construct and share knowledge among students in collaborative and cooperative online courses in the presence of an instructor or tutor. The collaborative and cooperative learning activities achieved by students in the activity system help researchers find the cognitive outcomes of a learning activity and the processes of knowledge creation and sharing during the learning process.

3.13. METHOD OF DATA ANALYSIS

The method of data analysis is the chi-square (^{x2}) test of independence. The reason for choosing chi –square technique is because the researcher wanted to use contingency coefficient to judge the relationship between ICTs and classroom management in a coherent manner. In other words, the researcher wanted to use the contingency coefficient to determine the magnitude of the relationship that exists between the variables (ICTs and classroom management). The formula of the chi-square which the researcher used this research is as follows.

$$x^2 = \sum \frac{(O-E)2}{E}$$

Where:

x^2= Chi Square

O= Observe

E=Expected frequency

$\sum$ = sum of

In order to calculate the x^2 values the calculated values of the expected frequencies are of required.

Generally, expected frequency

$$= \frac{\text{fr} \times \text{fe}}{\text{N}}$$

Where:

Fr= Total columns

Fe= Total columns

N= Total number of response

To read the critical value, it is necessary to calculate the degree of freedom (df) using the formula:

df=(r-1)(C-1)

Where

R= total number of rows

C= total number of columns

The critical value of x^2 was got at the level of significance 0, 05.

The following decision rule is used;

1. Accept the null hypothesis if the critical value of x^2 is greater than the x^2 calculated
2. Reject the null hypothesis if the x^2 critical value is less than the x^2 calculated
3. The nature of the relationship is determined by calculating the correlation coefficient using the formula:

$$\frac{C = x^2}{N\,!}$$

Where;

N= sample size

X^2=calculated Chi square

Maximum contingency coefficient(C (max)

$$-Cma\,x = \sqrt{\quad}$$

Where K= smallest numbers of rows or columns

Cmax= maximum contingence coefficient.

Application of Chi-Square

Whenever the calculated chi-square value is more than the critical value of chi-square or the chi-square read, the null hypotheses (Ho) will be rejected and the alternative hypotheses (H1) will be retained. Alternatively, if the calculated chi-square value is less than the critical value, the alternative hypothesis (Ha) will be rejected and the null hypotheses (Ho) retained.

The contingency coefficient denoted C and the contingency maximum were calculated. This was done in order to determine the magnitude of the relationships between the variables. The contingency coefficient is calculated as

C =

Here when the coefficient is at 0, it means that there is no relation between the variables. When the calculated coefficient is less than 0 (between -1 and -0.1) it means that there is a negative relationship between the variables. When the calculated coefficient falls between 0.01 and 1 there is positive relationship between the variables. Thus the general lies between -1 and 1. To determine the various ranges to judge the magnitude or the strength of the relationship the following scale is used.

Cmax=

Where k= lowest level of contingency (row or Column) comparison scale for correlation coefficient to measure the correlation magnitude as shown below

- – 0.59 = low relationship

0.59 – 0.6 = moderate relationship

0.6 - 1.0 = high relationship

Table 4: Synoptic table showing hypotheses, research variables and their indicators

General hypothesis	IV	Tests	Modality and HR	Indicators	Items		DV	Modalities
			H1=Effective exploration of internet contributes significantly in the amelioration of quality of classroom management.	-Need in classroom -Regular -connection coverage -Fastness -Accessibility	10 11 12 13	14		-Agree -Strongly agree -Disagree -Strongly disagree
H1=The Effective use of ICT contributes significantly in classroom management			**H1**=Effective Exploitation of the computer contributes significantly in the improvement of quality of	-Use in classroom -Disposition to user -Frequent use in class -Quality of computer.	14 15 16 17	18		-Agree -Strongly agree -Disagree -Strongly

in ca2d.	Influence of ICT	Chi square	classroom management.				Classroom management	disagree
			H1=Effective Exploration of mobile phones contribute significantly in the quality of classroom management.	-Use of mobile phone in classroom -Frequency in the usage in classroom -Quality of phone used in classroom -number of application	18 19 20 21	22		-Agree -Strongly agree -Disagree -Strongly disagree
			H1=Effective exploitation of the Online discussion forum (ODF) contributes significantly in the improvement of quality of classroom management.	-Existence of ODF -Accessibility -Effectiveness -Level of understanding course content -Frequent use of ODF -Availability of research material	22 23 24 25 26 27	28		-Agree -Strongly agree -Disagree -Strongly disagree

3.14. CONCLUSION

This chapter examines the research methodology, which are the step / procedure on how the research was conducted. Some areas of focus are: type of research, research design, area of the study, the population of the study, targeted population, accessible population, the sample and sampling technique, research instruments and data analyses technique. The chapter makes way for the next, which focuses on presentation of data and its analyses on the four indicators of ICT

CHAPTER 4

DATA ANALYSIS AND VERIFICATION OF HYPTHESES

4.0. Introduction

This forth chapter of our research has to do with information gotten from the field. In this chapter, we are going to start by analyzing the data collected and then move to verification of hypotheses.

4.1. Data Analysis

Table 5: Distribution of respondents according to their level of study

Masters level				
Modality	Frequency	Percent	Valid Percent	Cumulative Percent
masters 1 male	35	25.0	25.0	25.0
masters 1 female	35	25.0	25.0	50.0
masters 2 male	35	25.0	25.0	75.0
masters 2 female	35	25.0	25.0	100.0
Total	140	100.0	100.0	

Bar chat 1: Distribution of respondents according to their level of study

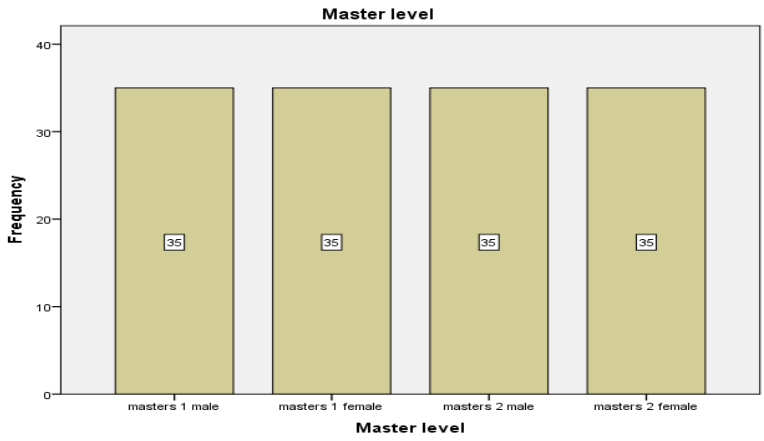


Table 5 and the bar chats 1 above show the distribution of respondents according to level of studies. According to the graph; 35 female and 35 male respondents were in masters I, 35 female and 35 male were in master II.

Table 6: Distribution of respondents according to age

Age				
Modality	Frequency	Percent	Valid Percent	Cumulative Percent
20-30 years	35	25.0	25.0	25.0
31-40 years	43	30.7	30.7	55.7
41-50 years	36	25.7	25.7	81.4
50+	26	18.6	18.6	100.0
Total	140	100.0	100.0	

Bar chats 2: Distribution of respondents according to age

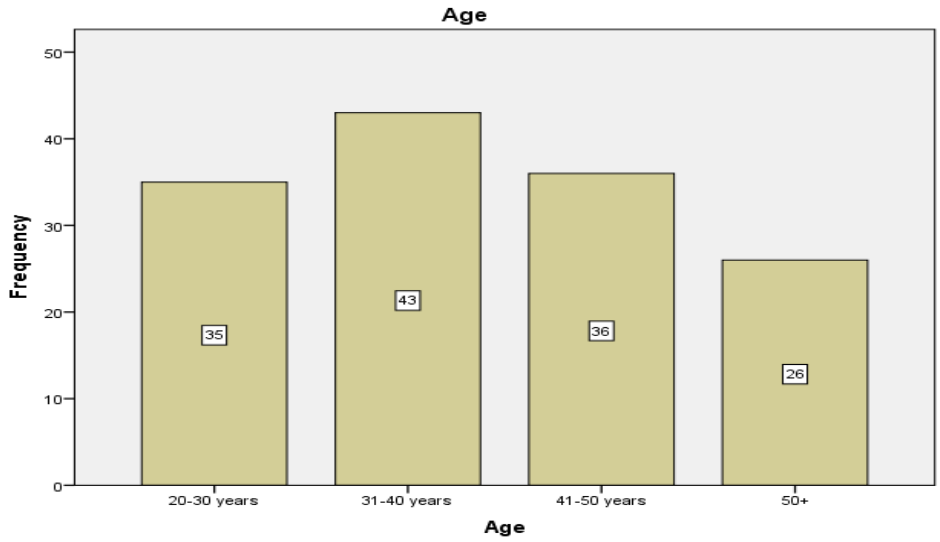


Table 6 and Bar chat 2 above shows the distribution of respondents according to age. According to the results 35 respondents were between the ages of 20-30, 43 between 31-40, 36 between 41-50 while 26 of them were as from 50+.

Table 7: Distribution of respondents according to internet usage in classroom management.

Internet connection is use in classroom activities in IRIC				
Modality	Frequency	Percent	Valid Percent	Cumulative Percent
Agree	80	57.1	57.1	57.1
strongly agree	60	42.9	42.9	100.0
Total	140	100.0	100.0	

Bar chats 3: Distribution of respondents according to internet usage in classroom management.

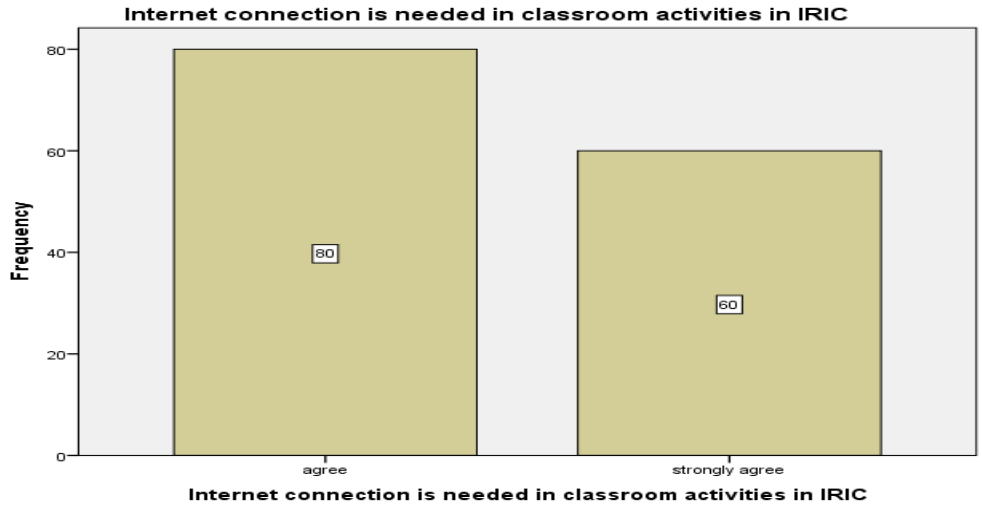


Table 7 and Bar chat 3 above shows the distribution of respondents according to use of internet connection in classroom management (to communicate and assign tasks to students through class delegates). The results from the Table and the Bar chats revealed that the use of internet use of internet connection in classroom activities was mainly expressed through the frequency of those who agreed and those who disagreed. The outcome of this frequency on the need for internet connection in classroom activities shows that out of 140 respondents, 80 of them agreed on the need for internet connection making a percentage of 57.1% while 60 of them strongly agreed, making a percentage of 42.9%. An overview of the two results shows that the need for internet connection in classroom activities was supported by 100%.

Table 8: Distribution of respondents according to their opinions on internet connection

There is regular flow of internet connection in IRIC				
Modality	Frequency	Percent	Valid Percent	Cumulative Percent
Agree	16	11.4	11.4	11.4
strongly agree	1	.7	.7	12.1
disagree	56	40.0	40.0	52.1
strongly disagree	67	47.9	47.9	100.0
Total	140	100.0	100.0	

Bar chats 4: Distribution of respondents according to their opinions on internet connection

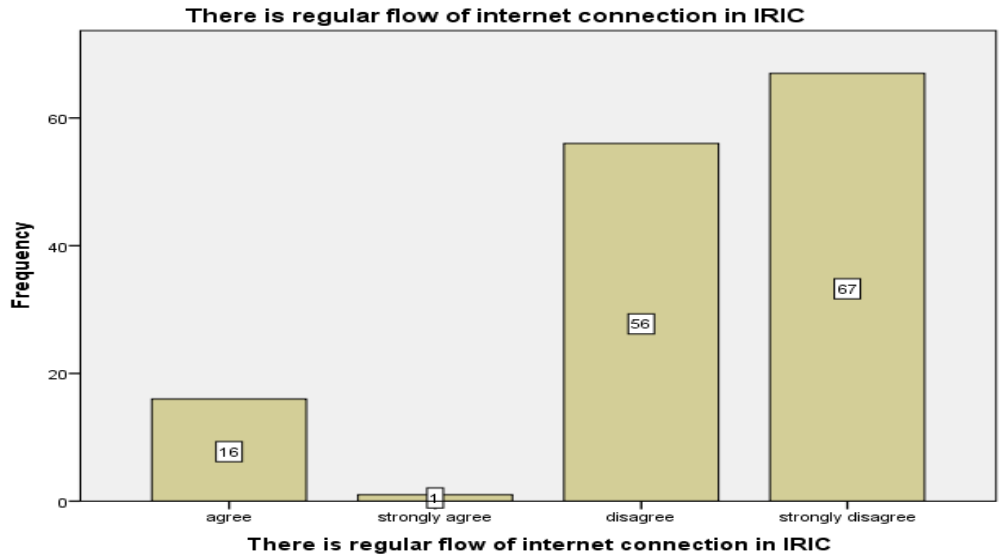
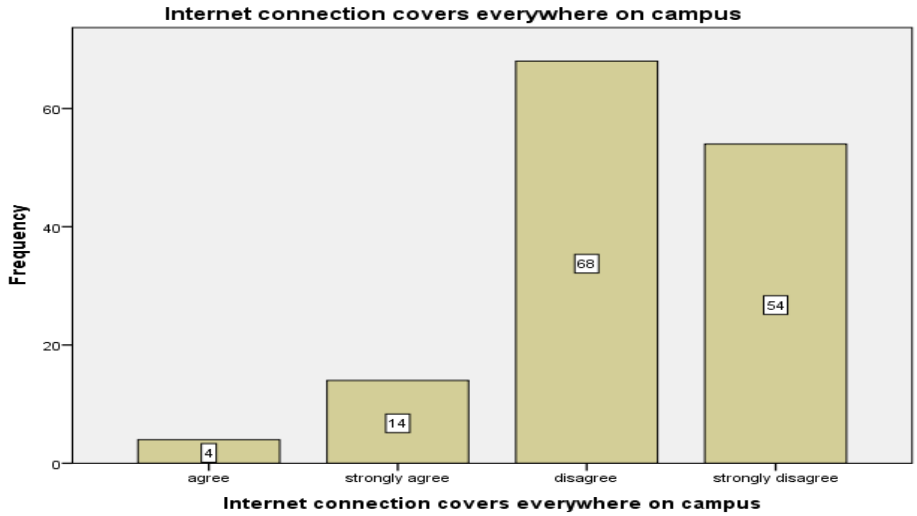


Table 8 and Bar chat 4 above provides the distribution of respondents according to regular flow of internet connection in IRIC. The result from the Table and the Bar chats revealed that responds on the regular flow of internet connection in IRIC was mainly expressed through the frequency. According to the results, out of 140 respondents, 16 of them agreed that there is regular flow of internet connection in IRIC, 1 of them strongly agreed, 56 of them disagreed and 67 of them strongly disagreed. And overview of the result shows that, the number of those who agreed and those who strongly agree are just 17 in numbers or 12.1% while those who disagreed or strongly disagrees are 123 in number or 87.9%. So we can see that a large number of respondents (87.9%) denied the fact that internet connection is not regular in IRIC.

Table 9: Distribution of respondents according to their opinions on internet coverage

Internet connection covers everywhere on campus				
Modality	Frequency	Percent	Valid Percent	Cumulative Percent
Agree	4	2.9	2.9	2.9
strongly agree	14	10.0	10.0	12.9
disagree	68	48.6	48.6	61.4
strongly disagree	54	38.6	38.6	100.0
Total	140	100.0	100.0	

Bar chats 5: Distribution of respondents according to their opinions on internet coverage

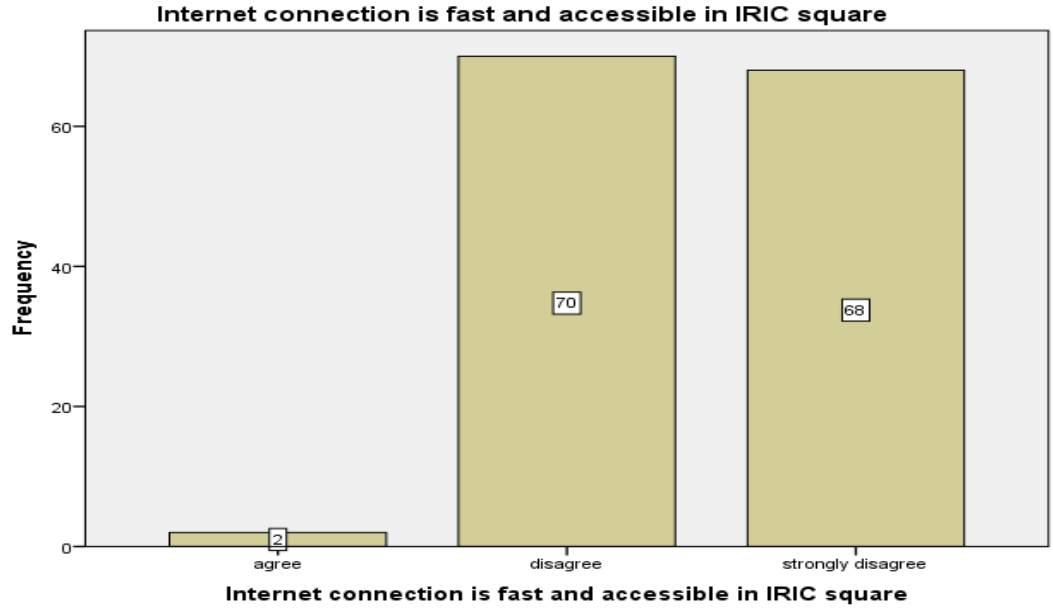


The Table and the bar chat (Table 9 and Bar chats 5) above provides the distribution of respondents according to internet connection coverage in IRIC Square. The result from the Table and Bar chats shows that responds on internet cover in IRIC was mainly expressed through the frequency. According to the results, out of 140 respondents, 4 of them agreed that internet connection covers everywhere in IRIC, 14 of them strongly agreed, 68 of them disagreed and 54 of them strongly disagreed. And overview of the result shows that, the number of those who agreed and those who strongly agree are just 18 in numbers or 12.9% while those who disagreed or strongly disagrees are 123 in number or 87.9%. So we can see that a large number of respondents (87.9%) denied the fact that internet connection is not regular in IRIC.

Table 10: Distribution of respondents according to their opinions on internet speed and accessibility

Internet connection is fast and accessible in IRIC square				
Modality	Frequency	*Percent*	Valid Percent	Cumulative Percent
Agree	2	1.4	1.4	1.4
disagree	70	50.0	50.0	51.4
strongly disagree	68	48.6	48.6	100.0
Total	140	100.0	100.0	

Bar chat 6: Distribution of respondents according to their opinions on internet speed and accessibility



The Table and the bar chat (Table 10 and Bar chats 6) above shows the distribution of respondents according to internet speed in IRIC. According to the results, out of 140 respondents, just 2 of them agreed that the internet connection is very fast in IRIC while, 70 of them disagreed and 68 of them strongly disagreed. And overview of the result shows that, a large proportion of respondents (98.6%) negated the fact that internet connection is very fast in IRIC while only 1.4% of respondents accepted the fact that internet connection is fast in IRIC Square.

Table 11: Distribution of respondents according to their opinions on the use of computer .

I use computer in classroom activities				
Modality	Frequency	Percent	Valid Percent	Cumulative Percent
Agree	56	40.0	40.0	40.0
strongly agree	19	13.6	13.6	53.6
disagree	41	29.3	29.3	82.9
strongly disagree	24	17.1	17.1	100.0
Total	140	100.0	100.0	

Bar chats 7: Distribution of respondents according to their opinions on computer use

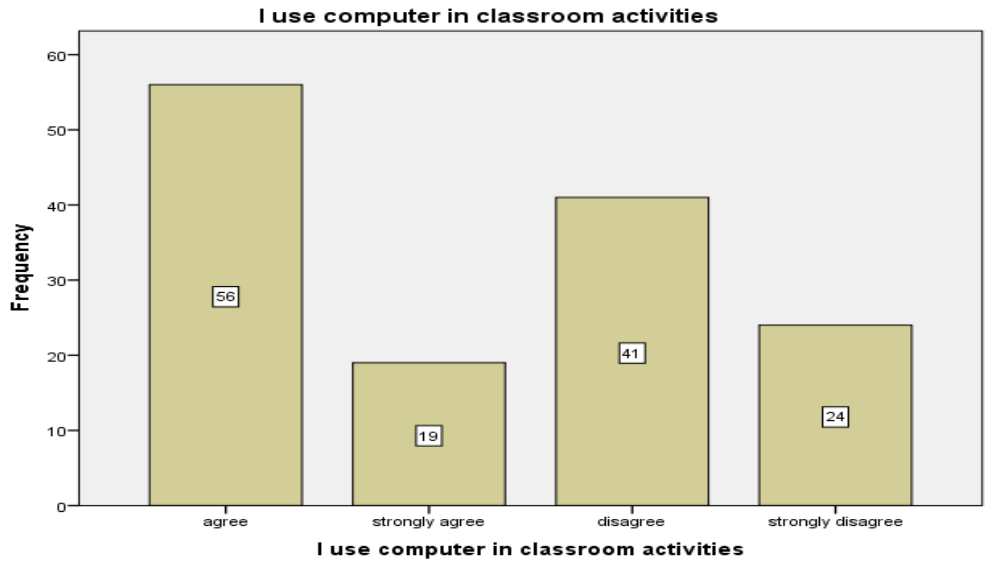
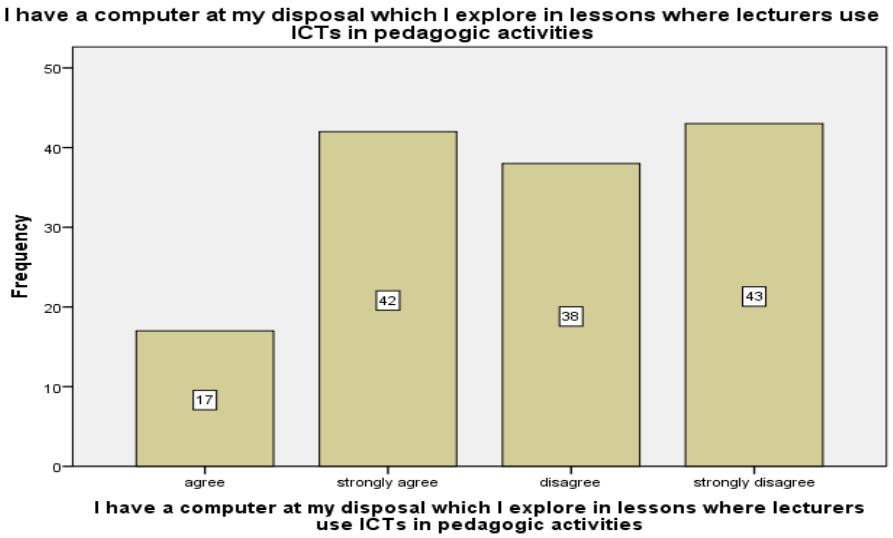


Table 11 and Bar chat 7 above provides the distribution of respondents according use of computer in classroom activities. The result revealed that out of 140 respondents, 56 of them agreed that they use computers in classroom activities (40.0%), 19 of them strongly agreed, 41 of them disagreed (29.3%) and 24 of them strongly disagreed (17.1). A general view of the result shows that, the percentage of those who agreed is 40.0 while the percentage of those who disagreed or strongly disagreed is 60%. So we can see that a large proportion of respondents accepted the fact that they use computer in classroom activities.

Table 12: Distribution of respondents according to their opinions on computer ownership

I have a computer at my disposal which I explore in lessons where lecturers use ICTs in pedagogic activities				
Modality	Frequency	Percent	Valid Percent	Cumulative Percent
Agree	17	12.1	12.1	12.1
strongly agree	42	30.0	30.0	42.1
disagree	38	27.1	27.1	69.3
strongly disagree	43	30.7	30.7	100.0
Total	140	100.0	100.0	

Bar chats 8: Distribution of respondents according to their opinions on computer ownership

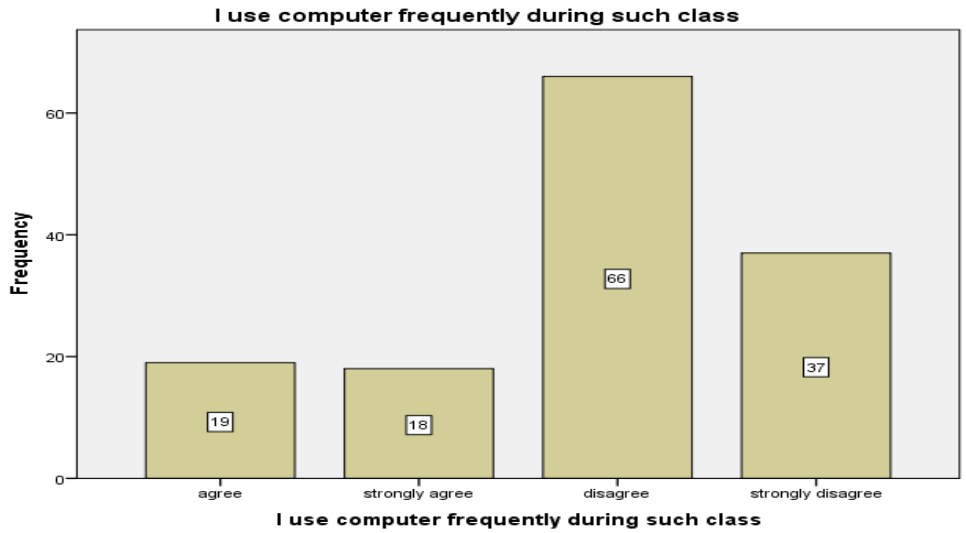


The Table and the Bar chat (Table 12 and Bar chats 8) above provides the distribution of respondents according to the number of respondents who have computer at their disposal .The result from the table and the bar chats revealed that various responds on those who have computers at their disposal was mainly expressed in terms of frequency. According to the results, out of 140 respondents, 17 of them agreed that they have a computer at their disposal, 42 of them strongly agreed, 38 of them disagreed and 43 of them strongly disagreed. And overview of the result shows that, majority of respondents (57.8%) lack a computer at their disposal while 42.1% has a computer at their disposal.

Table 13: Distribution of respondents according to their opinions on the level of computer use

I use computer frequently during such class				
Modality	Frequency	Percent	Valid Percent	Cumulative Percent
Agree	19	13.6	13.6	13.6
strongly agree	18	12.9	12.9	26.4
disagree	66	47.1	47.1	73.6
strongly disagree	37	26.4	26.4	100.0
Total	140	100.0	100.0	

Bar chats 9: Distribution of respondents according to their opinions on the level of computer use



The Table and the Bar chat above (Table 13 Bar chats 9) shows the distribution of respondents according to frequent use of computer in classroom. The result from the Table and the bar chats shows that response on the frequent use of computer was mainly expressed in terms of frequency. The results show that out of 140 respondents, just 19 of them agreed that computer is frequently used in classrooms. In that same light, 18 respondents strongly agreed while, 66 of them disagreed and 37 of them strongly disagreed. And overview of the result shows that, a large majority of respondents (73.5%) refuted the frequent use of computer in classes while only 26.5% of respondents accepted the fact that internet connection is fast in IRIC Square.

Table 14: Distribution of respondents according to Lecturers' use of computer

Lecturers use computers to teach us				
Modality	Frequency	Percent	Valid Percent	Cumulative Percent
Agree	31	22.1	22.1	22.1
strongly agree	16	11.4	11.4	33.6
disagree	78	55.7	55.7	89.3
strongly disagree	15	10.7	10.7	100.0
Total	140	100.0	100.0	

Bar chats 10: Distribution of respondents according to Lecturers' use of computer in classroom activities.

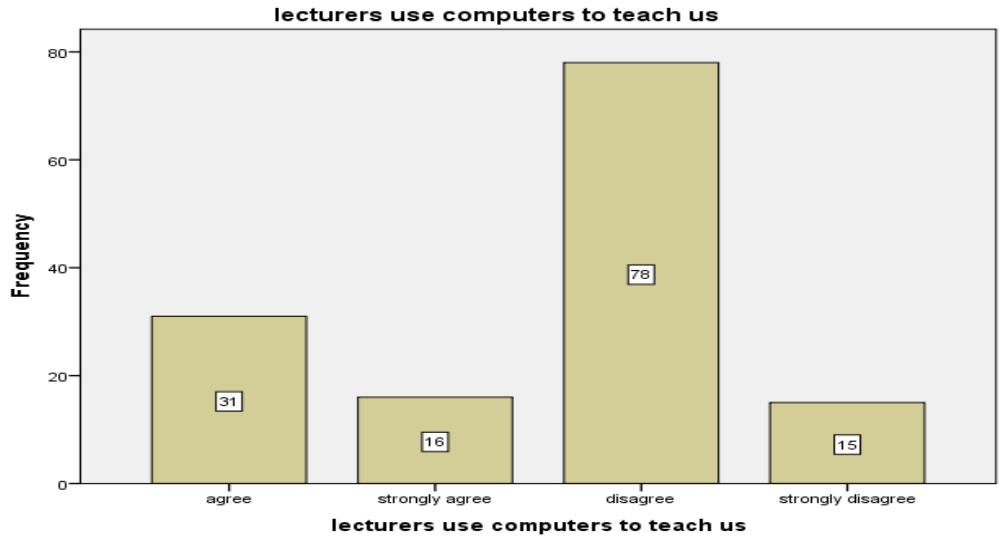


Table 14 and Bar chat 10 above shows the distribution of respondents according to the use of computer by lecturers. The response on the use of computer by lecturers was mainly expressed through the frequency. According to the results, out of 140 respondents, just 31 of them agreed that lecturers use computers to teach. 16 respondents strongly agreed, 78 of them disagreed while 15 strongly disagreed. An overview of the result shows that, a vast majority of respondents (66.4%) refuted the fact that lecturers use computers to teach while 33.5% of respondents supported the fact.

Table 15: Distribution of respondents according to their opinions on computer quality

The quality of my computer has the standard needed by lecturers who use ICTs in classroom				
Modality	Frequency	Percent	Valid Percent	Cumulative Percent
Agree	67	47.9	47.9	47.9
strongly agree	28	20.0	20.0	67.9
disagree	30	21.4	21.4	89.3
strongly disagree	15	10.7	10.7	100.0
Total	140	100.0	100.0	

Bar chats 11: Distribution of respondents according to their opinions on computer quality

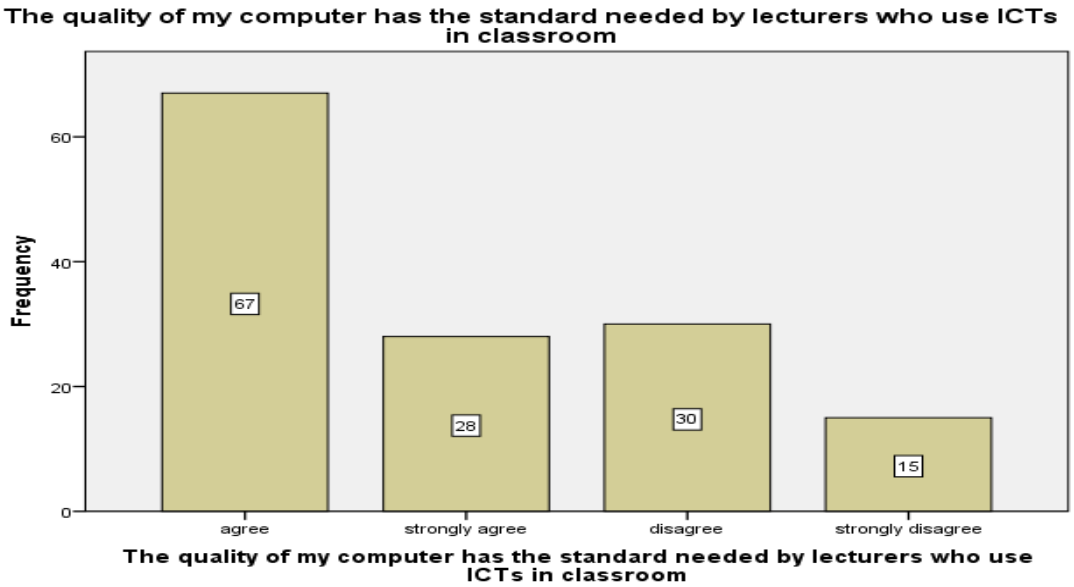


Table 15 and Bar chat 11 above shows the distribution of respondents according to students whose qualities of computer has the standard needed by lecturers. According to the results, 67 respondents agreed that the quality of their computers is of good quality. 28 of them strongly agreed while 30 disagreed and 15 strongly disagree. From the results above, one can see that a vast majority of respondents (67.9%) has quality computers that can be used in class while 32.1% of respondents have low quality computers.

Table 16: Distribution of respondents according to their opinions on the use of smart phones in classroom activities.

Students use Smart phones in classroom activities in CA2D				
Modality	Frequency	Percent	Valid Percent	Cumulative Percent
Agree	34	24.3	24.3	24.3
strongly agree	53	37.9	37.9	62.1
disagree	12	8.6	8.6	70.7
strongly disagree	41	29.3	29.3	100.0
Total	140	100.0	100.0	

Bar chats 12: Distribution of respondents according to their opinions on the use of smart phones in classroom activities.

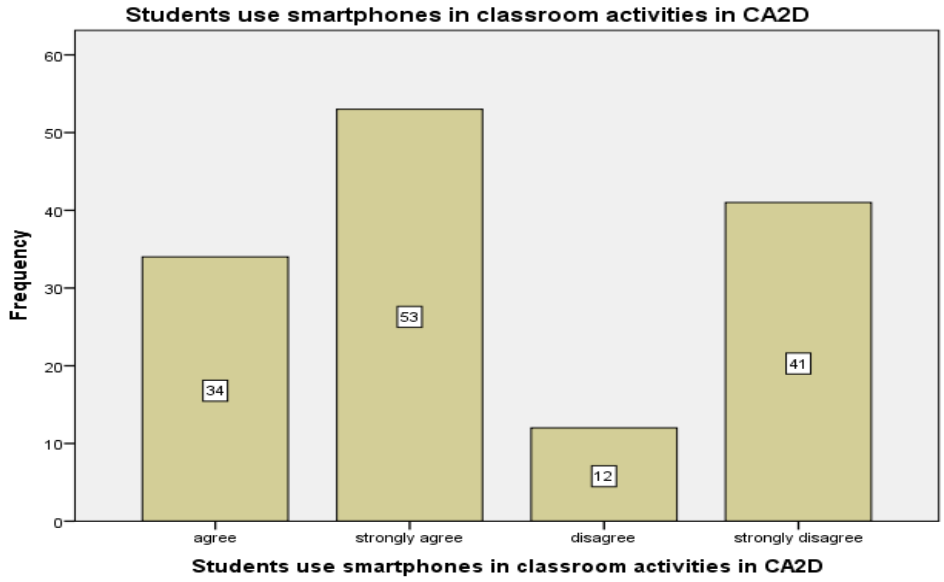


Table 16 and Bar chat12 above provides the distribution of respondents according to use of Smart phones in classroom activities. The result revealed that out of 140 respondents, 34 of them agreed that they use Smart phones in classroom activities, 53 of them strongly agreed, 12 of them disagreed and 41 of them strongly disagreed. A general view of the result shows that, the percentage of those who agreed and those who strongly agree is 62.2 while those who disagreed or strongly disagree is just 37.9. So we can see that a large proportion of respondents accepted the fact that they use Smart phones in classroom activities in CA2D.

Table 17: Distribution of respondents according to their opinions on level of smart phone usage

I use Smart phones frequently in classes where ICTs are being used				
Modality	Frequency	Percent	Valid Percent	Cumulative Percent
Agree	54	38.6	38.6	38.6
strongly agree	6	4.3	4.3	42.9
disagree	63	45.0	45.0	87.9
strongly disagree	17	12.1	12.1	100.0
Total	140	100.0	100.0	

Bar chats 13: Distribution of respondents according to their opinions on level of smart phone usage

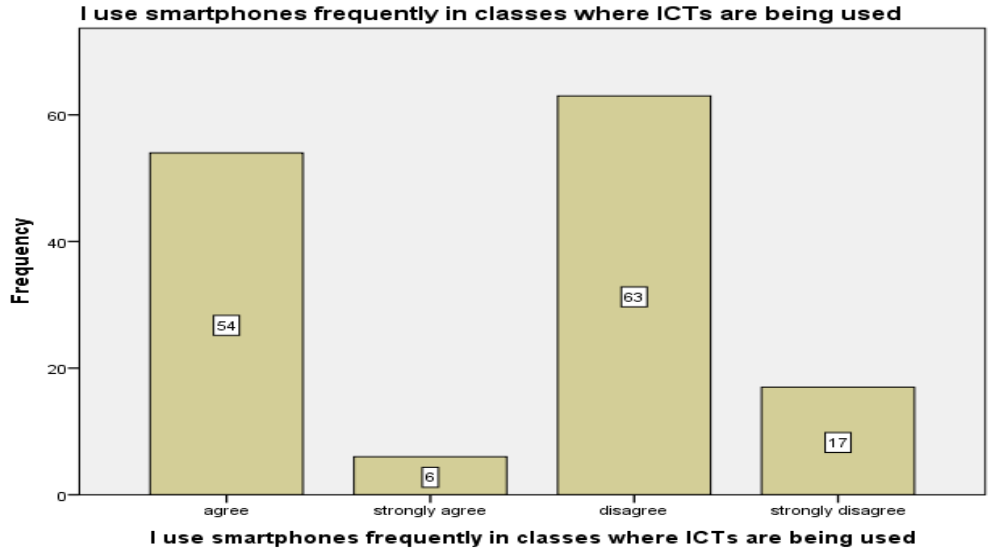


Table 17 and Bar chat 13 above provides the distribution of respondents according to frequent usage of Smart phones. The results revealed that out of 140 respondents, 54 of them agreed that they use computers in classroom activities, 4 of them strongly agreed, 63 of them disagreed and 17 of them strongly disagreed. An overview of the result in percentage shows that, 38.6% of respondent agreed that they frequently use Smart phones in classroom activities, 4.3% strong agree, 45.0% disagreed and 12.1% strongly disagreed. From these results, one can see that majority of respondents (57.1%) do not use Smart phones frequently in classroom activities while 42.9% use it frequently.

Table 18: Distribution of respondents according to their opinions on the quality of smart phone.

The quality of my Smart phone permits me do all my classroom task				
Modality	Frequency	Percent	Valid Percent	Cumulative Percent
Agree	28	20.0	20.0	20.0
strongly agree	5	3.6	3.6	23.6
disagree	78	55.7	55.7	79.3
strongly disagree	29	20.7	20.7	100.0
Total	140	100.0	100.0	

Bar chats 14: Distribution of respondents according to their opinions on the quality of smart phones.

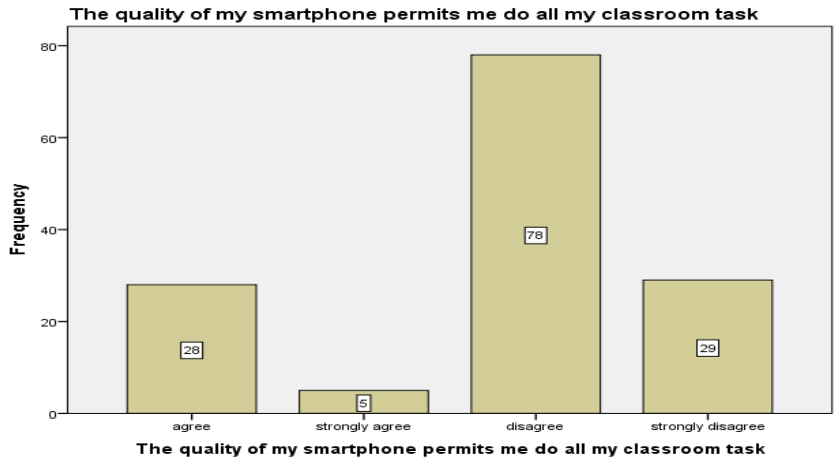


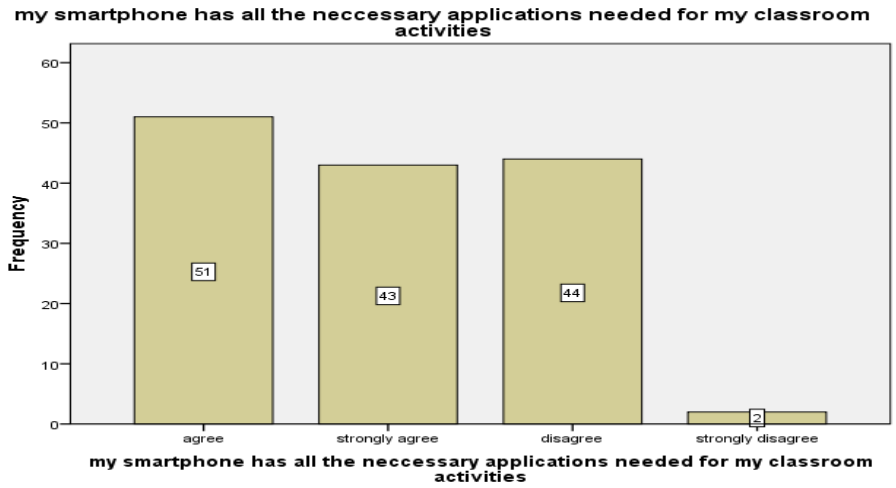
Table 18 and Bar chat 14 above provides the distribution of respondents according to quality of Smart phones. The reaction of the respondents was mainly judged in terms of frequency. According to the result, out of 140 respondents, 28 of them agreed that the quality of their Smart phones permits them to perform their tasks in school and 5 of them strongly agreed. On the contrary 78 of them disagreed that the quality of their Smart phones does not permit them to accomplish their tasks while 29 of them strongly disagreed. An overview of the result in percentage shows that, 20.0% of respondent agreed that the quality of their Smart phones permits them to perform their duties, 3.6% strongly agree, 55.7% disagreed and 20.0% strongly disagreed.

From this results, one can see that less majority of students (23.6%) has quality Smart phones that permits them to perform their tasks while more than majority (76.4%) of them has low quality computers.

Table 19: Distribution of respondents according to their opinions on applications found in smart phones

My Smart phone has all the necessary applications needed for my classroom activities				
Modality	Frequency	Percent	Valid Percent	Cumulative Percent
Agree	51	36.4	36.4	36.4
strongly agree	43	30.7	30.7	67.1
disagree	44	31.4	31.4	98.6
strongly disagree	2	1.4	1.4	100.0
Total	140	100.0	100.0	

Bar chats 15: Distribution of respondents according to their opinions on applications found in smart phones



The Table and Bar chat above (Table 19 and Bar chats 15) provides the distribution of respondents according to students whose Smart phones has all the necessary applications needed for their classroom activities. According to the result, out of 140 respondents, 28 of them agreed that the quality of their Smart phones permits them to perform their tasks in school and 5 of them strongly agreed. On the contrary 78 of them disagreed that the quality of their Smart phones does not permit them to accomplish their tasks while 29 of them strongly disagreed.

Table 20: Distribution of respondents according to their opinions on the presence of an Online Discussion Forum

There is an Online Discussion Forum in platform in CA2D where students interact with each other on a particular topic				
Modality	Frequency	Percent	Valid Percent	Cumulative Percent
Agree	33	23.6	23.6	23.6
strongly agree	59	42.1	42.1	65.7
disagree	36	25.7	25.7	91.4
strongly disagree	12	8.6	8.6	100.0
Total	140	100.0	100.0	

Bar chats 16: Distribution of respondents according to their opinions on the presence of an Online Discussion Forum

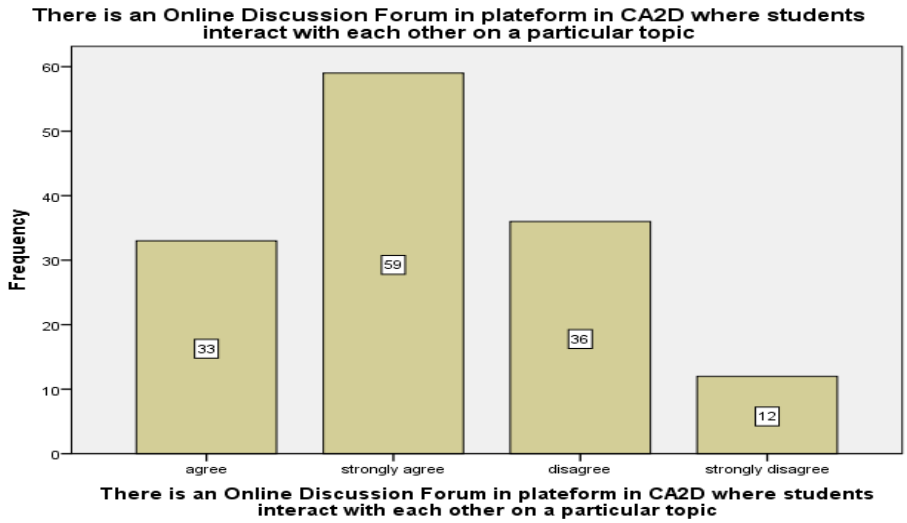


Table 20 and Bar chat 16 above provides the distribution of respondents according to the existence of ODF in platform in CA2D where students interact with each other on particular topic. The reaction of the respondents was mainly judged in terms of frequency. According to the result, out of 140 respondents, 33 of them agreed that there is an ODF in platform in CA2D where students interact with each other on a particular topic. In that same light, 59 of them strongly agreed while 36 and 12 of them disagreed and strongly disagreed respectively.

From this results, one can see that a vast majority of students (65.7%) affirmed that there is an ODF in platform in CA2D where students interact with each while just 34.3% of them refuted by disagreeing or strongly disagreeing.

Table 21: Distribution of respondents according to their opinions on the accessibility of online discussion forum

This Online Discussion Forum is accessible to everyone everywhere				
Modality	Frequency	Percent	Valid Percent	Cumulative Percent
Agree	38	27.1	27.1	27.1
Strongly agree	37	26.4	26.4	53.6
Disagree	40	28.6	28.6	82.1
Strongly disagree	25	17.9	17.9	100.0
Total	140	100.0	100.0	

Bar chats 17: Distribution of respondents according to their opinions on the accessibility of online discussion forum

According to the result from Table 21 and Bar chats 17 above, out of 140 respondents, 38 of them agreed that ODF is accessible to everyone. In that same light, 37 of them strongly agreed while 40 and 25 of them disagreed and strongly disagreed respectively. An overview of the result in percentage shows that, 27.1% and 26.4% of respondent agreed and strongly agreed respectively while 28.6% and 17.9% disagreed and strongly disagreed respectively.

From this results, one can see that a majority of students (53.5%) affirmed that ODF is accessible to everyone everywhere by agreeing or strongly agreeing while 46.5% of them refuted by disagreeing or strongly disagreeing.

Table 22: Distribution of respondents according to their opinions on the nature of posts in online discussion forum

Postings in Online Discussion Forum are coded in such a way that students cannot fraud				
Modality	Frequency	Percent	Valid Percent	Cumulative Percent
Agree	59	42.1	42.1	42.1
strongly agree	37	26.4	26.4	68.6
disagree	16	11.4	11.4	80.0
strongly disagree	28	20.0	20.0	100.0
Total	140	100.0	100.0	

Bar chats 18: Distribution of respondents according to their opinions on the nature of posts in online discussion forum

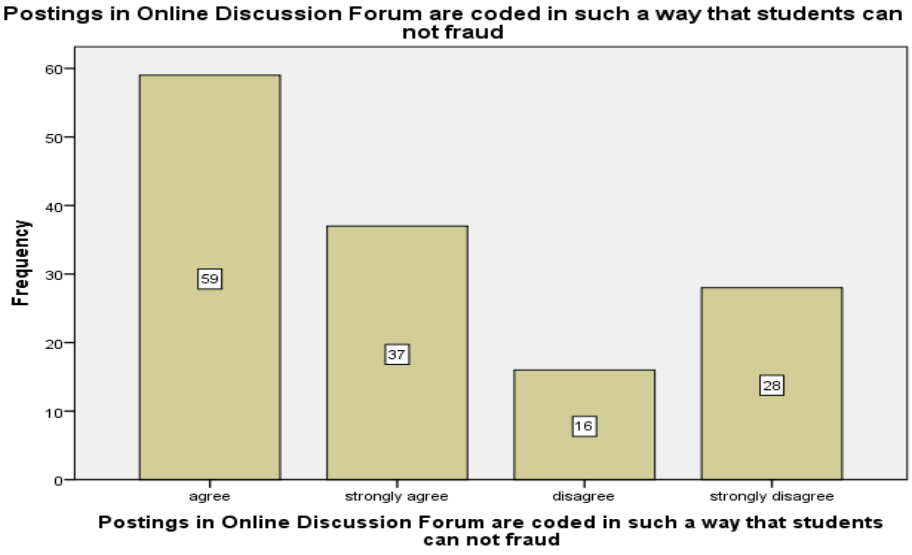


Table 22 and Bar chat 18 above provides the distribution of respondents according to whether postings in ODF are coded or not. The reaction of the respondents was mainly revealed in terms of frequency. According to the result, out of 140 respondents, 59 of them agreed that postings are coded. 37 of them strongly agreed while 16 and 38 of them disagreed and strongly disagreed respectively. An overview of the result in percentage shows that, 42.1%

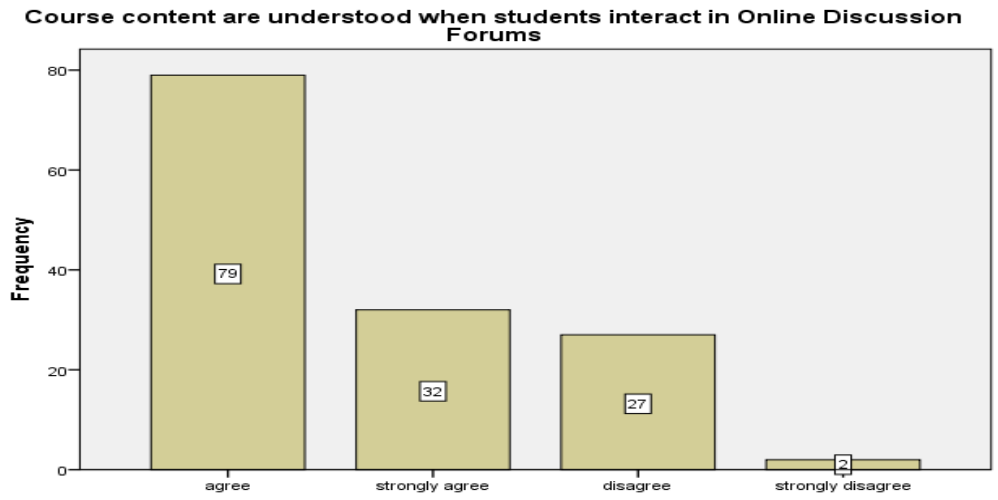
and 26.4% of respondent agreed and strongly agreed respectively while 11.4% and 20.0% disagreed and strongly disagreed respectively.

From this results, one can see that a large portion of respondents (68.5%) affirmed that postings in ODF are coded while just 31.4% of them refuted by disagreeing or strongly disagreeing.

Table 23: Distribution of respondents according to their opinions on the level of understanding course content material

Course content are understood when students interact in Online Discussion Forums				
Modality	Frequency	Percent	Valid Percent	Cumulative Percent
Agree	79	56.4	56.4	56.4
strongly agree	32	22.9	22.9	79.3
Disagree	27	19.3	19.3	98.6
strongly disagree	2	1.4	1.4	100.0
Total	140	100.0	100.0	

Bar chats 19: Distribution of respondents according to their opinions on the level of understanding course content material



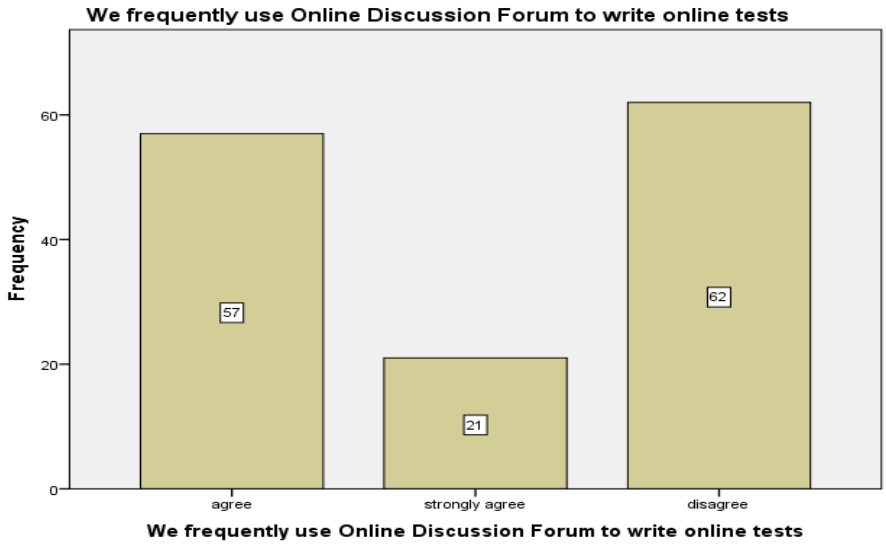
According to the result of Table 23 and Bar chat 19, out of 140 respondents, 79 of them agreed that they understand course contents when they interact in ODF, In that same light, 32 of them strongly agreed while 27 and 2 of them disagreed and strongly disagreed respectively. An overview of the result in percentage shows that, 56.4% and 22.9% of respondent agreed and strongly agreed respectively while 19.3% and 1.4% disagreed and strongly disagreed respectively.

From this results, one can see that a vast majority of students (79.3%) affirmed that they understand course contents when students interact in ODF by their agreeing or strongly agreeing while just 20.7% of them refuted by disagreeing or strongly disagreeing.

Table 24: Distribution of respondents according to their opinions on the level of online discussion forum for examination purposes

We frequently use Online Discussion Forum to write online tests				
Modality	Frequency	Percent	Valid Percent	Cumulative Percent
Agree	57	40.7	40.7	40.7
Strongly agree	21	15.0	15.0	55.7
Disagree	62	44.3	44.3	100.0
Total	140	100.0	100.0	

Bar chats 20: Distribution of respondents according to their opinions on the level of online discussion forum for examination purposes



Results from Table 24 and Bar chat 20 above provides that out of 140 respondents, 57 of them agreed they frequently use ODF in writing online test. In that same light, 21 of them strongly agreed while 62 and 0 of them disagreed and strongly disagreed respectively. An overview of the result in percentage shows that, 40.7% and 15.0% of respondent agreed and strongly agreed respectively while 44.3% and 0.0% disagreed and strongly disagreed respectively.

From this results, one can see that a vast majority of students (55.7%) affirmed that they use ODF in writing test by agreeing or strongly agreeing while 44.3% of them refuted by disagreeing or strongly disagreeing.

Table 25: Distribution of respondents according to their opinions on the presence of course content material in the online discussion forum platform

Course materials are available in Online Discussion Forum that students can download to enrich course contents				
Modality	Frequency	Percent	Valid Percent	Cumulative Percent
Agree	44	31.4	31.4	31.4
strongly agree	66	47.1	47.1	78.6
disagree	28	20.0	20.0	98.6
strongly disagree	2	1.4	1.4	100.0
Total	140	100.0	100.0	

Bar chats 21: Distribution of respondents according to their opinions on the presence of course content material in the online discussion forum platform

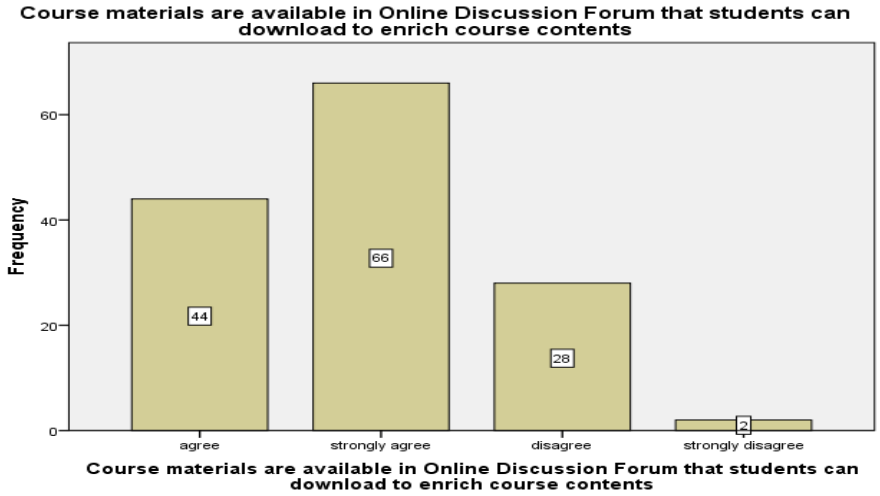


Table 25 and bar chat 21 above provides that out of 140 respondents, 44 of them agreed that there are available materials in ODF where students can download material to enrich course content, 66 of them strongly agreed while 28 and 2 of them disagreed and strongly disagreed respectively. An overview of the result in percentage shows that, 31.4 and 47.1% of

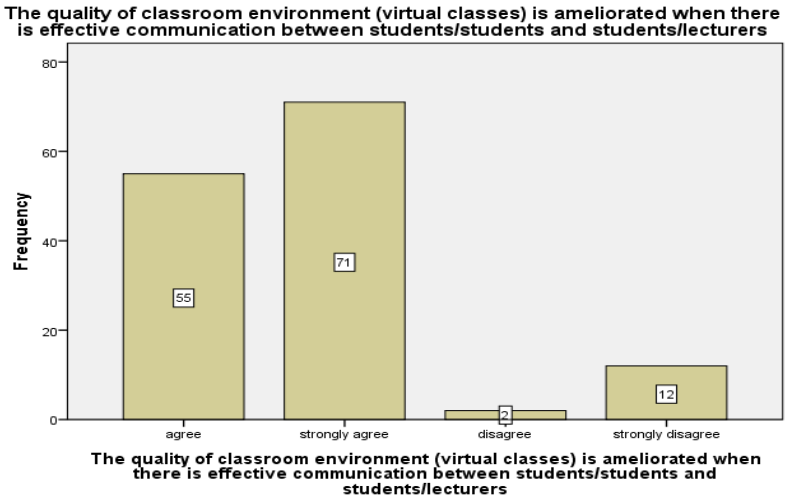
respondent agreed and strongly agreed respectively while 20.0% and 1.4% disagreed and strongly disagreed respectively.

From these results, one can see that a vast majority of students (78.5%) affirmed that materials are available while just 21.4% of them refuted by disagreeing or strongly disagreeing.

Table 26: Distribution of respondents according to their opinions on the quality of classroom environment.

The quality of classroom environment (virtual classes) is ameliorated when there is effective communication between students/students and students/lecturers				
Modality	Frequency	Percent	Valid Percent	Cumulative Percent
Agree	55	39.3	39.3	39.3
strongly agree	71	50.7	50.7	90.0
disagree	2	1.4	1.4	91.4
strongly disagree	12	8.6	8.6	100.0
Total	140	100.0	100.0	

Bar chats 22: Distribution of respondents according to their opinions on the quality of classroom environment.



The Table and Bar chat above (Table 26 and bar chats 22) shows the distribution of respondents according to how classroom environment is ameliorated when there is effective communication between students and lecturers. The reaction of the respondents was mainly revealed in terms of frequency. According to the result, out of 140 respondents, 55 of them agreed that that the quality of classroom is ameliorated when there is effective communication

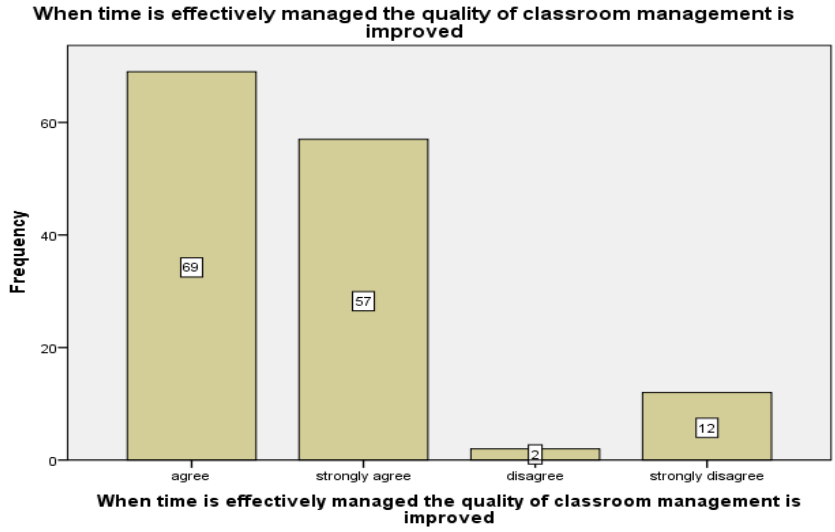
between students and their lecturers .In that same light, 71 of them strongly agreed while 2 and 12 of them disagreed and strongly disagreed respectively.

From this results, one can see that an absolute majority of students (90%) affirmed by agreeing or strongly agreeing that quality of classroom is ameliorated when there is effective communication while just 10% of them refuted by disagreeing or strongly disagreeing.

Table 27: Distribution of respondents according to their opinions on time management in the classroom

When time is effectively managed the quality of classroom management is improved				
Modality	Frequency	Percent	Valid Percent	Cumulative Percent
Agree	69	49.3	49.3	49.3
strongly agree	57	40.7	40.7	90.0
disagree	2	1.4	1.4	91.4
strongly disagree	12	8.6	8.6	100.0
Total	140	100.0	100.0	

Bar chats 23: Distribution of respondents according to their opinions on time management in the classroom



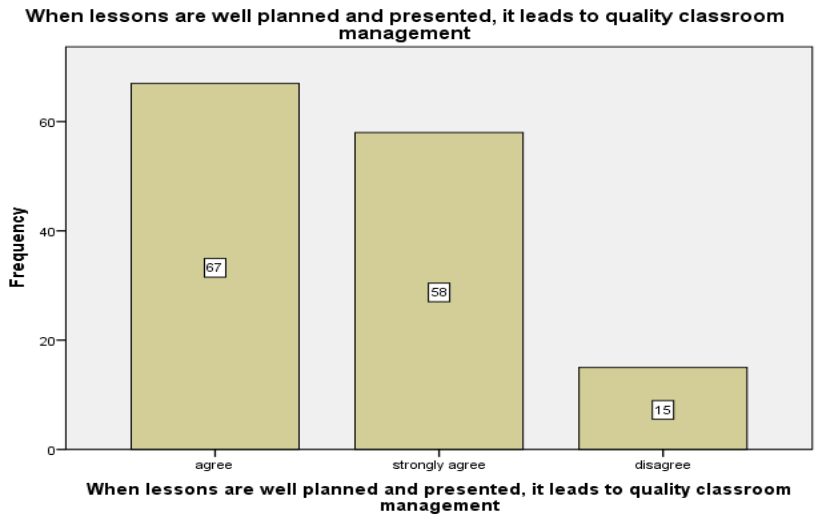
The Table and the Bar chat above (Table 27 and bar chats 23) shows the distribution of respondents according to how effective management of time can improve the quality of classroom management. The reaction of the respondents was mainly revealed in terms of frequency. According to the result, out of 140 respondents, 69 of them agreed that the quality of classroom is ameliorated when time is effectively managed. In that same light, 57 of them strongly agreed while 2 and 12 of them disagreed and strongly disagreed respectively.

From this results, one can see that an absolute majority of students (90%) affirmed by agreeing or strongly agreeing that quality of classroom is ameliorated when time is effectively managed while just 10% of them refuted by disagreeing or strongly disagreeing.

Table 28: Distribution of respondents according to their opinions on the planning of lessons

When lessons are well planned and presented, it leads to quality classroom management				
Modality	Frequency	Percent	Valid Percent	Cumulative Percent
Agree	67	47.9	47.9	47.9
strongly agree	58	41.4	41.4	89.3
disagree	15	10.7	10.7	100.0
Total	140	100.0	100.0	

Bar chats 24: Distribution of respondents according to their opinions on the planning of lessons



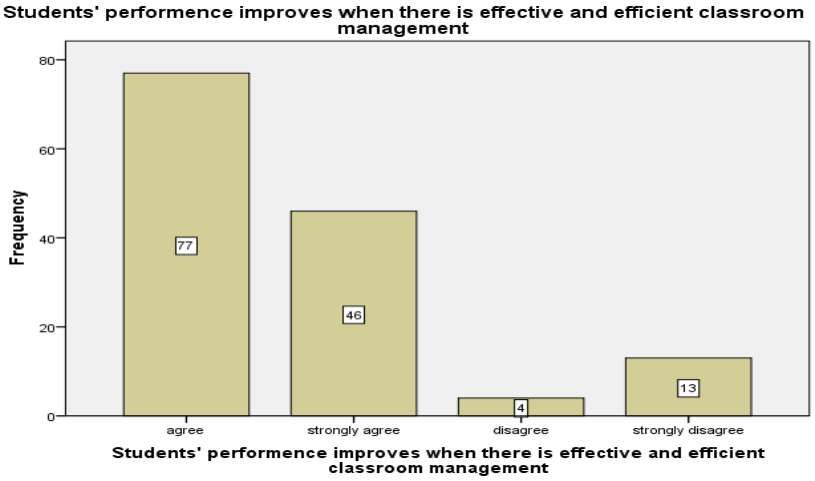
According to the result of Table 28 and Bar chats 24 above, out of 140 respondents, 67 of them agreed, 58 of them strongly agreed while 15 disagreed. An overview of the result in percentage shows that, 47.9 and 41.4% of respondent agreed and strongly agreed respectively while 10.7 % disagreed.

From these results, one can see that a relative majority of students (89.4%) affirmed that when lessons are well planned and presented, it leads to quality classroom management while just 10.7 of them refuted by disagreeing.

Table 29: Distribution of respondents according to their opinions on students' performance

Students' performance improves when there is effective and efficient classroom management				
Modality	Frequency	Percent	Valid Percent	Cumulative Percent
Agree	77	55.0	55.0	55.0
Strongly agree	46	32.9	32.9	87.9
Disagree	4	2.9	2.9	90.7
Strongly disagree	13	9.3	9.3	100.0
Total	140	100.0	100.0	

Bar chats 25: Distribution of respondents according to their opinions on students' performance



The Table and the bar chat above (Table 26 and bar chats 22) provides the distribution of respondents according to their opinions on students' performance. The reaction of the respondents was mainly revealed in terms of frequency. According to the result, out of 140 respondents, 77of them agreed, 46 of them strongly agreed while 04 and 13 of them disagreed and strongly disagreed respectively. An overview of the result in percentage shows that, 55.0

and 32.9% of respondent agreed and strongly agreed respectively while 2.9% and 9.3% disagreed and strongly disagreed respectively.

From these results, one can see that a vast majority of students (87.9%) affirmed that ICTs can contribute to the improvement of students' performance while only 12.2% of them refuted by disagreeing or strongly disagreeing.

4.2. VERIFICATION OF HYPOTHESES AND INFERENTIAL STATISTICS

In this section, each of the hypotheses of the study is restated and the variables are identified. The statistic needed to test each hypothesis is stated and the results of the data analysis are presented and interpreted. Each hypothesis is tested at 0.05 level of significance.

4.2.1. Hypothesis one

H_1: Effective exploration of internet contributes greatly to the amelioration of quality of classroom management in CA2D.

H_0=Effective exploration of internet does not contribute to the amelioration of quality of classroom management in CA2D.

Calculation of Chi-Square

Table 30: A contingency table showing the use of internet and classroom management

Internet * classroom Cross tabulation

Count

		Classroom						
		4.00	6.00	7.00	8.00	9.00	10.00	12.00
Internet	4.00	0	0	0	2	0	0	0
	7.00	2	0	12	0	0	0	0
	10.00	24	1	0	2	0	12	0
	11.00	2	0	1	0	1	0	0
	12.00	0	0	0	15	2	0	0
	13.00	12	13	1	12	0	0	12
	14.00	12	0	0	0	0	2	0
Total		52	14	14	31	3	14	12

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	256.586[a]	36	.000
Likelihood Ratio	211.912	36	.000
Linear-by-Linear Association	.207	1	.649
N of Valid Cases	140		

Choice of significant alpha = 0.05 or 5%

Determining the critical value of chi square:

- Degree of freedom is = (C – 1) (r – 1)
  Therefore, (7– 1) (7-1) = 6 x 6 = 36
- The critical value of chi-square with 36 as degree of freedom at the alpha 0.05 level of significance is 48.60 (see APPENDIX IV).

This value is compared with the calculated value to make a decision about the hypothesis. The calculated value of chi-square is 256.586

Thus, the calculated value of chi-square is greater than the critical value of chi square.

Decision rule

If the calculated value of chi-square is greater than the chi-square read, then we reject the null hypothesis (Ho) and accept the alternative hypothesis (Ha).

Decision

The calculated value of chi-square is greater than the critical value of chi-square and it falls in the rejected zone of the null hypothesis. In this regard, we reject the Ho and accept the Ha. Since the Ho is rejected, we have to determine the quality or magnitude of the relationship.

In order to do this, we use the contingency coefficient which is expressed as follows:

$$Cc = \sqrt{\frac{x^2}{x^2 + n}}$$

Where *n* is the sample size and X^2 is the chi-square calculated;

Therefore, $C^2 = \frac{x^2}{x^2 + n} = \frac{256.586}{256.586+140} = \frac{256.586}{396.586} = 0.64$

Since the data indicate a positive relationship between the two variables, to be positive, we have

$C = \sqrt{C} = \sqrt{.64} = 0.8$

Base on the chi-square analyses above, we can conclude that the contingency correlation is 0.8 indicating that there is a positive relationship between use of internet and classroom management.

4.2.2. Hypothesis two

H_1: Effective exploitation of the computer contributes significantly to the improvement of quality of classroom management in CA2D.

H_0: Effective exploitation of the computer contributes nothing to the improvement of quality of classroom management in CA2D

Calculation of Chi Square

Table 31: A contingency table showing the use of computers and classroom management

Computer * classroom management Cross tabulation								
Count								
		Classroom						
		4.00	6.00	7.00	8.00	9.00	10.00	12.00
computer	6.00	0	0	1	0	0	0	0
	7.00	0	1	0	1	0	12	0
	8.00	2	0	1	0	1	0	0
	9.00	0	0	0	2	0	0	0
	10.00	12	0	0	0	2	0	12
	11.00	12	0	0	2	0	0	0
	12.00	0	0	0	12	0	0	0
	14.00	0	0	12	0	0	2	0
	15.00	14	12	0	2	0	0	0
	16.00	12	0	0	12	0	0	0
	19.00	0	1	0	0	0	0	0
Total		52	14	14	31	3	14	12

Chi-Square Tests			
	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	399.552[a]	60	.000
Likelihood Ratio	295.429	60	.000
Linear-by-Linear Association	20.584	1	.000
N of Valid Cases	140		

Choice of significant alpha = 0.05 or 5%

Determining the critical value of chi square:

- Degree of freedom is = (C – 1) (r – 1)
  Therefore, (11 - 1) (7 - 1) = 10 x 6 = 60
- The critical value of chi-square with 60 as degree of freedom at the alpha 0.05 level of significance is 79.08

This value is compared with the calculated value to make a decision about the hypothesis. The calculated value of chi-square is 399.522.

Thus, the calculated value of chi-square is greater than the critical value of chi square.

Decision rule

If the calculated value of chi-square is greater than the chi-square read, then we reject the null hypothesis (Ho) and accept the alternative hypothesis (Ha).

Decision

The calculated value of chi-square is greater than the critical value of chi-square and it falls in the rejected zone of the null hypothesis. In this regard, we reject the Ho and accept the Ha. Since the Ho is rejected, we have to determine the quality or magnitude of the relationship. In order to do this, we use the contingency coefficient which is expressed as follows:

$$C=\sqrt{\frac{x^2}{x^2+n}}$$

Where n is the sample size and X^2 is the chi-square calculated;

Therefore, $C^2 = \frac{x^2}{x^2+n} = 399.552$ $\sqrt{0.09}$

399.552+180 = 399.552

579.552 = 0.68

Since the data indicate a positive relationship between the two variables, to be positive, we have

$C = \sqrt{C} = \sqrt{0.68} = 0.82$

Base on the chi-square analyses above, we can conclude that the contingency correlation is 0.82 indicating that there is a positive relationship between the use of computers and classroom management.

4.2.3. Hypothesis three

H_1: Effective exploration of mobile phones contributes significantly in the quality of classroom management CA2D.

H_0: Effective exploration of mobile phones does not contribute to the quality of classroom management CA2D.

Calculation of Chi Square

Table 32: A contingency table showing the use of mobile phones

Mobile phones * classroom Cross tabulation								
Count								
		Classroom						
		4.00	6.00	7.00	8.00	9.00	10.00	12.00
Phones	4.00	0	0	0	2	0	0	0
	5.00	0	12	0	0	0	0	0
	6.00	0	2	0	0	0	0	0
	7.00	0	0	1	0	2	0	0
	8.00	26	0	0	0	0	0	0
	9.00	12	0	0	14	0	0	0
	10.00	12	0	12	3	1	0	0
	11.00	0	0	0	0	0	12	0
	12.00	0	0	0	0	0	0	12
	13.00	0	0	1	12	0	0	0
	14.00	2	0	0	0	0	0	0
	16.00	0	0	0	0	0	2	0
Total		52	14	14	31	3	14	12

Chi-Square Tests			
	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	598.115[a]	66	.000
Likelihood Ratio	364.417	66	.000
Linear-by-Linear Association	30.753	1	.000
N of Valid Cases	140		

Choice of significant alpha = 0.05 or 5%

Determining the critical value of chi square:

- Degree of freedom is = (C – 1) (r – 1)
  Therefore, (12 - 1) (7 - 1) = 11 x 6 = 66
- The critical value of chi-square with 66 as degree of freedom at the alpha 0.05 level of significance is 84.82

This value is compared with the calculated value to make a decision about the hypothesis. The calculated value of chi-square is 598.115.

Thus, the calculated value of chi-square is greater than the critical value of chi square.

Decision rule

If the calculated value of chi-square is greater than the chi-square read, then we reject the null hypothesis (Ho) and accept the alternative hypothesis (Ha).

Decision

The calculated value of chi-square is greater than the critical value of chi-square and it falls in the rejected zone of the null hypothesis. In this regard, we reject the Ho and accept the Ha. Since the Ho is rejected, we have to determine the quality or magnitude of the relationship. In order to do this, we use the contingency coefficient which is expressed as follows:

$$C = \sqrt{\frac{x^2}{x^2 + n}}$$

Where n is the sample size and X^2 is the chi-square calculated;

Therefore, $C^2 = \frac{x^2}{x^2+n} = 598.115\ldots\ldots = 598.115+140$

598.115

738.115 = 0.81

Since the data indicate a positive relationship between the two variables, to be positive, we have

C = $\sqrt{C}$ = $\sqrt{81}$= 0.9

Base on the chi-square analyses above, we can conclude that the contingency correlation is 0.9 indicating that there is a positive relationship between the proper use of mobile phones and classroom management.

4.2.4. Hypothesis four

H_1: Effective exploitation of the online forum discussion contributes significantly in the improvement of quality of classroom management CA2D.

H_0: Effective exploitation of the online forum discussion contributes nothing to the improvement of quality of classroom management CA2D.

Calculation of Chi Square

Table 33: A contingency table showing the use of ODF

Online discussion forum * classroom management Cross tabulation								
Count								
		Classroom						
		4.00	6.00	7.00	8.00	9.00	10.00	12.00
ODF	7.00	0	0	0	2	0	0	0
	8.00	14	1	0	0	0	0	0
	10.00	14	0	0	0	0	0	0
	11.00	0	0	1	4	0	0	0
	12.00	12	1	0	12	1	12	12
	13.00	12	0	1	0	0	0	0
	14.00	0	12	0	12	0	0	0
	15.00	0	0	0	1	2	0	0
	17.00	0	0	12	0	0	2	0
Total		52	14	14	31	3	14	12

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	330.446[a]	48	.000
Likelihood Ratio	251.286	48	.000
Linear-by-Linear Association	11.957	1	.001
N of Valid Cases	140		

Choice of significant alpha = 0.05 or 5%

Determining the critical value of chi square:

- Degree of freedom is = (c – 1) (r – 1)

  Therefore, (9 - 1) (7 - 1) = 8 x 6 = 48

- The critical value of chi-square with 48 as degree of freedom at the alpha 0.05 level of significance is 62.83

This value is compared with the calculated value to make a decision about the hypothesis. The calculated value of chi-square is **330.446**

Thus, the calculated value of chi-square is greater than the critical value of chi square.

Decision rule

If the calculated value of chi-square is greater than the chi-square read, then we reject the null hypothesis (Ho) and accept the alternative hypothesis (Ha).

Decision

The calculated value of chi-square is greater than the critical value of chi-square and it falls in the rejected zone of the null hypothesis. In this regard, we reject the Ho and accept the Ha. Since the Ho is rejected, we have to determine the quality or magnitude of the relationship. In order to do this, we use the contingency coefficient which is expressed as follows:

$$C = \sqrt{\frac{x^2}{x^2 + n}}$$

Where n is the sample size and X^2 is the chi-square calculated;

Therefore, $C^2 = \frac{x^2}{x^2+n}$ = 330.446…… = 330.446+140

330.446

470.446 = 0.70

Since the data indicate a positive relationship between the two variables, to be positive, we have

C = $\sqrt{C}$ = $\sqrt{}$70 = 0.83

Base on the chi-square analyses above, we can conclude that the contingency correlation is 0.83 indicating that there is a positive relationship between online discussion forum and classroom management.

CHAPTER 5
INTERPRETATION OF RESULTS, RECOMMENDATIONS AND CONCLUSION

5.0. Introduction

In this chapter, the results obtained from verification of hypotheses will be interpreted, followed by a brief discussion of findings, and then recommendation and conclusion.

5.1. Interpretation of results obtained from verification of hypotheses

From the beginning of this study, our investigation was based on the use of ICTs in IRIC and to verify the extent to which its effective exploration can ameliorate the quality of classroom management in CA2D. It was in that light that the last section of the previous chapter was centered around four different hypotheses. In this section of our last chapter, we are going to recapitulate the results obtained from verification of hypotheses and then give interpretation to each of them. This will be followed by a detail discussion of finding.

5.1.1. Hypothesis one

This hypothesis postulates that; effective exploration of Internet contributes significantly to the amelioration of the quality of classroom management in CA2D.

Results obtained from the verification of this hypothesis revealed that the calculated value of chi square =256.586 and the critical value of chi square with 36 as degree of freedom at the alpha 0.05 level of significance is 48.60.

According to the decision rule, if the calculated value of chi square is greater than the chi square read, then we reject the null hypothesis (Ho) and accept the alternative hypothesis (Ha).

Judging from the results above, the calculated value of chi square is greater than the critical value of chi square. This result indicates that there is a positive relationship between effective exploration of internet and quality of classroom management. And the magnitude of this result shows that there exists a high relationship. This is because the value of contingency correlation is 0.8.

This can be explained by the fact that, out of 4 lecturers who were interviewed, everybody agreed that effective exploration of internet in classroom ameliorates the quality of classroom management. According to one of them, when lecturers use internet frequently to communicate, to pass out a communiqué, or evaluate students online, the quality of classroom management is ameliorated. Two lecturers also claimed that the use of ICTs such as internet serves better than the traditional method of classroom management where everything is based on physical contact.

Equally, out of 4 class delegates who were interviewed, all of them claimed that when lecturers use internet connection frequently to communicate, the students are updated on class events and this keeps them informed ahead of time.

However, this result goes in line with Chambers and Bax (2006) who in their review argued that ICT tools such as internet contributes to creating powerful learning environment in numerous ways. According to them, the use of ICTs changes the role of teachers from primary source of information to one who students with structure and advice, monitor their progress and access their accomplishments.

This can be explained by the fact that, with internet connection lecturers can structure the classroom in to virtual classes and monitor their activities even from afar.

But results revealed that internet connection in IRIC is poor. One of the administrators pointed out that there exists a network antenna in IRIC but this antenna has not been able to supply network to IRIC. He also added that, there is no WiFi connection that can complement the failure of large area networks to supply network in IRIC.

He also pointed out that it is also as a result of the lack of basic ICT competencies that most lecturers are reluctant to use ICTs in classrooms.

5.1.2. Hypothesis Two

This hypothesis holds that effective exploration of computer contributes significantly to the amelioration of the quality of classroom management.

Results obtained from the verification of this hypothesis revealed that the calculated value of chi square =399.552 and the critical value of chi square with 60 as degree of freedom at the alpha 0.05 level of significance is 79.08

According to the decision rule, if the calculated value of chi square is greater than the chi square read, then we reject the null hypothesis (Ho) and accept the alternative hypothesis (Ha).

The results above revealed that, the calculated value of chi square is greater than the critical value of chi square indicating that there is a positive relationship between effective exploration of computer and quality of classroom management. However, the value of the contingency correlation (0.68) show that the relationship is not just an ordinary relationship but a high relationship as Warschauer put in place (1996). This can be confirmed from results of our data analysis and interview. According to our analysis, out of 140 students who responded to our questionnaire, 53.6% of them use computers in classroom. Out of 4 delegates who were interviewed on the influence of ICT on Classroom management, all of them agreed that when lecturers use ICTs in classrooms, the quality of classroom environment is ameliorated. This was confirmed by interview from 4 lecturers who claimed that whenever they use computer in class, the quality of classroom management is improved

In his review, Warschauer (1996), argued that single class computer mediated communication projects to be beneficial to all. To him, computer assisted discussions tend to feature more equal participation than face-to-face discussion. Secondly, it allows students to incorporate the inputs from others messages into their own messages. Thirdly, it allows more planning time than does face-to-face. Finally, its place outside of the classroom which provides students an increased opportunity to communicate in their targeted language.

5.1.3. Hypothesis Three

The third hypothesis of this research postulates that; effective exploration of mobile phones contributes significantly to the amelioration of the quality of classroom management.

Results obtained from the verification of is hypothesis revealed that the calculated value of chi square =598.115 and critical value of chi square with 66 as degree of freedom at the alpha 0.05 level of significance is 84.82. According to the decision rule, if the calculated value of chi square is greater than the chi square read, then we reject the null hypothesis (Ho) and accept the alternative hypothesis (Ha).

Judging from the results above, the calculated value of chi square (598.115) is greater than the critical value of chi square (84.82). This result indicates that there is a positive relationship

between effective exploration of mobile phones and quality of classroom management in CA2D. The magnitude of relationship is a high relationship since the contingency coefficient is 0.9.

This result is in line with Schibeci and Co,(2008), who in their research argue that the more teachers are associate themselves with students through ICT interaction such as that of mobile phone calls, the better they are able to modify their class management approaches accordingly. In other words, when teacher get familiar with ICT, it can makes them to easily modify their approach of managing their classroom. In relation to ICT related pedagogical competency, they argued that many teachers adopted student-centered and collaborative and inquiry-oriented teaching practices. Which means that, teachers can easily modify their methods of managing the classroom from teachers -centered to students-center in order to suit the situation at hand, and when changes are being made to suit a particular situation in management, performances are likely to increase since the changes are meant to respond to particular situations.

5.1.4. Hypothesis Four

The fourth hypothesis of this research postulates that; Effective exploitation of the online forum discussion contributes significantly in the improvement of quality of classroom management CA2D.

Results obtained from the verification of is hypothesis revealed that the calculated value of chi square =330.446 and the critical value of chi square with 48 as degree of freedom at the alpha 0.05 level of significance is 62.83

According to the decision rule, if the calculated value of chi square is greater than the chi square read, then we reject the null hypothesis (Ho) and accept the alternative hypothesis (Ha).

According to the results above, the calculated value of chi square (330. 446) is greater than the critical value of chi square (62.83) indicating that there is a positive relationship between effective exploration of mobile phones and quality of classroom management in CA2D. The magnitude of this results shows that there is a high relationship since the contingency coefficient is 0.83. This idea was supported by Sheard (2004) who in his review argued that the number one issue preventing student success in online learning identified by recent studies

is a lack of time management skills possessed by the students. Through the provision of appropriate guidance and monitoring by the instructor, thereby ensuring interaction, communication, and collaboration, students are more likely to overcome such issues. To ensure effectiveness of the feedback provided by instructors to students on assignments and tests, communication must be timely.

From the beginning of this chapter, we have been interpreting the results of the hypotheses. In order to make these results more explicit, a brief discussion of our findings will be given in the paragraphs below. This discussion will be done under 4 sub headings that are related to classroom management in CA2D which are; management of online classroom environment(through coordination of students arguments in virtual classes), management of behaviors in virtual classes, management of time , management of communications.

Management of Online classroom environment (Organisation of classrooms)

The management of online classroom environment here involves the coordination and facilitation of online discussions.

As earlier mentioned, the result of our findings show a positive relationship between ICTs and Classroom management, but the main thing now is the attitude of administrator, lecturers and students.

The findings obtained from questionnaires and interviews of lecturers revealed that there is ODF in CA2D where lecturers share topics (repartition of tasks) for students to interact in virtual classes while they come in to coordinate and facilitate the discussion. It also shows that, very few lecturers practice the act of giving students topics to be argued in ODF in platforms .This interview added that course contents are understood when students are coordinated in their argument but most at times the coordination is being done by assistant lectures who at times do not intervene (lecturers' interview).

Findings from class delegates added, that at times some students do not participate while some copy and paste other students' ideas. It also revealed that facilitators always fail to communicate students in virtual classes on new events and most at times as a result, students fail to interact not because they are not willing to participate but because they are not informed.

This result also provides that it is as a result of poor network in IRIC campus that most students who live on campus fail to participate in ODF. Analysis from data of our questionnaires show that, 87.9% of respondent denied the fact that there is regular flow of internet connection in IRIC while 98.6% say internet connection is not fast.

This finding also show that, most students fail to intervene in ODF due to lack of computer or poor quality computers. It was also observed from the results of our questionnaires that 57.8% of students lack a computer while 32.1% of those who have suffer from low quality computers.

It was also discovered that the reason why some students are not effective in virtual classes could be as a result of lack of smart phones or low quality phones. Results from our data show that 37.9% of students lack smart phone that can enable them interact in ODF in virtual classes in platform. While 76.4% of them have low quality smart phones. This is partly is the reason why most students fail to participate in ODF.

Management of time

Management of time is another important aspect of classroom management that we shall discuss in this part of our research. Finding from lecturer's interviews show that, the use of ICTs positively affects management of time. According to two of our respondents (lecturers), ICT shortens the preparation time of the instructional activities. These lecturers also claimed that, when they use ICT tools like computer in classrooms, students understand very fast and this gives them opportunity to cover their course outline and even engage in other things which help them to complete their course content as planned.

Results from this interview also provided that, ICTs brings effectiveness in processes such as; starting the lesson, getting students' attention, reviewing information and previous knowledge, giving instructions for an activity, passing among the activities and students' response, checking understanding, setting homework/assignments, setting deadlines, reacting to homework and ending the lesson (interview from lecturers).

This result also added that, ICT usage such as computer and smart phones gives teachers the opportunity to deal with more activities in a given time.

Management of students Behavior

Students' behaviors here include student's ways of responding to others posting ODFs and during lectures. As to what concerns negative behaviors in ODF, two lecturers responded that they have been noticing and addressing negative behaviors in ODFs, but since they are not constantly in there to intervene due to lack of internet connection on campus, these behaviors keep persisting.

On the other side of managing students' behaviors, findings from lecturers who use Computers in classrooms revealed that, using ICT tools like computer in the classroom enable them to set their authorities in a better way.

Secondly, results of the interviews from one lecturer show that with the use of ICT lecturers are given greater chances to take individual differences into consideration and teach students the intended behaviors. This lecturer argued that whenever he uses ICT in classroom he pays attention to each student most of the time. To him, the use of ICT has a positive effect on students' behaviors. He claimed that whenever he fails to use ICTs such as computer and projectors in classrooms, he is always faced with the problem of noise making or students doing out of class activities (extra curricula).

Findings from this research also outlined that, when lecturers teach using the traditional method, most students are not allowed to express themselves or share their feelings and ideas (Lecturer). These findings also revealed that using technology such as ODF in classrooms and with effective guidance from lecturers make students feel more satisfied. This can be explained by the fact that when students participate in classroom activities effectively (ODF), they develop more self-trust and put up better relations in the classroom.

Last of all in regard to motivation, our finding revealed that using ICTs in classrooms motivates students (lecturer).

Management of communication

Under management of communication, we are going to look at it from the direction of language of communication, communication to guide students in their dissertations and communication on classroom events through class delegate.

As to what concerns language of communication, findings from lecturers interview revealed that when lecturers use ICTs (computer connected to internet) to interact with students, students develop a more powerful language of communication than when they are face-to-face. This finding holds that it is because most students are shy of their lecturers that they cannot express themselves fluently.

The second aspect of this finding on management of communication holds that, when lecturers use mobile phones, internet and ODF in communicating students on classroom events (through class delegates), students are psychologically prepared on how things are programmed.

An overview of the discussions above portrays that, there exists a positive relationship between ICTs and Classroom management but detail investigation shows that the use of ICTs is not effective due to problems like frequent power failure, poor network, lack of technological infrastructures, lack of skills, reluctances to accept change, poor methods applied in the usage ICT tools in classrooms.

Findings from lecturers and administrators revealed that the reason why ICT related problems are existing despite all the measures put in place by the government is because policy guiding the effective integration of ICTs in IRIC just like any other higher institution in Cameroon are inadequate.

5.2. RECOMMENDATIONS

Several public policy recommendations and initiatives follow from the results of the present study. They are treated under sub-topics that are related to the phenomenon under study. They are as follows:

To the Government of Cameroon

There is the absence of a national policy that engulfs the manner in which ICTs should be integrated into the functioning machinery of a country like Cameroon. It is every unit that designs its own *modus operandi*; a situation that has led to a kind of anarchy in the way it is implemented. This state of affairs has caused a lot of mishaps in the whole system and hence, needs remediation. The time for action is therefore now.

The organization of a National forum on ICTs in education

Some best practices exist here and can be tapped by the educational sector for its prosperity. It is true that in 1995, a National Education Forum was organized in Cameroon; but, it has been long and what is clear is that by then, the integration and use of ICTs was not yet at high gear in Cameroon in general and in the educational sector in particular. The need for such a forum which this time around is supposed to be wider in spectrum is therefore rife today.

The researcher strongly recommends that a National forum on the integration of ICTs in education in Cameroon be organized and the results of which should culminate in the definition of an ICTs implementation policy.

Education is not only an affair of those that are directly involved; it is an affair of the educational community as a whole. When we talk of an educational community, we are referring here to learners, facilitators, administrators/managers, parents and guardians. All these categories of people including the civil society, Non-governmental Organizations and other bodies relating thereto need to be part and parcel of such a National discussion panel to chip in their own modest contributions in terms of ideas on the path that the use of ICTs in the educational arena supposed to take.

Since there is no National policy based on the adoption of ICTs in education in Cameroon for now, the various points of view sampled from participants during this seating should be drafted in a strategic document that spells out in clear terms how the technological innovation should be integrated. It should also specify the various levels and time frames within which the technology needs to be implemented; not leaving out possible sanctions that await defaulters. The document should be published in the official gazettes in both English and French for the reading and understanding of the entire Cameroonian educational community.

The application of this recommendation in effect allows for the harmonization of the whole process and will go a long way to fill the ICTs awareness disparity gap that is today prevailing even among people who have the same educational or training levels. It is certain that not everybody will be able to acquire the knowledge at the same rates; but what is clear is that people who have followed a certain training program will be endowed with basic skills that can help them to realize a number of operations with little or no assistance.

The training of ICTs experts and the subsidization of already existing training agencies

Even though the ICTs' culture is gradually gaining grounds in Cameroon, not very many experts exist in this domain. Most of those who endeavour to follow strictly ICTs oriented programs still face lots of difficulties as far as the realization of complex operations is concerned. Most of these persons complain of the rift between theoretical and practical trainings; a situation that calls for alternative action(s).

The researcher encourages the government of Cameroon to support ICTs-based training and research by investing more than ever before in training grants and individual graduate studentships.

This recommendation should not be pursued at the expense of scientific and geographic diversity. Rather, we encourage the establishment of small, focused training-grant programs for state university officials in Cameroon that have groups of highly productive institutions in important specialized ICTs related fields; but might not have the number of departments needed for more traditional, broad-based training grants.

Our endorsement of training grants and studentship is not intended to result in the training of more certificate holders, which we argue would be entirely inappropriate. Rather, any growth in the numbers of trainees supported through an expansion of training grants should come at the expense of the numbers of trainees supported on research grants. Thus, the implementation of this recommendation should not only produce an increase in the number of learners but also a change in the mechanism by which their training is supported by state funds.

The researcher recommends that higher institutions should work to identify specific fields of Computer Science for which Bachelor's degree training is more appropriate, more efficient and less expensive than Master's training and that focused Bachelor's degree programs be established in such fields.

A consolidation of the Bachelor's degree program in ICTs will require that new programs be intimately tied to the opportunities in the labour market. Certainly, there is a need for persons with Computer knowledge to enter all forms of career. Intensive efforts should therefore be to change the nature and extent of Computer Science education in our higher institutions. Those efforts, based on the National Science Education Standards and similar reform documents

should emphasize the teaching of Computer Science as inquiry and practice rather than as words definition and association.

None of this will be possible without a structural change in the profession of pre-university teaching and a large cadre of people who both understand computer science and its nature as inquiry and have been trained as lead teachers/facilitators and computer science resource specialists. Focused and intensive Bachelor's degree programs would be not only more appropriate but also preferable to the graduate for this type of employment.

Interdisciplinary Bachelor's degree programs might combine advanced Computer Science training with studies in non-scientific fields such as management, public affairs and engineering that would prepare candidates for positions in both the public service and industries. A vigorous Bachelor's degree program that produces highly skilled Computer Engineers for industries, government and academe could potentially contribute to righting the imbalance between graduate training and the labour market. One way to resolve this dilemma is to effect a modest shift towards a more permanent engineering workforce by replacing some fraction of the existing training positions with permanent employees, such as BA and MSc-level Engineers and PhD-level research associates in the said field.

The creation and updating of ICTs infrastructure

We cannot talk of information and communication technologies in an entity where adequate provision for infrastructure is not made. The absence or the inadequate supply of these structures limits the extent to which it is used and the outcome is catastrophic to the entire organization. It is not news that IRIC suffer from an acute problem of infrastructure. This ranges from the most basic to the most complex ones.

In fact, the multi-media centers that supposed to be a prerequisite for the use of ICTs in this institution are barely inexistent. This affirmation stems from the fact that even those that are said to be existing are either not operational or need much to be desired. While some are never seen open, others are few in number and are too small in size so much so that it becomes so difficult for them to accommodate the thousands of students that usually come knocking at the doors of higher institutions every academic year.

The researcher recommends that a good number of spacious, staffed and well equipped multi-media centers and/or High-tech centers be created in all campuses of institutions of higher learning.

There is a reason for this recommendation. It is true that members of the university community are more and more equipped with sophisticated ICTs gadgets that can be used to do everything that is done in a multi-media or a High-tech center, but one should also note that not all persons, especially students are at the same level when it comes to per capita income. There are students from wealthier backgrounds who do not find any major problems when it comes to the use of ICTs on the university campus. But on the other hand, there are others that come from very poor backgrounds and tend to depend solely on the services that multi-media High-tech centers can offer, especially in terms of academic assignments. Such a populace is for now vulnerable in institutions of higher learning, given the inadequate provision of these centers and stands a chance of producing vexing outputs in terms of academic performances. So, it is high time for such centers to see the light of day.

The mere creation of the said multi-media/High-tech centers will however not be a panacea if it is not accompanied with the recruitment of experts in the ICTs World to man such projects and the equipment of the centers with up-to-date computers and high speed internet or Wi-Fi services. If this is not done and we contempt ourselves with the spacious nature of the halls, then the problem would not have been solved in any way. Such a situation will only lead us back to the present state of affairs that is marred by the prevalence of non-operational or *ghost* multi-media centers that some of our higher institutions are harboring.

The integration of ICTs into the curriculum of all institutions of higher learning

Ever since ICTs were embraced in the Cameroon educational system, very little efforts have been made to foster its integration into the curriculum of universities. Some remarkable emphases have so far been laid on its integration into the curriculum at lower levels of the scholastic ladder. This is a laudable initiative anyway; for mindsets are fashioned when they are still young. But if we look at the turn the global economy is taking nowadays, we may not be wrong to suggest another dimension. It is true that traces of ICTs are already found in the curriculum material contents of some institutions of higher learning, especially when it concerns specialized disciplines and that should be the more reason why we now have Computer Engineering faculties and departments in some of our universities. However,

this is basically for persons who may want to take a career in ICTs-oriented fields. What about people who just need the knowledge for the running of their day-to-day affairs? Those in the former case account for a meager portion of the university population while the latter is plentiful.

The researcher strongly recommends that the teaching and learning of information and communication technologies should be embedded into the course content materials of every discipline.

There is a veritable need for the teaching and learning of ICTs in Cameroon to be capitalized on and brought down to all levels of the higher educational ladder. The realization of this recommendation will give room for students to put in more efforts on the learning of ICTs and will be able to have a broad-based knowledge on the said technology and the opportunities that it offers at the time they are leaving the university. With such knowledge therefore, they will be able to reap a lot of benefits from when they finally integrate themselves into the professional World or the society which today is computer dominated. Teaching ICTs only at the Master's cycle as it is being done in some universities is synonymous to holding a snake in the middle. Such a situation gives room for more danger than resolving the problem.

To higher education authorities

We have earlier indicated that there is not yet a national and/or a sectorial policy that governs the integration or effective use of information and communication technologies in the Cameroon educational system in general and in the university environment in particular; a situation that gives room for university authorities to decide on the fate of such a technology in their various institutions in dispersed ranks. While waiting for the development of such a policy as recommended above, the university authorities can still be given the powers to effect some changes as far as the effective use of the technological innovation in the university management system is concerned.

The *creation of more access to* ICTs

Ever since ICTs saw its presence in the educational sector in general and in IRIC in particular, access to it has up till date remain a mere nightmare. It is true that some efforts are made at various levels to ameliorate accessibility to this technology of our time; but findings have

proven that the best is yet to come. This involves access to ICTs gadgets and software/applications that can be used to realize a number of complex operations.

Recommendation 06: The researcher recommends that state higher education authorities should re-orientate their institutional policies and reforms in a way that ICTs will occupy a significant position.

The realization of this recommendation warrants the purchase of more equipment and the diffusion of messages that can go a long way to promote the effective use of ICTs in the university environment. The said equipment include: computers of all forms; printers, photocopiers, scanners, digital cameras, sound systems, broad-band internet service, electricity backup systems et cetera. They are expected to be installed in administrative offices, amphi theatres, student leaders' offices and in other places where their usage is needed. Emphases should also be laid on those devices and applications that can suite the taste of the present generation which according to President Paul Biya is of the *Android Generation*.

The installation of broad-band internet service

The researcher is through this master-piece recommending that the powers that be in IRIC should endow the campus with broad-band internet services that can accommodate a good number of users.

The accomplishment of this recommendation is possible through two major ways; that is, the installation of a broad-band internet service on the one hand and the autonomization of Wi-Fi in the various sectors of activity. Broad-band internet service is necessary in areas that carry on complex activities and those that involve a huge number of users such as computer or multi-media centers, virtual campuses and digitalized libraries.

Still, this service should be installed in a way that students residing closer to the campus should be able to surf while in their rooms and if it must be paid for, then it should be as extensive and rapid as possible so that users can be able to reap the most from it.

The multiplication of energy sources

To counter this problem energy shortage, there is the need for other sources of energy and a back-up system that can retain electrical energy for at least two days to be put in place.

The researcher is here recommending that IRIC authorities should do all they can to multiply the sources of their energy and proceed by making them to be present everywhere on campus while laying more emphasis on the installation of back-up systems.

Apart from electrical energy that is used today, solar and wind energy and other renewable energy sources could also be explored and integrated into the system. While searching for such energy sources however, automatic stand-by generators should be installed to ensure continuous electricity supply in the meant time.

To the teachers

Most lecturers in IRIC are people of a certain generation or age group; a generation that is not very versed with ICTs. However, as some informants put it, the ICTs race is not more a matter of choice; either you use it or you are preparing for your own death. There are forums through which each and every one of us irrespective of our generations can upgrade our skills in ICTs. It is now up to us to take interest in ICTs; put in more effort and we will find it going, since determination leads to success. It is said or written nowhere that ICTs are only for youths; it is for everybody, provided we put in an extra effort. And since culture is learned and not inborn, there is still hope that such lecturers can still make it.

The development of ICTs skills among IRIC lecturers

There are very many emerging complex activities that most lecturers do regard them as being difficult for them to realize. For instance, most lecturers do not yet have the capacity to design their courses by themselves in say a laptop, calculate students' marks via applications such as Microsoft Excel, conduct virtual discussion forums, deliver online courses and design questions with the use of specialized software for tele-evaluation sessions. This is appalling and disgraceful for members of a community that is reputed for being the citadel of knowledge.

I, the instant researcher is launching a yelling appeal for all Cameroon state university lecturers irrespective of their gender, ages and academic status or profile to up-grade their skills in ICTs.

The realization of this recommendation warrants the regular organisation of ICTs related seminars, discussion forums, conferences and in-service training sessions for the teaching staff. The lecturers are expected to be briefed and taught on how to handle every innovation during such working sessions.

The importance of the realization of this recommendation therefore cannot be over emphasized upon. Studies have proven that there are lots of advantages that are reaped from managing classroom activities (instruction inclusive) with ICTs. We have earlier enumerated them in chapter six above and it will be laborious going back to them.

To IRIC students

They take initiatives that are laudable and can be very productive as far as the reinforcement of ICTs usage is concerned in IRIC.

The creation of ICTs oriented clubs/associations in IRIC

Clubs and associations of different linings have proven their worth in most educational setups lately. They appear to be appropriate avenues through which revolutionizing and/or reformative messages can be transmitted. The 1990 liberty laws in Cameroon give a green light for such forums. However, they must be purposeful and be adequately controlled; for students are susceptible to falling prey of all sorts of wayward attitudes. In that light, the creation of an ICTs-oriented club or association should not be extended to involve advocacy for cyber criminality in any of its forms; for cyber criminality is one of the threats that the World at large is grappling with today. Such organizations should instead shun cyber criminality and other forms of crime to the last man standing.

The researcher is recommending that students should take it as a duty to multiply the creation of ICTs oriented clubs/associations that can serve as mediums through which the ICTs adoption and effective use message can be diffused.

Some efforts relating to the above recommendation are already visible in the campus of the University of Buea, especially at the College of Technology and Faculty of Engineering and Technology. Here, associations like: College of Technology Students' Union (COTECH), Faculty of Engineering and Technology Students' Association (FETSA), etc with strong messages do exist.

5.3. Limitation of Study

This research was base on how the use of ICTs can influence classroom management in a department in IRIC (CA2D). At the beginning of this study, the following limitations were identified:

Firstly, the study was limited by the sample size. In other word, the research which was centered on the influence of ICTs in Classroom management was carried out in just one department whereas the use of ICTs is practiced in almost all the departments in IRIC. This made the sample size to be very small.

Secondly, the study on ICTs and classroom management was limited within just four ICTs tools; internet, computer, mobile phones, Online Discussion Forum. Meaning that only four ICT tools were used to determine how ICTs influence classroom management. In real life, there exist a good number of ICTs tools that stakeholders in CA2D use in managing classrooms which the researcher has not mentioned.

Moreover, the study was limited by the honesty and charity with which the respondents provided answers to the influence of ICTs in Classroom management. Although the participants were not obliged to provide their name on the questionnaire, there is always the possibility of lack of honesty and charity. Due to the length of the questionnaire involved in this study, participants may have rushed through the questionnaire without thoroughly considering their responses. Worst is the fact that most of them complained they don't understand what classroom management is all about.

In addition, the study was limited by the number of information the researcher got concerning ICTs and classroom management in IRIC. This can be explained by the fact that some necessary information which the researchers asked from the administration of IRIC in order to make this research look best was not put at his disposal. For example students' performances in online test and arguments in ODF were not put at the disposal of the researcher.

Furthermore, the study was limited by the number of books he explored in order to come out with this project. In short throughout our being in the field, it was discovered that the concept of classroom management is still a new thematic in most school in Cameroon and Africa as a whole. As such, very few authors have written books on ICTs and classroom management.

5.4. Research for future study

This research was centered on the influence of some ICT tools on classroom management in CA2D. This research was based on how ICT tools like internet connection, computer, smart phones and online Discussion Forum influences classroom management within a particular department in IRIC. As earlier mentioned, this study has limitation, and the research urge that for those wishing to carry out further research on the influence of ICTs on classroom management in IRIC;

He or she should extend his or her sample size to the all the departments of IRIC so as to know whether the same problem that CA2D is facing is a global phenomenon or a bias to CA2D. This is because it is very possible to see an institution where some departments are not treated equally like other because of one thing or the other.

Equally, he or she should exploit the influences of other ICT tools like whatsApp, facebook, Email and others. This is because there have emerged other ICTs that lecturers use today in managing their classrooms other than the ones we have exploited in this research.

In addition, future researchers should choose convincing periods where all the stakeholders of IRIC are available so that he can have all the necessary information needed for the realization of his research. If possible, persistency and patience should be exercised so that the administration can see extra seriousness and gain confide secret information to the researcher.

Furthermore, future researchers should seek book on ICTs and classroom management out of town in order to enrich their research. While doing that, the researcher should budget enough money to buy online books on ICTs and classroom management.

GENERAL CONCLUSION

In the world of globalization, ICT as an innovation has contributed enormously to educational development. This is as a result of its omnipresence in the life of the society and its positive impact in educational development. Because of all these, Cameroon had to introduce it in her educational system. As earlier mentioned, the integration of ICTs in the educational system of Cameroon took place since 2001.And since its official introduction, higher institutions in Cameroon including IRIC are practicing the use of ICTs in their affairs, but it is so surprising that 16 years after, the impacts of ICT has not been felt in classroom management in CA2D, IRIC. It is in this light that, the researcher centered his work on the influence of ICTs on Classroom management: the case of some ICT tools in CA2D.

This research, structured in five different chapters had as main objective to determine the degree to which effective use of ICTs contributes to the amelioration of classroom management in CA2D.The principal research question in this study was; to what extent can the effective use of ICTs contributes significantly to the amelioration of classroom management in CA2D? .The main hypothesis on its part claimed that the effective use of ICTs contributes significantly in classroom management in CA2D.

The idea behind of this research is that, effective use of ICTs in Classrooms can influence the way in which classrooms are being managed positively. In other word, effective use of ICT tools like internet, computer, mobile phones and ODF can help lecturers in managing communication, organize and coordinate discussions in virtual classes, manage student's behaviors and management of time.

During our field work, data was collected with the aid of questionnaires and interview guide. The Chi square technique was used to analyze the quantitative data. Data collected for this research were analyzed and hypotheses verified. The results obtained from the verification of hypotheses 1,2,3 and 4 gave a contingency correlation of 0.8,0.82,0.9 and 0.83 respectively, indicating that there is a high relationship between ICTs and classroom management in CA2D. But is it very surprising that the use of ICTs is ineffective. Findings revealed that network is poor in IRIC. It also revealed that infrastructural development is poor in IRIC. As

if that was not enough, there is frequent power failure and stakeholders lack ICT skills while others resists to accept change.

According this research, the main reason behind all these problems is that, policies designed to guide the effective integration of ICTs in classroom activities are inadequate.

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ANNEXES

Annex 01: Questionnaires

RÉPUBLIQUE DU CAMEROUN
PAIX-TRAVAIL-PATRIE
****
UNIVERSITÉ DE YAOUNDE I
****
FACULTÉ DES SCIENCES DE L'EDUCATION
****
DÉPARTEMENT DEMANAGEMENT DE L'EDUCATION
******

REPUBLIC OF CAMEROON
PEACE-WORK-FATHERLAND
****
THE UNIVERSITY OF YAOUNDE I
****
FACULTY OF EDUCATION
****
DEPARTMENT OF EDUCATIONAL MANAGEMENT
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Questionnaire for students

Dear Respondents,

I am a master's II student in the University of Yaounde I, Faculty of Science of Education from the department of Education Management. I am writing a memoire on the topic "**The Influence of ICTs on Classroom Management" The case of some ICT tools in International Cooperation, Sustainable Development and Humanitarian (CA2D).** In that light, I am so delighted to meet you and I plead that you help me realize this project by filling the information below. With a lot of confidence, I count on your kind collaboration.

SECTION A: Identification question

1) Name (optional)……

2) Option…….....

3) Level of studies……

4) Gender……

5) Age 20-30 ☐ 31-40 ☐ 41-50 ☐ 50+ ☐

6) Date……

8) Place ……

In the table beside each of the statements below, please mark a tick to indicate whether you Strongly Agree (SA), Agree (A), Disagree (D), Strongly Disagree (SD).

SECTION B: Internet

SS	A	D	SD

9) Internet connection is needed in classroom activities in IRIC campus.

10) There is regular flow of internet connection all the time.

11) Internet connection covers everywhere on campus.

12) Internet connection is fast and accessible in IRIC Square.

SECTION C: Computer

SA	A	D	SD

13) I use computer in classroom activities.

14) I have a computer at my disposal which I explore in lessons where lecturers use ICTs in pedagogic activities

15) I use computer frequently during such classes

16) Lecturer use computer in teaching in CA2D

17) The quality of computer I use has the standard needed by lecturers

SECTION D: Mobile phones

SA	A	D	SD

18) Students use Smart phones in classroom activities in CA2D.

19) I use Smart phones frequently in classes where ICTs are being used.

20) The quality of my phone permits me to do all classroom activities.

21) My smart phone has all the necessary applications I need to fulfill my task in class.

SECTION E: Online Discussion Forum (ODF)

SA	A	D	SD

22) There is ODF in CA2D where students interact with each other on a particular topic

23) ODF in CA2D is accessible to everyone everywhere

24) The ODF is effective and coded so that students cannot fraud

25) Course content are understood when students interact in ODF on that particular topic

26) We frequently use ODF to write online tests

27) Materials are available in ODF that students can download to enrich course content

SECTION F: Classroom Management

SA	A	D	SD

28) The quality of classroom is ameliorated when there is effective communication between students /student and student lecturer

29) When time is effectively managed, the quality of classroom management is improved

30) When lessons are well planned and presented, it leads to quality classroom management

31) The quality of students' performance improves when there is effective and efficient classroom management.

Annex 02: Interview guides

RÉPUBLIQUE DU CAMEROUN
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FACULTÉ DES SCIENCES DE L'EDUCATION
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DÉPARTEMENT DEMANAGEMENT DE L'EDUCATION
******

REPUBLIC OF CAMEROON
PEACE-WORK-FATHERLAND
****
THE UNIVERSITY OF YAOUNDE I
****
FACULTY OF EDUCATION
****
DEPARTMENT OF EDUCATIONAL MANAGEMENT
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Interview guide for class delegates

Dear Respondents,

I am a master's II student in the University of Yaounde I, Faculty of Science of Education from the department of Education Management. I am writing a memoire on the topic "**The Influence of ICTs on Classroom Management" The case of some ICT tools in International Cooperation, Sustainable Development and Humanitarian (CA2D).** In that light, I am so delighted to meet you and I plead that you help me realize this project by filling the information below. With a lot of confidence, I count on your kind collaboration.

Questions

-what do you understand by ICT in classroom management?

-how do you use the in your day-to-day activities?

-how do you get ICTs to operate your day to day activities in class?

-what are some of the difficulties that you usually encounter when using the ICT?

-what mechanism have put in place as an individual to remedy the situation?

-what is your opinion about ICT policies put in place by IRIC and the Government?

-how can you access the contribution of ICT in classroom management and the influence of classroom management on students' performances?

-what do you think can be done by the government, NGOs and IRIC to ameliorate the state of ICT integration at which IRIC is now.

Thanks for collaborating.

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****
DEPARTMENT OF EDUCATIONAL MANAGEMENT
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Interview guide for lecturers

Dear respondents,

I am a master's II student in the University of Yaounde I, Faculty of science of Education from the department of Education Management. I am writing a memoire on the topic "**The influence of ICTs on Classroom Management" The case of some ICT tools in CA2D.** I have been authorized by the administration of IRIC to conduct this interview that will help me with the necessary information needed for the realization of this research and I plead that you should help by collaborating with me. I am counting on your kind collaboration.

Questions

-As a lecturer what do you understand by ICT in classroom management?

-How do you use ICTs in your day-to-day teaching activities?

-How do you get these ICTs?

-What are some of the difficulties that you as a lecturer encounter when using the ICT?

-What mechanism have you put in place as an individual to remedy the situation?

-What is your opinion about ICT policies put in place by IRIC and the Government?

-What is your opinion about the effectiveness of ICT integration in IRIC?

-How can you access the contribution of ICT in classroom management and the influence of classroom management on students' performances?

-What do you think can be done by the government, NGOs and IRIC to ameliorate the state of ICT integration at which IRIC is now.

Thanks for collaborating

RÉPUBLIQUE DU CAMEROUN
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FACULTY OF EDUCATION
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DEPARTMENT OF EDUCATIONAL
MANAGEMENT
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Interview guides for administrators

Dear respondents,

I am a master's student in the University of Yaounde I, Faculty of Science of Education from the department of Education Management. I am writing a memoire on the topic "**The influence of ICTs on Classroom Management" The case of some ICT tools in CA2D.** I have been authorized by the administration of IRIC to conduct this interview that will help me with the necessary information needed for the realization of this research and I plead with much honor that you should collaborate with me. I am counting on your kind collaboration.

Questions

-What do you thing about the integration of ICT as pedagogic tool in IRIC?

-What is ICTs used for in IRIC (by students, lecturers and administrators)?

-How do they get these ICTs?

-What is your idea about policies put in place to guide the use of ICT as pedagogic tool in IRIC?

-What are the challenges IRIC faces in using ICT in pedagogic activities?

-What mechanism(s) has the institution put in place to remedy the situation?

-how can you access the contribution of ICT in classroom management and subsequently students' performances?

-What do you think can be done by the government, NGOs and IRIC to ameliorate the state of ICT integration at which IRIC is now.

Thanks for collaborating

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