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DIGITALISATION OF SCHOOL INFORMATION SYSTEM AND EFFECTIVE SCHOOL ADMINISTRATION IN SELECTED SECONDARY SCHOOLS IN YAOUNDE MUNICIPALITY

A dissertation submitted in partial fulfilment of the requirements for the award of a Master of Education in Educational Management

Speciality: School Management Information System

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JUNE, 2024

CERTIFICATION

This is to certify that this work title **"DIGITALISATION OF SCHOOL INFORMATION SYSTEM AND EFFECTIVE SCHOOL ADMINISTRATION. CASE OF SELECTED SECONDARY SCHOOLS IN YAOUNDE MUNICIPALITY**" is carried out by Ngwefor Adeline, Matricule No. 19Y3392.This work is original and no part of it has been published in this institution or a different institution by another researcher.

To

Forbah's Family

ACKNOWLEDGEMENTS

A dissertation of this magnitude cannot be accredited to an individual. My sincere gratitude and appreciation is hereby extended to the following people who contributed greatly to the realization of this work. The pride of place goes to my supervisor, professor Maingari Daouda, who accepted to supervise this work and whose valuable remarks, criticism, advise, comments suggestions and consistent encouragements pushed me to finish in the record time.

I am highly indebted to all my lecturers of the Faculty of Education and all the lecturers for the pains they took in training me.

Again, I would like to extend my gratitude to my classmates and friends, special thanks to Ngwemeta Nchangako Clautilde, Munchoh Ghisler Tembock, Chuyong Vera Beri, Neye Ngwie Regina,Tewom chouchou, Tufoin killian, and Neba Peter for all their inspiration and motivation towards the realisation of this work.

Finally, I would like to thank my parents for their unconditional love and support, both financially and emotionally throughout my study, the patience and understanding my mother and siblings shown me during this period. I greatly appreciate.

ABSTRACT

The purpose of this study was to investigate Digitalisation of School Information System and Effective School Administration. School administrators deal with issues in the area of their responsibility, how resources are used, bureaucratic procedures, student success, they are concerned about various school-related groups, a lack of funding, poor parent communication, a lack of support from upper management, and teacher disinterest. The study adopted the descriptive survey design frequency, percentage, mean ` and standard deviation. Data was collected using a Likert scale questionnaire administered to thirty-five Principals, thirty-five Vice Principals and thirty-eight Head of Departments in the Yaoundé municipality. The finding of the study revealed that digitalisation of school information system has a positive influence on effective school administration. Also, the study findings revealed the high availability of ICT devices and its accessibility. The study established a positive relationship between the process of implementation and effective school administration in secondary schools. Sustainable management of ICT devices increases administrative effectiveness if well used. Ordinal regression was used to test the various hypotheses and to show the extent to which digitalisation of school information system influences effective school administration.

Keywords: Digitalisation, School, Information Management System, School Administration

RESUME

L'objectif de cette étude était d'étudier la digitalisation du système d'information scolaire et l'efficacité de l'administration scolaire. Les administrateurs scolaires sont confrontés à des problèmes dans leur domaine de responsabilité tels que: gestion, utilisation des ressources, procédures bureaucratiques, réussite des élèves. Ils sont préoccupés par divers groupes liés à l'école, le manque de financement, la mauvaise communication avec les parents, le manque de soutien de la part des cadres supérieurs et le désintérêt des enseignants. L'étude a adopté le modèle d'enquête descriptive : fréquence, pourcentage, moyenne et écart-type. Les données ont été collectées à l'aide d'un questionnaire à échelle de Likert administré à trente-cinq directeurs d'école, trente-cinq directeurs adjoints et trente-huit chefs de département dans la municipalité de Yaoundé. Les résultats de l'étude ont révélé que la digitalisation du système d'information scolaire a une influence positive sur l'efficacité de l'administration scolaire. En outre, les résultats de l'étude ont révélé la grande disponibilité des dispositifs TIC et leur accessibilité. L'étude a établi une relation positive entre le processus de mise en œuvre des TIC et l'efficacité de l'administration scolaire dans les écoles secondaires. La gestion durable des dispositifs TIC augmente l'efficacité de l'administration si elle est bien utilisée. La régression ordinale a été utilisée pour tester les différentes hypothèses et pour montrer dans quelle mesure la digitalisation du système d'information scolaire influence l'efficacité de l'administration scolaire.

Mots-clés : digitalisation, école, système d'information, administration scolaire

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LIST OF ABBREVIATIONS

ADCOME : Association for Development, Communication and Environment

ADEA : The Association for Development and Education in Africa

BP : Brevet Professionnel

BEPC : Brevet d'Etudes du Premier Cycle

CAP : Certificat d'Aptitude Professionnelle

CD-ROM :Compact Disc Read-Only Memory

CIAC : Computer and Internet Access Centres

DOI : Diffusion of Innovation Theory

DSO : Designated School official

DSS : Decision suport System

EDB : Education Data Bank

EFA : Education for All

EMIS : Education management information system

ETSSP : Education and Training Sector Strategy Paper

G C E : General Certificate of Education

HODs : Head of Departments

ICT : Information and Communication Technology

IDSC : Information and Decision suport centre

LAN : local area Network

MDGs : Millennium Development Goals

MIS :Management information system

NDB : National Data Bank

NDS : National Development Strategy

NEMIS : Nigeria Education management information system

NGOs : Non-Governmental Organisations

PDA : Personal digital assistant

PTA : Parents Teachers Association

SDGs : Sustainable Development Goals

SEVIS :Student and Exchange visitor Information system

SMIS : School management information system

UDHR : Universal Declaration of Human Rights

UN : United Nations

UNESCO :United Nations Educational, Scientific and Cultural Organization

UNDP : United Nations Development Programme Organization

UNFPA :The United Nations Fund for Population Activities

UNICEF : United Nations International Children's Education Fund

USB : universal Serial bus

UTAUT : Unified theory of acceptance and use of technology

VCD Video Compact Disc

CHAPTER ONE
INTRODUCTION

The development of information technologies has significantly contributed to schools in teaching, learning, and administration. Computers have become part and parcel of modern society in general and education is one of its components. Information Technologies have reached a state of high priority in education. Recently, the contributions of information technologies to education have been among the most emphasized subjects (Tagbo, 2024).). Every society aims to train citizens who can develop their nation economically and technologically. Also, an extensive amount of investment that has gone into introducing information and communication technology (ICT) into schools including hardware, software, networking, and staff development will be considered worthwhile if there is evidence that it has made a commensurate impact on school performance and effectiveness (Kristiyanti, Alexandra, Situmorang, Athira & William, 2024). With the advent of these technologies, schools are run smoothly, effectively and collaboratively.

Management information system (MIS) in school management has brought changes and effectiveness in the management of schools and education institutions. It plays a significant role in school data management and decision-making. Findings revealed that MIS is essential in capturing, processing, storing, retrieving, updating and devising data and information which is essential for the smooth running of the school management (Karmeni, Beldi & Saadi, 2024). EMIS has become the backbone of modern institutions as data or information is managed in a single place. This system acts as a data repository where institutions can gather, store, and analyze the data, and monitor institutional growth and students' academic progress in a real time. This system also facilitates parents-teacher's communication, fee collection management, admission enquiry information management, examination management, student information dashboard, timetable management, payroll and leave management, lesson plans and assignments, transportation management and library management (Ţurcanu, Siminiuc & Ţurcanu, 2023). The introduction of digitalization is a landmark which enables education administrators to take robust decisions uplifting the management of institutions. Digitalization being an ICT tool for education management, its use in

education management has rapidly increased due to its efficiency and effectiveness in the management process. School managers who used to spend a large amount of time solving complex allocation problems (staff allocation, resource allocation, timetabling) and monitoring the school operations have now better options due to enhanced technology.

There has been an increase in the use of digital technology over the last decade. Our contemporary world has been marked by a digital evolution. There has been a great shift from the mechanical or analogue way of doing things to the digitalization of information in various spheres of life, be it the political, economic, business and educational domains. Digitalization being the process of converting analogue information into a digital format. It has been argued that this change is important in order for children and students to be able to participate and contribute to a highly digitalized society (Orhani, Saramati & Drini, 2023). By ushering in this new model of connected teaching through digitalization, it links teachers to the administration; to students, helping them to improve on their instruction and personalize learning, makes students smarter, making learners to grow effectively through self-directed learning. The students are capable of analyzing what they require to search, learn and use online resources, thus enlarging productivity and efficiency within their circle and the administration as well. It equally reduces paper work with its cumbersomeness, time consumption and making work lighter and easier. This phenomenon is a call for concern in our contemporary society and most specifically in some schools in the Yaoundé VI environs, due to the fact that some schools still drag their legs as far as the digitalization of information system in the school administration or the educational sphere is concerned, bringing into place the inadequate or insufficient application of digital information at the administrative level of some secondary institutions in yaounde municipality. This however showcases the importance of information system at the level of the administration. This chapter presents the statement of the problem, objective of the study, research questions, hypothesis, interest of the study, significance of the study and delimitation of the study.

Background to the Study

Historical background

According to the Education and Training Sector Strategy paper ETSSP (2013-2020), secondary education is the medium of the school system and its tasked with the development of General education, technical and vocational training and teachers' training. Secondary education extends beyond the elementary curriculum and addresses a combination of the personal, intellectual, vocational and social needs of adolescents in the society. During the pre-colonial era, education was dominated by the European Missionaries with the goal or aim of spreading the word of God. By 1884, the first primary school was opened in Bimbia with most missionaries coming from Britain.

During the German Annexation of Cameroon by 1884, there were about 15 primary schools with an enrolment of 368 pupils, run by the London Baptist missionary society. Apart from the Germans, the French were also present with the aim of implementing French language in their territory. The British also came up with the aim of making the curriculum to reflect the British Educational system. Two separate systems of education were used in Cameroon after independence. East Cameroon's Education was based on the French model. Uniting the two systems was deemed a symbol of National integration between west and East Cameroon. The two systems were merged by 1976,but studies suggest that they did general education and the last two for academic specification .There are two educational systems, secondary general education and secondary technical and vocational training,(ETSSP 2013-2020).Secondary education in Cameroon is structured in two cycles, The first cycle lasts for five (5) years in the Anglophone sub- system and four (4) years in the francophone sub-system .The cycle ends with the attribution of the General Certificate of Education Ordinary Level (GCE O/L) Certificate in the Anglophone sub- system and the Brevet d' Etudes du premier Cycle (BEPC) in the Francophone Sub-system. The second Cycle lasts 2 years in the Anglophone and is sanctioned by the General Certificate of Education, Advanced Level (GCE A/L) certificate, but lasts for 3 years in the francophone sub- system and its attested by the Baccalaureate Certificate.

It offers the first levels of qualifications necessary for the practice of a trade or a group of trades. As with general education, technical and vocational education has two cycles: the first last (4) years and the second and the second last (3) years in both sub-systems. The first cycle of technical education is sanctioned by "certificat d'Aptitude professionnelle '(C .A.P)and the second, by the Baccalaureate de Technicien (BT),or Brevet professionnel (B.P). It is noteworthy that at the end of the second year of second Cycle in the francophone sub-system, students have to take the' probatoire ' examination which is the condition for access to Terminale (upper sixth form). However, the 1989 economic crisis in Cameroon greatly affected the educational sector, with a drop in enrolment by 2.3 percent between 1989 -1994.(ETSSP 2013-2020).

Today, the General Certificate of Education board coordinates G.C. E O/L levels for the Anglophone educational system while the BAC board does same for the francophone educational system in Cameroon. Very little information exists on the internet regarding the use of computers and internet technologies in education in Cameroon. This is an indication of Cameroon's position in relation to the use of ICTs in education. According to Grewan & Day (2003), "Africa's ICT industry is stifled by shortage of appropriately trained/experienced people", with a poor "e-readiness" (Ifinedo 2005) when compared to developed countries. In Cameroon, this is reflected in shortage of ICT researchers and low use of computers and the internet in many sectors of the society, (ADCOME, 2007). In December 2000, there were only about 20,000 internet users in Cameroon which rose to 370,000 users in 2008 (Internet World Stats 2008).

Although there is growth, this is still low for a population of about 18 million people. Nevertheless, it is worth noting that Cameroonians have a relatively high literacy rate in Africa with 67.9% of population being literate (CIA 2006). The quest for knowledge is very strong and despite the high rate of unemployment, many students still progress to universities. About twenty years ago, most Cameroonian pupils progressing to secondary schools would have chosen general education rather than technical education. It was the general misconception that technical education was for the less intelligent pupils and hence, over 95% of the top pupils from primary schools proceeded

to general education whilst the remainder went into technical education. This is reflected in the existence of more general education institutions than technical and vocational colleges, with vocational colleges having a capacity of only 14,000 places (Haan, 2006) for the entire country.

Nevertheless, with an increase in unemployment, these technical education graduates have had an edge over their general education peers in finding employment after education as they are considered 'highly skilled' for industries. Unemployment has greatly affected the choice of education, with more pupils now choosing technical and vocational schools in order to find suitable employment or become self-employed after training. In Cameroon, technical education students have been trained to use computers earlier than their general education counterparts who may not have the opportunity throughout their course to use computers.

However, over the past five years, the situation is changing with more secondary schools installing computers. The availability of computers in such schools has probably been influenced by the need for students to take a public examination in computer science at the end of their course. Very few schools if any would normally have computers mainly to facilitate learning and teaching and it is not uncommon even for school teachers to lack computing skills (Palamakumbura, 2008; Ololube, 2006). Just like in Mongolia, computers and internet are not generally used by secondary schools for teaching in subjects other than computer science (Sambuu 2005) which is a similar situation in Nigeria, where ICTs have not been fully adopted in secondary schools (Aduwa-Ogiegbaen & Iyamu, 2005) .while universities also experience this shortage as ICTs have not completely permeated such institutions (Sife, Lwoga & Sanga 2007). Unlike in the UK and USA, computers and internet technologies are not fully employed in learning and teaching in higher education in Cameroon. A number of institutions have recently been involved in the struggle to bridge the digital divide in Cameroonian secondary schools through the use of computers and other information and communication technologies (ICTs). This is the case with the Computer and Internet Access Centers (CIAC) project implemented by the Association for Development, Communication and Environment (ADCOME).

The administration is responsible for entering data about the new students from one class to another, meaning that students account for any changes regarding to the name, address etc. The administrator also updates the college related information like calendar of events, information regarding any other event that occurs in the college like students' update, school updates, exam updates, financial updates and so forth. The administrator has the highest level of power in the student information system. The staff can update the information regarding students' attendance, internal marks of the students and any information regarding the subject they handle. By so doing;

- Increase the efficiency of college record management
- Decrease time required to access and deliver students record
- Make the system more secured
- Decrease time added on non-value added task to name but a few.

With this importance of digitalization of school information systems, how does this bring about effective school administration in some secondary schools in Yaoundé VI and environs? However, this underlying technology was invented in the latter quarter of the 19th Century, including Babbage's analytical engine and telegraph. Digital communication became economical for widespread adoption after the invention of the personal computer. The digital revolution converted technology that had been analogue into a digital format. By doing this, it became possible to make copies that were identical to the original, thus bringing a rapidity in the quick distribution of information.

At the global level, some efforts have been made to overturn the world into a digital system. At all spheres, everything is gradually being digitalized. Digital technology has advanced more rapidly than any innovation in our history reaching at most 50 percent of the developing world's population in two decades and transforming societies, by enhancing connectivity, financial inclusion, access to trade and public services, technology can be a great equalizer (impact of digital technologies by United Nations on the 74th session of the general assembly)thus, in retrospect, digitalization helps an organization to be more alert to changing business values, customize products and responses with clients on a personal level, and most importantly, to streamline and automate all processes so that workers can focus on things that really matter most in

business. It is equally widely recognized that digitalization is one of the most powerful tools for implementing the 2030 agenda for sustainable development and Africans agenda Gordon 2063.

Today, more than 80percent of Africa's population has a mobile phone subscription (Tande, 2010). Africa is still the least connected region compared to other regions of the world with about 28.2 internet coverage of 34percent to mobile broadcast (Impact of digital technologies by United Nations on the 74th session of the general assembly). Few citizens have digitalized businesses. Adopting digital technologies remain the exception rather than the normal and few governments are investing strategically in developing digital infrastructure services, skills and entrepreneurship.

Together with the African Union, we have developed and started to implement the Africans Union transformation for Africa (2020_2030) as a blueprint and master plan for transforming the continents economy and societies at large (UNO 74th session)

At the Level of the institutions, it will be expedient to digitalize the information system in most of the institutions within secondary schools in Yaoundé VI municipality. (Strategic plans for a digital Cameroon by 2020 ministry of post and telecommunication).

Despite all the efforts that have been made for the information system to be digitalized, there has been inadequate and insufficient application of digitalization in some secondary institutions in the Yaoundé VI municipality as the analogue or manual or mechanical state still exists. Some principals in those schools face problems of insufficient technological setups or inadequate training of these tools in order to facilitate the teaching and learning process (Wu, 2023). Therefore, from the precarious and prevalent situation, it will be expedient to implant and implement the use of ICT based material in the educational system in Cameroon. The ministry should disburse funds that can help to purchase these tools and make them available in a well-constructed multimedia environment available for both teachers and students.

Having mentioned the above, this piece of work will contain five chapters. Chapter one contains the research questions and the background of the studies. Chapter

two will be talking about literature review and theoretical framework. Chapter three will talk about the types of research methods. Chapter four will be presentation of results and discussion and chapter five will dwell on perspectives and recommendations.

Digitalization is a contemporary educational preoccupation that dictates the global sector of education in the world today. The issue is more recurrent in present times due to the pressing need it displays. The problem of the question is the inadequate application of digital information at the level of administration in secondary institutions in the Yaoundé VI municipality.

In our society nowadays, digital information is the pathway to development. For any society that aspires growth, it should move from analogue to digital technology, thus making work effective and efficient. It permits much to be done in less time without a fall in quality or quantity. Digital technology has contributed to the rapid growth of the world today. In the context of a school, it has reduced the bulkiness of work in both the administration and classroom work. The following can be seen as advantages of digital technology;

- Effective output due to a well applied information system
- Reduced paper work, because everything is digitalized
- Little or no harm caused by chalk in the fingers or hands
- Effective management of both didactic material and human resources

The present situation in the field of education has caused a lot of setbacks in that, manual work to itself is limited. In most secondary schools today, we can hardly find computers and even found, are in most times in deplorable states due to poor maintenance. Information system which is very vital in our society is not well implemented, and as a consequence there is poor output, low efficiency, low productivity time consuming and a fall to analogue where things become slow, students return to dependency, school administration becomes slow and inefficient and the tendency of time, money and material consuming becomes inevitable.

Conceptual background

A wide range of histories, events, realities, institutions and persons, are used to define concepts and ideas (Almalki & Williams, 2012) digitalization has its own history. Digitalization began in August 1920 pioneered by Matt Tapur. It essentially began with the advent of computers in 1950s since then the non-stop march of digitalization has transformed nearly everything into computer. This has changed the way we work, communicate, shop, bank and even how we relax and entertain ourselves.

Digitalization is transforming the world in almost every aspect of life during the last few decades. The access to internet, increase of people using mobile phones, social media and other ICT services changed the way people interact, communicate, learn and work in almost every country (Schelenz & Schopp, 2018). Digital technology was introduced in schools across Cameroon in 1999 by a Non-Governmental Organization (NGO) by its acronym (ADCOME). The activities of this Organization however started fully in 2000s after it was launched by the governor of the South West Region. How Literature Review on the application of ICTs in the School Systems of developed countries in relation to teacher computer ratio, indicates that ICT has a teaching support mechanism which makes one thinks that Cameroon is not keeping pace with educational innovations.

In 1995 when old educational experts converge in Yaoundé to see how the educational system could be improved upon, nothing was mentioned on the application of ICT on the classrooms. The Cameroon education law of 98/004 of 14th April did not make mention of ICT in the school systems. The Teacher's Training Colleges have not made mention of ICT in the school systems. The Teachers Training Colleges have not yet made provision for ICT provision for ICT application. This implies that the teaching core is to a great extent Computer illiterate (Tchombe, 2006).

The creation of the inspectorate of pedagogy in charge of computer science on 25th April 2005 organizational chart of the ministry of secondary education and the appointment of a pioneer inspector of pedagogy in charge of computers at the helm of this inspectorate on 12th April 2007, is a clear demonstration of the political will to

transform the secondary sector with ICT. The drafting of this document is in recognition of the fact that information and communication technology was infiltrating at schools, and that a strategic approach to the implementation is needed.

In 2002, the head of states inaugurated two multimedia centers connected with the network in two secondary schools, five other institutions were added on the list of those who received these presidential gifts in 2003.Currently, five other secondary schools are in the course of installation, while a project to equip several secondary schools is in due discussion. Official programs of ICT were given to secondary education teacher, training colleges offer ICT courses particularly as a pedagogical tool.

The five pioneer secondary schools are not only strategically situated in most towns but there exists a synergistic effect were learning, teaching and administrative needs are being moved from traditional pedagogic and administrative culture to ICT driven culture. Accordingly, in some private schools, already using ICT relevant pedagogical material are not only processed but also computerized. In the same vein, learning and teaching are shifting from memorization, where the model is teacher centered to a more constructivist approach where the model is pupil centered with people assuming more responsibility because of increased development in research skills through the use of ICT.

In spite of this political will, the computers and other relevant material remain in short supply in schools. Meanwhile focus in teaching ICT is more on the mastery of theoretical issues. In a research review, Isah & Ojetunde (2019) concluded that there has been an extensive focus on aspects of technology. This was confirmed by Eling & Lehmann (2018), who continued this line of discussion to say that having access to ICT in education will not necessarily lead to an effective use of ICT in education. Other researchers put forth the importance of connecting integration of technology to pedagogical objects and methods (Jahnke, Bergström, Mårell-Olsson, Häll & Kumar, 2017).

Eling & Lehmann (2018) found that digitalization that is not rooted in pedagogical objects often face to transform practice and enhance students learning.

Moreover, digitalization in school must be driven by new ways of thinking about teaching and learning. Ifinedo (2005) defines digitalisation as the "art of converting the contents of a document from hard-copy into machine readable format» According to Tetang (2007). Digitalization is" a process in which materials are converted from the hard copies to electronic copies". Also, Brennen and Kreiss (2016) define digitalization as the material process of converting individual analog streams of information into digital bits. Maxwell & McCain (1997) define digitalisation as "Digital technology takes information and breaks it down into its smallest components. By transforming an analogue signal into discrete pieces, digitalization makes it possible to manipulate information, text, graphics, software code, audio, and video. Digitalization is also the process of converting information into a digital format. Many people try to put hard copy information into a form that everybody can read.

Digitalization makes things easier as bulky information can be transferred into a flash, save us from the stress from carrying bulky papers and documents around, thus making things easier. In the educational domain, digitalization refers to the use of desktop computers, mobile devices, the Internet, software applications and other types of digital technology to teach children of all ages. First, let’s clarify that the digitalization of education and online distance learning differs. The concept of digitalization is much broader. It means using different programs, applications, and other digital resources for e-learning remotely and directly at school or university. For example, one element of digital education is using an essay writing service to aid academic writing. Digitalization concerns not only educational processes but also organizational ones. In addition, electronic diaries and journals, as well as the ability to write electronic messages to the teacher instead of calling or coming to school in person, are also digitalization. The digitalization of education has become incredibly prominent since the beginning of the coronavirus pandemic. Digital education helps learners build the skills they need to navigate technology and to get the best out of it. Students of digital education become comfortable with findings, accessing, consuming and sharing content online. (Christ smith, 2022).

To talk about the evolution of digitalization, in the XV century invention of printing influenced education due to the high cost of handwritten books; the most common way of getting and distributing knowledge was life lectures. Furthermore, the same way digital technologies are changing education. There was a time when people wrote only by hand, then came typewriters, then computers with word-processing programs. Once it was possible to discuss something with another person at a great distance only in letters, the telegraph and the telephone came, and then the Internet with its many possibilities. All this corresponds in many ways to the notion of industrial revolutions. The first industrial revolution occurred with the steam engine's invention, which spurred the mechanization of production and the development of rail transport. In turn, it caused the rapid growth of factories and plants in the late 18th century. The technical reason for the second industrial revolution in the late 19th and early 20th centuries was the invention of electricity and the internal combustion engine.

New production technologies appeared, the telegraph and telephone appeared, automobiles appeared, people in remote regions could exchange messages quickly, and movement between cities accelerated. Finally, in the second half of the twentieth century, digital technologies appeared, and the growth of electronics and telecommunications spread to personal computers, commonly referred to as the third industrial revolution. The development of the Internet marked the beginning of a new industrial revolution. The fourth revolution will lead to the growth of technologies based on artificial intelligence, neural networks, augmented reality, the Internet of Things, etc. All of these revolutions, to one degree or another have had an impact on educational processes as well. It would be extraordinary if, despite the technological changes that have taken place, classes at schools and universities still used kerosene lamps, and students wrote with pens dipped in ink. Likewise, it would be unnatural now to dismiss the possibilities of digital technology. Schools and universities still need to fit in with society despite their conservatism. Preparing graduates of schools and universities for life in the modern world is essential. On the other hand, students in elementary school (or even kindergarten) are already familiar with digital technology. Enhancing home learning.

Even though the differences between “digital natives” and previous generations are generally greatly exaggerated, the fact remains that each new generation is becoming more deeply immersed in the digital environment. And educational systems already have to adapt to the daily habits of students. And many of those habits are digital. But digitalization of education does not mean that electronic tools will replace the entire educational environment, with fewer teachers. The research results show that they are usually more effective when education is built offline or partly online.

And practice shows that quality education always implies a live interaction experience with a teacher and fellow students. An online course without feedback and a boring lecture, after which no one asks questions, are equally unhelpful.

Theoretical background of the study

The theoretical background takes us to elaboration of some theories developed by some authors in order to defend ideas they had on the digitalization of information system. Amin (2005) defines a theory as a set of systematically tested and logically interpreted proposal that have been developed through research and that explains social phenomena in research, thus a theory is a statement based on observed facts that through a theory we can clearly see and analyse the relationship between the cause and effect. This work will center on the following theories which will help us to better explain and understand the research work.

Diffusion of Innovation theory is a theory developed by EM Roger's in 1962, it seeks to explain how, why and at what rate new ideas and technology spread. It is one of the oldest social science theory. This theory originated in communication and explains how, overtime an idea or product gains momentum and diffuses or spreads through a specific population or social system. Rogers proposes that four main elements influence the spread of a new idea, the innovation itself, Communication channels, time and a social system. For example, early receivers embrace the idea of new technologies in education and particularly digitalization and make use of it especially in the urban areas where the communication tools are available, while it spreads to the interior,challenges occur like some schools in the interior where these tools are rare and

there are communication network issues. An innovation mostly lags at the centre and becomes really difficult to get to some schools at the peripheries.

The unified theory of acceptance and use of technology (UTAUT) is a technology and acceptance model formulated by Venkatesh and others in user acceptance of information and technology. The UTAUT aims to explain user intentions to accept and use information system and subsequent usage behavior. Recently, the unified theory of acceptance and use of technology has taken place as one of the most developed and intensive models to test technology adoption and acceptance. The use of any information system implicitly relies on the existence of those ready to use it but the continuation to use it depends on two beliefs: in the first stage, the information has to be accepted by the users, then continuing usage which comes after acceptance depends on user's satisfaction with the system. In the organizational environment, it means continuing in increasing the investment in information technology (Hong et al 2006). This can be illustrated below:

The Influence of acceptance and satisfaction on continued usage intention (Momani, 2018). Acceptance Satisfaction intention for continued usage. In the educational milieu, the concept of digitalization is unanimously accepted, tested, adopted and put into use and a continuous usage by users. Digitization in schools becomes pertinent in teaching, lesson preparation, recording of marks and other administrative work. Thus, the ability of users to accept, new technologies with the intention to continue usage. We see that teachers and learners accept digitalization or technology after usage, the satisfaction they derived from it spells out continuous usage thus facilitating effective administration.

Connectivism learning theory was propounded by Siemens (2004) and Downes (2019). Connectivism is built on the idea that digital technology brings people together and creates new learning opportunities. Connectivism creates a good framework for learning by connecting even those at the remote areas. Technology is accepted as the major learning process. This theory promotes the idea that learning can successfully happen through digital channels, including social media, forums, videos and blogs, Siemens (2004). An individual can turn to digital technology to solve a problem. This

may include actions such as googling a question, texting a friend or searching for topical social media content. Connectivism learning theory stipulates that the use of digital technology helps to solve a problem and in turn deepens the understanding of a topic. It equally creates a culture based on continuous learning. Therefore, with connectivism using the new technological tools, students will be connected, new learning opportunities will be created and even the peripheries and the remote areas will not be left out as far as learning is concerned. Connectivism learning theory accepts technology as a major factor in our learning process. Connecting people from distant places such that learning can take place without disruption or interaction. For example, connectivism was mostly applied during the corona virus periods where there was a shutdown of all activities but learning continued through digital devices. This theory promotes the idea that learning can successfully happen through digital channels including social media, forums, videos and blogs, Siemens (2004 and Downes, 2019).

Contextual background

In a modern world like ours where technology has become a backbone or foundation of change, it is but normal that most administrators follow the trend of technology by adopting new skills and techniques involved. The era in which this work is carried out needs to be digitalized for effective management of both natural and human resources. Digitalization has come to stay because it fosters positive change rapidly and efficiently than the traditional methods which was more of manual because digitalization is transforming the world in almost every aspect of life during the last few decades. The access to internet, increase of people using mobile phones, social media and other ICT services changed the way people interact, communicate, learn and work in almost every country (Peprah, 2016). In Cameroon where the work is carried out, the government is adopting modern techniques of development by implementing digital technology at each level of its economy. This became more practical during the covid-19 outbreak; the educational sector took a different turn designed by the government for responding to the COVID - 19 pandemic.

On the 17th of March 2020, a strategy was set out by the Prime Minister of Cameroon which consisted of placing the educational sector as a top priority. Schools

and universities were ordered to lock down, face - to - face academic activities were suspended. It paralyzed the educational sector. A report by UNSDG. (2020) revealed that 40,000 learners in vocational training, and 347,000 in higher education were " involuntarily out of school " To compensate for the cessation of face- to - face teaching, the Ministries of Basic Education, Secondary Education and Higher Education resolve on switching to distance teaching and learning tools after two weeks of hesitation, to ensure the continuity of education. The government also recommended the prioritization of the use of distance communication tools by school and university administrators for meetings, seminars and conferences (Béché, 2020). For the first time, higher education institutions in Cameroon, migrated to the online environment to protect staff and learners ' lives. However, it should be noted that this migration to the online world was not an easy task. The government through education equally created additional subjects like information and communication technology and computer science in its curricular so as to promote technology in this sector.

The ministry of telecommunication is creating several platforms on seminar in order to edify workers at its ministry so that they get enlightened. The economy of Cameroon has introduced digital technology to almost all sectors of its economy. This view comes from the UNESCO who has set the path all over the world for a rapid and effective change. It is the single best investment countries can make to build prosperous, healthy Education in the basic building and equitable societies. Article 26 of the 1948 Universal Declaration of Human Rights states that everyone has the right to education. Today, 57 million children remain out of school, Education is not only a right but a passport to human development that opens doors and expands opportunities and freedoms. The Sustainable Development Goal 4 ensures inclusive, equitable, and Quality Education and the promotion of lifelong learning opportunities for all.

The Education for All movement is a global commitment to provide quality basic education for all children, youth and adults. The movement was launched at the World Conference on Education for All in 1990 by UNESCO, UNDP, UNFPA, UNICEF and the World Bank participants endorsed and expanded vision of learning and pledged to universalize primary education and massively reduce illiteracy by the end of the decade

2005_2015.Ten years later, with many countries far from having reached this goal, the international community met again in Dakar, Senegal in 2000 and affirmed their commitment in achieving Education for All. They identified six Key education goals which aim to meet the learning needs of all children, youths and adults by 2015 with goals as follows: Expand early childhood and education, provide free and compulsory primary education for all, promote learning and life skills for young people and adults, increase adult literacy by 50% achieve gender parity by 2005, gender equality by 2015, improve the quality of education movement for All.

According to the Incheon Declaration (2015), towards inclusive and equitable quality education and lifelong learning for all UNESCO together with UNICEF, the Word Bank, UNFPA, UNDP, UN Women and UNHCR organized the world Education forum in Incheon, Republic of Korea, from 19-22 May 2015 adopted the Incheon Declaration for Education 2030, which sets out a new vision for Education for the next 15 years. This historic occasion reaffirms the vision of the worldwide movement for Education for All initiated in Jomtien in 1990 and reiterated in Dakar in 2000- the most important commitment to education in recent decades which has given a significant progress to education. The Muscat Agreement developed through broad consultations and adopted at the Global Education for All (EFA) 2014 which successfully informed the proposed education targets of the Open Working Group on Sustainable Development Goals (SDGs). Having taken stock of progress made towards the EFA goals since 2000 and the education related Millennium Development Goals (MDGs) examine the challenges and the proposed Education 2030 agenda and the framework for action, this Declaration is accepted. With the aim of transforming lives through education, this new vision is fully captured by the proposed SDG4 Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all and its corresponding targets. By so doing, this Declaration expands on access ensuring the provision of 12 years of free publicly funded, equitable quality primary and secondary education of which 9 years are compulsory leading to relevant learning outcomes. With the provision of free early childhood education with access to all children.

With inclusion and equity, addressing all forms of exclusion and marginalization, disparities and inequalities leaving no education target unless met by all. Efforts will therefore be focused on the most disadvantaged especially those with disabilities to ensure that no one is left behind and also eliminating gender-based discrimination and violence in schools. It is also geared towards quality education in that, it ensures that teachers and educators are empowered, adequately recruited, well-trained, professionally qualified, motivated and supported within well-resourced efficient and effectively governed system.

In line with the Universal Declaration of Human Rights article 26 (1948), everyone has the right to an education, including free primary education. In relation to the continental Education Strategy for Africa (2016-2025) in its objective number 2 lay emphasis to build, rehabilitate, preserve education infrastructure and develop policies that ensure a permanent, healthy and conducive learning environment in all subsectors and or all, so as to expand access to quality education and also harness the capacity of ICT to improve access, quality and management of education and training systems.

In the national context, the Law of Orientation of Education in Cameroon (1998) Law Number 98|004 of 14th April 1998 equally lay down guideline principles of Education in Cameroon with the State ensuring primary education for all and equal access to quality education at the other levels with measures to promote equality and fairness will include free and compulsory primary education for all and access to all due to poverty ,place of residence and gender with issues relating to inclusive education. The minister of Basic, Secondary and Higher Education at the outbreak of the corona virus pandemic on 17th march 2020 placed education at the top priority, after two weeks of hesitation by using distance teaching and learning tools this was to ensure pedagogical continuity through new educational technologies despite the closure of schools and the confinement of teachers and learners to their homes

Justification of the study

This research on the digitalization of school management information system will provoke more research in the field under study thereby resulting in scientific progress in this domain. The research focuses on the digitalization of school management

information system and effective school administration in some secondary schools in Yaoundé VI municipality. This same topic could be useful for studies elsewhere in Cameroon. Thus, the scientific interest of the study is drawn from the fact that the results of this study could be generalized and applied in any part of the world to improve on teachers' digitalization of teachings and effective management of information system and how digitalization can be effectively implemented at the secondary level.

Digitalization of teachings and information system is still ongoing in many African countries, in most schools in Cameroon and Yaoundé VI environs to be precise. Many studies have been done out of Cameroon on the digitalization of information system. It has been observed that most teachers have a negative perception and phobia towards digitalization. They think it is too complex for them to use it to accomplish any meaningful task. Therefore, they are reluctant to learn how to use it. Furthermore, Peprah (2016) indicates that teachers are central to the integration of ICT in education and for which reason, they must be properly trained to acquire the technical know-how in ICT. This can be achieved through periodic workshops, seminars, and in-service training to update teachers' knowledge and skills in ICT to make them more conversant with the technology. The absence of this has led to poor implementation of digitalization in some secondary schools in Yaoundé municipality.

Furthermore, some teachers are discouraged by integrating ICT in their teaching as they are lacking availability of resources and facility, adequate training, time, and confidence. Integrating ICT into teaching is a complex process that may encounter many difficulties and challenges.

The negative behavior of most teachers towards digitalization has been noticed in most school premises as most teachers shy away from the manipulation of the computer. Some teachers have not even seen a computer talk less of even knowing how to put it on. This has made the implementation of digitalization of teachings and management of school information system remain at an early stage in most Cameroonian Schools and to a greater extent, these schools have produced learners that are completely blank in manipulating the computer and cannot solve some problems in the society.

The justification for this study therefore is to conduct a study within the community of Yaoundé environs so that through it, teachers and administrators as well as students and the community at large may reap the real fruits of digitalization. This study will use a different methodology from that which has been used by other studies. Through this means, a new body of literature will emerge to either confirm or contradict what previous studies have shown. This will equally inform educational authorities of the Yaoundé VI Sub-division on their success rate towards the implementation of digitalization as well as identify the various roadblocks. Through this, the necessary measure to ensure the success of digitalization in the area may be assured. What equally motivated me to carry out this study on digitalization of school information system and effective school administration is that, digitalization though has been in existence for long is undergoing a lot of challenges in its effective application. The benefits of digital technology can be best realized when strategically introduced and used by skilled and competent teachers.

Teachers, administrators and even students are facing a lot of challenges in the institutions as there is ineffective digitalization of school management information system as such making work to be slow, time consuming and ineffective. The major aspects of digitalization are at the level of organization, planning and teaching. Work cannot proceed smoothly if administrators do not give to digitalization. If attention is not given to the digitalization and the opportunity to exercise it in the administrative system. The administrators with the help of the principal are better placed to make digitalization in all aspects of the institution go operational. Any decision taken in an institution requires a major role from the principal. Other aspects that motivated the researcher to carry out this study is that; we are moving into the 21st century were technology has no bounds. In this 21st century, the term “technology " is an important issue in many fields including education. This is because technology has become the knowledge transfer highway in most countries. Technology integration nowadays has gone through innovations and transformed our societies that has totally changed the way people think, work and live (Grabe, 2007).

Ministry of Education (2010) acknowledged the role of EMIS and stated that EMIS facilitated access to timely and accurate management data which is a pre-requisite for effective monitoring. MINEDUC works with all education institutions, the National Institute of Statistics and the Districts to collect qualitative and quantitative management data to inform policy development and to evaluate progress. The Ministry of Education (2010) further added that an EMIS has been developed to collect primary source data relating to all education institutions. Although the government officially introduced ICTs in schools in 2001, there is not yet any specific policy guiding their use in education in Cameroon (Tetang, 2007). Yet there is a leap in the use of EMIS/ICTs in schools by the administration, teachers and students for the simple reason that it facilitates the management and performance of the institution. School administrators most especially principals, vice principals and Head of departments have gradually embraced the use of EMIS in schools for efficient and effective management but with the lack of qualified human resources at the decentralized level, low budget and outdated information technologies, it is difficult for administrative efficiency to be effective. MINEDUB has the best EMIS established as compared to the other education ministries in Cameroon, even though more is still supposed to be done for it to go fully operational as there is no big data server that cuts across all this ministry and they must rely on annual census for data collection and at times unreliable and untimely slowing down decision making at the ministry level. (UNICEF Cameroon Country Programme, 2018-2020).

Problem Statement

The modern world's rapid advancements in information and communication technology has drastically altered all educational systems, including the Cameroon educational system. Due to these modifications, school administration has grown more difficult and complex, necessitating the possession of a sufficient degree of knowledge and abilities by school principals. Furthermore, the administrative abilities of those working in the field of education have changed as a result of variables including modernization, population growth, globalization, and the increased need for education. The world of organization and administration has undergone a fundamental

transformation that has an impact on schools and requires school principals to stay one step ahead of the game. Schools are hierarchical structures made up of administrators and those under them. The accomplishments of individuals who administer as well as those who serve as administrators determine the school's success. Nonetheless, given that administrators set the precedent for those they oversee, their contributions to the school's success are noteworthy.

The role of a school administrator is to oversee the school's relationship with the neighborhood, ensure that it operates with organizational effectiveness, and improve the quality of the school. But school administrators can also deal with issues like how their area of responsibility is run, how resources are used, bureaucratic procedures, student success, concerns about various school-related groups, a lack of funding, poor parent communication, a lack of support from upper management, and teacher disinterest. School administrators are obliged to ensure the organizational development of schools, and to increase the qualitative and quantitative efficiency of the school by optimizing the present resources. School administrators exercise their legal authority in fulfilling these obligations. However, it is inevitable that the school administrators face with several problems while practicing their authority. These problems may stem from factors related to school or also factors not pertaining to school. Problems caused by students, teachers; problems resulting from the school premises, and social, cultural and political environment of the school, and management mentality of the school principals may be listed among the most important problems. In Cameroon education system, there are various problems both at micro and macro levels at each school. Principals at every educational stage have to bear certain administrative qualifications. These qualifications may include skills such as decision taking, planning, organizing and motivating people as well as problem solving skills. This is because the success of a school administrator is closely associated with his/her success in problem solving.

Research Objective

The research objective is broken down into general objectives and specific objectives

Main Objective

To determine the degree to which digitalization of school information management system influences effective school administration in Yaoundé municipality.

Specific Objectives

From the above main objective derived the following specific objectives:

- To determine the degree to which the availability of ICT devices impacts effective school administration
- To evaluate the extent to which the process of implementation increases effective school administration
- To examine the extent to which sustainable management of ICT devices fosters effective school administration

Research Questions

General Question

To what degree does digitalization of school information management systems influence effective school administration in secondary schools in Yaoundé municipality?

Specific Question

From the above research question, we will find out the following:

- Does availability of ICT devices impact effective school administration?
- Does the process of implementation increase effective school administration?
- Does sustainable management of ICT devices foster effective school administration?

Research hypothesis

General Hypothesis

Digitalization of school information management system influences effective school administration.

Digitalization of school information management system does not significantly influence effective school administration.

Specific Hypothesis

- Availability of ICT devices significantly impacts effective school administration.
- The process of implementation significantly increases effective school administration.
- Sustainable management of ICT devices significantly fosters effective school administration.

Significance of the study

This study is significant to the government, Administrators (school authorities), stakeholders, students and parents.

To the government

The government of Cameroon is the main policy maker and the one who establishes the rules of a country. The government being one of the policy makers, this work helps the government to better understand their citizens and achieve greater outcomes, provide services more effectively and efficiently. They may also find new solutions to policy changes. The government at all levels is undergoing digital transformation in order to deliver government services and programs more efficiently, transparently, and cost -effectively. The raison d'être of this study is for the government to redefine some policies as far as digitalization of information is concerned in other spheres of the economy and most especially in education. "This digital processing can free up a lot of labor time for more essential, and more difficult task as paul colangelo puts it (Aug 14 2020). However, this work calls for more collaboration between the government, school authorities, teachers and parents to better enhance the digitalization of school information system in order to reduce paper work and cumbersomeness.

To administrators

This study directly concerns administrators in the management of education and particularly digitalizing school information (system) to aid or better effective school

administration. Whatever the managerial style puts in place by the school administrators, they should lay emphasis on digitalizing of information so as to make work stress free. The school administrators are therefore called upon to create a good sense in the management of ICT devices, create an awareness amongst the school administrators where interconnection of school digitalize information can better administration. In this case, the devices can be made available, seminars and workshops organized to create awareness as the world is fast developing so as to adapt to the fast changing world.

To the teachers

The teachers are pedagogues' trainers or facilitators who are in direct contact with students on daily bases. Based on the training received by these teachers on the new devices, they are expected to employ personal techniques in getting the right skills into the learner. In this light teachers are expected to instill the right skills during the teaching/learning process to help integrate the students into the digitalized world, such that they can better develop themselves and meet up with the fast developing world and an easier insertion in the society.

To students

The students are the learners. They are expected to learn and acquire knowledge that will help them to better insert themselves to the digital world making things easier even for themselves, the economy and the country at large. They have to be really focused so as to pick up the right skills that will help them to better function in the fast changing digital world. The learners are equally expected to develop computing skills that will permit integrate the technology world of today which is fast growing.

To the parents

Parents constitute the authority, the guidance and sponsors of the learners. They are to support these schools in all forms so as to create room for a good atmosphere in the training of their children. Therefore, through parents' teacher's association (PTA) meetings. They may put in an enormous support where ICT devices may be purchased

to equip the schools, help in effective administration and in the training of administrators/teacher.

Delimitation/scope of the study

The present study is limited in space, discipline and time.

Spatial/geographical Delimitation

The present study was set to involve school administrators and teachers in some secondary schools in Yaounde VI municipality. The choice was motivated by the fact that there is inadequate or insufficient used of ICT devices in secondary schools, without prospects of digitalizing their information for effective management of work. Thus year in and out some schools still operate manually. The geographic area of the study is the environs of the Yaounde VI municipality precisely in some secondary schools in the mfoundi division in the centre region of Cameroon.

Thematic Delimitation

This subsection is concerned with the field under which the research is carried out. This piece of work falls between the spheres of Educational Management, specifically in the management of schools and university information system. It is a scientific domain that is still gaining grounds in the educational world at large. School and university information system is a domain of study that deals with the various devices, techniques, of information in a school or university environment. This includes: administrator's information, staff information, students result and achievement, student's behavior, administrative data, financial records, school fees entries, examination entries etc. Even though the Cameroon law of orientation of Education of 14th April 1998 does not make mention of ICTS in the school system.

The time factor

The time factor in this study is considered in two dimensions. It encompasses the history of digitalization and the time frame that the entire research covers. This study covers the period of 1995 _ date. This period is justified by the fact that it was in 1995 when all educational experts met in Yaounde to see how the educational system could be improved upon; nothing was mentioned on the application of ICTs in the classroom.

Since then, there has been a number of initiatives that has been put in place. Many initiatives have been put in place to install information and communication technology in education. As Fonkeng and Mbangwana says, using these new technologies as a means of auxiliaries capable of increasing the efficiency of administration, teaching methods, learning and culture is for the principal, teachers and students something to be accepted implicitly or explicitly as an ending itself.

On the other hand, this research project ran from November 2019 to June 2021, preceded by 1 and a half year of class work, field work takes place in this month of May 2021 running for 2months.This exercise helps the researcher to have an in-depth on the different forms of challenges that are an impediment to the digitalization and effective school administration in selected secondary schools in Yaohunde VI municipality.

The objective of this paper was to present the drawbacks that serve as a base for the digitalization of school information system and effective school administration in Cameroonians institutions. In this wise, the issue was examined historically, theoretically, contextually as well as conceptually so as to better assimilate the prevailing situation.

Chapter one which is the introductory part enlightens the reader on the background issues after which the problem was stated. The objectives of the study defined and variables of the study indicated, the hypotheses and research questions outlined, delimitation of the study. The next chapter will deal with the definition of concepts used in the study, literature relating to the variables of the study and theoretical framework of the study.

CHAPTER TWO
LITERATURE REVIEW AND THEORETICAL FRAMEWORK

This section deals with the study of conceptual Literature on key concepts and variables. This is important literature on digitalization, school, information, effectiveness, administration, school information system, school administration, and secondary schools will be expatiated upon. The second part deals with related literature on similar studies, the third part deals with the theoretical insertion of the study in which the theories of diffusion of innovations, the unified theory of acceptance and use of technology and the connectivism learning theory.

Key concepts

Digital Technology

In the area of digital technology development Cameroon faces the dual challenge of accelerated and transformative industrialization of the economy on the one hand, and its integration into the dynamics of information and communication technologies on the other hand, given that neutralization of the digital divide is the ultimate issue in this area. To face this challenge, it will be imperative to promote a synergy of actions of the strategic partnerships between the States and major national and international private operators. More specifically, it will be necessary to: (i) reconfigure the national digital ecosystem particularly by restructuring the sector through the creation of a digital infrastructure in heritage a company; (ii) build the consequent digital infrastructure; and (iii) secure network globally. In addition, Government plans to set up digital and technology parks for: (iv) developing the production of digital content; (v) increasing and diversifying digital uses and services (vi) developing the manufacturing and assembly of digital parts and appliances (NDS30, 2020).

Digitalization

Digitalization is the process of creating a digital image and then presenting it on a computer, local area network or the Internet. Digitalization refers to the conversion of an item in printed text, manuscript, image or sound, film and video recording from one format (usually print. or) in other words is the process of converting information into a digital format, in which the information is organized into bits. Also, digitalization is transforming the world in almost every aspect of life during the last few decades. The

access to internet, increase of people using mobile phones, social media and other ICT services changed the way people interact, communicate learn and work in almost every country (Laura , 2018); (Parviainen, et al.2017).

Witten and David (2003), described digitalization as the process of taking traditional school materials that are in the form of hard paper books and converting them to electronic formats where they can be stored or manipulated by a computer. De Stefano (2001), explained that there must be a reason for digitalization and such reasons include the fact that school materials that are growing old and require constant reuse and are in danger of extinction be reproduced, stored and placed in formats that enable them to be retrieved at any point in time. In essence it involves the production, storage, retrieval and dissemination of materials. Materials that can be digitalized in the school system could include; library books, instructional materials, images, manuscripts, photos and photographs, musical recording.

This is the representation of an object, image, sound, document or signal by generating a series of numbers that describe a discrete set of points or samples. The advance learner's dictionary defines digitalization as the conversion of data or information from analog to digital or binary.

School Effectiveness

Effectiveness is the capability of producing a desired result or the ability to produce desired output. When something is deemed effective, it means it has an intended or expected outcome, or produces a deep, vivid impression. Hornby (2000) defines effectiveness as the ability or capability of the individual to produce desirable results. A school is an educational institution designed to provide learning spaces and learning environments for the teaching of students (or "pupils") under the direction of teachers. Most countries have systems of formal education, which is commonly compulsory. In these systems, students' progress through a series of schools. The names for these schools vary by country (discussed in the Regional section below) but generally include primary schools for young children and secondary schools for teenagers who have completed primary education. An institution where higher education is taught is commonly called a university college or university, but these higher education

institutions are usually not compulsory. In addition to these core schools, students in a given country may also attend schools before and after primary education. Kindergarten or pre-nursery provide some schooling to very young children (typically ages 3–5).

University, vocational school, college or seminary may be available after secondary school. A school may be dedicated to one particular field, such as a school of economics or a school of dance. Alternative schools may provide nontraditional curriculum and methods. There are also non-government schools, called private schools. Private schools may be required when the government does not supply adequate, or special education. Other private schools can also be religious, such as Christian schools, and others; or schools that have a higher standard of education or seek to foster other personal achievements. Schools for adults include institutions of corporate training, military education and training and business schools.

In home schooling and online schools, teaching and learning take place outside a traditional school building. Schools are commonly organized in several different organizational models, including departmental, small learning communities, academies, integrated, and schools-within-a-school. In other words, school is primarily a place to learn and to improve chances of success in my career and life as a whole. It's a place to better oneself, not just for the good grades, but for the satisfaction of knowing that its better going through it. School doesn't just teach you facts and academic skills, but disciple, social communication skills, leadership and so many more things too. Other people aren't interested in what they can get out of school, though, and see it as a place to socialize, become popular, have lots of friends and have a good time. Having friends and fitting in is probably an important part of school for everyone though, be they popular and carefree or hardworking and academic. For some children and young people, school is so much more than these trivial things. School can be a place of safety, perhaps from an abusive home life, or for children in third world countries, as a way of avoiding dangerous manual labor from a young age and giving themselves the best chance to have a better future than they would have otherwise. For many such children, school can also be the place where they get their only hot meal of the day, and it offers the only opportunity they will ever have to learn.

Hornby (2000) defines secondary school as a school for young people between the ages of 11 and 16 or 18. Merriam Webster .com dictionary defines secondary school as a school intermediate between elementary school and college and usually offering, general, technical, vocational, or college preparatory courses. Achankeng (2014) defines a secondary school as a school whereby pupils are admitted after leaving primary school and after obtaining the government common entrance examinations and a first school leaving Certificate. It is made up of seven years. At the end of the 5th year, students obtain the ordinary level certificate. The last two years are referred as high school. At the end of the high school, students obtain the Advanced Level Certificate. A high school in Cameroon is part of a secondary school but in Cameroon it is habitual to talk of a secondary school for a school which ends at the ordinary levels and a high school for one which offers the complete secondary education programme of 7 years or one which simply has lower and upper sixth classes.

School Information

The Student and Exchange Visitor Information System (SEVIS) School Information page displays the school's current information, which is recorded on the school's Form I-17. The School Information page is the main hub for actions a designated school official (DSO) can take on a school record. It provides easy access to update the school's record, when needed. The School Information page has multiple sections for easy viewing and access of school information: What is school administration? School administration involves the management of all school operations, from creating a safe learning environment to managing the school budget. ... School administrators could also be superintendents, who help oversee multiple schools in a district. Young (2003) Integrating ICT into second language education in a vocational high school. Journal of Computers Assisted Learning, 19, 447-461. Yunus (2007). Malaysian ESL teachers' use of ICT in their classrooms: expectations and realities.

The definition of information is news or knowledge received or given. An example of information is what's given to someone who asks for background about something. Information is the summarization of data. Technically, data are raw facts and

figures that are processed into information, such as summaries and totals. www.yourdictionary.com › Information is organized or classified data, which has some meaningful values for the receiver. Information is the processed data on which decisions and actions are based.

World Bank Student Dictionary (2001) defines "information as knowledge about someone or something, facts and data" The Dictionary of science and Technology (1995) defines information as a means of given data by the way in which it is interpreted and also as any intelligence which can be communicated to a remote destination by electrical or electromagnetic means "information is processed data.

Teacher in-service training

According to Ayvaz-Tuncel & Çobanoğlu (2018) in service teacher training refers to the relevant courses and activities in which a serving teacher participates to upgrade his / her professional knowledge, skills, and competence in the teaching profession. This encompasses all forms of education and training given to a teacher who is already on the job of teaching and learning. In - Service teacher training allows for such activities that may include seminars, workshops, conferences, classes and exhibitions among others that are designed to develop and improve employees in an organization from the initial employment stage to retirement. Morgan (2010), in his study on benefits of professional development, found out that teachers acquire more knowledge which can help them deliver more while in the class. ICT can impact student learning when teachers are digitally literate and understand how to integrate it into curriculum. Schools use a diverse set of ICT tools to communicate, create, disseminate, store, and manage information. ICT tools stand for Information Communication Technology tools. The ICT tools means to digital infrastructures like computers, laptops, printers, scanners, software programs, data projectors, and interactive teaching box (Nomor, 2024).

Administration

According to the Cambridge Advanced Learner's Dictionary (2005, p.16), administration is" the arrangement and task needed to control the operation of a plan or organization "Also, the world book dictionary (2001, p. 10) defines administration as

"the management of business, government, school, club or other groups". Also, Tamajong and Fonkeng (2009, p.1), says administration is a group of people brought together in a systematic manner in order to achieve a desired objective, will constitute an organization "According to this work, the definition of Fonkeng and Tamajong suit this study because it gives a clear meaning of administration and an example which is the school. Administration is a process of systematically arranging and coordinating. The human and material resources available to any organization for the main purpose of achieving stipulated goals of that organization (Adcome, 2007).

According to Al-Sarairah & Al-Sarayrah (2024) school administration involves the management of all school operations, from creating a safe learning environment to managing the school budget. To further define school administration, one needs to consider the different areas of school administration and who performs these school administrative duties (Adcome, 2007). ICT helps facilitate the transaction between producers and users by keeping the students updated and enhancing teacher's capacity and ability fostering a live contact between the teacher and the student through e-mail, chalk session, e-learning, web-based learning including internet, intranet, extranet, CD-ROM, TV audio.

Types of digitalization

Inceoglu, Vanacker & Vismara (2024) define digitization as the material process of converting individual analog streams of information into digital bits. The second importance is related to digitalization as the acceptance or increase of the use of digital technology by organizations, industries, countries. According to Inceoglu et al. (2024) the process of digital transformation is how many domains of social life are restructured around digital communication and media infrastructure. A simple example can also show the difference between conceptual meanings.

In the context of digitization, we use a digital tool to scan; the first focused definition was presented by Maxwell & McCain (1997), who considered digitalization as the transformation of analogue signals into digital pieces. The aforementioned description was therefore supported (Hagberg, Mallard, Ferriero, Vannucci, Levison, Vexler & Gressens 2015), Rodanou 2021). Whereas Machekhina (2017) described

digitalization in a broader way, characterizing it as all information types to the digital language. Should be noted that digitalization is the most significant on-going transformation of contemporary society and encompasses several domains of daily life, such as: the social, the economic, and the organizational domain, in order to create and harvest value.

In their article, Eling & Lehmann (2018) also presented a very similar debate about the concept of digitalization, with the difference that, in the end, they present a middle ground conceptualization, between the broad and the narrow. Likewise, in our view: digitalization is the phenomenon of transforming analogue data into digital language (i.e. digitization), which, in turn, can improve business relationships between customer and companies, bringing added value to the whole economy and society. The integration of the analogue and digital worlds with new technologies that enhance customer interactions, data availability and business process Gobble Digitalization refers to the use of digital technology, and probably digitized information, to create and harvest value in new ways (Palander, Tokola, Borz & Rauch, 2024). Digitalization is the growing application of ICT across the economy "encompassing a range of digital technologies, concepts and trends such as artificial intelligence, the "Internet of Things"(IOT) and the Fourth Industrial Revolution"(citing IEA) Ringenson et al. Digitalization is about social life's restructuring around digital communication and media infrastructures (citing) Gebre-Mariam and Bygstad. Digitalization refers to the development and implementation of ICT systems and concomitant organizational change, it involves the transformation of socio-technical structures formerly mediated by non-digital artefacts into ones mediated by digitized artefacts. Digitalization is defined as the way many domains of social life are restructured around digital communication and media infrastructures. In simple terms, digitalization may be defined as the use of digital technologies (Zheng, Grosse, Morana & Glock, 2024).

Digital Education brings about some advantages (Ngwa, 2023). Students able to access learning materials and interact and collaborate with their tutors and peers online can enjoy flexible, engaging and motivating courses of study. Digital education can expand the reach of learning to communities who could otherwise be excluded and provides scope for rewarding, personalized and self-directed study. Personalized

learning tailor's tuition according to the needs of each individual. This can be in terms of pace, content and delivery. It recognizes that one size rarely fits all when it comes to education. After all, students will learn in different ways and at different speeds. They will have varying needs and will respond in individual ways to visual, written and spoken information (Fossung & Warah, 2020).

A modern learning platform creates a space for learning, where each student follows their own learning pathway. For example, if a student is struggling with a topic, additional resources can be triggered to help them backfill their knowledge. Another student, already competent in that area, wouldn't need additional content; they might need to devote more time on another part of the course instead. By personalizing learning, educators can aim to meet each student's particular needs for the best results. Take a look at this video to find out how intelligent agents and release conditions, which predetermine the content students access and when, help personalize the learning experience.

Gamification taps into models familiar to users of technology to deliver enhanced and engaging learning experiences for more successful outcomes. Easy-to-use digital tools, which many students will be familiar with from gaming, can be incorporated into course design to motivate them through rewards and real-time feedback. By drawing on the principles of the gaming model, education can make use of a range of techniques. These include the awarding of points and badges. After all, students will make regular achievements – recognizing and rewarding them motivates them to continue. Students have something to aim for when they can see a clear roadmap through their learning journey and when they're acknowledged for reaching key milestones. Games-based learning can also give recognition for desirable learning behaviors such as participating in discussions and carrying out independent research. As students' progress through their education, they will need to become competent in self-directed learning. This refers to students' capabilities to manage their own time, do their own research and take ownership of their learning.

Along the way, they will discover more about how and when they learn best. This will help them develop strategies for maximizing study time to ensure they get the most

out of it. For some, that might mean learning first thing in the morning; for others, later in the day. Knowing how to take ownership of an activity, organize time to deliver it and get the best results are important career and life skills. Insights into how to plan and organize their time will stand students in good stead in the world of work. A digital learning platform provides an ideal framework for each student's learning journey. There, students can access their course schedules, see the range of their commitments over time and plan their course of action.

Online learning provides students, who might otherwise struggle to access education, with a way to learn. In rural communities, where travel infrastructure may be limited, being able to study remotely is ideal. Likewise, students with additional responsibilities, such as work, childcare and other caring duties, will appreciate options that enable them to fit studying into their busy lives. Education must be for all; not everyone will be able to learn at set hours or from the same location. Through digital education, students and tutors can connect, regardless of where they are located. Materials in the learning platform provide students with all the content they need, even when they can't go to the college, university or other site of learning. Whether learning is fully online, or a blend of in-person and digital, levels of interactivity and collaboration can still be high with the online learning environment providing the means for discussion forums, tutorials and feedback.

Students can learn at their own pace as well as being able to access learning anytime, from anywhere, digital education also enables students to learn at their own pace. They can re-read materials to gain a deeper grounding in a topic or even revisit earlier modules.

The learning platform gives students 24/7 access to a range of materials, including recorded lectures which they may wish to view again. Content is preserved, not lost, when a lecture ends. Self-directed learning, undertaken at students own pace, gives learners ownership of their own experience, which is important to maximize successful learning outcomes, keep students motivated and engaged and avoid an 'edtech reality gap'. As students' progress through their studies, they are likely to be

assessed a number of times. Digital assessment needn't be confined to the marking of written work – it can include live online or pre-recorded presentations.

Students can demonstrate modern foreign language pronunciation through audio files, or video themselves completing a practical task. Digital assessment includes time saving features that make grading and giving feedback simpler and more effective to free up tutors from repetitive marking. That way, tutors can focus time on addressing learning points instead. Quizzes with correct and incorrect answers can be automatically marked, saving tutors a huge amount of time. Students benefit from simple access to their grades and feedback over time through the online learning platform. That way, they can clearly see their progress and are able to revisit feedback whenever they need to.

Blended learning combines some face-to-face tutoring with online learning. It's an approach that can work very successfully because it combines the convenience and flexibility of online, with the personal touch of in-class tuition.

Each institution and educator will have their own approach to blended learning, according to the course type and needs of students. For many, blended learning enables a 'flipped' classroom approach, in which students' access content through the learning platform to prepare for in-person lessons. In this way, knowledge acquisition occurs outside the classroom, perhaps from recorded lectures, documents, videos and other resource, and knowledge application occurs in class.

Competency-based learning recognizes that, within a specified period of study, learners will progress at different rates. Students will need to spend more time on some topics than others. They might also need to supplement main course material with other information to plug knowledge gaps. Many of today's learners are already familiar with sharing content online. As users of social media platforms, they are used to online spaces being collaborative. Tutor to student and student to tutor. Students can share their work with each other as well as the tutor so that they learn from each other. They can also work on group projects using document sharing tools, video conferencing and chat forums. This type of collaboration builds team working and social skills. Online, everyone is only a click away, so students can connect with their peers all over the world, broadening horizons and building diverse connections. We all need to be digitally

literate in today’s technology age. Digital literacy means being able to use technology to find and share information. It’s an essential life skill, as well as a prerequisite for many jobs. Even the act of applying for a job is likely to include technology.

Digital education helps learners build the skills they need to navigate technology and to get the best out of it. Students of digital education become comfortable with finding, accessing, consuming and sharing content online. They become discerning in the content they see, making judgements on what’s legitimate, safe and fact-based. Digital education equally provides a range of advantages whether learning is fully online or as part of a blended teaching model. The broad scope that digital learning provides for a range of content types help keep students engaged. All the while, they’re building valuable digital skills that will serve them in their personal and professional lives. For educators and institutions, the digital learning platform helps connect students with tutors and each other, and the data it generates provides valuable insights into learning progress. As you embark on, or continue your digital education journey, find out more about the modern digital learning platform.

Educational Administrator's Perception of ICT

The complexity of school administration requires a modernized system approach to ease the process of implementing educational policies and actualizing the goals of education. MIS is good for managing students' applications for admission online, processing students' results using spreadsheet software, managing students' attendance using spreadsheet software, disseminating information to students and parents through the school website, encouraging teachers to issue home assignment to student using email system, and encouraging multi-media instructional delivery using PowerPoint software application but it could be noticed that school administrators do not utilize management information system for students’ personnel administration in secondary schools. School administrators can use MIS in the financial and student management of their institution (Chidinmachinenye, Anachuna & Chidinma, 2019).

According to Aini, Fitria & Wahidy (2024), MIS supports a wide range of school administrative activities including attendance monitoring, assessment records, reporting, financial management, and resource and staff allocation. It is the application

of modern technologies and computerized methods imputing, processing, storing and retrieving organizational information for effective administration. MIS has changed school management in the areas of leadership, decision-making, workload, human resource management, communication, responsibility, and planning. MIS help organizations in making operational, tactical and strategic decisions. Benwari and Dambo (2014) assess that the school management information system can be used for fee management, hostel space allocation, timetabling and the management of school infrastructures. In the management of students' personnel, it keeps track of students who have default payments or haven't paid any fee reducing financial fraud at the school level. Record is the basis for governance, control and decision-making in every institution. This record could be kept using electronic sources such as computers and databases, but it could be noticed that most of a still paper base. If MIS are used efficiently and effectively this will increase administrative effectiveness, and accountability in the management process and ease decision-making. School Management Information Systems (SMIS) are large databases which are used to run day-to-day activities of the school including student records, personnel records, financial records, teaching and learning materials, and infrastructure stored electronically in such a way that different authorized users have access to the information making it easy to generate report and aid in the decision-making process. This SMIS can be configured using a Local Area Network (LAN) or connected to a Public server to manage schools efficiently. On the public server, parents can check students' results and update them.

The information administration cycle in schools includes three major components namely Student administration, Staff administration and General administration. Student administration deals with the admission process to learning activities till the processing of results and performance analysis with the aid of e-media. Staff administration is concerned with recruitment, allocation of tasks, attendance, and leave management and performance appraisal of staff using ICT. General administration of the school management system includes the various day-to-day activities of the entire system. A good communication system can enhance administrative effectiveness. ICT can facilitate the efficient and effective storage of information using magnetic tapes,

disks, optical disks, cassettes, flash drives, memory cards, and zip drives to ease access by school administrators. There is a disparity in the use of ICT between rural and urban regions in Mogadishu as a result government policy on the provision of ICT equipment is low and NGOs do not equip these schools. This study reveals that school administrators' skills in the use of ICT is very low (Udo, Ochuba, Akinrinola & Ololade, 2024).

For an effective EMIS to produce information that is accurate, timely, complete and concise, it must be supported by a manager skillful in information management as well as the necessary funds that make the information management system effective. For an EMIS to be effective it requires enough financial and material resources. EMIS provide day-to-day support for administrative decisions for school management. MIS retrieves information about internal operations from the database, providing information from external sources too and stores information about the present situation of the school. These activities help in the functions of the school. Decision Support Systems (DSS) are intensive computer-based information systems that use decision models and specialized databases to assist the decision-making processes of managerial end users. From this study carried out in Aba zone, Aba region, Findings reveal that management information system leads to a result-oriented administration and speedy execution of tasks in secondary schools' management (Tonle, Niassy, Ndadji, Tchendji, Nzeukou, Mudereri... & Tonnang, 2024).

School heads, teachers and record officers fill out questionnaires, these questionnaire gives information about the educational sector and help policymakers. With the coming of EMIS databases are created to store a large amount of data from school activities and annual census. In redefining the management of the educational institution, head teachers are required to adapt to these technologies for efficient and effective management (Wako, 2003). Njoku (2015), adds that communication aided by good communication channels would help organizations attain the goals in the school system. The diffusion of ICT innovations in the education industry has reformed and improved school administrators' professional capabilities in the management of their institutions. The Principal's administrative effectiveness includes decision-making,

planning, communication, influencing, coordinating and evaluation of school activities. With the aid of ICT, principals can efficiently and effectively carry out these activities since adequate information is collected for management. His study carried out Uyo Senatorial District of Akwa Ibom State revealed that there is a significant relationship between ICT usage in the communication process and principals' administrative effectiveness in terms of goal attainment, budgeting and interpersonal relations. Also, there is a significant relationship between ICT usage for records keeping and principals' administrative effectiveness in terms of goal attainment budgeting and interpersonal relations. From his study, it's evident that ICT has a great role to play in effective school administration. EMIS is a system of people, technology, models, methods, processes, procedures, rules and regulations that function together to provide education leaders, decision-makers and managers at all levels with a comprehensive, integrated set of relevant, reliable, unambiguous and timely data and information to support them in the completion of their responsibilities.

It is crucial for tracking changes, ensuring data quality and timely reporting of information and facilitating the utilization of information in decision-making. This very circumstance makes it one of the principal sources of data to monitor education sector plans, as well as SDG 4 commitments. The type of data entered into the system needs to follow a logical, fixed methodology and have a well-defined purpose. A successful EMIS is credible, and operational in planning and policy dialogue, as well as teaching and learning. It produces and monitors education statistics within an education system and has a multifaceted structure, comprising the technological and institutional arrangements for collecting, processing and disseminating data (Abdul-Hamid, 2014). As the potential users of data, education administrators, managers and staff, such as teachers, are systematically provided with accurate and timely information so that decision-making, planning, project development and other management functions and operations can be carried out effectively. EMIS covers all the following sub-sectors of education: Staff management, financial management, pedagogical material, tracer data following study, institution details, learning achievements, students, infrastructure and facilities (UNESCO, 2012).

EMIS and ICT are integrated into school management practice. There is a faster integration of ICT tools in schools in Kenya for pedagogic and administrative purposes. Management of the school is becoming complex, it demands the use of ICT tools for storing, processing, distributing and disseminating information. ICT can also contribute to the production of knowledge and communication sharing among the school community. From the study, it is noted that ICT services are limited to a few major towns leaving out the rural areas of the country where most Kenyans live. However, the Kenyan government is making many efforts to support ICT development, deployment, Maintenance and its introduction in public libraries to ease access to online learning materials. In most studies carried out on the use of ICT for school administrative purposes, most principals claim it facilitated that work. The study concludes that ICT is vital for usage in monitoring activities on students' personal health records, students' academic progress, students finance records, procurement records, and financial transaction records. Also, it is vital in monitoring staff personal data records, school policies and history, school academic performance records, students' subject choices records and school facilities and equipment records. Information Communication Technologies (ICTs) are information-handling tools that are used to produce, store process, distribute and exchange information. ICT assist school administrators in meeting the task of school management in the areas of curriculum and instruction, school community relationships and school business operations. The introduction of ICT in schools enhances the daily school routine, and programme, solving individuals or groups' as well as staff development. Principals suggested that in-house workshops and seminars on the use of ICT in school systems should be organized. Such seminars will make staff understand the usage of ICT as well as know how to use various equipment in the day-to-day running of the school affairs (Manju, 2014).

Management Information System

MIS is a system or process that provides the information necessary to manage an organisation effectively. MIS is being used by schools to support a range of administrative activities such as financial management, assessment records, reporting, attendance monitoring and resource and staff allocation. The components of MIS which

include hardware, software, data, procedure and people must interact for an efficient management of an organization.

Manju (2014), describes MIS as a process or system that provides the necessary information to manage an organization effectively. Academically it refers to the study of how individuals, groups and organizations evaluate, design, implement, manage and utilise systems to generate information to improve the efficiency and effectiveness of decision-making. MIS are distinct from other Information systems, in the sense that they are used to analyse and facilitate strategic and operational activities. These systems are designed to enhance communication among employees and to deliver complex material more easily throughout the organization. It is also used by managers to automate activities in an institution. Telem (1999), defines management information systems in his words as "an executive information system planned to match the structure, management task, instructional process and particular needs of the school" school management information systems increase effectiveness and efficiency by saving time and facilitating the development of alternative solutions for advanced problems. Information systems sustain not only the information process but also support innovations. Since being amendable to different changes, these systems help manage the load for change. Management information systems have changed school management in the areas of management, decision-making, workload, human resource management, communication, responsibility and planning.

Principals have started to make use of information systems in the gradually-increasing daily management of staff (May, 2003). Reasons are increasing effectiveness at work by processing information, increasing managerial effectiveness by meeting the need for information and gaining superiority in competitions by directing strategies (Yuen, Law &Wong, 2003).

Laudon & Laudon, (2012) described an information system "as a set of interrelated components that collect (or retrieve), process, store, and distribute information to support decision-making and control in an organization." An SMIS also referred to as a school management information system, education information system, student management system, academic administration system or student administration

system is a “management information system that is designed to match the structure, management task, instructional processes and special needs of the school”. The MIS manages a wider range of services than just student management. MIS play three vital roles in educational institutions: supports the operation of institutions, guides managerial decision making and provides strategic and comparative advantage to institutions.

Educational Management Information System

According to Subosa & West (2018), Educational Management Information System (EMIS) is an organized group of information and documentation services that collects, stores, processes analyses and disseminates information for educational planning and Management. All educational institutions nowadays use MIS for effective and efficient management. With the evolution of EMIS, data is typically collected separately on each of the subsectors of education and training. This may, however, change in the future as the interconnection and transitions between subsectors become more important. Furthermore, education stakeholders will increasingly be asking questions about the equity and relevance of educational opportunities and outcomes, for the advancement of quality education and lifelong learning and, more broadly, for the SDGs. The educational data currently being collected by Member States are insufficient and do not cover the full range of data needed to monitor progress towards SDG 4. While MDG 2 focused on universal access to basic education and ensuring gender parity in education, SDG 4 is broader, expanding to lifelong learning with a shift in focus from “schooling” to “learning”, as well as a redefinition of what a “learner” is (Subosa & West, 2018). An EMIS is an ensemble of operational systems and processes - increasingly supported by digital technology that enables the collection, aggregation, analysis and use of data and information in education, including management and administration, planning, policy formulation and monitoring and evaluation.

In many countries, EMIS still does not collect data by all the disaggregation suggested by SDG4. A significant level of work is needed to make EMIS collect data at all levels of disaggregation. Most countries collect aggregated data from schools. In the process of aggregation, important data on ethnicity, disabilities, language, wealth and

other data on characteristics of students and teachers tends to get lost. The school census questionnaire also does not capture a lot of important data on student and teacher characteristics. Data sharing and integration have to promote the effective collection and processing of administrative data from different data sources. It is important to map out who are the main data providers for the different types of data. There is a lack of coordination among different data producers at the national level. There are also organizational, as well as technical issues in sharing and exchanging data among educational data producers.

According to the Association for the Development of Education in Africa (ADEA) 2016 the application of MIS in schools in Africa is gradually moving to reality, in countries like Nigeria, Egypt, Ghana, Gambia, Angola, Uganda, and Morocco. Despite these performances, there are some deficiencies, including private sector data coverage, relatively low EMIS budget, outdated communication and information technology infrastructures, and the lack of qualified human resources at the decentralized level. The lack of timely, accurate statistics on education in 1986 forced the Nigerian government to develop a National Data Bank (NDB) and later a sectoral data bank in 1988, including the Education Data Bank (EDB) known as Nigeria Education Management Information System (NEMIS). The sectoral data banks were to serve as Information and Decision Support Centres (IDSC) for their various sectors. NEMIS helps computerized education databases to monitor and evaluate educational system performance and the crafting of effective education policies. The Nigerian government has invested in EMIS to update school census data, per capital funding to schools, effective monitoring of learner enrolments and attendance, address emerging institutional issues, and provide appropriate information to support planning (Matthews, 2016).

Educational management information systems (EMIS) have significantly brought enormous inputs and transformations to data and information management in education. Educational institutions recognize the value of information and data in decision-making. The education system relies on accurate, timely and complete education data and information in order to function properly. Institutional management information systems

should be designed to achieve the following; Enhance communication among employees, deliver complex materials throughout the institution, provide an object system for recording and aggregating information, reduce expenses to labour-intensive manual activities, and Support the organization's strategic goals and direction. MIS enhances job performance throughout an institution and also supports management. Management can use MIS to measure performance, allocate, manage and control resources, and help an institution comply with regulatory requirements. An effective management information system typically employs computers and other sophisticated technology to process information that reflects the day-to-day operations of the company (Mohammed, Yusuf, Sanni, Ifeyinwa, Bature & Kazeem, 2014).

MIS resources for Education

According to Ofodu (2007), the various MIS resources available in Nigerian schools include computers, overhead projectors, internet, fax machines, CD-ROMS, electronic notice boards, slides, digital multimedia, video/VCD machines, DVD players and so on. However, the use of MIS resources within schools especially in institutions has become modus operandi for modern academics and students so much so that there is an inextricable intertwinement between MIS and academic processes within schools in Nigeria. According to Edewor, Imhonopi and Urim (2014), a closer look at the existing use and benefits of MIS resources in schools in Nigeria reveals the following:

Computers (Laptops & Desktops): Schools in Nigeria across a wide continuum have been enabled by the use of computers, including laptops and desktops. Administrators, teachers and students now use these ICT tools as a medium to type, process and store their work for later use. Before the advent of mobiles such as iPhones, iPods, iPads and Tablets, 20th-century schools depended hugely on desktops for data generation, conversion and storage.

PowerPoint: These are also used by school administrators during seminars and training programs.

Email: Many school administrators now rely on emails to sustain interaction and improve communication. Through emails, these days, administrative documents are sent

from one delegation to another and to their education ministry faster. Emails have become so useful to schools that it is almost anathema not to have one as a school or an administrator.

Digitalisation of School Processes: Nowadays, application and admissions into Nigerian schools are conducted via online processes and these include payments, registration, admissions, and confirmation of acceptance and publishing of information for stakeholders. Similarly, e-communication channels are gradually replacing face-to-face communication processes and these make for speed, ease and time-saving advantages. Digital papers are also replacing physical papers which take up space and create environmental eyesore when they are being disposed of. Also, physical libraries are gradually giving way to the emergence of e-libraries.

Websites: Most, schools in Nigeria have a website or multiple websites that contain their corporate information and other details. Through this forum, the institutions are able to connect with their students and staff and meet the needs of other stakeholders. Also, websites have become marketing tools for institutions including remaining communication channels to explain the programmes and activities of the respective institutions.

Mobiles: Although not yet fully deployed, to a large extent, some schools in Nigeria currently use mobile technologies such as mobile phones, Tablets, iPads, iPods and others to prosecute admission, learning, teaching and research efforts. These instruments help for the easy generation, processing, storage and transmission of data. They also provide multimedia advantages which offer multiple administrative advantages and real-time communication between and among administrators, teachers and their students.

Furthermore, the need for effective use of MIS resources especially among schools is highly fundamental. However, it could be a fundamental one only when authorities of these institutions realize that all the MIS resources found in their institutions are categorized into computers, storage media and telecommunication (Mondal & Mete, 2012). When they realized that the computer in their offices performed processing operations on data, they processed stored and retrieved information as well

as assorted data, and that storage media such as magnetic disks and tapes, CD-ROM and diskettes are also used to provide additional storage media for information.

Theoretical framework

The Oxford English Dictionary defines theory as a formal set of ideas that is intended to explain why something happens or exists. Nworgu (1991) defines theory as a combination of concepts, propositions, and definitions that show the relationship between and amongst variables in an attempt to explain a phenomenon. According to Amin (2005), a theory helps to provide a guide for systematized and interrelating various aspects of the research. Different theories have been chosen to guide this section of the study. These theories have been chosen in relationship to the scientific contribution it has to play to this work. In the following paragraphs, these theories will be vividly reviewed and presented. The theories will present its strengths, weaknesses and the relevance of the theories to this study.

The connectivism learning theory

This theory was propounded by George Siemens (2004) and Stephens Downes (in 2019). They said connectivism begins when an individual turn to digital technology to solve a problem. It is backed up by actions such as googling a question, texting a friend or searching for something or a topic over the social media. The theory equally holds that the use of digital technology helps to solve a problem and in turn deepens the understanding of a topic.

Connectivism is equally built on the idea that digital technology brings people together and creates new learning opportunities. It’s out to transform the work place and the educational milieu, with today's workforce moving towards remote work and remote learning, connectivism provides a good framework for learning and so accepting technology as a major factor in the learning process. Thus promoting the idea that learning can successfully happen through digital channels, including social media, forums videos and blogs.

From the above theory , it can be deduced that Siemens in the connectivism learning theory explained that learning can successfully occur through digital channels

by connecting with individuals or groups of people in distant places or all over the world through digital channels including social media, forums, videos and blogs using the Internet due to the fact that the increasing rate of ICT development brings about radical changes in the way we work, think learn and communicate (Vassilos, 2012). The theory therefore implies that teachers and learners need well-furnished computer laboratories good quality gadgets through which interactions with others or distant learning can take place. If they are provided with adequate materials, it will enhance connectivity and thus promote learning Zurich, Stanzel, Kopp-Schneider, Prieto & Honegger (2013) observed that information and communication technology (ICT) make our work more sustainable: saving energy and material resources by creating more value from less physical input, increasing quality of life forever more people without compromising the future generation ability to meet their needs.

Strengths of the connectivism learning theory

It creates collaboration within connectivism. Learning occurs when peers are connected and share opinions, viewpoints, and ideas through a collaborative process. It empowers students and teachers and embraces diversity. Connectivism accepts technology as a major factor in our learning process. In fact, this theory promotes the idea that learning can successfully happen through digital channels, including social media, forums videos and blogs. The connectivism learning theory equally encourages group interactions and conversations, allowing us to express various opinions and positions. When making choices, solving problems and understanding data. Connectivism also encourages education through online communities, blogs and other public spaces.

Connectivism is not limited by time nor space, meaning that the learner has access to all information at any point in their life.it equally emphasis the importance of social connections and networks in constructing knowledge. Leaners are co- creators rather than passive recipients in their own education. It is a powerful and unique way to learn because it allows people to create their own knowledge.

Weaknesses of the connectivism learning theory

There may be no clear path for learners because there are so many different learning methods available. It is also criticized since it has no clearly define knowledge. It does not provide any guidance in terms of what should be learned, so the learner has no direction. Students learn according to their ability level instead of age- level.

Relevance of connectivism theory to the study

Connectivism is a learning theory that suggests that knowledge is not transmitted from the teacher to the student but instead constructed by both parties through social interaction and shared action experience.

This theory in the study stipulates that knowledge is not transmitted from the teacher to the student but instead constructed by both parties through social interaction and shared action experience through new technology tools or gadgets such as computers, phones and tablets. Both parties then connect through social media from different and distant learning points bringing into place digitalization of teachings and effective school administration. The teacher who is well acquainted with knowledge, connects with students from different angles through social media to involve the students such that the word can pass across.

The theory provides a unique opportunity for teachers and students not only to learn as individuals but to collaborate with their peers, their school administrators, pedagogic inspectors in distant places without actually seeing one another but through social media making learning enjoyable without movement or displacement. Thus the theory leads the educators to study or continuous ongoing studies even during moments of pandemic and lockdown where ever.

The unified theory of acceptance and use of technology (UTAUT)

The unified theory of acceptance and use of technology (UTAUT) is a technology acceptance model formulated by Venkatesh and others in user acceptance of information and technology. The UTAUT aims to explain user intentions to accept and use information system and subsequent usage behavior. Recently, the unified theory of acceptance and use of technology has taken place as one of the most developed and intensive models to test and technology adoption and acceptance of those ready to use

it but the continuation to use it depends on two beliefs: in the first stage, the information has to be accepted by the users, then continuing usage which comes after acceptance depends on user's satisfaction with the system. In the organizational environment, it means continuing in increasing the investment in information technology (Hong, Thong and Tam 2006).

In the educational milieu, the concept of digitalization is unanimously accepted, tested, adopted and put into use and a continuous usage by users. Digitization in schools becomes pertinent in teaching, lesson preparation, recording of marks and other administrative work. Thus, the ability of users to accept, adopt new technologies with the intention to continue usage as it facilitates effective administration.

Strength of the utaut theory

The Unified Theory of Acceptance and Use of Technology has been hailed as one of the most practical models for explaining and understanding the psychological perceptions, external support conditions, behavioral intentions, and usage patterns of users accepting and using new technology. Therefore, this study attempts to reveal how ICT acceptance and use influence the teaching behavior of teachers based on the UTAUT.

It has taken place as one of the most developed and intensive models to test technology adoption and acceptance. It equally supports the technology development process. It brings about the use of various technologies within an organization and consumer market. It facilitates learning, break the distance barrier, simplifying tasks and providing entertainment and brings about quick access to information.

Weakness of the utaut theory

It is mostly self-reported usage and one cannot access actual usage Hung et al (2007). It equally uses a single information system for research (Benwari & Dambo, 2014). It is not appropriate for working situations. It is focus on one community, organization, culture or country and it will be difficult to generalize a particular result. Another weakness is that, the increasing rate and the development of ICT makes acceptance and adoption difficult for some people due to the scarcity of these gadgets

as some institutions may not afford and thus limited connections. The unavailability of these tools makes us to remain glued to the old approach of teaching which was teacher centered and the teacher building the knowledge always for the students.

Relevance of the utaut theory to the study

Digitalization in education refers to the use of desktop computers, mobile devices, the internet, software applications and other types of digital technology to teach students of all ages. Digital education helps learners build the skills they need to navigate technology and to get the best out of it. Students of digital education become comfortable with finding, accessing and sharing content online. Teachers are expected to use a variety of strategies to convey their message, we therefore understand that in this contemporary times technological tools cannot be left out in the teaching and learning process. Therefore, the government together with school authorities have unanimously accepted to involve these tools in the teaching and learning process. It is accepted by teachers and students because it eases work and connects people in distant places around the world. There is therefore acceptance, adoption, satisfaction and the idea of a continuous usage in subsequent studies and integration in most institutions.

The Diffusion of Innovation Theory

According to Roger's (1995, p. 56), theory of innovation is interested in the penetration of technical innovations in the fabric of our culture. Although this theory has a lot of criticism, Rogers findings brings to the limelight how innovations circulate in the social network. Rogers (1995, p. 57) also insists that difference in personality and behavior also affects persons which sometimes may lead to the acceptance or rejection of the innovation. To Rogers (1995, p.58) for any innovation to be successful, there must be an intermediator or agent of change. According to this theory, there must be one to one collaboration between all the agents of this innovation.

Therefore, total collaboration is needed between teachers, head teachers and Officials of the ministry for the complete and total integration of ICT in our educational system. According to the Macmillan English Dictionary for Advanced learners (2002) innovation is the invention of new ideas. Diffusion of Innovation (DOI) Theory,

developed by E.M. Rogers in 1962, is one of the oldest social science theories. It originated in communication to explain how, over time, an idea or product gains momentum and diffuses (or spreads) through a specific population or social system. The end result of this diffusion is that people, as part of a social system, adopt a new idea, behavior, or product. Adoption means that a person does something differently than what they had previously (purchase or use a new product, acquire and perform a new behavior). The key to adoption is that the person must perceive the idea, behavior, or product as new or innovative. It is through this that diffusion is possible.

Adoption of a new idea, behavior, or product (innovation) does not happen simultaneously in a social system; rather it is a process whereby some people are more apt to adopt the innovation than others. Researchers have found that people who adopt an innovation early have different characteristics than people who adopt an innovation later. When promoting an innovation to a target population, it is important to understand the characteristics of the target population that will help or hinder adoption of the innovation. There are five established adopter categories, and while the majority of the general population tends to fall in the middle categories, it is still necessary to understand the characteristics of the target population. When promoting an innovation, there are different strategies used to appeal to the different adopter categories.

The process of adopting new innovations has been studied for over 30 years, and one of the most popular adoption models is described by Rogers in his book, Diffusion of Innovations (Sherry & Gibson, 2002). Much research from a broad variety of disciplines has used the model as a framework. Dooley (1999) and Stuart (2000) mentioned several of these disciplines as political science, public health, communications, history, economics, technology, and education, and defined Rogers' theory as a widely used theoretical framework in the area of technology diffusion and adoption. Rogers' diffusion of innovations theory is the most appropriate for investigating the adoption of technology in higher education and educational environments (Medlin, 2001; Parisot, 1995). In fact, much diffusion research involves technological innovations so Rogers (2003) usually used the word "technology" and "innovation" as synonyms. For Rogers, "a technology is a design for instrumental action

that reduces the uncertainty in the cause-effect relationships involved in achieving a desired outcome" (p. 13). It is composed of two parts: hardware and software. While hardware is "the tool that embodies the technology in the form of a material or physical object," software is "the information base for the tool" (Rogers, 2003, p. 259). Since software (as a technological innovation) has a low level of observability, its rate of adoption is quite slow. For Rogers (2003), adoption is a decision of "full use of an innovation as the best course of action available" and rejection is a decision "not to adopt an innovation" (p. 177). Rogers defines diffusion as "the process in which an innovation is communicated thorough certain channels over time among the members of a social system" (p. 5). As expressed in this definition, innovation, communication channels, time, and social system are the four key components of the diffusion of innovations.

Four Main Elements in the Diffusion of Innovations

Rogers offered the following description of an innovation: "An innovation is an idea, practice, or project that is perceived as new by an individual or other unit of adoption" (Rogers, 2003, p. 12). An innovation may have been invented a long time ago, but if individuals perceive it as new, then it may still be an innovation for them. The newness characteristic of an adoption is more related to the three steps (knowledge, persuasion, and decision) of the innovation-decision process that will be discussed later. In addition, Rogers claimed there is a lack of diffusion research on technology clusters. For Rogers (2003), "a technology cluster consists of one or more distinguishable elements of technology that are perceived as being closely interrelated" (p. 14).

Uncertainty is an important obstacle to the adoption of innovations. An innovation's consequences may create uncertainty: "Consequences are the changes that occur in an individual or a social system as a result of the adoption or rejection of an innovation" (Rogers, 2003, p. 436). To reduce the uncertainty of adopting the innovation, individuals should be informed about its advantages and disadvantages to make them aware of all its consequences. Moreover, Rogers claimed that consequences can be classified as desirable versus undesirable (functional or dysfunctional), direct versus indirect (immediate result or result of the immediate result), and anticipated versus unanticipated (recognized and intended or not).

Communication Channels

The second element of the diffusion of innovations process is communication channels. For Rogers (2003), communication is "a process in which participants create and share information with one another in order to reach a mutual understanding" (p. 5). This communication occurs through channels between sources. Rogers states that "a source is an individual or an institution that originates a message. A channel is the means by which a message gets from the source to the receiver" (p. 204). Rogers states that diffusion is a specific kind of communication and includes these communication elements: an innovation, two individuals or other units of adoption, and a communication channel. Mass media and interpersonal communication are two communication channels. While mass media channels include a mass medium such as TV, radio, or newspaper, interpersonal channels consist of a two-way communication between two or more individuals.

On the other hand, "diffusion is a very social process that involves interpersonal communication relationships" (Rogers, 2003, p. 19). Thus, interpersonal channels are more powerful to create or change strong attitudes held by an individual. In interpersonal channels, the communication may have a characteristic of homophile, that is, "the degree to which The Turkish Online Journal of Educational Technology – TOJET volume 5, Issue two or more individuals who interact are similar in certain attributes, such as beliefs, education, socio economic status, and the like," but the diffusion of innovations requires at least some degree of heterophily, which is "the degree to which two or more individuals who interact are different in certain attributes." In fact, "one of the most distinctive problems in the diffusion of innovations is that the participants are usually quite heterophilous" (Rogers, 2003, p. 19). Communication channels also can be categorized as localize channels and cosmopolite channels that communicate between an individual of the social system and outside sources. While interpersonal channels can be local or cosmopolite, almost all mass media channels are cosmopolite. Because of these communication channels' characteristics, mass media channels and cosmopolite channels are more significant at the knowledge stage and localize channels

and interpersonal channels are more important at the persuasion stage of the innovation-decision process (Rogers, 2003).

Time

According to Rogers (2003), the time aspect is ignored in most behavioral research. He argues that including the time dimension in diffusion research illustrates one of its strengths. The innovation-diffusion process, adopter categorization, and rate of adoptions all include a time dimension. These aspects of Rogers' theory will be discussed later in more detail.

Social System

The social system is the last element in the diffusion process. Rogers (2003) defined the social system as "a set of interrelated units engaged in joint problem solving to accomplish a common goal" (p. 23). Since diffusion of innovations takes place in the social system, it is influenced by the social structure of the social system. For Rogers (2003), structure is "the patterned arrangements of the units in a system" (p. 24). He further claimed that the nature of the social system affects individuals' innovativeness, which is the main criterion for categorizing adopters.

This theory will be applied in this work to see how an innovation diffuses, set rolling accepted and adopted and how it gains momentum. Digitalization of information becomes an innovation that needs to be adopted in the school environment. Therefore, to improve the quality of the school, the principal is the critical person in making change to occur. According to Uyanga (2008), since a school is known to be an instrument of change and reforms in the society, the principal is said to be the pivot of such reforms and changes. Thus he must see to it that there is change from analogue to digital.

Limitations of Diffusion of Innovation Theory

There are several limitations of Diffusion of Innovation Theory, which include the following: Much of the evidence for this theory, including the adopter categories, did not originate in public health and it was not developed to explicitly apply to adoption of new behaviors or health innovations. It does not foster a participatory approach to

adoption of a public health program. It works better with adoption of behaviors rather than cessation or prevention of behaviors. It doesn't take into account an individual's resources or social support to adopt the new behavior (or innovation).

This theory has been used successfully in many fields including communication, agriculture, public health, criminal justice, social work, and marketing. In public health, Diffusion of Innovation Theory is used to accelerate the adoption of important public health programs that typically aim to change the behavior of a social system. For example, an intervention to address a public health problem is developed, and the intervention is promoted to people in a social system with the goal of adoption (based on Diffusion of Innovation Theory). The most successful adoption of a public health program results from understanding the target population and the factors influencing their rate of adoption.

The stages by which a person adopts an innovation, and whereby diffusion is accomplished, include awareness of the need for an innovation, decision to adopt (or reject) the innovation, initial use of the innovation to test it, and continued use of the innovation. There are five main factors that influence adoption of an innovation, and each of these factors is at play to a different extent in the five adopter categories.

Relative Advantage - The degree to which an innovation is seen as better than the idea, program, or product it replaces.

Compatibility - How consistent the innovation is with the values, experiences, and needs of the potential adopters.

Complexity - How difficult the innovation is to understand and/or use.

Triability - The extent to which the innovation can be tested or experimented with before a commitment to adopt is made.

Observability - The extent to which the innovation provides tangible results.

Relevance of the theory to the work

This theory is relevant to this work in that the idea of technology and particularly digitalization is received by the population and good use is made in the urban areas or at the centre were the necessary tools needed for this innovation to be applicable such as good infrastructure and the various communication tools required for this innovation to set rolling. We call this the early adopters. As this innovation or idea spreads to the periphery, it is faced with challenges such as the unavailability of internet connection, poor infrastructure and poor network. Therefore, at the outskirts or rural areas, we talk of laggards or late adopters of an innovation. This explains how an innovation is quickly embraced at the urban level and diffuses to the outskirts while some villages are still lagging behind.

Empirical literature Review

Due to the contributions that this study seeks to make, some literature related works were reviewed. However, this subsection deals with review of various empirical studies related to digitalization of school information system and effective school administration. Teachers view about digitalization, teacher's readiness towards the implementation of digitalization, teachers view about digitalization, factors that influence teachers ' decision to adopt digitalization and challenges encountered in implementing digitalization. Summary of the review of the studies are also provided in this section.

Nowadays, ICT has become crucial as it impacts every aspect of our daily lives. Digitalization in education can be defined as a diverse set of technological tools and resources that use to create, communicate, disseminate, manage and store information. People are fully relying on technology to search and retrieve useful information. The common tools are computers, smartphones, videos conferences, digital television, email, news and most especially beneficial to education. Digitalization or ICT implementation in education sector has been introduced by the ministry of education in Malaysia since 1970 and initiates the computer education in the 90s. Three core policies of ICT have been developed in education which are opportunities of accessing digitalization (ICT) to all students, the role and function of digitalization in education, and emphasizing the use of digitalization in the rural areas. Limited facilities and resources would impede the

application of digitalization knowledge delivery. In a study conducted by Abdullah Alenezi on A Teacher's Perspective of ICT Integration in Northern Borders primary schools, Saudi Arabia.

In line with the strategic view of improving the use of ICT in Saudi primary and secondary schools, Almalki and Williams (2012) give priorities to such areas of improvement as teacher confidence, teacher competence, positive attitudes to the present ICTs, ICT training, and local technical and administrative support. Not only in the Saudi context but also worldwide. In this regard, Saudi primary and secondary education as other primary and secondary educational systems worldwide. In his analysis of Technology- enhanced learning in British primary and secondary schools, Passy (2006) identifies such problems for ICT integration as technology, impacts of discrete forms of ICT on the teaching and learning process and adequate pedagogical uses of each technology. In saudi Arabia, the roles of ICT at the primary and secondary level of education are still unidentified, the uses of ICT are haphazard and non- systemic, and appropriate uses of limited number of devices that are available in these levels are poorly studied. Therefore, Saudi teachers are ICT adopters due to their mandate. They cannot be considered effective teachers without using ICT tools.

They adopt such technology as projectors, data display devices, computers and smart whiteboards when they are available in their school) and they try to use one or some of them to retain their status as ICT adopter Abass Ngoungouo (2017) carried out a study aimed at analyzing and evaluating the use of ICTs by teachers in Cameroon secondary school system. More precisely, it sought to identify the types of ICTs used by teachers to evaluate the state of equipment of those schools and the state of the training of the teachers in the use of ICTs in teaching. It equally sought to bring out the different uses of ICTs in and during, the results of their use, the difficulties encountered by the teachers on the field, and considering their multiple advantages (Beche, 2017). Questionnaires were used and semi- structured interview especially in the primary schools. The results of this study were classified into five groups in accordance with the pre- established aims. These are namely the types of ICTs used in teaching and their usage typology (Ndibnu-Messina Ethé & Kouankem, 2021), the state of training of

teachers and equipment of schools, the results obtain through the use of ICTs in teaching, the difficulties encountered in the field, and recommendations for the promotion of ICTs in the Cameroonian School System. However, the study had fallen short on the implementation of digitalization and sustainable management of ICT infrastructure.

Also, the study did not examine the availability of ICT infrastructure, teacher in-service based training and how it leads to effective school administration. Thus the present study apart from investigating the avalability of ICT infrastructure, and teachers in-service based training also talks about challenges encountered and possible solutions in the implementation of digitalization and effective school administration in Yaounde. The information and communication technologies ICTs, as can be observed elsewhere, has touched and influenced the life of people. They have imposed their presence into the human daily life so much so that the latter cannot function without them. They are present in communication, finance, health sciences, music, cinema, architecture, cuisine, sport and education which is the center of this work. In this precise domain, ICTs plays a very important role as they ease the teachers' duty (typing, content multiplication, automatic examinations, marking and corrections, research and others).

Moreover, they contribute to the self-training of learners through the same means mentioned above. Most importantly, they have improved the traditional teaching methods through several learning Management Systems (LMS) and massive Open, Online courses (MOOCs), the latter being much adapted to the present day educative reality. The results of the study show that calculators, telephones, computers and data storage tools are the most used by teachers, while projectors, Dictaphones and LMS are the least used. As far as the interactive whiteboards are concerned, they are unavailable and not used by teachers and learners. Therefore, it has been established that the use of ICTs in the Cameroonian School System at the primary and secondary levels is still at a very low stage. Much effort is being done by the private schools wherein the number of students per classrooms is acceptable, contrary to the public schools wherein, students are too many. The results of this study were classified into five groups. In view with a study conducted by Teoh, Chee & Zaibidi (2019) on the topic Analyzing the factors that

Hinder the Implementation of ICT in teaching-learning process in Rural Area by using Analytic Hierarchy process kedah, Malaysia. There were 19 rural schools with 811 teachers who teach in kedah's rural secondary schools. Stratified random sampling was used to select sample that is by dividing the population into classes. A questionnaire was developed and distributed to 23 targeted teachers. The finding showed that three main factors hinder the implementation of ICT in Kedesh rural secondary schools are the factors of, lack of ICT integration skills, workload and lack of assistance. This study therefore stipulates that, although the teachers were aware of the implementation of ICT in the teaching and learning process, there was lack of ICT integrated skills and lack of assistance to realize this.

However, this study had various short comings which the present study sought to address. Although the study was analyzing the factors that Hinder the Implementation of ICT in teaching-learning process in Rural areas, it failed to talk about the digitalization of school information, the readiness of the teachers to implement digitalization in the school information. Therefore, the present study investigated on the digitalization of school information system, teacher's readiness towards its implementation and how it can effectively manage administration. Furthermore, in a study conducted by Bingimlas (2009) on the topic Barriers to the successful integration of ICT in Teaching and Learning Environments in Bandoora Australia, the findings of this study indicate that teachers have a strong desire for the integration of ICT into education but they encounter many barriers to it.

The major barriers were lack of confidence, lack of competence and lack of access to resources. According to Newhouse (2002), teachers need training in technology education (focusing on the study of technologies themselves). Silicia (2005) found that teachers want to learn how to use new technologies in their classrooms but the lack of opportunities for professional development obstructed them from integrating technology in certain subjects such as science. However, this study limitation. The review study was limited to the level of knowledge in implementing digitalization. This current study, apart from talking on implementing digitalization of school information system also examines, teacher ICT in-service training and a sustainable management of

ICT devices and also talk about effective school administration in a case of secondary schools in Yaounde VI municipality.

Momenyi Mirabel Tangmo, Prof. Fonkeng Epah George, Dr. Nyenty Stephen Atem University of Buea, South West Region of Cameroon conducted a study on the digitalization of Higher Education delivery processes and the effectiveness of state University in Cameroon. The purpose of the study was aimed at investigating the effect of the digitalization of higher education delivery processes on the effectiveness of states Universities. The study was guided by two objectives which are to: investigate the extent to which digitalization of administrative processes affect the effectiveness of State Universities, and to find out to what extent does digitalization of curriculum processes affects the effectiveness of State Universities. The study was equally guided by two hypotheses that stated that digitalization of administrative processes, and digitalization of curriculum processes significantly affects the effectiveness of state Universities in Cameroon. The survey research design using a triangulation approach was adopted for the study. The population constituted of all academic staff and administrators of the 8 states universities in Cameroon. A total of 2718 academic staff in four of the state Universities constituted the accessible population of the study. Sample size constituted of 371 academic staff and 24 administrators. The purposive, convenient and proportionate sampling techniques were adopted for the study. Questionnaires and interview guides are the instruments adopted for the study. The quantitative data were analyzed using SPSS version 25 with the aid of descriptive and inferential statistics while the qualitative data were analyzed thematically.

In conclusion, it was observed that there is a positive link between digitalization of higher education delivery processes and the effectiveness of state Universities in Cameroon. Based on this, it was generally recommended state Universities should digitalize their delivery processes to enhance the effectiveness of states Universities. Although the study examined on the digitalization of the effectiveness of state universities in Cameroon ,the study has fallen short on examining teachers view about digitalization, teachers readiness about the implementation of digitalization, factors that influence teachers decision to adopt digitalization and challenges encountered in

implementing digitalization .The current study investigated on the digitalization of school information system, teachers readiness towards the implementation of digitalization ,digitalization of the effectiveness of state universities in Cameroon.

The findings of our study on the relevance of digitalization of administrative processes in secondary schools also tied with that of Achale, Tani and Chongwain (2007) who carried a study on the use of Information and Communication Technology for quality education in Cameroon state Universities with their findings showed that ICT is relevant towards enhancing the quality of administration. In addition to the above previous findings, that of Krishnaveni and Meenakumari (2010) who carried out a study on digitalization of Administration in Higher Education Institutions also showed that the integration of ICT helps to reduce the complexity and enhance the overall administration of higher education and lead to better management and quick response to administrative issues. The conclusion derived from this study was that although a majority of the academic staff disagreed that administrative and curriculum processes are not digitalized, technology in education help to improve on accessibility of academic programs to many aspirants and ease the administrative activities, thus improving ın theır effectiveness

According to Isah and Ojetunde, (2020), digitalizing educational learning processes especially in secondary schools, Problems associated with manual school activities prompted an investigation into this study considering stakeholders' preparation, available ICT facilities, administrators' and student' readiness with a survey sample of teachers and students that consisted of 600 respondents. Data collection instrument is "Digitalizing Secondary Schools Activities Questionnaire" Study results indicate that a significant relationship exists between students' readiness and digitalization of secondary school activities. It was recommended that stakeholders' in secondary school education should assume responsibility for providing basic ICT facilities to facilitate the implementation of digitalization of secondary school activities in Nigeria.

In trying to find the relationship between school facilities and digitalization of secondary activities in Ibadan Municipality. The result revealed that school facilities

have no significant relationship with digitalization of secondary schools in Ibadan Municipal. This is an indication that the level of school facilities in Ibadan secondary schools is not sufficient for effective implementation of digitalized teaching, learning and administrative activities of Ibadan Municipal secondary schools. The importance of school facilities has been given premium among the factors requisite for digitalization of school activities, (Plomp, Anderson, Law, and Quale, 2009) reported that access to ICT infrastructure and resources in schools is a necessary condition to the integration of ICT in education. They also stress the fact that effective adoption and integration of ICT into teaching and other schools' activities depends mainly on the availability and accessibility of ICT resources such as hardware, software, etc. Obviously, if teachers cannot access ICT resources, then they will not use them. Therefore, access to computers, updated software and hardware are key elements to successful adoption and integration of technology. Yildrim (2007) also found that access to technological resources is one of the effective ways to teachers' pedagogical use of ICT in teaching.

Thus, Ibadan Municipal secondary schools have not enough school facilities for digitalization of their teaching and other school activities administrators) readiness for digitalization of secondary school activities, the results revealed that students and schools' administrators are ready and prepared for digitalization of the school activities. Stakeholders' preparations are in forms of ICT competence, computer self-efficacy and attitude to adoption of digital solution. (Hew and Brush, 2007; Keengwe and Onchwari, 2008) reported that if students' and teachers' in the same vein, hypotheses 2 and 3 was trying to find out stakeholders (students and school attitudes are positive toward the use of educational technology then they can easily provide useful insight about the adoption and integration of ICT into the teaching and learning processes. Also, according to Berner (2003), Na (1993) and summers (1990) as cited in Bordbar (2010), teachers' computer competence is a major predictor of integrating ICT in teaching. Evidence suggests that majority of teachers who reported negative or neutral attitude towards the integration of ICT into teaching and learning processes lacked knowledge and skills that would allow them to make "informed decision" on the adoption of ICT for teaching and other school activities (Al- Oteawi, 2002, in Bordbar, 2010).

Identified Gaps from the Reviewed Studies

From the summary of the reviewed studies, majority of the studies have not yet investigated on the level of administrators and teachers level in implementing digitalization in secondary schools, the extent to which digitalization strategies and its associated skills have been implemented in secondary schools, teachers and administrators in implementing digitalization, challenges encountered and possible solutions in implementing digitalization in secondary schools. Also, none of the reviewed studies examined the influence of Teachers and administrators' characteristics such as professional qualifications, working experiences and the type of school (private or government) on the extent to which information and communication strategies are applied in schools. Thus based on these gaps, the present study evaluated digitalization of school information system and effective school administration in secondary schools in Yaounde VI municipality in Cameroon. Specifically, the current study examined the effective implementation of digitalization in the administrative sector of secondary education debunking manual activities in order to ease the teaching and learning process. Specifically, the current study equally examined, the availability of infrastructure, teacher ICT in-service training, sustainable management of ICT devices and the process of implementation of digitalization, teacher's readiness to adopt digitalization, teachers' decision to adopt digitalization and the challenges faced by teachers and administrators in implementing digitalization in Yaounde VI municipality.

Summary of Empirical Studies

Majority of the reviewed studies were from outside Cameroon and very few in Cameroon. Then, a majority of the reviewed studies investigated on digitalization of education and teacher's ability to implement it in the teaching and learning process and how digitalization can be implemented in secondary education for effective administration. Isah, Emmanuel and Ojetunde segun (2015) examined the relationship between school facilities and digitalization of secondary activities in Ibadan Municipal. Siew chin Teoh, chee keong and Nerda Zura examined the implementation of ICT in Teaching-Learning process in Rural Area by using Analytic Hierarchy process. Ngoungouo (2017) investigated the use of ICTS in Cameroonian School System.

CHAPTER THREE
RESEARCH METHODOLOGY

In this chapter, the research procedure adopted will be discussed, that is, collecting, organizing, analyzing and interpreting the data, as well as other related issues organized according to the following sub-headings: research design, population of the study, sample and sampling procedure, instrumentation, validity of the study, reliability of the study, data collection procedure, data analysis techniques and ethical consideration.

Research design

This study uses the quantitative research method, to have data on principals, vice principals and HODs. The qualitative research method as explained by Lee (2014) seeks to study a phenomenon or situation in detail, unlike a quantitative method that seeks to make standardized and systematic comparisons. This author explains that a qualitative research methodology is exploratory, observational, flexible, contextual portrayal and dynamic. The data collection is semi-structured or unstructured and the nature of data is mainly narrative and descriptive. The data collection in this method can be done by observation, Interviewing, administration of written questionnaires and the method also does a thematic analysis of data. Below is a summary table that illustrates the features of a qualitative and quantitative analysis**.**

Table 1. Qualitative and Quantitative research

	Qualitative research	Quantitative research
Type of knowledge	subjective	Objective
Aim	Exploratory and observation	Generalizable and testing
Characteristics	flexible	Fixed and controlled
	Contextual portrayal	Independent and dependent variables
	Dynamic, continuous view of change	Pre- and post-measurement of change
Sampling	purposeful	Random
Data collection	Semi-structured or unstructured	Structured

Nature of data	Narratives, quotations, description,	Numbers, statistics
	Value uniqueness, particularity	Replication
Analysis	thematic	Statistic

Source : (Lee, 2014)

Population

Target population refers to the entire group of individuals or objects to which researchers are interested in generalizing the conclusions. The target population usually has varying characteristics and it is also known as the theoretical population (Majid, 2018). The target population of this study consisted of Principals, Vice Principals and Heads of Departments selected from 35 private and public secondary schools in Yaoundé Municipality.

Table 2. Population of the Study

Sub Division	School	N° of Principals	N° of Vice Principals	N° of HODs	Total
Yaoundé I	GBHS EMANA	1	3	3	7
	GBHS Nkol-Eton	1	3	3	7
	GTHS Nsam	1	3	3	7
	Academic College of Excellence	1	1	3	5
	College Prive Laic La Victoire	1	1	3	5
	Fondation Tsoungui	1	1	2	4
Yaoundé II	Lycee de la cite-verte	1	2	3	6
	Lycee de Tsinga	1	3	3	7
	Lycee technique de Yaounde II	1	3	3	7
	College Elohim	1	1	3	5
	College Bilingual Lincoln	1	1	3	5
Yaoundé III	Lycee bilingue d'application.	1	2	3	6
	Lycee de Biyem-Assi	1	2	3	6
	Lycee de Nsam-Efoulan	1	2	3	6
	College Diderot	1	1	3	5
	English High School	1	1	3	5

Yaoundé IV	Lycee bilingue d'Ekounou	1	3	2	6
	Lycee bilingue de Mimboman	1	3	3	7
	Lycee d'Odza	1	2	2	5
	College Bilingue Yondo	1	1	3	5
	College Frantz Fanon	1	1	2	4
Yaoundé V	Lycee bilingue de Yaounde	1	2	3	6
	Lycee de Ngousso Ngoulmekong	1	3	3	7
	College Foche	1	1	3	5
	College prive du succes	1	1	2	4
Yaoundé VI	Lycee bilingue d'Etoug-Ebe	1	3	2	6
	Lycee bilingue de Mendong	1	3	2	6
	CETIC Bilingue de Mewoulou	1	3	2	6
	College Ebanda	1	1	2	4
	City Bilingual Academy	1	1	2	4
	Lycee bilingue	1	3	2	6
Yaoundé	d'Ekorezok	1	3	2	6
VII	Lycee classique de Nkolbisson				
	Lycee technique de Nkolbisson	1	2	2	5
	Complex Scolaire Thecla	1	1	2	4
	College Venue	1	1	2	4
	TOTAL	35	68	90	193

Source: (Research data, 2024)

Sample Population

The sample size of the population was determined by using the Krejcie and Morgan Table**.** A margin of error of 5% using a confidence level of 95% shall be applied on the total population. From a total a population of 193, the sample population was 108, as on the Krejcie and Morgan Table. 35 principals, 35 vice principals and 38 Head of Departments.

Data Collection Method

Administration of questionnaires shall be the data collection method in this study. A questionnaire is a data collection tool in which written questions are presented and are to be answered by the respondents in written form (Kongmany, Premrudeepreechacharn & Charoenpatcharakij, 2009). The different ways of administering written questionnaires are:

- Sending questionnaires by mail with clear instructions on how to answer the questions and asking for the mailed responses.
- Gathering all or part of the respondents in one place at one time, giving oral or written instructions, and letting the respondents fill out the questionnaires
- Hand-delivery questionnaires to respondents and collecting them later.

As far as the collection instrument is concerned, a structured questionnaire shall be used to formulate the principal's, vice principals and HODs questionnaire (qualitative tool). The questionnaire shall contain closed ended questions, geared towards investigating the contribution of ICT on administrative effectiveness of secondary schools in the Yaoundé municipality.

Instrument for Data Collection

The instrument for data collection is the Likert scale questionnaire rated Strongly agreed (1), Agreed (2), Disagreed (3) and Strongly disagreed (4). In this case, it is made up of the preliminary section containing the letter to the respondents, instructions and title of the questionnaire; and other section which constituted section A is on background information, Section B is on availability of ICT devices. Section C is on the process implementation, section D is on sustainable management of ICT devices, Section E is on effective school administration. The respondents were required to tick each item in the appropriate column that mostly represents their opinion based on their degree of agreement or disagreement with the statement.

Validity of the Instrument

The instrument was subjected to screening by the researcher's supervisor, experts in educational technology and educational management. The instrument was subjected to face and content validity. Experts were to determine which of the items are suitable and can elicit the intended responses and information. The instrument was applauded to meet the face and content validity.

Reliability of instrument.

To determine the reliability of the questionnaire, twenty-five (25) copies were administered to twenty-five (25) administrators of secondary schools in Yaoundé. Statistical Product and Service Solution (SPSS 25) was to ensure the reliability of the instrument, a Cronbach alpha statistics technique was used and a reliability coefficient of 0.981 obtain. Which is reliable for this study.

Administration and Data Collection

The questionnaires will be administered to school principals, vice-principals and HODs who are major respondents in this study. Clarifications were also made on respondents' questionnaire where necessary. Effort was also made to collect the questionnaire filled on the same day so as to ensure high rate returns.

Data Analysis

Descriptive and inferential statistic will be used to analyse the data which will be gathered from the principals, vice principals and HODs questionnaires. Data from the questionnaires shall be analysed using the SPSS software version 25 (The Pell Institute, 2017) and frequencies, percentages, means scores, standard deviation and global mean using the Likert scale which constituted the descriptive statistics. For generalization about the population, inferential statistics test ordinal regression was used to test the hypotheses of the study.

Ethical Considerations

The research study was conducted based on professional ethics as well as principles of research. That is consent procedures, confidentiality towards participants,

protecting their anonymity and privacy of research, participants were respected while filling the questionnaires for the research. The researcher was also conveying the purpose of the study to the proposed respondents as per standard research requirements. The researcher was avoiding deceptive practices, and respect indigenous cultures as well as discloses sensitive information. The researcher never practices any kind of practice that affect professional research undertakings.

Synoptic table

The main hypothesis	Specific hypotheses	Independent variable	indicators	Dependent variable	indicators	Statistical model and tool	scale
Digitalization of school information management system influences effective school administration in Yaoundé municipality	Availability of ICT devices influences effective school administration in Yaoundé municipality	Digitalization of school information management system	-Computers, -Laptops, -desktop -Projector, -Photocpiers -Tablets -Software -programs -USB -Internet connection -Printers and Scanners	Effective school administration	-School curriculum -Teachers monitor students' progress -co-ordinates activities - Delegates duties - Communication - school property - classroom equipment - parents-teachers association	Multiple regression analysis SPSs version 25	Likert scale
	The process of implementation significantly influences effective school administration in Yaoundé municipality		Using internet, computer/ICT laptops and projects in dispensing lesson data/information analysis and processing				Strongly disagree Disagree Agree Strongly agree
	Sustainable management of ICT devices significantly influences effective school administration in Yaoundé municipality		-Computer maintenance -Reduce Recycle Reuse -Email -Renovation Replacement -Upgrading models Reconstruction				

CHAPTER FOUR
DATA ANALYSIS AND PRESENTATION OF RESULTS

This chapter presents the research findings and analysis. The study investigates the digitalisation of school information system and effective school administration of secondary schools in Yaoundé municipality. The data was collected through questionnaires. Findings were presented to respond to the three specific objectives of this study. The study sought to provide answers to three specific objectives:

- To determine the degree to which the availability of ICT devices influences effective school administration
- To evaluate the extent at which the process of implementation influences effective school administration
- To examine the extent at which sustainable management of ICT devices influences effective school administration

Demographic Characteristics of Participants

Demographic characteristics of participants in this study includes the gender, position, work experience and qualification.

Gender of respondent

The gender for this study included male and female administrators of secondary schools in Yaoundé municipality.

Table 3. Gender of Respondent

Gender	Frequency	Percent	Cumulative Percent
Female	50	46.3	46.3
Male	58	53.7	100.0
Total	108	100.0	

Source: (Field Data, 2024)

The table on gender distribution shows male constituted that a bigger number of respondents (53.7%) as compared to (46.3%) for female respondents. This shows that majority of the respondents of the questionnaire were males.

Table 4. Work Experience

Work Experience	Frequency	Percent	Cumulative Percent
0-10 years	39	36.1	36.1
10-20 years	34	31.5	67.6
20+ years	35	32.4	100.0
Total	108	108	

Source: (Field Data, 2024)

The highest proportion of respondents of 36.1%, with work experience ranging from (0-10 years), as shown on figure 4.1. 31.5% respondent had experience of 10 -20 years. Finally, 20+ experience had 32.4%. ICT as a digital tool was not a new concept to majority of respondents. The experience of respondents made the information collected reliable.

Educational level of respondent

From the information collected respondents were divided into four categories base on their educational qualification. That is Bachelor, PLEG, PCEG and Master degree.

Table 5. Education Level of Respondents

Education Level	Frequency	Percent	Cumulative Percent
Bachelor's degree	30	27.8	27.8
PCEG	25	23.1	50.9
PLEG	48	44.4	95.4
Master	5	4.6	100.0
Total	108	100.0	

Source: (Field Data, 2024)

Majority of the respondent were PLEGs with 44.4%, followed by Bachelor degree with 27.8% then PCEG 23.1% and finally 4.6% for Master degree. From the information collected it is evident majority of the respondent had the necessary qualifications to administer and teach in secondary school.

Administrative Position

The respondents' position was recorded in three categories. The first category were Principals. The second category were Vice Principals. The third category were Head of Departments.

Table 6. Administrative Position

Administrative Position	Frequency	Percent	Cumulative Percent
Principals	35	32.4	32.4
Vice Principals	35	32.4	64.8
Head of Departments	38	35.2	100.0
Total	108	100.0	

Source : (Field data, 2024)

As shown in table 6. 32.4% respondent are Principals, 32.4% also were Vice Principals while 35.2% were Head of Departments making most of the population.

Presentation of Findings

This section presents the findings according to the study objectives. This study had three specific objectives to answer (i) To determine the degree to which the availability of ICT devices influences effective school administration; (ii) To evaluate the extent to which the process of implementation influences effective school administration; (iii) To examine the extent to which sustainable management of ICT devices influences effective school administration. For each case the frequencies, percentages, weighted mean, and standard deviation was used to present and analyze data and appropriately reporting findings following objectives. In order to answer this research objective, data collected was analyzed using percentage, frequency as shown on the table 7.

Table 7. Availability of ICT Devices Influences Effective School Administration

Statement	Available	Not Available
	Frequency and Percentage; N=108	
	f (%)	f (%)
Database for schools	92(85.2)	16(14.8)
Desktop computers	106(98.1)	2(1.9)
Laptops	40(37)	68(63)
Internet connection	56(51.9)	52(48.1)
Printers and Scanners	96(88.9)	12(11.1)
USB (memory) stick/external hard drives	98(90.7)	10(9.3)
Photocopying Machines	85(78.7)	23(21.3)
Projectors	65(60.2)	43(39.8)
Interactive Whiteboards	1(.9)	107(99.1)
CCTV (Surveillance Cameras)	26(24.1)	87(75.9)
School Email service	47(43.5)	61(56.5)
School Management Information System	96(88.9)	12(11.1)
Technician in ICT	96(88.9)	12(11.1)
Library Softwares	-	108(100)
Microsoft office package (MS Word, MS Excel, MS Powerpoint)	108(100)	-

Source : (Field data, 2024)

Table 7 indicates that 85.2% of schools had database , Desktop computers 98.1%, Laptops 40%, Internet connection 51.9%, Printers and Scanners 88.9%, USB (memory) stick/external hard drives 90.7%, Photocopying Machines 78.7%, Projectors 60.2%, School Management Information System 88.9%, Technician in ICT 88.9%, Microsoft office package (MS Word, MS Excel, MS PowerPoint) (100%).On the contrary not available laptops 63%, Internet connection.48.1%, Projectors 38.9%, Interactive Whiteboards 99.1%, CCTV (Surveillance Cameras) 79.5%, School Email service 56.5%, Library Softwares 100%. It could be noticed that most schools in the Yaoundé municipality do not have white interactive boards and with the absence of library software. From the data collected it could be seen that EMIS resources were ready available in secondary schools in Yaoundé municipality.

Table 8. Process of Implementation Influences Effective School Administration

Statement	Available	Not Available		
	Frequency and Percentage; N=108			
	SA	A	DA	SD
	f (%)	f (%)	f (%)	f (%)
Using computers avoid loss of records	61(56.5)	43(39.8)	4(3.7)	0
The internet eases information seeking and dissemination, record keeping and retrieving information.	60(55.6)	45 (41.7)	3(2.8)	0
Collection of data/information on students' teachers and parents is made easy via computer/ICT	60(55.6)	41(38)	4(3.7)	3(2.8)
Enhances Compilation and ranking of student's results	58(53.7)	50(46.3)	0	0
Simplifies school data/information analysis and processing with use of computer	57(52.8)	51(47.2)	0	0
ICTs ease communication within school through networking	63(58.3)	45(41.7)	0	0
ICT enhance decision making process	73(68.5)	31(28.7)	3(2.8)	0

Source : (Field data, 2024)

As indicated in Table 8, most of the respondents fell in the category of those who strongly agreed and agreed on the Perception of administrators on the ease of using EMIS on administrative effectiveness. Using computers avoid loss of records. (56.5%: mean=3.35) strongly agreed with the statement. The internet eases information seeking and dissemination, record keeping and retrieving information (60%: mean = 3.35) strongly agreed; Collection of data/information on students' teachers and parents is made easy via computer/ICT (60%:mean=3.46) strongly agreed; Enhances Compilation and ranking of student's results (53.7%:mean =3.54) strongly agreed; Simplifies school data/information analysis and processing with use of computer (52.8%:mean=3.35) strongly agreed; ICTs ease communication within school through networking

(58.3%;mean =3.58) strongly agreed; EMIS/ICT enhance decision making process (68.5%:mean=3.66) strongly agreed. On the other hand, some respondents strongly disagreed and disagreed on the perception of administrators on the ease of using EMIS to improve administrative effectiveness. For using computers avoid loss of records (3.7%); The internet eases information seeking and dissemination, record keeping and retrieving information (2.8%); Collection of data/information on students' teachers and parents is made easy via computer/ICT (3.7%); ICT enhances decision making process (2.8%).

As a result, the overall average mean of responses was 3.5214 for perception of administrators on the ease of using EMIS on administrative effectiveness. The overall average mean fell in the range of high mean. This indicated that many of the respondents strongly agreed on the perception of administrators on the ease of using EMIS to improve administrative effectiveness.

Table 9. Sustainable Management of ICT Devices Influences Effective School Administration

Statement	Available	Not Available		
	Frequency and Percentage; N=108			
	SA	A	DA	SD
	f (%)	f (%)	f (%)	f (%)
School website	49(45.4)	58(53.7)	1(.9)	0
Mobile technologies (PDAs, Telephones, Tablets)	63(58.3)	45 (41.7)	0	0
Email	45(41.7)	59(54.6)	2(1.9)	2(1.9)
Computers	83.(76.1)	25(23.1)	0	0
Social network and Chat room.	48(44.4)	38(35.2)	10(9.3)	12(11.1)

Source : (Field Data, 2024)

As indicated in Table 4.8 most of the respondents fell in the category of those who strongly agreed and agreed on which EMIS of reference for the effectiveness of school administration in Yaoundé municipality. School website (53.7%: mean =3.44) agreed with the statement; Mobile technologies (PDAs, Telephones, Tablets) (58.3%: mean =3.58) strongly agree; Email (54.6%: Mean =3.36) agreed; Computers (76.1%: mean=3.77) strongly agreed; Social network and Chat room. (44.4%: mean =3.13)

strongly agreed. On the other hand, some respondents strongly disagreed and disagreed School website (0.9%), Email (1.9%); Social network and Chat room. (9.3%).

As a result, the overall average mean of responses was 3.4560 which EMIS of reference for the effectiveness of school administration in Yaoundé municipality. The overall average mean fell in the range of high mean. This indicated that many of the respondents strongly agreed.

Table 10. Effective School Administration

Statement	Available	Not Available		
	Frequency and Percentage; N=108			
	SA	A	DA	SD
	f (%)	f (%)	f (%)	f (%)
Plans the school curriculum with the various subject teachers	58(54.7)	50(46.3)	0	0
Ensures that teachers monitor students' progress regularly through continuous assessment	53(49.1)	54(50.0)	0	1(.9)
Actively co-ordinates the general instructional activities of teachers	64(59.3)	44(40.7)	0	0
Delegates duties to collaborators	56(51.9)	51(47.2)	1(.9)	0
Communicates with teachers regularly on issues concerning school affairs	57(52.8)	50(46.3)	1(.9)	0
Consults with the teachers in matters affecting the students	42(38.9)	62(59.3)	1(.9)	1(.9)
Shows concerns for the security of school property	46(42.6)	50(46.3)	12(11.1)	0
Provides immediate replacement to damaged classroom equipment	52(48.1)	26(24.1)	14(13.0)	16(14.8)
Encourages regular parents-teachers' association meetings	62(57.4)	43(39.8)	3(2.8)	

Source: (Field data, 2024)

As indicated in Table 4.8 most of the respondents fell in the category of those who strongly agreed and agreed on administrative effectiveness. Plans the school curriculum with the various subject teachers (54.7%: mean =3.54) strongly agreed on statement; Ensures that teachers monitor students' progress regularly through continuous assessment (49.1%: mean =3.47)strongly agreed.; Actively co-ordinates the general instructional activities of teachers (59.3%: mean=3.59) strongly agreed; Delegates duties to collaborators (47.2%:mean =3.51) agreed; Communicates with

teachers regularly on issues concerning school affairs (52.8%:mean =3.52); Consults with the teachers in matters affecting the students (59.3%:mean=3.36) agreed.; Shows concerns for the security of school property (46.3%; mean =3.31) agreed; Provides immediate replacement to damaged classroom equipment (48.1%: mean = 3.06) strongly agreed; Encourages regular parents-teachers association meetings. (57.4%: mean=3.55) strongly agreed. On the other hand, some respondents strongly disagreed and disagreed Delegates duties to collaborators (0.9%); Communicates with teachers regularly on issues concerning school affairs (0.9%); Consults with the teachers in matters affecting the students (0.9%); Shows concerns for the security of school property. (11.1); Provides immediate replacement to damaged classroom equipment (13%); Encourages regular parents-teachers' association meetings. (2.8%).

As a result, the overall average mean of responses was 3.4344 on administrative effectiveness. The overall average mean fell in the range of high mean. This indicated that many of the respondents strongly agreed that EMIS plays a great role on administrative effectiveness.

Research Hypotheses

The data collected from the questionnaire was not normally distributed, the test of normality gave a significant value of 0.00 using the Kolmogorov -Smirnov which is less than 0.5 as our data set is 108. Accepting the fact that our data is not normally distributed, so a non- parametric test (ordinal regression) was used to test the hypotheses.

The ordinal regression coefficients simply interpret the estimated or predicted change in the log odds of being in a higher (as opposed to a lower) group/category on the dependent variable (controlling for the remaining independent variable) per unit increase on the independent variable.

Inferential test

Hypothesis 1: Availability of ICT devices significantly was a significant positive predictor of effective school administration in Yaoundé municipality. For every one-unit increase in availability of ICT devices, there is a predicted increase of 2.515 in the

log odds of being at level on effective school administration. The null hypothesis is rejected and alternative hypothesis accepted.

Table 11. Testing Hypothesis 1 using Ordinal Regression

Parameter Estimates								
							95% Confidence Interval	
		Estimate	Std. Error	Wald	df	Sig.	Lower Bound	Upper Bound
Threshold	[Effective school administration = 2.33]	20.485	3.086	44.074	1	.000	14.437	26.533
	[Effective school administration = 2.44]	21.243	2.998	50.209	1	.000	15.367	27.118
	[Effective school administration = 2.56]	21.683	2.972	53.231	1	.000	15.858	27.508
	[Effective school administration = 2.67]	23.156	2.954	61.437	1	.000	17.366	28.946
	[Effective school administration = 2.78]	24.051	2.977	65.276	1	.000	18.216	29.885
	[Effective school administration = 2.89]	25.181	3.042	68.509	1	.000	19.218	31.143
	[Effective school administration = 3.00]	26.005	3.113	69.803	1	.000	19.904	32.105
	[Effective school administration = 3.11]	27.428	3.268	70.430	1	.000	21.022	33.834
	[Effective school administration = 3.22]	27.666	3.293	70.590	1	.000	21.212	34.120
	[Effective school administration = 3.33]	28.282	3.357	70.963	1	.000	21.702	34.862
	[Effective school administration = 3.44]	28.687	3.400	71.207	1	.000	22.024	35.350
	[Effective school administration = 3.56]	29.362	3.471	71.570	1	.000	22.560	36.165

[Effective school administration = 3.67]	29.496	3.484	71.668	1	.000	22.667	36.325
[Effective school administration = 3.78]	29.993	3.532	72.116	1	.000	23.071	36.915
[Effective school administration = 3.89]	30.652	3.585	73.084	1	.000	23.624	37.679
Availability of ICT devices	21.167	2.515	70.841	1	.000	16.238	26.096

Hypothesis 2: This hypothesis states that the process of implementation significantly influences effective school administration in Yaoundé municipality. Perceived the process of implementation was a significant positive predictor of effective school administration. For every one-unit increase in perceived the process of implementation, there is a predicted increase of 1.187 in the log odds of being at level on effective school administration. The null hypothesis is rejected and alternative accepted.

Table 12. Testing Hypothesis 2 using Ordinal Regression

Parameter Estimates

							95% Confidence Interval	
		Estimate	Std. Error	Wald	df	Sig.	Lower Bound	Upper Bound
Threshold	[Effective school administration = 2.33]	24.809	3.535	49.244	1	.000	17.880	31.739
	[Effective school administration = 2.44]	25.624	3.464	54.717	1	.000	18.835	32.414
	[Effective school administration = 2.56]	26.169	3.449	57.565	1	.000	19.409	32.929
	[Effective school administration = 2.67]	28.212	3.525	64.040	1	.000	21.303	35.122

[Effective school administration = 2.78]	29.344	3.586	66.975	1	.000	22.316	36.372
[Effective school administration = 2.89]	30.707	3.664	70.228	1	.000	23.526	37.889
[Effective school administration = 3.00]	31.785	3.743	72.122	1	.000	24.449	39.120
[Effective school administration = 3.11]	34.105	4.096	69.329	1	.000	26.077	42.133
[Effective school administration = 3.22]	34.439	4.151	68.848	1	.000	26.304	42.574
[Effective school administration = 3.33]	35.527	4.344	66.890	1	.000	27.013	44.040
[Effective school administration = 3.44]	36.462	4.495	65.803	1	.000	27.652	45.271
[Effective school administration = 3.56]	37.488	4.612	66.065	1	.000	28.448	46.528
[Effective school administration = 3.67]	37.657	4.625	66.279	1	.000	28.591	46.722
[Effective school administration = 3.78]	38.255	4.663	67.303	1	.000	29.115	47.394
[Effective school administration = 3.89]	38.890	4.690	68.772	1	.000	29.699	48.081
Perception of the process of implementation	9.938	1.187	70.111	1	.000	7.612	12.264

Hypothesis 3: Sustainable management of ICT devices significantly influences effective school administration in selected secondary schools in Yaounde VI municipality. Sustainable management of ICT devices was a significant positive predictor of effective school administration. For every one-unit increase in Sustainable

management of ICT devices, there is a predicted increase of 1.270 in the log odds of being at level on effective school administration. This implies that Sustainable management of ICT devices has a significant positive effect on effective school administration. The null hypothesis is rejected and alternative hypothesis accepted.

Table 13. Testing Hypothesis H03 using Ordinal Regression

							95% Confidence Interval Lower Bound	Upper Bound
		Estimate	Std. Error	Wald	df	Sig.		
Threshold	[Effective school administration = 2.33]	27.538	3.317	68.914	1	.000	21.037	34.040
	[Effective school administration = 2.44]	29.055	3.306	77.233	1	.000	22.575	35.534
	[Effective school administration = 2.56]	30.385	3.344	82.540	1	.000	23.830	36.940
	[Effective school administration = 2.67]	32.840	3.470	89.545	1	.000	26.038	39.641
	[Effective school administration = 2.78]	34.394	3.594	91.588	1	.000	27.351	41.438
	[Effective school administration = 2.89]	37.254	3.908	90.864	1	.000	29.594	44.914
	[Effective school administration = 3.00]	39.102	4.069	92.350	1	.000	31.127	47.077
	[Effective school administration = 3.11]	41.356	4.281	93.305	1	.000	32.964	49.747
	[Effective school administration = 3.22]	41.668	4.313	93.342	1	.000	33.215	50.121
	[Effective school administration = 3.33]	42.669	4.425	92.989	1	.000	33.996	51.341

[Effective school administration = 3.44]	43.482	4.520	92.523	1	.000	34.622	52.342
[Effective school administration = 3.56]	44.851	4.680	91.860	1	.000	35.679	54.023
[Effective school administration = 3.67]	45.154	4.713	91.777	1	.000	35.916	54.392
[Effective school administration = 3.78]	46.256	4.839	91.364	1	.000	36.771	55.740
[Effective school administration = 3.89]	47.473	4.947	92.079	1	.000	37.777	57.170
Sustainable management of ICT devices	12.326	1.270	94.159	1	.000	9.836	14.815

I think that teachers do not develop themselves professionally in a way to keep up with the times, and this causes teachers to fail in self-improvement and over time, to consider teaching profession as a usual official work (P1). In activities and works either at school or outside the school, teachers make up excuses not to assume tasks and, in a sense, this falls into a habit. Therefore, as administrators we, the school principals have to oppose teachers. I believe that teachers do not understand school administration and show sufficient empathy towards the school administration (P3).

Interpretation of Results

The main purpose of this study was about digitalization of school information management system and effective school administration in Yaoundé municipality. The finding from research objectives one sought to determine the degree to which the availability of ICT devices influences effective school administration. School Administrators strongly agreed that the process of implementation influences effective school administration in gathering, organizing, processing, analyzing and storing student and administrative data; School Inspection Reports; For payroll and financing

of school activities; Planning school activities, Infrastructure Management (laboratory equipment's library and school properties); Staffs and students Management; To check attendance and absence of teachers/students. The overall average mean fell in the range of high mean (above cutoff mean 2.5). This indicated that many of the respondents strongly agreed that digitalization of school information management system boost effective school administration in secondary schools.

The findings from research objectives one sought to establish a relation between the availability of ICT devices necessary for school administrators to enhance effective school administration. It was revealed that most administrators have the following ICT devices in their schools: Database for schools, Desktop computers, Laptops, Internet connection, Printers and Scanners, USB, Photocopying Machines, Projectors, School Management Information System and Technician in ICT. The study revealed that desktop computers are mostly used in all secondary schools' administration. Just one school had an interactive whiteboard. and very few schools with advanced equipment like laptops, and projectors. Very few schools had internet service available. No school out of the sample schools had a library software. The overall average mean of responses was 1.3747 on the availability of ICT devices. The overall average mean fell in the range of high mean.

The finding from research objective two sought to establish the relationship between the process of implementation by administrators and effective school administration, administrators strongly agreed that digitalization of school information management system avoid loss of records; ease communication, enhance decision making, simply data analyses and processing. As a result, the overall average mean of responses was 3.5214 for administrator the process of implementation for effective school administration is good. The overall average mean fell in the range of high mean. This indicated that many of the respondents had digitalization of school information management system facilities in their schools.

The finding from research objective three sought to examine which sustainable management of ICT devices influence effective school administration of secondary schools in Yaoundé municipality. The study revealed that computers could highly

increase administrative effectiveness, followed by mobile technologies like PDAs, telephones and tablets. Also School website and email were considered useful while the least consider useful were social networks and chat rooms. As a result, the overall average mean of responses was 3.4560 on sustainable management of ICT devices. The overall average mean fell in the range of high mean. This indicated that many of the respondents strongly agreed that sustainable management of ICT devices plays a great role on effective school administration.

Table 14.Summary Results of Research Objectives

	Objectives	Mean	Standard deviation	Remark
1	Determine the degree to which the availability of ICT devices influences effective school administration	1.3747	.17563	Available
2	Evaluate the extent to which the process of implementation influences effective school administration	3.5214	.072935	Strongly agree
2	Examine the extent to which sustainable management of ICT devices influences effective school administration	3.4560	.222747	Strongly agree

CHAPTER FIVE
DISCUSSION, CONCLUSION AND RECOMENDATIONS

This chapter presents the discussion, conclusions and recommendations drawn from the findings of this study. The main purpose of this study is to determine the degree at which digitalization of school information management system influences effective school administration in Yaoundé municipality.

Discussion

The world is fast developing with technological devices gaining ground and becoming more important to human consumption. With the help of the internet and digital devices, the social media has completely revolutionized information and communication technology (Ngwa and Ngoa, 2024), like many other aspects of life, education is undergoing constant changes under the effect of globalization, which has come as a result of the emergence of the new information and Communication technologies (ICTs). Things have become really easy with the use of this technology. Fonkeng and Tamajong (2009) say through this means, it is possible to reduce congestion, time wasting and eliminate mistakes. Thus, in so many domains there is a shift from analog to digital. As such, preparation of timetables, lessons, transcripts, continuous assessments, and end of term academic reports for students is easily stored using the computer by putting it in a digital format. This is to prepare the world at large and existing organizations to embrace digitalization at all spheres of life. The digital implementation makes work effective and efficient; work is done in less time without a fall in quality and quantity.

Despite the presence of new technology and revolution of information and communication, it has been observed in the field of education that there is a lot of setbacks in manual work. In most secondary schools today, we can hardly find computers and even if found, are in most time in deplorable states due to poor maintenance. Tchombe, (2006) says Cameroon is not keeping pace with educational innovations. Information system which is very vital in our society is not well implemented. However, this study spines that the traditional (manual) school routines must give way to automated, digitalized approach to school activities.

Digitalization if well applied will bring effective output, reduce paper work and bring effective management of both didactic material and human resources. The world at large places a great importance in the digitalization of information system as it will help in effective management even at the level of the schools.

This inadequate application of digital information at the level of administration in secondary education as a consequent has poor output, low efficiency, low productivity, time consuming and a fall to analog where things become slow, students return to dependency, school administration becomes slow and inefficient and the tendency of time, money and material consuming becomes inevitable, thus causing a digital divide between those who can access information and those who cannot, reducing level of education due to vast amount of incorrect and misleading information. Whereas, the National Development Strategy (NDS 2020-20-30 (NDS30) talks of increase and diversify digital uses and services. Therefore, follows that this study looks at the digitalization of school information system from the perspective of availability of ICT infrastructure, teacher ICT- in service, sustainable management of ICT devices, and the process of implementation.

The main question preoccupying the researcher on the effectiveness of Digitalization of school information system at the level of secondary institutions in Yaoundé VI municipality can be effectively carried out so as to ease effective school administration. Meanwhile my orientation is to bring the disposition that can be put in place to make digitalization available, the training of teachers on modern ICT devices and implementation. With the diffusion of innovation theory by (Rogers, 2006). When an innovation is proposed to a people, it becomes very new to them, complex and incompatible with their everyday life becoming very difficult to quickly accept, validate and implement. However, with the help of this theory and others we will be able to decipher the brain behind this issue raised in some selected institutions.

Accordingly, problem solving may be seen as one of the main tasks of a school administrator. In this sense, Xie, Li, Ma & Zhao (2024) pointed that the performance of the tasks pursuant to school's objectives, and long-lasting existence depend on problem solving (Zhou& Zhong, 2024). While the interest in and value attached to education are

rapidly increasing each day in Cameroon, it is also known that the problems encountered in schools are increasing and diversifying. Therefore, responsibilities assumed by school administrators and teachers are becoming more challenging each day. In a sense, it is inevitable that school administrators face several problems in school administration.

Badawi (2024) classified the main problems of the schools as those stemming from the environment of the school, the school itself and the school personnel; and Gümüşeli Minga & Ghosh (2024) stated lack of physical resources, classrooms and insufficient wages as the most common problems of schools. In short, it may be stated that tasks and responsibilities such as the management of the curriculum, management of general services, management of physical resources and management of students are related with the problems encountered in school administration (Frisancho, 2023).

Fruitful school administrators who can meet the rapidly developing and changing expectations of schools are required for efficient and effective schools. However, efficiency of the school administrators depends on the surrounding conditions and facilities. Therefore, types of problems that the school administrators tackle with and their approach to problems that have a negative effect on them professionally are also important. Thus, how a school is administered has a determinative role in its efficiency, and achievement of school's objectives. Indeed, it is very natural that the school administrators face with problems. It should not be forgotten that school administrators should not ignore the problems and should solve them with goodwill and by being recognized by the addressees.

The school administrator/Principal is an individual appointed to head educational institutions. The principal is known for heading the secondary schools in Cameroon School administrator or principal is that professional individual saddled with the functions of planning, organizing, controlling and supervision human and material resources of the school with the objective of using the resources to actualize the objectives of the school. Ikgbusi & Iheanacho (2016) observed that Heads of secondary schools are tasked with the implications of these objectives. The success of secondary school education rests on a good administration involving the local communities, adequate and well qualified teachers, adequate funds for infrastructural facilities,

together with interested parents supplying children's material needs and bringing home training to supplement the efforts of the teachers at school. For heads of secondary schools to succeed in the administration of secondary schools, they need the collaboration and sustenance of the parents, teachers, the Post Primary Schools Service Commission and the Ministry of Education. School administrators are strong members of the educational institutions that can either make, develop and mar academic progress of secondary schools in Cameroon. Analyzing the functions of the principal, Ikgbusi & Iheanacho (2016) asserted that principals set the academic tone and work actively with teachers to develop and maintain high curriculum standards, formulate mission statements and establish performance goals and objectives. They evaluate teachers, visit classrooms, observe teaching methods, review instructional objectives and examine learning materials and give their best (Utagah & Ngwa, 2024).

Conclusion

The main objective was to determine the degree at which digitalization of school information management system influences effective school administration in secondary schools in Yaoundé municipality. The study was guided by one main objective and three specific objectives and subsequently answered three questions. The objectives were: 1) to determine the degree to which the availability of ICT devices influences effective school administration. 2) to evaluate the extent to which the process of implementation influences effective school administration. 3) to examine the extent to which sustainable management of ICT devices influences effective school administration of secondary schools in Yaoundé municipality.

One of the findings of the study concluded that many secondary schools in Yaoundé municipality are deficient in the availability of ICT devices such as white interactive boards, library software and laptops. Principals, Vice principals and Head of departments extend of effective school administration is high as administrative functions like communication, record keeping, finance administration and supervision of instruction are performed effectively with the availability of ICT devices.

Sustainable management of ICT devices on effective school administration was positive as they concluded that, if effective school administration could help avoid loss

of records, data collection, ease communication and hence decision making at all level. Principals, Vice principals and Head of departments also concluded that Sustainable management of ICT devices like computers, mobile technologies, emails, school websites, social networks and chat rooms could increase administrative performance if well used.

Success of administrators is mainly measured with problem solving skills. Moreover, problem-solving skills are considered as the technical part of problem-solving process.

Contribution to Knowledge

This study provides an insight on digitalization of school information management system influences effective school administration in Yaoundé municipality.

Digitalization of school information management system has the following impact on effective school administration: In gathering, organizing, processing, analysing and storing student and administrative data, School Inspection Reports, for payroll and financing of school activities, Planning of school activities, Infrastructure Management (laboratory equipment's library and school properties), Staff and students Management, to check attendance and absence of teachers/students, to disseminate information to teachers.

The study confirmed availability of ICT devices and the process of implementation in secondary schools in Yaoundé municipality. This study found that sustainable management of ICT devices influences effective school administration. It also requires technical support and training to positively change the staff behaviors and perception. The results of this study confirmed the connectivism learning theory, Diffusion of Innovation Theory, and unified theory of acceptance and use of technology. As administrators, the theory improves data collection process and makes decision making process optimal and efficient in organization.

Administrative effectiveness is the progressive response to administrative efforts and activities with the purpose of achieving the stated goal. The administrative

performance in making decisions, delegation of duties to collaborators, setting good examples and inspiring the teachers and students alike in an effort to generate a conducive working atmosphere to achieve school goals and objectives seem to enhance collaborators' performance for school success. AKINYEMI & Ajayi (2020) observed that school administrators had ineffective administrative skills in managing schools, meeting deadlines, curriculum targets and delegating duties. Some principals run a "one man show" administrative style to take all the credit. This category of school principals prefers to carry out administrative tasks without involving staffers nor delegating such duties to competent staffers creating lapses and time delays within the administrative management of their school.

For an administrator to make things work in his organization, it is very important for him to have a good leadership and management role to develop plans for improving all aspects of the school system. For administrative performance to reach human resources, material resources, technological resources, interpersonal relationships, managing school finance, discipline and motivation must come into play. Principals who participate in educational management orientation usually perform well in administrative issues as they learn to manage human resources thus increasing productivity at their institution (Besong, 2014).

Administrative effectiveness is very important in education management because it helps to accomplish school programmes, objectives and the attainment of educational goals. Situational leadership can be applied in the school milieu to solve problems. Therefore, administrative effectiveness is judged by the extent to which the group accomplishes its primary task; that is, the quality and efficiency of personnel who perform the functions necessary for the fulfilment of the state also and objectives of the primary tasks. Hence, the quality of education in the system depends largely upon the quality of the personnel engaged in the educational process, and upon the effectiveness with which they carry out individual/group responsibilities. Principal's effectiveness or ineffectiveness would determine the level of discipline or otherwise, among teachers, students and other members of staff. The role and duties of the secondary school principals are to delegate vital roles, that good care should be exercised in appointing the right calibre of persons that have the aptitude, interest and character profile for the

position. He should be able to influence others in line with school objectives. For principals to achieve effective management of schools whose climate provides the right mixture of order, flexibility and diversity, such principals must be prepared to face and resolve challenges. The principalship position, therefore, can be seen as the oldest administrative position in the school system. Inadequacies in basic infrastructural facilities, coupled with scarce resources, stubborn students, widespread malpractices, indiscipline, poor academic performances and many more, have further impeded the administrative efficiency of principals. In addition, the general stress and strains on students and parents resulting from the economic crunch had made it imperative for principals to acquire extra administrative capabilities for effective management of our schools (Ikpe, 2013)

Administrative effectiveness is a measure aspect of success in school administration (Usabor, 2012). It is the extent to which the set goals and objectives of a school programme are accomplished through administrative practices of the principals, which may be described as principals' administrative effectiveness. There are numerous determinants of the effectiveness of school principals such as accountability, performance improvement, monitoring and evaluation but the concept basically refers to the achievement of organizational standards. Achievement of organizational standards, as seen from the foregoing review, seems to be related to principals' ability to keep accurate and up-to-date records, especially teachers' records, meaning, that a well-kept record is a mark of good administration.

The principals' ability to keep accurate and up-to-date teachers' records could to a great extent, enhance their administrative effectiveness. In other words, for effective management of schools, there is a need for principals or school administrators to develop the skill of keeping accurate and up-to-date records about the school's activities, which will be useful for evaluating teachers' job performance, planning for teachers' recruitment and training, decision making as well as organizing other school activities. When these records are created, stored, retrieved and utilized appropriately, execution of management functions may likely be easy. Teachers of various disciplines will be deployed in appropriate numbers based on schools' needs (Herman & Herman, 1992) point out three basic skills essential for the success of administration, and their

usefulness depends on the level of administrative responsibility. For instance, principals require conceptual skills more than technical skills. Human skill is however needed by all levels of administration. Nakpodia (2011), defines educational administration as a specific domain of public administration which deals with the process of mobilizing and utilizing scarce human and physical resources for achievement of educational objectives. The school administrator therefore contributes in terms of planning, policy making and designing of education programmes in schools. However, the effectiveness of the school administrator depends largely on the managers of the educational system.

A school administrator is said to be effective if he/she can improve academic supervision, improve results and enhance the involvement of stakeholders. Institution heads must be transformed into institutional leaders for effective management since their role is no longer limited to schools, they are at the front line between the school and society (Poonam, 2017).

Administrative effectiveness of an educational institution must meet the following key factors; professional development and quality of school; administrative employment satisfaction; acquisition, availability and efficient utilization of resources; community relations; and career and personal development. An institution is said to have attained effectiveness if it can make good use of personnel, money, time, energy and materials to produce desired and expected quality outcomes. It has been shown in most cases that administrative effectiveness is a critical success factor that determines the overall performance of post-primary institutions (Iroegbu & Adeleke, 2017).

According to the researchers, transformative skill is a global skill comprising three skills: the administrators being able to identify and sustain a vision of the school which is interpreted as conceptual skills by other researchers; intellectual stimulation of other members of the school. This can only be done by a person who knows the educational processes of a school, using a combination of the technical and interpersonal skills; and individual consideration for others; the interpersonal or human skill. The use of these skills was discovered to enhance school effectiveness by increasing teacher commitment and motivating them to achieve school goals. Effective leadership of school administrators depends on three basic skills: technical, human interpersonal and

conceptual. In South West Nigeria transformational leadership skills can help public secondary school administrators better manage their institution (Akinola, 2013).

Transformational leadership style attributes power to any collaborator that is able to inspire a higher level of personal commitment and school goal, encourages and raises institutional members, a visionary leader, considers the intrinsic motivation and confidence of collaborators, provides a stimulus for change and innovation, provides a supportive school climate where personal needs and differences are acknowledged, builds trust and respect for collaborators and opportunities into account why handling issues and values self-interest as the ultimate goal. Administrative effectiveness is the extent to which the secondary school administrators are able to effectively execute and implement the school policies with regards to the task areas of school administration as laid down by the Ministry of Education and schools board. The major tasks area of school administration includes student personnel administration, staff personnel administration, school business administration, school community relations, managing physical facilities, school finances and others. The core administrative effectiveness of the principal is in the area of relationship and leadership. Ineffective administration may lead to a hostile school environment, poor implementation of school policies in the area of maintenance of school facilities, effective school programme management (curriculum) and ineffective student personnel services such as selection, orientation, placement, guidance and counselling, management of school business finance, staff personnel management and maintenance of effective inter relationship with the school community and external agencies (Egbe, 2022).

Educational leaders (administrators) should have the following responsibilities: establishing a vision for the academic success of students based on high standards, creating a friendly and comfortable environment that enables the implementation of education establishing harmonious interactive cooperation and conditions, developing a harmonious leadership that allows teachers and students to understand their responsibilities as a realization of school vision, managing collaborators, data and processes to improve school quality (Egbe, 2022).

School leadership is effective if it meets the following conditions: has clarity of vision (bring the school to move forward in a certain period), achieves performance targets according to vision, mission, and objectives, have prerequisite competence as a principal, have a wide network of communication and are able to use it for the improvement of school performance, respect the time and encourage school personnel to make the most of their time, encourage and reward the work performance of school personnel, conduct continuous evaluation and quality control (Rahabav, 2016).

Peretomode (2021) saw a record as an account in writing or other permanent form, serving as a memorial or authentic evidence of facts or events. It is regarded as information handed down or preserved. The school record consisted of all the books and files or other documents containing information relating to what went on in a school, who was in the school as well as what types of property the school owned. Records keeping as well as its administration is a vital responsibility of school principals because of the indispensable role that records play in affecting the day-to-day operations as well as those affecting long-term politics. School administrators rely on information that is on records. For effective utilization of information, there should be a proper system of storing and retrieving data when needed. School principals must ensure that all the data necessary for effective decision-making and communication are available and up to date.

The effectiveness of the principal derives from his administrative capacities and ability to make reasonable decisions for effective secondary administration. Poor job performance of teachers and poor academic performance of students in secondary schools could be attributed partly to the poor administrative skills of school principals. This is because the principal is the pioneer of his school and should be expected to perform certain expert and authoritative functions, bearing in mind that the end goal will be determined by effective teaching and learning. Be it big or small, public or private, it is the leader who usually provides direction towards goal attainment. To accomplish school goals, a proficient and viable executive must head the school. In schools, be it public or private the administrator is mostly viewed as the principal (Cletus, Nizam, Eissa & Khan, 2019).

The principal heads the secondary education, such a head should have demonstrated quality and the information to accomplish his managerial goals. The principals are the custodians and bookkeeping officers of their various institutions. Onyeike and Nwosu (2018) state that they assume all routine jobs to accomplish all administrative tasks as leaders for achieving school objectives. Principals are the leaders of their schools as well as administrators in whose hands lies the future of these institutions. In the school system, the duty of administration falls upon the principal. He co-ordinates and organizes the entire organ towards the achievement of goals. Being top on the hierarchy, his activities directly or indirectly affect every other factor in the system, the teachers, students and other nonteaching personnel. Principals' role performance to a great extent determines the effectiveness of the teachers in the performance of their job. In fact, his dealings transcend the boundary of school to government agencies like the school board, education commission as well as the host community. Each of these bodies has a role expectation of the principal and he must successfully pilot the boat of the school to fulfil goals (Uzoigwe, 2013).

In the school system, the leadership role of the principal is demonstrated in his activities such as planning, coordination, supervision, decision-making and motivation of staff and these are what distinguish him as the head. It is very clear that where there is good educational planning, cogent school programs, adequate staffing and facilities, what is most needed is good leadership role performance to co-ordinate all these for success (Okorie & Williams, 2009). The principal as the chief executive of schools has multifarious tasks to accomplish for the successful administration of the school system. Several authors describe the functions and roles of the school principal. Ali Maki (2017) describes the functions and roles of the school principal as ‘head teacher, principal, leader of the school, school father adviser, chief administrative executive, public relation officer, curriculum director, innovator, policy maker, organizer, communicator, school authority educator, perfectionist and philosopher. In the same vein, the functions of the principal as supervision of instructions, curriculum development, aid evaluation, school community relations, and management of school finance, staff and student personnel administration. The principal is a standard setter, one who leads in the development of an aspiration and expectation on the part of both teachers and pupils to do good work.

He assists the teachers with their problems of improving methods, materials and evaluation and thus provides a good measure of quality control.

Principals can help teachers improve their testing techniques and develop their ability to analyse and interpret data. The principal as an administrator needs to possess certain administrative skills to effectively perform his duty. Several studies have discussed the administrative roles of principals. Makhanu (2012) states that within the secondary school system, the principal stands out as the chief executive of the school, he is also the school administrator, the instructional leader, and the personnel manager for both the pupils (students) and staff personnel.

The study went further to show the extent to which Digitalization of school information management system influences effective school administration using ordinal regression to test the hypothesis.

Recommandations

- It is recommended to the Ministry of Secondary Education to provide and avail regular digitalization of school information management system support when needed by school managers and staff through available permanent expert for digitalization of school to support. School leaders should provide and conduct induction to new staff who are the digitalization of school information management system users for proficiency and competence development.
- Government should also improve on the level of training of Principals, Vice principals and Head of departments on ICT through induction courses, refreshers courses, seminars and workshops. Regular in-service ICT training programme conducted.
- Government policy should be favourable, providing administrators with the availability of ICT devices like mobile technologies (tablet and PDAs) to facilitate their work. Also, government should institute policies to support the use of ICT in education ministry.
- Since there is no big data that could cut across the three-education ministry, Government should create one for the education ministries, that will facilitate the

follow up of educational statistics from one level to another and in a sequence while keep track of individual information.

- ICT resource in secondary schools should be increased and updated.
- Curriculum developers should make computer education one of the core subjects to be offered by administrators of schools.
- ICT usage depends on regular power supply. School management should try to ensure regular power supply in school especially during official hours.

Limitation of the Study

The empirical results reported herein should be considered in the light of some limitations as not all secondary schools in Yaoundé municipality were investigated since not all of them are currently integrating digitalization in administration because as it's not made mandatory by the government. The study therefore confined itself only to a sample population of those Principals, Vice Principal and Head of Departments of those schools that had access to computers and availability of ICT devices.

Since literature on digitalization of school information management system on effective school administration of secondary schools' administration is not easy to get. The integration of digitalization of school information management system on effective school administration was different from country to country. However, despite these limitations, the focus for this study was not derailed.

Suggested Areas for Further Research

- From the findings of this research, we suggest that a comparative study should be carried out between private and public secondary administrators use of ICT for effective school administration.
- Usage of digitalization of school information management system for different aspects of school administration like student administration, personnel administration, and financial administration.
- Examine factors influencing the implementation of digitalization of school information management system in secondary schools and performance.

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APPENDICES

Appendix 1: Data Collection Instruments

QUESTIONNAIRE

My name is Ngwefoe Adeline, a student from the faculty of education, department of Curriculum and Evaluation of the University of Yaoundé I. Specialty: Management of Information System of Schools and Universities. Carrying out a research study geared toward Digitalisation of school information system and effective school administration. case of selected secondary schools in Yaoundé municipality. I therefore guarantee that the information collected will be treated confidentially and used only for this study.

Please tick where appropriate √ GENDER: Male ☐ Fem ☐

POSTION: Principal ☐ Vice Princi ☐ HO ☐ Experience (number of years of

service) 1-10year ☐ 10-20 yea ☐ 20 ☐

Qualification …….

SECTION I

In all tables below 1 = Strongly, 2 = Agree, 3 = Disagree, 4 = Strongly Disagree

A	**Availability of ICT devices for effective school administration**		
SN	**Please tick on item**	**Available**	**Not available**
9	Database for schools		
10	Desktop computers		
11	Laptops		
12	Internet connection.		
13	Printers and Scanners		
14	USB (memory) stick/external hard drives		
15	Photocopying Machines		

16	Projectors		
17	Interactive Whiteboards		
18	CCTV (Surveillance Cameras)		
19	School Email service		
20	School Management Information System		
21	Technician in ICT.		
22	Library Softwares		
23	Microsoft office package (MS Word, MS Excel, MS Powerpoint)		

B	**The Process of Implementation for Effective School Administration**				
SN	**Please state your opinions on the scale**	**1**	**2**	**3**	**4**
24	using computers avoid loss of records.				
25	The internet eases information seeking and dissemination, record keeping and retrieving information.				
26	Collection of data/information on students' teachers and parents is made easy via computer/ICT.				
27	Enhances Compilation and ranking of student's results.				
28	Simplifies school data/information analysis and processing with use of computer.				
29	ICTs ease communication within school through networking.				
30	ICT enhance decision making process.				

C	**Sustainable Management of ICT Devices for Effective School Administration**				
SN	**Please state your opinions on the scale**	**1**	**2**	**3**	**4**
31	School website				
32	Mobile technologies (PDAs, Telephones, Tablets)				
33	Email				
34	Computers				
35	Social network and Chat room				

SECTION II

D	**Effective School Administration**				
SN	**Please state your opinions on the scale**	**1**	**2**	**3**	**4**
36	Plans the school curriculum with the various subject teachers.				
37	Ensures that teachers monitor students' progress regularly through continuous assessment.				
38	Actively co-ordinates the general instructional activities of teachers.				
39	Delegates duties to collaborators				
40	Communicates with teachers regularly on issues concerning school affairs				
41	Consults with the teachers in matters affecting the students				
42	Shows concerns for the security of school property.				
43	Provides immediate replacement to damaged classroom equipment.				
44	Encourages regular parents-teachers association meetings.				

THANKS FOR YOUR COLLABORATION

Appendix 2: Krejcie and Morgan Table for Sample population

Required Sample Size†

Population Size	Confidence = 95% Margin of Error				Confidence = 99% Margin of Error			
	5.0%	3.5%	2.5%	1.0%	5.0%	3.5%	2.5%	1.0%
10	10	10	10	10	10	10	10	10
20	19	20	20	20	19	20	20	20
30	28	29	29	30	29	29	30	30
50	44	47	48	50	47	48	49	50
75	63	69	72	74	67	71	73	75
100	80	89	94	99	87	93	96	99
150	108	126	137	148	122	135	142	149
200	132	160	177	196	154	174	186	198
250	152	190	215	244	182	211	229	246
300	169	217	251	291	207	246	270	295
400	196	265	318	384	250	309	348	391
500	217	306	377	475	285	365	421	485
600	234	340	432	565	315	416	490	579
700	248	370	481	653	341	462	554	672
800	260	396	526	739	363	503	615	763
1,000	278	440	606	906	399	575	727	943
1,200	291	474	674	1067	427	636	827	1119
1,500	306	515	759	1297	460	712	959	1376
2,000	322	563	869	1655	498	808	1141	1785
2,500	333	597	952	1984	524	879	1288	2173
3,500	346	641	1068	2565	558	977	1510	2890
5,000	357	678	1176	3288	586	1066	1734	3842
7,500	365	710	1275	4211	610	1147	1960	5165
10,000	370	727	1332	4899	622	1193	2098	6239
25,000	378	760	1448	6939	646	1285	2399	9972
50,000	381	772	1491	8056	655	1318	2520	12455
75,000	382	776	1506	8514	658	1330	2563	13583
100,000	383	778	1513	8762	659	1336	2585	14227
250,000	384	782	1527	9248	662	1347	2626	15555
500,000	384	783	1532	9423	663	1350	2640	16055
1,000,000	384	783	1534	9512	663	1352	2647	16317
2,500,000	384	784	1536	9567	663	1353	2651	16478
10,000,000	384	784	1536	9594	663	1354	2653	16560
100,000,000	384	784	1537	9603	663	1354	2654	16584
300,000,000	384	784	1537	9603	663	1354	2654	16586

RESEARCH AUTHORISATION

REPUBLIQUE DU CAMEROUN
******
Paix –Travail – patrie
*****
UNIVERSITE DE YAOUNDE I
******
FACULTE DES SCIENCES DE L'EDUCATION
******
DEPARTEMENT DU CURRICULUM ET EVALUATION

REPUBLIC OF CAMEROON
******
Peace -Work- Futherland
*****
UNIVERSITY OF YAOUNDE I
*****
FACULTY OF OF EDUCATION
******
DEPARTMENT OF CURRICULA AND EVALUATION

N°.354...../21/UY1/FSE/DSSE

RESEARCH AUTHORISATION

I the undersigned, **Professor MOUPOU Moise**, Dean of the Faculty of Education, University of Yaoundé I, hereby certify that the student **NGWEFOR Adeline,** matriculation **No 19Y3392** is registered in Masters II, in the Faculty of Education, Department of **CURRICULA AND EVALUATION**, option: **EDUCATIONAL MANAGEMENT**, speciality: **MANAGEMENT OF INFORAMTION SYSTEM IN SCHOOL AND UNIVERSITY.**

The interested party is carrying out research work in partial fulfilment of the requirments for the award of a Masters degree in Educational management. The research entitled **THE IMPLICATION OF COVID-19 ON STUDENTS LEARNING METHODS AND PERFORMANCE IN SOME SELECTED SECONDARY SCHOOSL IN YAOUNDÉ VI."** is under the supervision of **Pr DAOUDA MAINGARI,** University of Yaoundé I.

I would be grateful if you approve, facilitate and provide her with every information that can be helpful in the realization of the research.

This authorization is to serve the concerned for whatever purpose it is intended to.

Done in Yaounde, on the 07 AVR 2021

For the Dean and by order

INTERNSHIP AUTHORISATION

REPUBLIQUE DU CAMEROUN
******
Paix –Travail – patrie
*****
UNIVERSITE DE YAOUNDE I
******
FACULTE DES SCIENCES DE L'EDUCATION
******
DEPARTEMENT DU CURRICULUM ET EVALUATION

REPUBLIC OF CAMEROON
****
Peace -Work- Fatherland
*****
UNIVERSITY OF YAOUNDE I
*****
FACULTY OF OF EDUCATION
******
DEPARTMENT OF CURRICULA AND EVALUATION

N° 253 /21/UYI/FSE/DSSE

INTERNSHIP AUTHORISATION

I the undersigned, **Professor MOUPOU Moise**, Dean of the Faculty of Education, University of Yaoundé I, hereby certify that the student **NGWEFOR Adeline,** matriculation **No 19Y3392** is registered in Masters II, in the Faculty of Education, Department of **CURRICULA AND EVALUATION**, option:: **EDUCATIONAL MANAGEMENT**, speciality: **MANAGEMENT OF INFORAMTION SYSTEM IN SCHOOL AND UNIVERSITY.**

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I would be grateful if you approve, facilitate and provide her with every information that can be helpful in the realization of the research.

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Done in Yaounde, on the 07 AVR 2021

For the Dean and by order.

Le Vice-Doyen

ONGO Etienne
Professeur