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PEDAGOGIC SUPERVISION OF DISTANCE LEARNING IN SOME SECONDARY SCHOOLS IN THE YAOUNDE MUNICIPALITY

A Dissertation Submitted and defended on the 20th July 2023 in fulfilment of the requirements for the award of a master's degree in education

Option: ***Educational Management***

Specialty: ***Conception Implementation and Evaluation of Educational Projects***

By

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DECLARATION

I Yovngeh Peter, registration No 19P3905 hereby declare that this work titled "**Pedagogic Supervision of Distance Learning in Some Secondary Schools in the Yaounde Municipality**" is my own work. It was done in compliance with internationally accepted practices. I have duly acknowledged and referenced all materials used in this work and I understand that non adherence to principles of academic honesty and integrity, misinterpretation/fabrication of any idea /fact/source/ will contribute sufficient grounds for disciplinary action by the university and can also evoke penal action from the sources which have not been properly cited or acknowledged.

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CERTIFICATION

This is to certify that, this research titled "**Pedagogic Supervision of Distance Learning in Some Secondary Schools in the Yaounde Municipality**" is the original work of Yovngeh Peter. This work is submitted in partial fulfilment of the requirements for the award of a Master's Degree (M.Ed) in Educational Management, Faculty of Education of the University of Yaounde 1, Cameroon.

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Having met the stipulated requirements, the dissertation has been accepted by the Faculty of Education

Date_____

(DEAN)

DEDICATION

To My Parents;

Brigit Ntang and Mawo Anacetus

ACKNOWLEDGMENTS

I would like to express my sincere gratitude to my Supervisor, Pr. Michael Nkwenti Ndongfack Associate Professor, for his constructive comments and advice in writing this dissertation.

I equally extend my gratitude to the Head of the Department of Educational Management, Pr. Maingari Daouda, Pr. Maureen Tanyi, Dr. Chaffi Cyrille Ivan, Dr. Emmanuel Ndjebakal Souck, Dr. Ndjonmbog Joseph Roger and Dr. Dr Shaibou Abdoulaï Haji, for their relentless efforts throughout my training and to all the lecturers of the department, I am extremely grateful.

I cannot forget Dr. Patience Tenneng, defender of truth and Pr. Ngongang, a spirit of resource all of blessed memory.

I am also indebted to all the heads of departments, principals and inspectors of the Ministry of Secondary Education for their genuine cooperation in the undertaking of this study.

I have to express my sincere appreciation to all my beloved friends and classmates: Yakum Derick of blessed memory, AbwaYan Marc, Mounchikpou Mouiche Loudi, Besem Brigit, Che Kelly, Mrs. Njong Mercy, Adeline and Moses for their unreserved support and collaboration.

Finally, I would like to extend my heartfelt thanks to my family for giving me moral support in my course of study: Mr. Lontum Bernard, Dr. Jifon Francis, Madam Jifon Evelyn, Dr. Jifon Gilbert, Mr Simon Jifon, Mrs. Mbilam Emma, Parfait Litinyuy, Flavian Tanko, Dinyuy Marinus, and Lesly Ghansenyuy. They have always stood by me in every circumstance.

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LIST OF ACCRONYMS AND ABBREVATIONS

PPS: Practices of Pedagogic Supervision

TTPS: Techniques and Tools of Pedagogic Supervision

AS: Aspects Supervised

ICPS: Issues and Challenges of Pedagogic Supervision

BPSM: Blended Pedagogic Supervision

COL: Commonwealth of Learning

DL: Distance Learning

ICT: Information and Communication Technology

MOOCs: Massive Open Online Courses

ODL: Open and Distance Learning

OERs: Open Educational Resources

IRB: Institutional Review Board

UNESCO: United Nations Educational, Scientific and Cultural Organization

ABSTRACT

The trend of supervision is rapidly undergoing a shift from face-to-face format towards online mode as instructional delivery is trending from brick-and-mortar classroom towards online delivery environment. With the advent of COVID-19, distance learning was precipitately adopted as a alternative instructional delivery strategy. Supervision of teaching and learning became an issue amongst secondary school teachers. To resolve the issue, three research questions were formulated: What are the current practices in pedagogic supervision? How can Pedagogic supervision be conducted in distance learning mode? What model of pedagogic supervision can be used to supervise distance learning in secondary schools?

In order to respond to the research questions, a cross-sectional descriptive survey design of research methodology was employed. Simple random sampling technique was used to select 150 participants from 6 secondary schools to take part in this study. The data collection instruments were basically closed ended items measured on a 5- point Likert scale. The reliability of this data collection instruments was checked using Cronbach's Alpha method after pilot test was conducted. The face and content validity of the tool was also checked by experienced teachers in the area of study. Frequency counts and descriptive analyses were used for the analysis of general characteristics of respondents. Ordinal Regression analysis and modelling was used to predict the extent to which each construct affected the dependent variable.

The results showed that distance learning in secondary schools was not sufficiently supervised. A discrepancy was found between theory and practice in the implementation of Distance Learning in Secondary Schools. On the one hand, laws have been enacted for its implementation in schools and on the other hand, neither schools nor teachers appeared to be fully prepared for the transition to a digitalized distance learning environment. As a recommendation, a model of pedagogic supervision called "Blended Pedagogic Supervision Model" (BPSM) which integrates e-Supervision and Face-to-face Supervision, laying emphasis on tools used such as Learning Management Systems as our multiple ordinal regression analysis indicated was proposed. It is hoped it will contribute to enhance pedagogic supervision in distance learning.

Key Words: ***Pedagogy, Supervision, Distance Learning, E-Supervision, Blended Supervision, Face-to-face supervision.***

RESUME

La tendance de la supervision est en train de passer rapidement du format face à face au mode en ligne, car la prestation de l'enseignement passe de la salle de classe physique à l'environnement de prestation en ligne. Avec l'avènement de la COVID-19, l'apprentissage à distance a été adopté précipitamment comme stratégie alternative de prestation d'enseignement. La supervision de l'enseignement et de l'apprentissage est devenue un problème pour les enseignants du secondaire. Pour résoudre la problématique, trois questions de recherche ont été formulées : Quelles sont les pratiques actuelles en matière d'encadrement pédagogique ? Comment mener une supervision pédagogique en mode enseignement à distance ? Quel modèle d'encadrement pédagogique peut être utilisé pour encadrer l'enseignement à distance dans les écoles secondaires ?

Afin de répondre aux questions de recherche, une conception d'enquête descriptive transversale de la méthodologie de recherche a été employée. Une technique d'échantillonnage aléatoire simple a été utilisée pour sélectionner 150 participants de 6 écoles secondaires pour participer à cette étude. Les instruments de collecte de données étaient essentiellement des items fermés mesurés sur une échelle de Likert à 5 points. La fiabilité de ces instruments de collecte de données a été vérifiée à l'aide de la méthode Alpha de Cronbach après la réalisation d'un test pilote. La validité apparente et de contenu de l'outil a également été vérifiée par des enseignants expérimentés dans le domaine d'étude.

Des comptages de fréquence et des analyses descriptives ont été utilisés pour l'analyse des caractéristiques générales des répondants. L'analyse et la modélisation de la régression ordinale ont été utilisées pour prédire dans quelle mesure chaque construction affectait la variable dépendante.

Les résultats ont montré que l'enseignement à distance dans les écoles secondaires n'était pas suffisamment encadré. Un écart a été constaté entre la théorie et la pratique dans la mise en œuvre de l'enseignement à distance dans les écoles secondaires. D'une part, des lois ont été promulguées pour sa mise en œuvre dans les écoles et d'autre part, ni les écoles ni les enseignants ne semblaient être pleinement préparés à la transition vers un environnement d'apprentissage à distance numérisé. En guise de recommandation, un modèle de supervision pédagogique appelé "Blended Pedagogic Supervision Model" (BPSM) qui intègre la e-Supervision et la Supervision en face à face, mettant l'accent sur les outils utilisés tels que les Learning Management Systems comme l'a indiqué notre analyse de régression ordinale multiple est proposé. On espère qu'il contribuera à un meilleur encadrement pédagogique dans l'enseignement à distance.

Mots clés : ***Pédagogie, Supervision, Apprentissage à distance, E-Supervision, Supervision mixte, Supervision en présentiel.***

CHAPTER ONE: INTRODUCTION

In recent years, the education landscape started undergoing a shift in paradigm from face-to-face classroom delivery to distance learning delivery mode, due to the exponential growth and advancement in telecommunications (Nkwenti, 2017). New terms such as e-banking, e-commerce, e-governance, e-supervision, virtual community and virtual classroom, have emerged in the educational literature (Vaiz et al., 2021). All these changes are galvanised by the computer and the internet. Also, in 2020, the whole world witnessed dramatic changes in all spheres of life due to the unprecedented outbreak of covid-19, which forced academic institutions, including the primary and secondary, to engage in distance learning. Franklin et al. (2015) noted that while, "online learning currently reaches millions of K–12 learners and its annual growth has been exponential" (p. 1), nothing could have prepared teachers and campus leaders for the rapid transition to all teaching and learning being online.

A big question that arises is "how can supervision in distance learning be carried out in the secondary schools in a manner that will produce quality results?" Supervision is a very important measure to ensure the quality of distance learning especially in the secondary education sector. According to Vaiz et al., (2021), effective and efficient use of distance education practices is important in terms of sustainability and no interruption of education. For any organization or enterprise to produce quality products, there is need for control, coordination, inspection and evaluation. The processes of controlling, coordinating, inspecting and evaluating fall under supervision. Hence for any institution to produce good results, it needs effective supervision. This is carried out in order to ensure that the standards and norms are respected; to ensure the efficacy and efficiency of the institution in the process, essentially by improving the performance of the personnel and ultimately to improve the performance of students. In the Educational sector we refer to it as Pedagogic Supervision when it involves the teaching/ learning process. In this study we focus on pedagogic supervision of Open Distance Learning (ODL), with target on the supervisory chain, wherein we have the Head of Department (HOD), the Vice Principal (dean of studies), the Principal and the assigned inspector from the Ministry of Secondary Education.

Nowadays, we have a mix model of inspection/supervision: As inspectors, they contribute towards achieving the Government's overall purpose, its strategic objectives, and the compliance with educational standards; and as supervisors, they try to establish a collaborative, cooperative, democratic, and consultative climate in schools (Vazquez & Garcia, 2013).

One of the required skill sets of an educational leader is the ability to provide guidance and support to help teachers continually improve their instructional practices and increase student achievement (Hartman & Morris, 2019). This includes the leader observing classroom lessons, collecting observation data, facilitating teacher reflection on instructional practices, and providing feedback, thus essentially coaching teachers professionally to reach their full potential. It also involves providing ongoing school-wide and individualized professional development to respond to teachers' needs and to build teacher leaders. In order to successfully perform these functions, the school leader must create a climate of collaboration and build trust (Glickman, Gordon, & Ross-Gordon, 2001; Jean-Marie & Normore, 2010).

Since E-learning is a new field in the Cameroonian secondary education system, there is very little literature as far as pedagogic supervision of ODL in this sector is concerned. Renninger (n.d.) has suggested that supervision within a virtual context requires the same skills as supervision in-person, "but with a few added twists" (Brock et al, 2021).

In this chapter we discuss the rationale or the reason this study is carried out. Here we have the background of the study, the context of the Study, the Problem statement, the objectives of the Study, the research problem and finally, the delimitation of the study and definition of terms used in the study.

1.1. BACKGROUND OF THE STUDY

1.1.1. Historical background of Supervision

According to Kalita (2017), the current literature on supervision advocates modern concept of supervision, which evolved, developed and is being practised to a large extent in America. Supervision in America was developed through a variety of educational institutions, where the initial supervisory concepts are characterised by external supervision, which is known as the "Period of Administrative Inspection", during the years 1642-1875 (Bala, 2012). In 1635, in America, the responsibility of supervision was borne by the community members. Massachusetts School Law of 1647 also instructed community leaders to monitor the students' progress in reading and in understanding religious principles (Thakral, 2015). Supervision, during this period denotes control, monitor, judgement and maintenance of schools. Afterwards, during the late half of 19th century, professionalization of supervision developed in U.S.A. and responsibility of overall supervisory services of a school were gradually shifted from community leadership to a couple of authorities like local school superintendents, Head teachers, Principals, State Department of Education, state universities as well as regional

colleges (Bala, 2012), but the inspection as a method of supervision, still sustained. In the 20th century, in the years following 1920, some significant trends of supervision emerged, as the improvement of instruction was recognised as a major function of supervision. Accordingly, scientific, creative and democratic supervision were developed primarily during the period from 1925 to 1950 (Bala, 2012).

Scientific Supervision

The growth of scientific supervision paralleled the development of scientific methods of research in other areas of knowledge. According to Tracy (1995), "Central to scientific supervision was the concept of measuring the methods of teaching to determine the most productive ones in relation to student outcomes." Scientific supervision advocates research and scientific method as tools for improving teaching-learning situation, by using proper instruments to obtain pertinent data and supervision, then uses these data to improve teaching and learning (Bala, 2012). However, two major factors have challenged scientific supervision as most supervisors, teachers were not trained to use the method and the human factors that operate in teaching cannot be measured scientifically.

Democratic Educational Leadership

As against the shortcomings of scientific supervision, concept of Democratic Educational Leadership in supervision was developed. The successful supervisors have been described as a high type of educational leader, who makes use of co-operative techniques in a democratic manner. Besides, supervisors also work for improvement of the total teaching-leaning process for attainment of the purposes of education in a democracy. The school Principal has now been identified as a supervisor of major stature, from this perspective (Bala, 2012). This phase is also referred to as "The Period of Emergence of Democratic Methods in Supervision" (Sullivan & Glanz, 2000) or "The Human Relation Phase" (Tracy, 1995).

Creative Supervision

The controversy between scientific supervision and democratic leadership gave rise to the concept of Creative Supervision, as a compromise between democratic and scientific supervision. Creative supervision passed through several shifts in emphasis. One from considering supervisor as the main creative individual to the teacher, as that person. Another was, from the idea of 'creativity' as learning to 'discovering' as learning. The third one was from the concept that a certain teaching method must be used by every teacher to the idea that different individual teachers use different methods effectively. Main allied concepts of creative supervision are as follows:

- Supervision through instructional teams.
- Supervision as guidance.
- Supervision as skill in human relations or group processes
- Supervision as curriculum reorganization and improvement.

Clinical Supervision

Clinical supervision is the latest among the different phases of evolution of educational supervision. Moris Cogan is considered as the originator of the term 'clinical supervision' (Tracy, 1995). Clinical supervision emerged to fill in the gap between scientific and democratic supervision. It is an attempt to combine the tools and techniques of the Scientific Phase with the supervisor/teacher team approach of the Human Relation Phase (Tracy, 1995). Clinical supervision places emphasis on sustained teacher and supervisor interaction in order to solve classroom problems (Thakral, 2015). This new trend in supervision didn't gain wide acceptance in schools yet.

Evolution of Supervision in Cameroon

According to Titanji F. and Yuoh N. (2010), secondary education in Cameroon has witnessed increased attention since the mid-1990s, evidenced by the 1995 National Education Forum and the February 2005 technical committee meeting in Yaoundé, involving all the ministries of education (basic, secondary and higher education), with technical assistance from the ministries of economy and finance, planning and regional development, labour and professional training and UNESCO to reflect on a sector-wide approach to education in the country. A key theme running through the reports of both the National Education Forum (MINEDUC 1995) and the Draft Document of the Sector-Wide Approach to Education (Republic of Cameroon 2005a) is the need to strengthen teacher quality as part of a comprehensive strategy towards efforts aimed at improving the quality of educational services. Law No. 98/004 of 14 April 1998 (based on the recommendations of the National Forum) in its Chapter III, Section 2:1, refers to teachers as the guarantors of quality education (Republic of Cameroon 1998).

One of the strategies adopted by the government to improve and guarantee teacher quality is the appointment of provincial pedagogic inspectors (PPIs) for each subject area. The responsibilities of PPIs are contained in Decree No. 2005/139, organising the Ministry of Secondary Education (Republic of Cameroon 2005b). Interest in the secondary education subsector aligns neatly with national and international education initiatives, notably The

African Union's Second Decade of Education for Africa (2006–2015), Draft Plan of Action (African Union 2006).

Cameroon's educational system, more particularly at the level of secondary education, suffers from an acute shortage of teachers in both numbers and quality. As a result, there is heavy dependence on unqualified individuals. Many of the teachers possess subject-matter knowledge, but lack knowledge of the foundations of education as well as pedagogic content knowledge. The situation even becomes more complicated in the distance learning environment. This reality reinforces the importance of instructional supervision. If there is heavy dependence on unqualified teachers (Republic of Cameroon 2005a), it becomes logical not only to have structures aimed at strengthening teacher quality but to ensure that they are indeed performing at expected or superior levels.

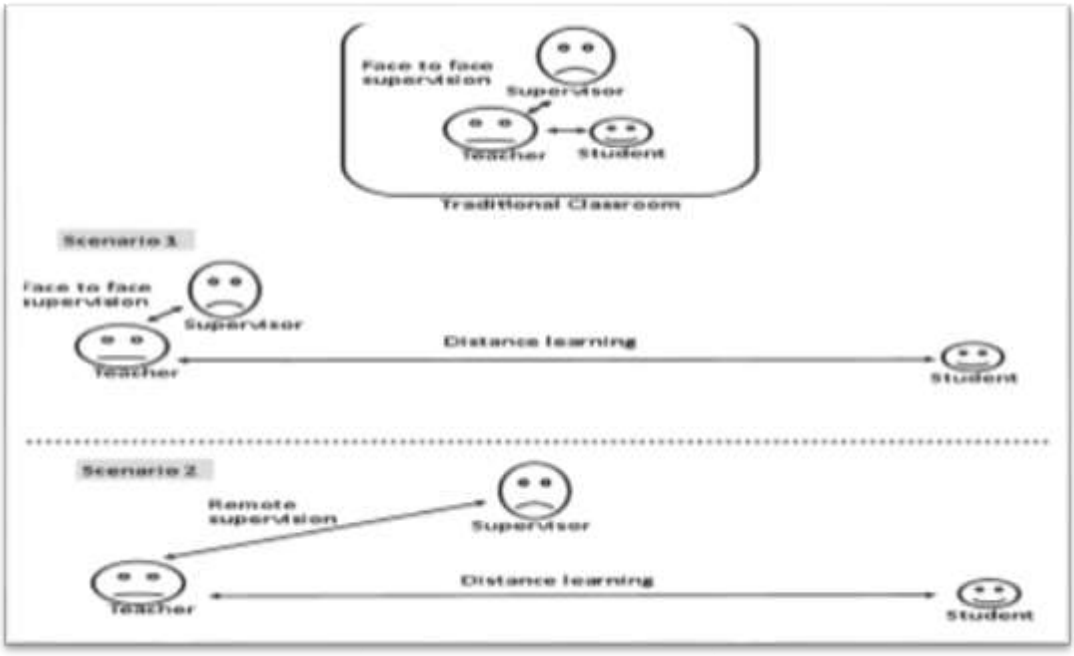
In education sector, efforts have been made to deepen decentralization to school level. Decision making is being shifted from regions and zones to municipalities or local councils and further to school level to provide direct response and service delivery. Accordingly, to facilitate the implementation of decentralization process, MOE has developed guide lines for the organization and educational management, community participation and education finance (Strategic National Development 2020-2030).

Now with the introduction of Open and Distance Learning in the educational system pedagogic supervision will undergo another face lift which this study seeks to address. Nowadays there exists the notion of electronic supervision (E-Supervision) which means supervision using the internet and telecommunication facilities. Here, we introduce the concept of blended supervision of Distance Learning wherein we have face-to-face supervision blending with e-supervision as illustrated in the diagram fig. 1 below.

1.1.2. Conceptual Background

In the distance learning format where does the supervisor position himself in order to observe the teacher?

Figure 1: Pedagogic Supervision of Distance Learning



Source: Researcher

Currently, the concept of supervision is broader, incorporating two interconnected levels in institutional supervision, focusing on the mediation of the teacher's professional development, as well as on the organisational development of the school (Glickman et al., 2017). So, supervision includes, not only the classroom context, but also a reflective school (action research), as a learning community. In this understanding, the school is redefined, in the tradition of Schön (1983) and Zeichner (1981), as a reflective organisation in its mission and structure, in the course of a simultaneously evaluative and formative process of pedagogical and institutional regulation (Alarcão, 2003; Nolan and Hoover, 2011). Thus, the concept of supervision places the improvement of pedagogical practice within an educational community, in a democratic perspective based on collaboration between peers, in the context of a school capable of integrating and applying, individually and collectively, strategies for reflection, autonomy, mediation and leadership. The purpose of supervision lies then in the better quality of teaching and learning, linking the development of students, teachers, supervisors, and the school itself.

Open and Distance Learning (ODL)

Open Learning:

The South African government defines open learning as follows: Open learning is an approach which combines the principles of learner-centeredness, lifelong learning, flexibility

of learning provision, the removal of barriers to access learning, the recognition of prior learning, the provision of learner support, the construction of learning programmes in the expectation that learners can succeed, and the maintenance of rigorous quality assurance over the design of learning materials and support systems (Nkwenti, 2016).

Distance Learning:

Distance learning may be broadly defined as a flexible form of education characterised by the:

- Separation of the teacher from the learner in time or space, or in both;
- use of a variety of media to bridge that separation, including print, radio and television broadcasts, video- and audiocassettes, computer-based learning and telecommunications;
- Provision of two-way communication, which allows for tutor-learner and/or other learner interaction;
- Possibility of face-to-face meetings for tutorials, learner–learner interaction and laboratory or practice sessions; and
- Use of industrialised processes, where there is a division of labour that contributes to reduced unit costs through economies of scale (COL, 2000, p. 2).

It is important to note that the concept of online learning is not new (Singh & Thurman, 2019). Online learning has been classified as a sub-category under the distance learning umbrella (Stern, n.d.). Distance learning is broadly defined as "an organized instructional program in which teacher and learners are physically separated" (Newby et al., 2000, p. 210). However, online learning specifically refers to "education that takes place over the Internet" (Stern, n.d., para. 3).

1.1.3. Theoretical Background

The theory of Goals Setting, the theory of Equivalence, the theory of social constructivism and the adult learning theory will be used to illuminate the concepts in this research.

The Theory of Goals Setting

Regarding Pedagogic Supervision, the theory of goals setting by Latham and Yoke is very appropriate as the ultimate end of pedagogic supervision is improvement of students' academic success. Goal-based management is essentially based on a joint setting of goals (Locke & Latham, 1990). This approach is thus likened to the prime directives of results-based

management, in which the goals to be reached are clearly and jointly established by all three parties, in this case, the Ministry of Education, the regional or divisional inspectorates of education, and the schools. Pedagogical supervision is the ideal method to collect crucial data that will improve existing practices, as well as student achievement which is defined according to objectives.

The theory of Equivalence

Simonson et al, (1999) asserts that education at a distance should be built on the concept of equivalency of learning experiences. The more equivalent the learning experiences of distant learners are to those of local learners, the more equivalent will be the outcomes of the educational experiences for all learners.

The theory of Social Constructivism

For teachers' professional development we invoke the theory of social constructivism. It is one of the most appropriate theoretical frameworks that supports the teacher professional development model. Dewey (1916) suggested that experience is the cornerstone from which new knowledge is created, promoting authentic learning and meaningful experiences that foster new knowledge growth. This perspective gave rise to a theoretical perspective known as constructivism. Widely accepted within the educational community, constructivism describes learning as a process whereby learners actively construct or build new ideas, concepts, or knowledge objects based upon existing understandings. Vygotsky (1962), a cultural psychologist theorized that language and conceptual development are linked to social phenomena and cultural contexts. Vygotsky (1978) extended the perspectives of constructivism by theorizing that learning occurs through sociocultural mediation, meaning that individuals construct \new knowledge through their active participation within a social context and via interactions with its signs and tools.

1.1.4. Present Context of Distance Learning in Cameroon Secondary and High Schools

Distance Learning in Secondary and Primary Education, has basically been theoretical until recently that the convid-19 pandemic forced institutions to undertake online and remote teaching and learning, very ill prepared. Also some Non-governmental organizations helped out some schools carry out distance learning in crisis stricken South West and North West regions of Cameroon as a resilient measure to continue education. The National Television and Radio were used to broadcast some lessons. The internet and some social media were used especially in urban areas. Unfortunately, some regions and rural areas, don't have enough

power, or access to the internet and modern technology and are therefore excluded. The teachers and instructors, including the students do not master the right and appropriate technology and methodology to use. No state regulation to set the standards and norms for distance learning and so the practice is mild with chaos as institutional leadership adopt the laser-faire approach.

The legal backing of Distance Learning in Cameroon

According to the survey carried out in Cameroon by Nkwenti (2016) regarding the aspect of recognition and accreditation of distance learning certificates or degrees, all the 10 institutions of higher learning in Cameroon surveyed, referred to Law (No. 98/004, 14 April 1998, Section 23, Article 2)., laying down guidelines on higher education in Cameroon. This law recognises distance learning as an alternative form of education. There is yet no government policy on distance learning, the writer points out. This will help to lay down the standards and norms guiding distance learning.

Empirical Evidence

During the period of the ravaging Covid-19 pandemic, and as a results of the crisis in the North West and South West regions coupled with Boko Haram insurgents in the Far North Regions of Cameroon, Distance learning was carried out as resilience means to carry on education in Cameroon. To that effect secondary and primary schools engaged in Distance Learning but quite a good number of issues were observed:

- A lot of teachers did not master the right technology and methodology involved; therefore, the teaching was not effective.
- Parents, although without any pedagogic competence in most cases, automatically engaged themselves in following up their kids, besides their busy schedules.
- Regarding the technology used, basically the Television and radio, with their shortcomings and a few social media were used. A few schools employed Google classroom, Google docs and other appropriate media for distant learning.
- On the part of the students, many of them did not follow up the lessons for several reasons; frequent power cuts, poor internet connection, indiscipline, poor mastery of the technology etc. Some of them only indicate their presence and disappear without following the lessons.

Quality Matters (QM) is a widely used framework for designing and assessing the quality of instructional design in online courses (QM, 2005). QM's research- based rubric consists of standards focused on design principles that are essential to and/or promote learner

success in an online or blended (a combination of face- to-face meetings and online content) learning environment. The standards of the quality assessment rubric focus on various key aspects including the following: the course overview and introduction; alignment of learning objectives, activities, and assessments; active student engagement; learner support; and accessibility (Hartman & Morris, 2019). The following terms describe the quality of project: Sustainability, accountability, equity, Efficiency, efficacy and effectiveness, pertinence. SMART- Specific, Attainable, Relevant, Time bound.

In this regard, a lot still needs to be done to improve on the quality of distance learning in Cameroon in the Secondary Schools. How then can Open and Distance Learning be carried out in a satisfactory manner in the Secondary Education with quality assurance? Pedagogic Supervision is a great way to guarantee quality of ODL.

1.2. PROBLEM STATEMENT

The trend of supervision is rapidly undergoing a shift from face-to-face format towards online mode as instructional delivery is trending from brick and mortar classroom towards online delivery environment (Burns, 2011). Way back in 2019, some NGOs adopted distance learning in secondary schools in the crisis stricken Regions of North West and South West as well as the Far North Regions of Cameron, as a resilient way to continue education. With the unprecedented outbreak of covid-19 pandemic, schools around the globe were forced to closure and distance learning became the only mode of instructional delivery. Following the strategy set out by the Prime Minister of Cameroon on 17 March 2020, the Ministries of Basic Education, Secondary Education and Higher Education decided, to continue courses by using distance teaching and learning tools during the lockdown period.

Despite all that had been said and put in place for Distance Learning to be effective in Cameroon, the practice of it was marred by a lot of flaws and challenges, especially in Secondary Education. There was no effective supervision as the resources (financial, material and human) to follow up distance learning were inadequate and inappropriate. Secondary school leaders and administrators, were unprepared. The fact that there was no government policy to guide and regulate distance learning further complicated matters (Nkwenti, 2016) supported by (Beche, 2020). These issues undoubtedly compromised the quality of education. While some school leaders encouraged peer collaboration and collegial relationship and mentorship amongst the staff while majority adopted a laisser-faire approach, leaving each teacher to do it their own way.

It has been revealed that the advantages of distance education also provide opportunities for e-supervision which facilitate control, eliminate time and place concepts, and create an easier communication network between supervisors, teachers and school administrators. The notion and practice of e-supervision is fast gaining grounds. How can clinical supervision which involves pre-lesson observation conference, classroom observation, student evaluation, post-observation conference and document inspection, be carried out by a supervisor in the distance learning delivery environment? Where does the supervisor situate himself in this context where the teacher and student are physically separate? What model of instructional supervision is suitable in Open and Distance Learning mode? Is it face-to-face supervision? E-supervision? Or both (blended supervision)? These are some of the questions this researcher seeks to answer.

The purpose of this study therefore, is to analyse current practices of pedagogic supervision and to identify practices of supervision in distance learning environment, targeting school administrators in the supervisory chain, namely, the principal of the college being the main actor, the dean of studies, the head of department (HOD) and the inspector from the delegation of the Ministry of Secondary Education. This is in a bid to ultimately develop a model of pedagogic supervision of distance learning suitable for secondary education. In this research, we adopt quantitative research approach, using a cross-sectional descriptive survey design.

Hence, the study was designed to answer the following basic questions:

1.3. RESEARCH QUESTIONS

1.3.1. Principal Research Question

How can effective pedagogic supervision in Distance Learning be carried out in secondary schools in the Yaounde municipality?

1.3.2. Specific Research Questions

- What are the current practices in pedagogic supervision?
- How can Pedagogic supervision be conducted in distance learning mode?
- What model of pedagogic supervision can be used to supervise distance learning in secondary schools?

1.4. RESEARCH OBJECTIVES

1.4.1. General Research Objective

To analyse current practices of pedagogic supervision with the issues involved and develop a model of pedagogic supervision that can be used to supervise distance learning in secondary schools in Yaoundé Municipality.

1.3.2. Specific Research Objectives

- To analyse current practices of pedagogic supervision in Secondary Schools.
- To identify practices of pedagogic supervision in Distance learning.
- To develop a model of pedagogic supervision in distance learning for secondary schools

1.5. RELEVANCE AND IMPORTANCE OF THE STUDY

As mentioned earlier in this work, Distance Learning is practically a novelty in the Cameroonian Education system at the primary and secondary levels and so there is very little or no literature in this domain. Therefore, it is important to introduce adequate and effective pedagogical supervision practices of this form of learning in order to guarantee quality assurance. Our study will help to bring out contextualised Distance Learning Pedagogic Supervision practices that can be used in the Secondary and High Schools in Cameroon, why not primary and higher Education. Our study will equally contribute to reshaping the theories of Pedagogic supervision of distance learning, which involve students in remote and enclave areas where there is no internet and appropriate technologies as the issue of equity is very pertinent in Distance Learning.

In the domain of Conception and Evaluation of Educative Projects, my specialty, this study is very pertinent and relevant since all projects need monitoring and evaluation in order to guarantee quality and efficiency, efficacy and effectiveness. We have several educative projects such as the implementation of the New Pedagogic Approach, the Alternating Training (Dual Training), and Education Can't Wait project. All these projects need monitoring and evaluation, which fall under supervision.

1. Moreover, this study will provide pertinent and timely information to stakeholders of education at all levels about the practices of pedagogic supervision of distance learning and help them to know how effective it is practiced in schools, especially at the secondary level and its role in improving the teaching and learning process in the Distance Learning mode.

2. Stakeholders will also be aware of the weaknesses and challenges involved in pedagogic supervision of Distance learnings. This will help them to design minimizing mechanisms to curb the issues.

3. It may equally serve as a supplementary material for others who have an interest to profoundly investigate the issue of pedagogical supervision of distance learning.

1.6. DELIMITATION OF THE STUDY

This study will be carried out in some selected secondary schools in the Yaoundé municipality.

The reason behind taking this as a study area is the fact that the area contains a vast number of schools that are undertaking distance learning and the nature of schools is diverse with regard to resources (human, material and financial) which is very representative of the study population. This may enable the researcher to see the problem in detail, as well as to manage the process of the research better. Although, supervision is a broad concept, the focus of this study is assessing the current practices and major challenges of supervision pertaining to distance learning in the study area. For this, looking thoroughly, the areas of supervision related to assisting teachers in planning, presenting, evaluating, and managing their distance learning lesson were the conceptual concerns of the study. Moreover, the basic domains of supervision: curriculum, staff, and instructional development and their interrelationship, particularly focusing on instructional supervision have been seen in the study. Because of its importance in exploring the facts, Issues and practices; a descriptive cross-sectional survey design of research was employed.

This research is in partial fulfilment of the requirements for the award of a Master's Degree, option Design and Evaluation of Projects in Education, Department of Curriculum and Evaluation, Faculty of Education in the University of Yaounde I.

1.7. OPERATIONAL DEFINITION OF TERMS

Table 1: Definitions of key Terms and Concepts

Term	Definition	Author	Year
Distance Learning	It is a method of study where teachers and students do not meet in a classroom but use the Internet, e-mail, mail, etc., to have classes. Simply put, distance learning is when students are separated from teachers and peers.	**Mary Burns**	**2011**
Pedagogy	Pedagogy, most commonly understood as the approach to teaching, is the theory and practice of learning, and how this process influences, and is influenced by, the social, political and psychological development of learners. Pedagogy, taken as an academic discipline, is the study of how knowledge and skills are imparted in an educational context, and it considers the interactions that take place during learning. Both the theory and practice of pedagogy vary greatly, as they reflect different social, political, and cultural contexts.	April, Daniel Bouchamma, Yamina	**2019**
Supervision	Supervision is the act or function of overseeing something or somebody. A person who performs supervision is a "supervisor", but does not always have the formal title of supervisor. A person who is getting supervision is the "supervisee".	April, Daniel Bouchamma, Yamina	**2019**
Pedagogic supervision	Pedagogic supervision can be defined as the theory and practice of teaching and learning regulation in an educational context, with pedagogy as its object, and	April, Daniel Bouchamma, Yamina	**2019**

	aimed at improving educational action and the skills of the teacher in training.		
Instructional supervision	Supervisory activities and **practices** aimed at the improvement of instruction, in tackling instructional Issues and for the professional growth of teachers.	Musaazi, John C S	**216**
Supervisory practice	The actual activities happening in the school related to supervision.	April, Daniel Bouchamma, Yamina	**2015**
In school supervision	Supervision within the school which can be done by principals, vice principals, teachers and supervisors assigned in school.	Lyonga, Ngemunang Agnes Ngale	**2018**
E-Supervision	Electronic supervision. Supervision from a distance using modern information and communication technology.	Vazquez Cano, Esteban Sevillano García, M. Luisa	**2013**
Asynchronous communication	Communication in which the participants interact in varied time spaces (e.g., e-mail, threaded discussions, homework, message boards)	(Vazquez Cano & Sevillano García, 2013).	2013
Blended/Hybrid Course	Course blending online and face-to-face delivery. Substantial proportion (30-79% of the content is delivered online).	Vazquez Cano, Esteban Sevillano García, M. Luisa	**2013**
Blog	(a contraction of the term weblog) is a type of website, usually maintained by an individual with regular entries of commentary, descriptions of events, or other material such as graphics or video.	Mette, Ian	**2020**
Blended Supervision	Supervision blending e-supervision and face-to-face supervision		

Cyberschool (virtual school)	An online learning program in which students enroll and earn credit towards academic advancement (or graduation) based on successful completion of the courses (or other designated learning opportunities) provided by the school	Brock, Jesse D. Beach, Don M. Musselwhite, Mandy Holder, Ikie	**2021**
Learning Management System (LMS)	The technology platform through which online courses are offered; a LMS includes software for the creation and editing of course content, communication tools, assessment tools, and other features designed to enhance access and ease of use.	Ziraba Godwill Chenyuei Akwene Atabong nee Alemanjoh Mariana Nkea Shiynsa Charles Lwanga American, Abdallah Ziraba, Abdallah Chenyuei Akwene, Godwill nee Alemanjoh Mariana Nkea, Atabong Charles Lwanga, Shiynsa	**2020**
Chat	Primarily meant to refer to direct one-on-one chat or text-based group chat using Internet applications.	Kukua, Ruth Coleman, Ntumy	**2004**
Ning	An online platform designed for people to create their own private or public social networks, many are used for educational purposes.	Burns, Mary	**2011**
Online learning	Education in which instruction and content are delivered primarily via the Internet;	Franklin, Tracy O East, Theron Bill	**2015**

	online learning is a form of distance learning. Eighty percent of seat time is replaced by online activity.	Mellard, Daryl F	
Seat time	The actual physical presence of a student in a brick-and-mortar school setting, often used for attendance and funding		
Social networking	Online communities of people who share interests and/or activities, or who are interested in exploring the interests and activities of other members. Most of the social network services are web based and provide a variety of ways for users to interact, such as chat, video conferencing, forum-discussions, and e-mail.	Mary Burns	2011
Synchronous communication	Communication in which the participants interact in the same time space (e.g., telephone calls, face-to-face meetings, physical classrooms, chat rooms, videoconferencing)	Eric G. Rosendale Bachelor	2009
Threaded discussion	An electronic discussion (e-mail, e-mail list, bulletin-board, newsgroup, or Internet-forum) in which users visually group messages in a hierarchy by topic.	Angel A. Joan	2010
Web 1.0	One dimensional web design where an Internet browser displays hosted information to the user. Also, a heteronym of the state of the World Wide Web, and any website design style used before the advent of the Web 2.0 phenomenon.	Esteban Vázquez Cano M.ª Luisa Sevillano García Faculty	2013
Web 2.0	A second generation of web development and web design. It is characterized as facilitating communication, information sharing, interoperability, and collaboration	Eric G. Rosendale Bachelor	2009

	on the World Wide Web. It has led to the development and evolution of web-based communities, hosted services, and web applications.		
Web 3.0	A supposed third generation Internet-based service which emphasizes machine-facilitated understanding of information. This can provide a more intuitive and productive user experience. Web 3.0 is also known as the Semantic Web	Esteban Vázquez Cano M.ª Luisa Sevillano García Faculty	2013
Web-Facilitated Course	Course that uses web-based technology (1-29% of the content online) to facilitate what is essentially a face-to-face course.	Mary Burns	2011

1.7 LAYOUT OF THE STUDY

This work is divided into five chapters as follows

- Chapter 1: The General Introduction
- Chapter 2: Literature Review

Empirical Review

Theoretical Framework

Conceptual Framework

Appraisal of Literature

Chapter Summary

- Chapter 3: Methodology

Design

Target population

Sample population

- Chapter 4: Research findings, Data analysis and Discussions.
- Chapter 5: Suggestions and Conclusion

CHAPTER TWO

LITERATURE REVIEW

Research findings are demonstrating that teaching and learning in conventional classrooms will highly be impacted by the use of online learning (Allen, Seaman, Poulin & Straut, 2016). In the face of crisis plaguing the world now such as wars and diseases such as covid-19, Distance learning is considered a sure and resilient method to keep education going. Education facilitated by e-learning is transforming instructional process both in educational institutions and in business firms. E-learning is becoming an accepted and indispensable part of mainstream education prompted by the need to make Corresponding learning more accessible to a wider population; the growing need for continual skills and the need to enhance learning outcomes while promoting lifelong learning. For this reason, more and more institutions of learning around the world are embracing e-learning systems and investing heavily in developing the infrastructure (Nkwenti, 2017).

Mcaleavy and Gorgen (2020) argue that the highly effective remote teacher must be proficient in the same domains as the face-to-face teacher: planning and teaching well-structured lessons (structure), adapting teaching when appropriate to meet individual needs (adaptation), and making accurate and productive use of assessment (assessment). However, physical distance between the teacher and learner brings considerable challenges and requires changes to planning, teaching and assessment practices. This writer argues that online teaching should not try to mimic the entirely synchronous teacher-student engagement of the conventional school. Ensuring equitable outcomes for disadvantaged students is more difficult for remote teachers and requires greater intentional effort. Pedagogical performance is circumscribed by the digital capacity of the teacher. The digital capacity of teachers in some high-income countries is poor and is poorer still in most low income countries. Many teachers need professional development support in the use of technologically enhanced pedagogy (Mcaleavy & Gorgen, 2020).

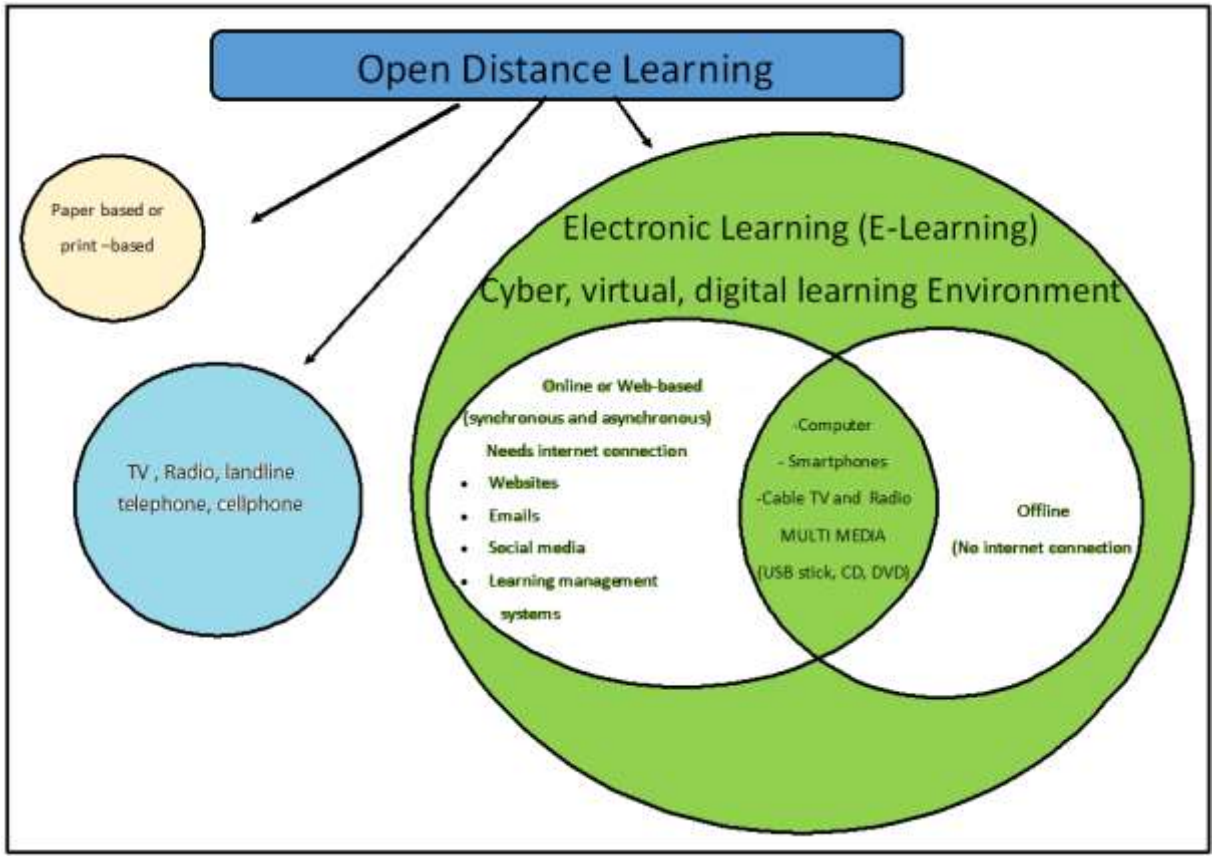
In Cameroon before 2020, Distance Learning was practiced only in higher education realm. But because of the unprecedented outbreak of covid-19, the lower cycles (Primary and Secondary) were forced to undertake e-learning. There is therefore need for pedagogic supervision of this form of delivery in order to guarantee the quality and a good standard of education.

Vaiz et al., (2021) point out that education is a living, developing and progressing process. It can be said that this process cannot proceed uncontrolled. Supervision tries to determine to what extent the organization has achieved the success criteria, and the success criteria of educational organizations are their goals. Schools are established to achieve these goals. (Aydın, 2016; Altunya, 2014). The inputs, processes and outputs of the schools, which constitute the main part of educational organizations, should be controlled according to a certain program and the results should be reviewed in order to determine to what extent they reach their goals.

The focus of this research is therefore pedagogic supervision in distance learning. Hence, in this chapter we review literature on distance learning, current practices of pedagogic supervision with difficulties and challenges involved followed by Pedagogic Supervision in Distance learning (including the concept of E-supervision and blended supervision). This is followed by theoretical and conceptual frameworks. From literature reviewed, we develop a model of supervision of Distance Learning for Secondary schools, backed by related theories.

2.1. OPEN DISTANCE LEARNING

Figure 2: Open Distance Learning



Source: Researcher

Distance learning refers to formal, institutionally-based educational activities in which the learner and teacher are separated from one another and are connected synchronously and asynchronously via two-way interactive telecommunication networks to share video, voice, and data-based instruction. Simonson (Simonson, 1995)

Hence Remote learning, also known as distant learning, occurs when the learner and the educator, or knowledge source, are not physically present in the same location as they would be in a regular classroom. Technology is used to communicate information, such as discussion boards, video conferencing, and online evaluation. A distance learning program can be completed wholly online or using a combination of online and traditional classroom education (hybrid or blended). According to the amount of time available, there are two major categories of remote learning.

Synchronous Instruction

Synchronous instruction replicates live, traditional coursework as closely as an online class can. Professors adopt tools and online instructional methods that support real-time learning and discussion. Dr. James Groves, an associate professor of Engineering and the University of Virginia, points out that the live sessions offer the opportunity for student mixing, and that the additional perspectives of the larger, more diverse student body benefit all of the students

When it comes to teaching online courses, technology matters. Instructional methods both depend on how, and when, content is delivered. Technologies that allow instructors to maintain audio and video control while giving students a chance to ask questions and engage in discussion using a live chat might offer a common ground. Asynchronous discussion boards are another, perhaps more structured means of addressing questions and discussions. Small classes, however, can often accommodate live, two-way audio and video, which provides an even more personal, classroom-like learning experience (Mcaleavy & Gorgen, 2020).

Professors teaching synchronous courses are not limited to just content delivery method: they can combine them with additional technologies to accommodate a wider range of learners. The following tools are just some of those that support real-time communication:

- Streaming video platforms
- Live chats, individually or course-wide
- Web conferencing tools

- Telephone availability
- Virtual office hours

Each of these tools encourages live participation and interaction, though some online professors also capture and upload lecture videos and chat transcripts for students who occasionally miss class (Hartman & Morris, 2019). Some of the virtual classroom or virtual meeting platforms with functions similar to Blackboard Collaborate include Adobe Connect, Google Hangout, Skype, GoToMeeting, and Zoom. Virtual tools for document collaboration similar to Google Drive include Ether Pad and Microsoft 365. Some alternative options for Learning Management Systems like Canvas include Moodle, Blackboard, and Desire2Learn. The list of available potential tools is extensive (Vazquez C. Sevillano G., 2013).

Some of the virtual classroom or virtual meeting platforms with functions similar to Blackboard Collaborate include Adobe Connect, Google Hangout, Skype, GoToMeeting, and Zoom. Virtual tools for document collaboration similar to Google Drive include Ether Pad and Microsoft 365. Some alternative options for Learning Management Systems like Canvas include Moodle, Blackboard, and Desire2Learn. The list of available potential tools is extensive. It is highly recommended that instructors who are designing online courses work closely with their university's teaching and learning support networks to explore the many options available.

Asynchronous Instruction

Online courses that allow students to view lectures, access materials, and collaborate with teachers and peers on their own schedule are called asynchronous courses. Lectures might be pre-recorded or presented on a program like Microsoft PowerPoint, perhaps with instructor voice-over. These delivery methods allow students to review and re-review lessons as necessary. These options could be quite helpful to students who cannot attend scheduled sessions, hope to minimize live group projects or discussions, or want to work through lessons at their own pace (Vazquez C. Sevillano G., 2013).

Programs that use asynchronous content delivery methods require a different approach to teaching-one that depends heavily upon the technologies used. As with synchronous instruction, characteristics like class size and instructor preferences can influence which tools are used in an asynchronous online classes. Many employ more than one technology, which could include the following:

- Downloadable pre-recorded lectures
- Microsoft PowerPoint presentations with or without voice-over
- Forums and discussion boards
- Email communication
- Google Drive and similar collaborative tools
- Tools for off-hour support, like virtual tutoring centres and virtual resource centres

According to Lethuillier and Nkengne (2020), the following table presents the benefits and flaws of the different media used in open distance learning delivery mode.

Table 2: Benefits and Flaws of Media Proposed

Medium	Benefits	Flaws
Digital platforms (with computer/printer)	- Appreciated for its flexibility and adaptability, digital technology gives teachers and students free and widespread access to educational resources from educational, institutional and private partners. - Communication can be synchronous (direct, for example by video-conference) or asynchronous (indirect, for example by providing a discussion forum). - A platform can both offer courses and provide follow-up to achieve objectives because learners can send their work to teachers. - Content is designed by professionals and is accessible to students autonomously. Resources allow learners to	- Need for learner and teacher training in how to use the platform. - Possibility of referring to a facilitator who can provide answers if necessary. - A good quality connection is needed to be able to quickly access all of the resources online. - Regularly updated sites that are clear, rich, attractive, intuitive, and meet the needs of students. - Motivation must be maintained because the student might work without a fixed schedule. - Actual presence may be required by a 'virtual call' in some cases. - Optimal use of the platforms requires the provision of a computer to both students and teachers as well as access to a printer for reproducing documents when necessary.

	document the proposed themes and, if they wish, to dig deeper into the learning to be acquired. Offline access to platform resources through USB keys means that content can be downloaded and returned.	- Not very compatible with the early years of education (pre-school and first grade in particular).
Smartphones / digital tablets	- Advantages are more or less the same as for digital platforms because they allow the same access. - These tools also allow the sending and receiving of text messages (widely appreciated by students) which help to maintain links.	- Similar to disadvantages of digital platforms, with the additional issue of small screen sizes, which makes reading some larger or longer documents more difficult.
Television	- All countries have national channels that can broadcast programmes as necessary (in this case, the COVID-19 crisis and the need to reach students confined to their homes due to the indefinite closure of schools). - Television is a widespread medium and the attractiveness of the image, the staging, and the presentation of the lesson is an advantage compared to the radio, for example.	- National initiatives of MoEs enable students to access content created for them, but without taking into account the actual level of each individual and, as a priority, to students in examination classes, which considerably reduces their scope. - Need to consider students who have not acquired and consolidated basic learning concepts. - Priority should be given to broadcasting school curricula on public channels (without an internet subscription). - Television courses are generally designed with a low level of interactivity (difficult to implement for live or pre-

		recorded programmes). Students are just spectators and cannot go at their own pace, ask questions, or ask for explanations if they are lost, as they could if they were in class. - Students must be present at the time when the programme is broadcast, which is not always easy (family responsibilities, household chores, etc.).

Medium	**Benefits**	**Flaws**
Radio	- The most widespread audio medium in Africa and accessible to the greatest number of people. In many countries there are already skills or resources available to develop content and make it accessible to beneficiaries. - Local radio stations can broadcast educational continuity information to parents in their own language, which is an advantage for those who are not fluent in the language of instruction of their children. - In the field of teacher training (also indispensable), modules exist and new ones can be designed to address the specific topic of distance education.	- Information provided at national, regional, or local level (depending on the educational offers) will have to be widely disseminated in order to reach the target audience. - Students must be present at the time of broadcast, which is not always easy (family responsibilities, household chores, etc.). - As with television, there is no opportunity to influence the pace of the lesson and some students might lose the thread, as there is no repetition unless they record the programme.

Lessons and exercises on paper	- Low-tech approaches make it possible to send reading, writing, and arithmetic content to families in the form of fun worksheets for the youngest students and lesson sheets for older ones. - Personalized documents can be sent when possible, and care taken to correct them and provide feedback to maintain the often fragile link with teachers. - No need for special equipment.	- Without the support of technology, the job of making resources available the 'old-fashioned' way is more tedious. - Parents or students must make the effort to collect the materials (when possible) and again, some families may be left behind. In this case, teachers or the school management must try to maintain the link so that the system does not abandon these families. - Teachers experiencing difficulty in the development of materials adapted to the autonomous work of students also need to be supported.

Source: *IIEP-UNESCO Dakar, 2020.*

The same authors highlight factors to consider in order to ensure quality in Distance Learning as shown in the table below

Table 3: Factors to consider in order to ensure the quality of distance education

Issue	**Benchmarks for quality management**
Quality of the proposed content: initiation by the central administrative authority or by regions. What control over the relevance of the content? How do we ensure this?	- Identifying bodies which can validate the content of distance programmes for all levels and disciplines (not just for examination classes). - Reflecting on the need to provide every student with textbooks that facilitate distance learning and guarantee content is standardized and consistent with the curriculum. - Clarification of the roles of actors (national, regional, and local) on the management of educational continuity. - Considering the different needs of different target learners.
Coverage: in terms of (i) the area of coverage of the media used, and (ii) the	- Negotiation with mobile and internet telecommunication providers to develop access to communications for the largest number of people.

ability of the targeted students to access the media	- Identification of the media and tools (studios, information technology labs, etc.) available to develop and broadcast programmes. - Inventory of internet coverage and tools distributed across the country (public and private access points) for urban and rural areas.
Monitoring learning: what kind of support? By whom? Informing new actors about the role they will have to play	- Considering new technical requirements (digital, audio-visual, radio, etc.) in the context of distance education to ensure the quality of new formats of educational content. - Reflecting on in-service training for teachers regarding skills needed for distance education content and communication with learners. - Reflecting on capacity building in terms of support for students at home, parents, parents' associations, management committees, and teachers' associations. - Collaboration with non-governmental organizations, other ministries, CBOs, FBOs to strengthen action in the field for students at risk of dropping out.
Identifying targets or actors requiring specific accompaniment or support: how is this managed?	- Identification of families who have not managed to join or remain in the educational continuity system. - Search for solutions to keep in touch with students and their families, giving priority to monitoring students whose parents are not able to provide support (e.g. telephone, text messages, and radio announcements in the local language). - Need for regular and individual monitoring, recorded in a shared database at the school.
Need to collect feedback from the actors involved for improvement: is this being put in place? How?	- Establishing a national or regional platform or a telephone exchange enabling dialogue, in local languages, among all those involved in education, including a system for finding answers to questions that arise from education specialists or parents. - Displaying information or dialogue panels in front of schools. - Maintaining records of connections to digital content online by students, parents, and teachers.

	- Analysis of exchanges on forums or telephone switchboards. - Evaluation of the methods used and adoption of a learning approach. - Implementation of specific studies in line with different contexts, in order to enrich the feedback process and to adapt strategies and intervention methods if necessary.

Source: *IIEP-UNESCO Dakar, 2020.*

From the table above we notice that territorial coverage of electricity and telecommunication and students' ability to access them using various ICT tools play a great roll in Distance learning. So, we take a look at the situation of Cameroon.

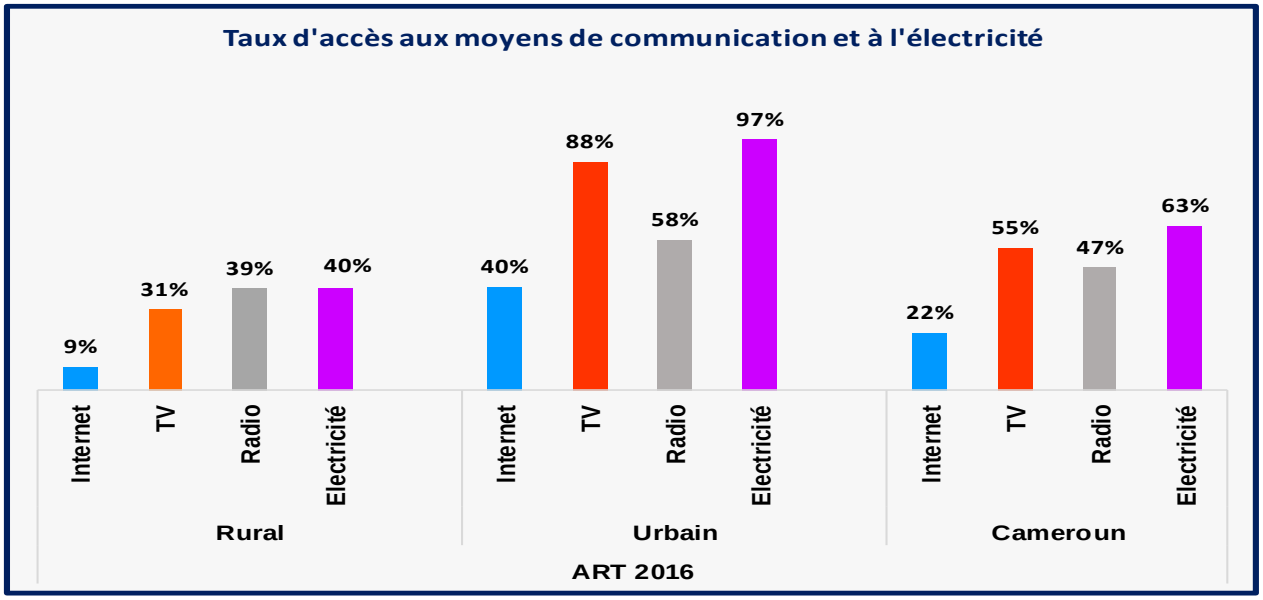
Situation of access to electricity and telecommunications and ICTs in Cameroon

Global Partnership for Education (GPE) and Education Can't Wait (ECW) Project (2020), was launched by the Cameroon government and the aforementioned partners, in a bid to mitigate the effect of covid-19 on key aspects of the life of the country especially the education sector. The response to the impact of COVID-19 on the education system during school closures primarily focused on the use of distance learning devices through radio, television and Internet (associated with traditional approaches to the distribution of educational materials in paper version). In order to determine the accessibility of these infrastructures by populations across the country the following statistics were harvested:

The graph below, presenting the data which are taken from the ART 2016 survey by the National Institute of Statistics (INS), shows the population's access rates to electricity and means of communication. Overall, 63% of households have access to electricity. This rate cumulates to 97% in urban areas and nearly 40% in rural areas.

As for the internet penetration rate, it is 22% nationally. This rate reaches 40% in urban areas and is around 9% for populations living in rural areas. Overall, 85% of households have a cell phone and 17% have a computer.

Figure 3: Average rate of accessibility to communication (investigation by ART 2016, INS)



Regarding television, the coverage radius of the national territory is 90% (TNT CRTV platform). However, to access this audio-visual service, households must have a television set powered by an electrical source (mainly through electricity supplied by the national electricity company, solar energy, rechargeable batteries, etc.)

In this context, based on data from the ART survey carried out by the INS in 2016, we note that 55% of households have a television set at home. This television access rate reaches 88% for urban areas and is around 31% for rural areas.

As for radio, broadcasts cover the entire national territory. This device includes community radios established with the support of UNESCO, religious radios and those belonging to the private sector. To access radio broadcasts, however, people must have a receiving set. To this end, based on data from the ART survey, we note that 47% of households have a radio station. This rate rises to 58% for urban areas while it stands at 39% for rural areas. It should be noted that with the advent of ICTs and the Internet, where radio is accessible through several types of ICT media, in particular the mobile phone, households are equipping themselves less and less with traditional radios (the cell phone ownership rate is 85%).

The table below presents the detailed data by region. The regions of the far North, North, and East Adamaoua are those with the lowest access rates to means of communication, especially for the internet where the rates are between 0 and 8 %.

Table 4: Household access to electricity, means of communication and ICT tools

Regions	Proportion of households with							
	Radio set	television	telephone (fixed or mobile)	fixed telephone line	mobile phone	computer	Access to interne	Electricity
Region of Survey								
Douala	64	93	97	5	97	36	31	100
Yaoundé	50	92	98	7	97	40	56	99
Adamaoua	32	35	75	3	74	11	6	54
Centre without Yaoundé	56	49	82	2	81	11	3	56
Est	39	35	50	0	50	7	8	40
Extrême Nord	32	17	77	0	77	3	4	20
Littoral without Douala	51	61	96	0	96	12	34	71
Nord	26	22	76	0	76	6	0	30
Nord-Ouest	59	55	85	3	82	12	25	59
Ouest	54	53	93	1	93	15	24	70
Sud	46	54	80	1	80	7	10	68
Sud-Ouest	46	70	91	2	91	18	40	83
				Residence				
Urbain	58	88	96	2	95	32	40	97
Rural	39	31	78	3	77	6	9	40
Total	**47**	**55**	**85**	**2**	**85**	**17**	**22**	**63**

Source : INS, Enquête ART, 2016

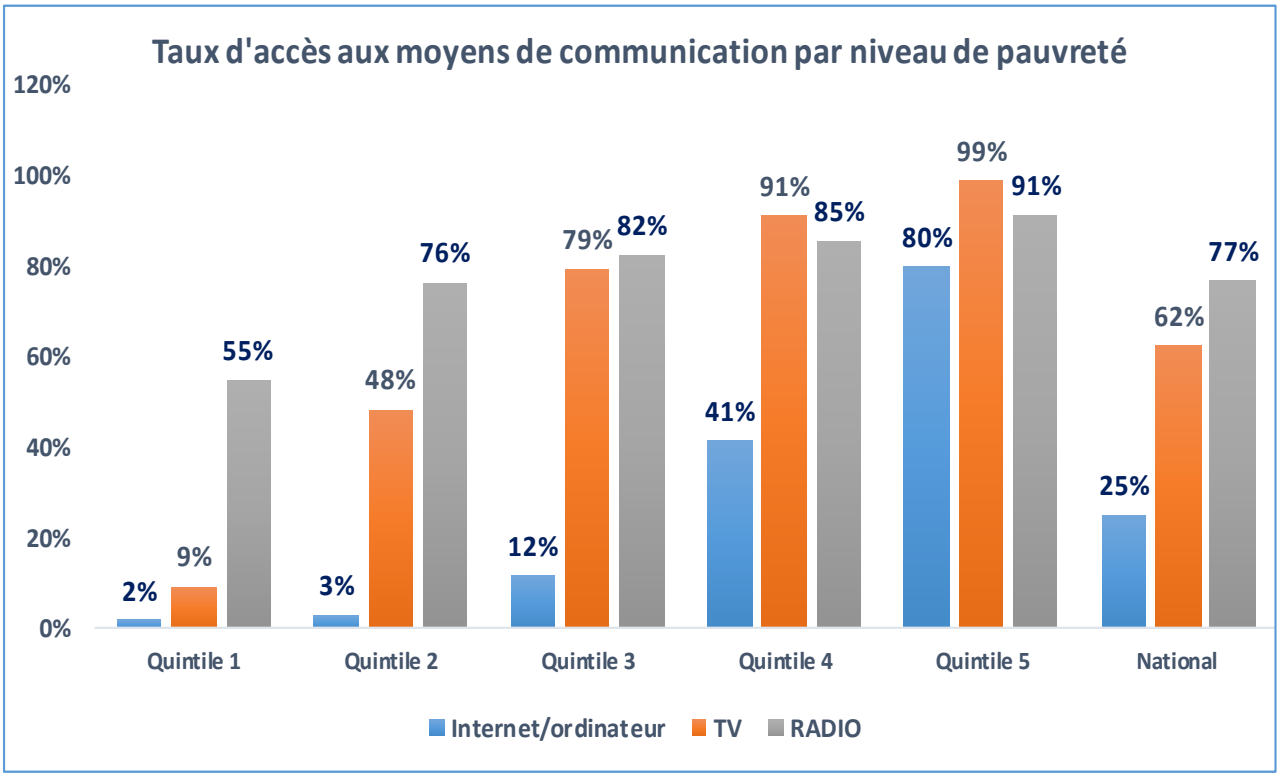
In addition, according to the most recent data published in 2019 by “Hootsuite and We Are Social”, two platforms that measure activity on online social networks, 7.87 million people, mostly young people, have access to the Internet. 'internet, for an overall penetration rate of 30%. The report indicates rapid growth in internet penetration at an average rate of 7.8% per

year. Between December 2018 and December 2019, 59.4% of Internet users connected to the Internet via their mobile phone against 39.4% for laptops and 1.3% for tablets.

Regarding social networks, 3.7 million people regularly use these tools, or 14% of the population. Among the platforms studied, Facebook remains the most used with 3.5 million active users. Next come “Linkedln” (640,000), “Instagram” (390,000) and Twitter (110,000).

Figure 4: Access rate to means of communication according to the Poverty level of homes

(Source: INS, Enquête ART, 2016)



The data collected by PASEC in 2014 on access to means of communication by pupils includes an economic dimension and makes it possible to identify access to means of communication according to the standard of living of families. The graph below highlights that the poorest households have very poor access to the internet connection.

In view of the potential available in the country in terms of household access to means of communication (internet, television, radio), their rational use during this difficult period marked by the COVID-19 pandemic is essential to contribute ensure the continuity of educational services and awareness-raising for students. However, there are significant disparities in the access of populations to these infrastructures depending on the areas of residence (urban / rural), regions and standard of living (poverty). In order to close the gaps between the rich and the poor; between the urban and rural areas, in order to ensure equity and

inclusion in access to distance education technologies, the project adopted a diversified approach through the use of radio and television, the internet and the distribution of printed material to the underprivileged students.

In addition, it should be noted that the traditional channels for broadcasting lessons through radio and television have pedagogical limits expressed by their unidirectional character centred on the teacher, limiting live interactions with the students. The use of internet platforms for the dissemination of online courses, which offers greater potential for educational facilitation, constitutes a real avenue for a solution for the future, including full operationalization in the future for the benefit of improving education. Access and quality of education, requires the support of the Government, partners and the educational community for the promising initiatives that are launched to meet this major challenge (GPE and ECW project, 2020).

Each of the delivery formats discussed above allows instructors to overcome teaching challenges, but few programs adopt just one approach to teaching. Professors pull from a much larger instructional toolbox. Teachers and students both benefit from knowing how various teaching methods work online, and in what circumstances. How then can distance learning delivery mode be supervised in order to ensure the quality and good standards? One major way to guarantee effective and quality distance learning is to reinforce pedagogic supervision of this delivery mode.

2.2. PEDAGOGIC SUPERVISION

According to Asayantani, G. (2019) the term supervision has derived from the Latin words –"super" meaning "over" and "vision" meaning "to see". Thus the word supervision means "to oversee" (Fehmerling, 2013). A definition given by Itzhaky (2000) explains supervision as an assisting process in which a skilled person (supervisor) helps a less skilled person (supervisee) with ideas and theoretical knowledge with the practice of which clients are enabled to receive highest quality service (Karpetis, 2010). Internationally, several official reports, journal articles and practice texts emphasize the importance of supervision in professional social work practice (O'Donoghue, 2015).

Supervision literally means "to oversee". It is an interactive process between the supervisor and the supervisee and the effectiveness of supervision is highly dependent on the quality of relationship between the supervisor and supervisee (Cohen and Laufer, 1999).

Supervision of teaching/learning process is referred to as instructional supervision or pedagogic supervision.

Brock et al., (2021) asked pertinent and reflection questions during a study relative to instructional supervisors and the work they had to do during the COVID-19 shutdown of schools: (a) How do we support teachers in the transition from face-to-face to online teaching; (b) How do we focus on addressing the needs of teachers while engaged in online teaching; (c) How do we maintain communication, contact, and relationships with teachers; (d) How do we celebrate successes as teachers work with students in the virtual world; (e) How do we assess the quality of teaching–learning process; and (f) How do we plan for the next steps? Answers to these questions are very helpful to any institution engaged in distance learning.

As for Nkwenti (2015), with the introduction of ICTs in the Cameroon primary school curriculum, teachers have been receiving training on computer skill-base courses and yet many are unable to adopt the tool in instructional processes. To ensure that teacher training programmes effectively assist them in integrating technology in instructional processes, a study was initiated to determine additional set of skills that they need to adopt the tool in their classrooms. He concluded that teacher- participants performed better in the Content Knowledge (CK), Pedagogic Knowledge (PK) and Pedagogic Content Knowledge (PCK) because these constructs constitute the basis for teacher education in Cameroon. Similarly, they performed well in the Technological Content Knowledge (TCK) construct because their professional development programme is focused on fostering their computer knowledge as a standalone skill. Their poor performance in the Technological (TK), Techno-pedagogical Knowledge (TPK) and Techno-Pedagogical Acceptance Content Knowledge (TPACK) stems from the fact that the training programmes do not lay emphasis on these constructs.

2.2.1. Approaches Pedagogic Supervision

There are several approaches of supervision and the supervisor determines which one to adopt depending on situation at hand. In this research we are dealing with instructional or pedagogic supervision of distance learning. In the face-to-face conventional format of education delivery, several authors have written on different approaches of supervision some of which are discussed below. It is important to note that there are many similarities.

The goal of pedagogical supervision, according to Bouchamma's (2004) model, is to "assist the teacher in acquiring competences and developing abilities that put him on the route

to an inductive approach, self-training, self-supervision, and access to effective autonomy in his/her teaching practice" (p.3). It's crucial to acknowledge that instructors have diverse demands when it comes to pedagogical approaches, professional development, and supervisory preferences. Bouchamma (2004) proposes a taxonomy that keeps the following prominent models:

1. The traditional approach of educational supervision
2. The model of clinical supervision
3. The model of self-supervision
4. Using an inductive approach, the supervision model differentiated training.
5. Peer supervision
6. Peer evaluations
7. Action research-based supervision

It's worth noting that the models are presented as equals, as UNESCO (2007) states that no one model of pedagogical monitoring is preferable to the others. The compatibility of these models with the needs of education and training systems, according to this organization, is what makes them sufficient and relevant. Not only should supervision models be adjusted to diverse education and training systems, but they should also be tailored to the learning requirements and objectives of individuals. As a result, it is critical that pedagogical supervision models implemented in schools or non-formal education structures are tailored to the demands of teachers and contribute to increasing learning quality.

As for Asegu (2012), Supervisors should develop basic skills of supporting styles to succeed what is supposed to achieve. For this, they should have equipped with instructional supervisory skills which include knowledge based, technical, conceptual, human and political skills. Regarding the knowledge base skills supervisors need to understand what teachers and schools can be and what teachers and schools typically are. For technical skills, supervisors must have skills of observing, planning, assessing and evaluating instructional improvement. In line with human /interpersonal skills, it requires the development of interpersonal relationships which include effective communication, working with people effectively, developing group decision making, developing trust, motivation, empowerment and collegiality.

As a result, various authors proposed various supervision styles or approaches. Direct help, collaborative, and non-directive ways to supervision were identified by Glickman et al.

(2004). Supervisory approaches, alternatives approaches, and non-directive approaches were also identified by Randall and Thornton (2001) as supervisory approaches, alternatives approaches, and non-directive approaches to in-service teacher supervision. Sergiovanni (1991) also offers five different types of supervision that can be employed as needed. Clinical, collegial, and self-directed supervision, as well as informal and inquiry-based supervision, are all options. Even if the ideal technique isn't always available to act effectively, supervisors should be aware of the scenario in order to tailor their supervisory strategy to achieve success. In this regard, Glickman and et al. (2004) noted that there are two basic approaches to evaluate a teacher's performance.

One way is to observe the teacher teaching or working with other teachers, another is to discuss with the teacher about his or her ideas about students, teaching instructional improvement. Whatever it is, the most common and valuable approaches are selected for this research and discussed below.

Directive Supervisory Approach

According to Asegu (2012), directive behaviours raise issues of power, respect, and expertise between line and staff relationships. Some supervisors see their role as a highly directive one and prescribe content materials and techniques for teachers to follow. Individuals commonly react to the highly directive approach in one of the number of ways. They may comply with the administrator’s wishes because they happen to be in accord with them and choose to ignore the manner in which they have been made known (Oliva and Pawlas, 1997).

As they also explained, although directive approach raise complain among supervisors, it has a positive impact whenever it is used during the appropriate time and situation. If a teacher contemplates an activity that might be dangerous to the bodies and minds of students, the administrator has not only a right but the duty to be directive. Teachers recognize this authority as necessary to the administrator’s job. In connection to this, Bittle, (1985), explained about giving orders and instructions which are useful for those who have had directive nature of supervision. In Randall, and Thornton, (2001) words, directive supervision is where the role of the supervisor is to direct and inform the teacher, model appropriate teaching behaviors and act as an evaluator.

Oliva and Pawlas (1997) noted the effect of directive approach by taking Blumbergs ideas. A supervisor using predominantly directive behavior might well be assuming that: the control of a situation is based on the authority of one’s position in an organizations hierarchy;

people in higher organizational position have more expertise and in lower organizational position can best be evaluated by those who are higher; the most important external rewards of a job come to a person who holds a higher position; empathetic listening to the teacher is not a necessary dimension of Assisting; people learn best by being told what to do by someone in a higher organizational position; work is natural, there is little place in supervision for discussion of feeling or interpersonal relationships; collaborative, problem solving between supervisor and teacher is not a critical concern in supervision; teaching as a skill can generally be separated into the right and wrong ways of doing things.

A. Collegial Supervision

According to Pavan (1997), unless supervisors develop a collegial relationship with teachers, they become ineffective to improve the instructional program for children. It is not only useful for teachers and supervisors to have a collegial relationship; it is also essential for the improvement of schools. An analysis of effective schools' research indicated that productive school culture requires four process variables to sustain itself:(1) collaborative planning and collegial relationship; (2) building a sense of community through appropriate use of ceremony, symbols and rules; (3) sharing clear goals and high expectations; and (4) maintain order and discipline (Pavan, 1997). He noted strongly that without faculty-supervisory-administrative-collegial relationships, this nurturing culture is non-existence for either students or teachers.

According to Harris (1997) collegiality doesn't refer any relationships between supervisors and classroom teachers rather it needs to be connected with the essence of appropriateness, effectiveness, and feasibility. Harris (1997) also described collegial supervision using the phrase 'cooperative professional development' in which teachers agree to work together for their own professional development. He defined this approach as a moderately formalized process by which two or more teachers agree to work together for their own professional growth, usually by observing each other's classroom, giving feedback each other about the observations, discussing professional concerns. According to him, collegial supervision takes the following forms. (1) Professional dialogue among teachers featuring guided discussion and focusing on teaching as process. (2) Curriculum development featuring teachers working together. (3) Peer supervision featuring observations of each other's teaching. (4) Action research featuring the study of Issues.

B. Collaborative Supervisory Approach

Collaboration among teachers, principals, supervisors and other school personnel is an essential aspect of supervision. According to Glickman, (1992), the collaborative approach is neither directive nor non directive approach or conversely directive and non-directive on the parts of both the teacher and supervisor. Following this concept, the supervisor and a teacher work together and take turns at listening, analyzing, and making suggestions.

It is the supervisors' task to adapt an individual approach to each teacher's style. Researchers suggested that collaboration is an essential ingredient of teacher development and thus school improvement (Day, 1999). As Olsen, (1997) explained, collaboration shows promise for reshaping the relationship between the researcher and practice as university teachers, classroom teachers, and pre service teachers attempt to integrate and expand their understandings of teachers' professional knowledge. Collaborative relationships are relatively new to the educational landscape where formal learning relationships have traditionally been for a very different sort. Developing collaborative relationships call for monumental shifts in the traditional version of epistemology which is implicitly linked within present social contexts of educational institutions.

Olsen (1997) also explained that collaboration involves a neutral labor of working together. New views are shared, each participant in the collaborative endeavor is provided with new ways to reconstruct past knowledge and imagine future possibilities. However, collaboration is not easy. The tensions which emerge in collaborative relationship are what keep the relationship alive and dynamic.

Stewart, (1997) forwarded principles of collaboration which enables to become at the fruitful ends are:

1. Collaboration is neither a static event nor a formalized route for researching a specific goal; neither it is an end in itself. It is rather an ongoing creative process, one which involves constructing an ever evolving outcome from within an ever changing matrix.
2. Ongoing change is essential to collaboration; change in itself can be a catalyst in the construction of new knowledge, new patterns and new goals.
3. Diversity can be empowering if seen positively and used constructively.
4. Process such as talk and storying traditionally taught to be unproductive are deemed meaningful and constructive work in collaboration.

5. Trust and commitment become powerfully constructive factors as collaboration opens participants to vulnerability and the potential stresses of deep change.
6. A central empowering factor in collaboration is the valuing of each participant's collaboration.

Moreover, Hopkins (2002) argued that building collaborative networks in higher education can constitute a significant factor to bring about change and improvement, particularly collaborative networks have the potential to provide the focal point for the dissemination of good practice. Collaborative network also helps in generalizability of innovation and the creation of action oriented knowledge of effective educational practice.

C. Peer Supervision

Literature upholds that an effective professional development model on technology integration should be characterized by teachers' pedagogical content knowledge; provision of sufficient time and resources; promotion of collegiality and collaborative exchange; include follow up procedures; models high quality instruction and be school-based (Nkwenti, 2015).

Triangulating the opinions of supervisors and teachers, a positive opinion predominates about the influence of supervision on school construction as a learning educational community. As Senge et al. (2000) state, it is necessary to transform each school into a learning community, in which teachers can learn together, valuing the knowledge and experiences of all, in order to build a collaborative and democratic culture. (Maria de Nazaré Coimbra et al., 2020)

Generally, there is the existence of a collaborative culture in schools, evident in the willingness of teachers to plan and prepare activities together, to share assessment tools and ways of acting in certain situations, to plan and implement projects and to exchange opinions. However, it is important to note that collaborative culture is not widespread, but is restricted to certain departments or groups of teachers, indirectly dependent on collaborative culture on individual teachers' attitudes.

D. Clinical Supervision

One of the useful supervisory approaches is clinical supervision which focuses on assisting teachers individually in the class room to improve the teachers teaching skills. Cogan (1961) defines clinical supervision as:

Clinical supervision may be therefore defined as the rational and practice designed to improve the teacher's classroom performance. It takes its principal data from the events of the classroom. The analysis of the data and the relationship between teacher and supervisor from

the basis of the program, procedures and strategies designed to improve the students' learning by improving the teacher's classroom behavior.

He also offered a simple test for distinguishing between general and clinical supervision as general supervision incorporates supervisory operations that take place principally outside the classroom. It denotes activities like writing and revision of curriculum, developing development process and instruments and reporting to parents and evaluating general educational programmes.

The revised work of Golghammer by Anderson and Krajawski, also defined clinical supervision as: Aspect of supervision which draws upon data from first hand observation of actual teaching, or other professional events, and involves face-to-face and other associated interactions between the observer(s) and person(s) observed in the course of analyzing the observed professional behaviors and activities and seeking to define and /or develop next steps toward improved performance.

Moreover, Anderson, (1997) defined clinical supervision as Assisting function housed within actual classroom situations, is indeed viable. He also noted that, clinical supervision is well accepted in the field of instructional supervision in the present time. Similarly, clinical supervision viewed as partnership in inquiry shared by teachers and supervisors that is intended to help teachers modify existing patterns of teaching in ways that make sense to them (Sergiovanni and Starratt, 1993). But they also pointed out that clinical supervision may be suitable for some teachers not for others when there is a difference in need of teachers to be supervised all the time or not. However, they highly stressed that clinical supervision is powerful model for professional development for two reasons: it works and provides a conceptual framework that can be transferred to other models of supervision and evaluation also directed to professional development. In clinical supervision it is assumed that the school curriculum is in reality, what teachers do day to day, changes in curriculum and in teaching formats require changes in how teachers think about and understand their teaching and how they behave in classrooms. Supervision is a process for which both supervisors and teachers are responsible there by the focus of supervision is on teacher strengths. Given the right conditions, teachers are willing and able to improve; they have range reservoirs of talent, often unused; and also they drive satisfaction from challenging work.

According to Glickman et al., (2004) and Oliva and Pawlas, (1997); the structural model of clinical supervision consists of the following procedural parts: that is; pre observation

conference and planning for instruction, observation, analysis of the data, and finally post observation conference.

E. Pre-observation conference

Randall and Thornton, (2001) leveled the advantages of pre observation conference in two forms: either on the management level or pedagogical level. In management level, it has the advantage of low costs whereas, pedagogically, the use of friend pre-observation removes many tensions which will occur during observation for both the supervisor and supervisee. And hence the function of the supervisor might be attending and listening to what the teacher intends to do. At the pre-observation stage the supervisor does not attempt to criticize what the teacher is attempting to do. Here the supervisor should listen to understand the teachers aim, but should avoid challenging. The main point to be considered during pre-observation is the supervisor should not judge or label the teacher in some type of classification. In a nut shell, pre-observation conference is a face to face talk between the teacher and the supervisor prior to the supervisors visit in the classroom which helps to set necessary preliminaries and to agree on points of observation.

I. Observation

Observation is the time to follow through with the understanding of the pre-observation conference. The observer might use any one of the observation or a combination of observations. As Pajak (1989) observation is the phase in which the supervisor records instances when the internal behavior are seen to occur. On the surface, observation seems simple but, it requires a high level of technical and analytical skills. The supervisor must know what to look for, how to look for it and how to collect, analyze, and interpret the data (Oliva and Pawlas, 1997).

Garman (1982), noted the complexity of the task of supervisors who work with teachers in clinical setting. She identified five models of inquiry to be practiced by the supervisor. That is, discovery, verification, explanation, interpretation, and evaluation. Each model fulfills a different purpose, uses, different methods of collecting data –some quantitative and some qualitative –and requires different treatment.

II. Analysis and Interpretation

This phase of observation sometimes can be done during the actual classroom observation. But, according to Glickman et al. (2004), it can be done after the supervisor leaves the classroom which might be helpful to reduce teachers stress and not to criticize them in front

of students. The supervisor lays out the recorded pages of observations and studies the information. The task might be counting up the frequencies, looking for recurring patterns, isolating a major occurrence, or discovering which performance indicators.

In connection to this, Randall and Thornton (2001), also explained the function of the supervisor is empathetically observing the behavior of the teacher during the actual lesson and listening actively to the teacher on account of the lesson and the way it went. At this stage, the supervisor attend to what the teacher is doing and try to understand the teacher's actions in the context of the intended aims, the developmental perspective of the teacher and the classroom situation. But, it is important to avoid labeling and judging action as they happen.

III. Post Observation Conference

Soon after the observation, the teacher and the supervisor meet once again at mutually satisfactory location. Most specialists believe that this phase is the most difficult and most important in the entire cycle. The major purpose of the post observation conference is to give feedback to the teacher about the teachers' performance (Oliva and Pawlas, 1997). They also noted that participants should not perceive the post observation conference as an assessment of the teachers' performance comparable to the principals' summative evaluation but rather as an opportunity for the supervisor to provide valuable feedback on the teachers' considerations.

In a nut shell, it might be good floor to take into consideration about the situation, needs of teachers, the time needed and other factors to choose and apply appropriate supervisory approach which might lead to success.

A. MASLEPT (Mastery of Active and Shared Learning Processes of Techno-pedagogy) Model of Pedagogic Supervision

Nkwenti (2015) points out, "In the Cameroon primary educational system, opportunities for in-service training and teacher development are sparse and intermittent, in most cases just once a year. The training and staff development follow the transmission model and the sessions are hardly evaluated, nor are implementation of training monitored" (p. 27). The author is referring to primary education but it holds the same or even more precarious for secondary education. He continues, "Working as an Inspector of Pedagogy in the Ministry of Basic Education for the past eight years and a teacher educator for 23 years, the limited number of supervisory staff and other resources cause a limited follow-up of teachers after their participation in the pedagogic day seminar. The lack of proper follow-up indicates that teachers will be unable to build on the knowledge and skills discussed at the workshop or get practical

support from their colleagues to effectively integrate technological knowledge into their practices.

To Nkwenti (2015), the Mastery of Active and Shared Learning Processes for Techno-pedagogy (MASLEPT) model indicates that during a professional development programme, a member of the pedagogic supervision chain such as a head teacher, pedagogic animator, pedagogic adviser or regional pedagogic inspector playing the role of a facilitator, clusters teachers according to levels (Level I, II, III). The facilitator proceeds by guiding the teachers in setting technology-driven lesson goals, planning the lessons, implementing the lessons and reflecting on its outcomes. The activities that take place during the process are highly influenced by social constructivist theorists. The teachers continue the practice together by working through the Technological Pedagogical Content Knowledge (TPACK) developmental stages to master the art of mainstreaming technology with content and pedagogy. As the process goes on, teachers' practices change. This change influences their teaching and learning in the classroom. A member of the pedagogic chain continues with the provision of classroom support to ensure that the change in teachers' routine practices is sustainable. The role of a member of the pedagogic chain is very important in the entire process.

Kinds of Supervision

According to Kalita (2017), there are different kinds of supervision. Burton and Brueckner have given the following kinds (Mohanty 2007, P 85-88) [12].

Inspection

In the past, supervision was merely confined to the inspection of activities of teachers. This implies the critical examination of the routine works of the teachers.

The person undertaking this responsibility was known as School Inspector. The inspection activities are mainly aimed to ascertain whether or not the teachers were performing their regular duties and responsibilities as per the norms laid down by the State authority. The nature of remedy always seemed to be that of displacing or replacing the unsuitable teachers with suitable ones.

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This kind of supervision allows complete freedom to the teachers in their work. Here, the teachers are free to teach as he or she pleases. Only little efforts are given to assist the teachers to improve instructional programmes.

Coercion

Coercion is an authoritarian concept of supervision which is based on the authority of omniscience. Here, the teachers are visited by the supervisor while in teaching and the defects and the good points are pointed out to them. The teachers are coerced to follow the orders and instruction of the supervisor and thereby awarded prizes or increments based on personal judgement.

Training and Guidance

Supervision, here, assumes the role of imparting in- service education and training to the teachers on the job. Teachers are motivated to do better and supervision becomes a process of teaching.

Democratic Leadership

Co-operation of teachers and supervisors on the problems of improving instruction is the basic concept of democratic supervision. Here, the supervisor does not impose his will upon the teachers, rather provide his leadership and co-operation to the whole school community for improvement of the whole teaching-learning situation.

Functions of Supervision

The functions of supervision in an educational institution are as follows (Lovell, 1967) [10]-

Goal Development

The educational system is a sub-system of the society. Since society is in a constant process of change, so do the goal of education. The function of supervision is to facilitate the co- operative effort of teachers and supervisors in developing educational goals suitable to the need of the society.

Programme Development and Actualization

The educational goals developed leads to the programme development and its actualization, the responsibility of which rests upon teachers. The function of supervision is to provide technological support to teachers in the form of consultations and services.

Co-ordination

Any educational organisation is composed of variety of teaching and non- teaching units that contribute to the overall functioning of the institution. This demands co- ordination among

the various units. The function of supervision is to provide and ensure this co- ordination of different resources and expertise for making the concerted effort a successful one.

Motivation

It is only through a highly motivated faculty that an educational institution can expect to facilitate students learning in the right direction. One important outcome of supervision is therefore assumed to enhancement of motivation of both teachers and the supervisors through their interaction to work towards the achievement of the goals of education.

Problem Solving

The facilitation of human problem solving is another function of supervision. Educational instructions require a constant process of examining for achieving the desired outcomes. Failure to achieve, demands new attempts with new ideas. It requires capacity of problem solving with regard to specification of goals, re-arranging the conditions for achieving goals, where supervision makes intervention for helping in this regard.

Professional Development

The growing complexity of education and the developments in technology, behavioural sciences requires more specialization and skill on the part of the teachers. Another function of supervision is to provide teachers with necessary initiation, co- ordination and support in this regard.

Evaluation of Educational Outcomes

The society specifies certain expectations that the educational institutions are supposed to meet. Supervision of educational institutions also acts as a process of external evaluation of educational outputs to see whether or not the needs of society are fulfils through the educational outcomes (Kalita, 2017).

Profile of the Pedagogic Supervisor

From research carried out by Maria de Nazaré Coimbra et al, (2020) regarding the profile of the pedagogic supervisor, the interviewees were of the opinion that the pedagogic supervisor should gather a set of personal characteristics, have acquired specific knowledge and skills and play a set of roles. Among the personal characteristics identified are: flexibility and empathy, sensitivity, availability for colleagues, motivation, and belief in changing the educational system, experience and demand. With regard to knowledge and skills, academic training and continuing education were mentioned as a guarantee of up-to-date scientific and

didactic knowledge and innovative techniques and strategies. The supervisor is therefore a collaborator, a dynamizer, and adviser, adoption of innovative practices (motivator), interpersonal relations mediator, link, critical reflection promoter, pedagogical manager, and evaluator.

- His role as the Pedagogic supervisor. The role of the pedagogic supervisor summed in three points, is to ensure that:

❖ The norms and standards of education are met. He promotes the improvement of scholastic and social results: better and greater concretisation of the principles and values as inscribed in the National Education policy, which ultimately leads to the improvement of the quality of the students' learning, fundamental for obtaining result.

❖ There is cohesion and collaboration to build the institution as a learning community through collaboration between peers. With regard to the influence of supervision in the school, as a learning educational community, supervision is, among other things, the main foundation of school construction;33 and, finally, promotes reflective practices, the assumption of the school as a community capable of generating learning, more human and democratic.

❖ Effectively there is teacher's professional development. He regulates and accompanies the educational and formative activity of the teachers: reflection and self-regulation of one's own work; critical stance toward educational posture.

From the literature reviewed we observe that the supervision models that are practiced in our schools are clinical supervision, peer supervision and collegial supervision and to some extent, democratic supervision.

2.2.2. Current Practices in Pedagogic Supervision

Hence we examine the role of supervisors at different stages of clinical supervision, with the Teacher, the Head of Department (HOD), the Vice-Principal, the Principal and the Inspector from the Ministry of Secondary Education in the supervisory chain.

2.2.2.1. The Role of Supervisors in Pedagogic Supervision

Supervisors should possess certain personal traits, knowledge and skills. Supervisors are expected to demonstrate a high degree of skill in human or interpersonal relations. They should exhibit human and humane traits like empathy, warmth, and sincerity. Although educational researches fail to identify notable traits of supervisors which separate successful from unsuccessful, some specialists in the field forwarded that traits like trustworthiness, loyalty, and helpfulness, friendly might lead to be success (Oliva and Pawlas, 1997). Supporting

this, Lucio and McNeil, (1979) described that characteristics of a person those who become a leader might exhibit extrovert, assertive, socially mature and regarding the individual personality, educated, intelligence, general ability, task ability and also having training in leading techniques.

In schools, principals, vice principals' senior teachers, department heads, and any personnel assigned as a supervisor may play the supervisory roles in one or another way. The interaction among each other might strengthen the instructional process and also enhance the ability of problem solving. For this, the quality mentioned previously might be essential. The supervisors' job is unique in that it bridges the management ranks with the operating employees. No one else in the organization can make that claim. Yet, because of this uniqueness, supervisors serve as critical connectors in organizations through the chain of authority. They must also interact and reconcile the opposing forces and competing expectations from higher management and workers. These views make the role of supervisors to be complex and ambiguous. The point to be stressed for this study is the role of supervisors in Assisting teachers to plan, present, evaluate and class room management to improve the instructional process.

1. Assisting Teachers to Plan Their Lesson

Planning is an inherent and primary activity in the continuum of instruction, followed by implementation and evaluation. Teachers through their pre-service training learn basic techniques of planning and usually experience opportunities for demonstrating their plans and putting them into practice. They also learn how to plan during their actual task. However, teachers might face Issues related to planning and changing the plan to practice. Thus, the central belief to teachers and supervisors should be that all teachers, no matter how long they have taught can develop the new skills and improve the old ones. The more teachers know about planning the better they become to instruct. And hence, the supervisors' task needs to be assisting teachers to become familiar with newer approaches to instruction by developing and improving their instructional skills (Oliva and Pawlas, 1997).

They also explained that supervisors should aware of the extent of planning and degree of proficiency in these skills shown by teachers. Supervisors may encounter that some teachers may complain on preparation of lesson plans, considering as they are experienced and proficient. But as instruction is complex and situations are in dynamic changes planning should be taken as necessary task for better instruction.

Southworth and Conner, (1999) also supported the advantage of collaborative planning and monitoring of plans for school improvement. Planning for development is an essential part of the school improvement process. Planning is enriched when staff draws upon the data produced by inquiry and reflection activities and when the planning process involves as many members of the staff and other groups as possible. It is also important to avoid seeing the plan as entirely fixed. It needs to be flexible and changing rather than rigid. It also needs to be updated to fit the changing nature of the situation. For this, monitoring becomes prominent to check whether the plan fit the necessary conditions or not. To this end, the supervisors become the front person in assisting teachers to plan their instruction as effectively as possible.

2. Assisting Teachers to Present their Lesson

Teaching effectiveness depends on not only effective planning but also it needs effective presentation of the lesson. For this, studying the characteristics of effective teaching would help to understand what teachers' presentation should comprise. Regarding effective teaching, Muijs and Reynolds, (2005) explained that whole class teaching has been employed in a long time but the effectiveness of whole class teaching methods has not been scientifically studied until quite recently. Interest in this style of teaching took off with the 'teacher effectiveness' school of research, which started in the late 1960s, following the failure of attempts to explain differences in the performance of teachers by looking at their personality. In contrast teacher effectiveness researches decided to look at the actual behaviors of teachers in classrooms, observing lessons and linking the behaviors to pupils' outcomes such as scores on standardized tests. As stated by Oliva and Pawlas (1997) effective school research has made clear that some long–held beliefs about effective teaching do, in dead, make a difference in school achievement. Though stated in different ways by different researchers the teacher need to set clear goals for the class, holding high expectations from students, focusing on academics, maintaining an orderly class room, using suitable materials for instruction monitoring student performance, and providing feedback using positive reinforcements for effective presentation of the effective instruction.

In a nut shell, the supervisor should encourage teachers to increase student participation and incorporate a variety of stimuli and activities in both planning and actual presentation. To help the supervisor to work with teachers on lesson presentation the focus should be generic competencies; like setting induction, lecturing, discussion, questioning, providing for variation, and closure. Supervision should help teachers to discover whether they have time for instructional purposes. In selecting instructional strategies teachers need to be mindful of the problem of motivation. It is the presentation stage that the carefully laid plans of instruction

come to fruition or fail (Oliva and Pawlas, 1997). To this end, supervisors should develop the necessary skills, knowledge, and approaches to help teachers during presentation of their lesson.

3. Assisting Teachers with Classroom Management

The fruitful accomplishment of planned activities through effective presentation can be succeeded within well-arranged and good disciplined classroom. Students behave differently because of many reasons. Being aware of these differences might be the prior task of teachers before they start to present the lesson. Unless classrooms as well as schools at large are not safe all the efforts rest on teaching become ineffective. In relation to this, Senge, (1990); Waikins, and Warsick, (1993); explained that as schools are service organizations that are committed to teaching and learning, they need to be safe and conducive for the teaching and learning process.

A teacher not only teaches classes but also manages the learning environment in such a way that learning can occur. The skills that teachers employ for this are collectively called classroom management. These includes: classroom routines, prevention of misbehavior, and correction of behavior Issues. The teachers' task in matters of discipline, control, and classroom management should not be minimized. These issues need to be constantly on the minds of most teachers, particularly new and inexperienced ones (Oliva and Pawlas, 1997). But as Good and Brophy, (1987) explained that, teachers are unaware of much of the classroom behaviors and this unawareness sometimes results in inappropriate, self-defeating behaviors. Variety of techniques should be used to increase teacher awareness. To the extent that teachers are cognizant of what happens in the classroom and can accurately monitor their behavior (or be assisted to do so by fellow teachers, the principal or a supervisor), they can adapt their classroom behavior to achieve the goals that they and their supervisors set.

The major causes of behavior Issues as indicated by Oliva and Pawlas (1997) are: causes originating with the child, teacher, school, home and community or larger social order. Whatever these causes seems different all are interrelated to each other and hence teachers and supervisors should identify them very well. Supporting the individual differences Ownes (1998) explained that people are different in fundamental ways; they want different things; they have different motives, purposes, aims, values, needs, drives, impulses, and urges. Nothing is more fundamental than that. They believe differently; they think, cognize, conceptualize, perceive, understand, comprehend, and cogitate differently. Hence these differences might fire to misbehave. Particularly students in the classroom act to violate the normal process whenever their needs and interests do not meet. Indeed, supervisors should assist teachers to manage their classroom effectively. Some of the ways of preventing behavior Issues as suggested by Oliva

and Pawlas are: analyzing attitudes, analyzing teaching styles and students learning styles, analyzing classroom management, analyzing the curriculum continuously, analyzing the methods of instruction employed, gathering information about individual learners, analyzing the disciplinary model used and seating and enforcing minimum expectations of behavior.

4. Assisting Teachers to Evaluate their Lesson

Supervision of instruction requires a complex set of evaluation skills on the part of the teacher. It is also an essential phase of the instructional process as that of planning and presentation. As Oliva and Pawlas (1997) stated the assessment of instruction can be pre-assessment, continuing, or through assessment.

The pre-assessment takes place before the actual instruction with the purpose of knowing whether the students already mastered the skills and knowledge planned for presentation in order to avoid unnecessary repetition. It also helps the teacher to know whether students possess the necessary prerequisite skills and knowledge to begin the study of the material. The continuing assessment on the other hand focuses on assessing achievement of objectives of instruction by each learner who make up a class. Regarding this, they stressed that evaluation should be thought of as an integral part of instruction, not an activity that can be separated from instruction.

Supervisors should not consider that the only test is evaluation mechanisms but, oral questions, observation, survey and questionnaires, attitude inventories, evaluation conferences, actual performance of skills and self-evaluation are all techniques of evaluation. Therefore, they should develop their skills to inform and train teachers accordingly.

2.2.2.2. Weaknesses in Pedagogic Supervision of Distance Learning

There are different varieties or choices of supervisory behaviors and approaches which teachers and supervisors can select from. There are claims being made regarding the best model of supervision or the best supervisor behavior and approaches. The task of discovering which supervisor behavior and approach work well for the supervisor is left to the supervisor (Glickman et al., 2004).

Whatever supervision has been made continuously in schools it might be meaningless unless observable changes are seen in the quality of education. The supervisor should actively participate with the teacher in any decisions that are made and should attempt to establish a shared relationship and responsibility. The teacher and the supervisor should work together in addressing and solving Issues in the teachers' classroom teaching.

A study conducted on instructional supervision in three Asian countries by Sharma, Yusoff and Kannan, (2011), revealed that, the role of instructional supervision simply seems to display the completion of paper work and fault finding process. As the study indicated, teachers argued that supervisors did not consider instructional supervision as a platform to develop sense of ownership for teachers and their professional growth. Instead, it is done to punish, demoralize, and insult teachers and rather than to improve their performance. Similarly, Luel (2009), Anmew (2010), Million (2011), and Sintayehu (2011) also found in their studies regarding supervision; the implementation of school based supervision in terms of curriculum, instructional and staff development was ineffective in Assisting teachers to improve their performance and they recommended that supervision should be given a due attention to make it as useful engine for the improvement of instructional process.

Although implementing instructional supervision effectively and efficiently might be challenged by various factors, some of them are discussed below which are useful for this study.

1. **Mutual mistrust between the supervisor and supervisee**

Supervision requires mutual agreement between supervisors and supervisees to use it for improvement. If there is a gap in their perception they may play contradictory roles, as a result the prior aims of supervision become crippled. Glanz and Neville (1997) explained that the quality of relationship among supervisors depends on developed trust between supervisors and supervisees. Teachers and supervisors should develop trust to each other for effective instructional supervision, otherwise, being dishonest, and disrespectful become appeared through their task (Johnson and Johnson, 2000; cited in Million, 2011). Similarly, Randall and Thornton (2001), explained trust becomes a generic prerequisite for the provision of effective help. It is central to the idea that the process is collaborative. Without such trust, collaboration between the advisor/supervisor and the teacher cannot be effective.

To this effect, one of the challenges that affect instructional supervision is perception of teacher, principals and supervisors to each other and lack of trust among them as well as the perception of teachers to supervisors and the role of supervision in instructional process are determinants not to be performed the supervisory task as expected.

2. **Competency of Supervisors**

Some supervisors are less competent especially in the usage of ICT tools than teachers they supervise. Supervisors need to be competent to perform their task effectively as expected. In practice, school supervisors are failing to be competent enough in all directions of assisting

teachers. According to Sergiovanni and Starratt (1991), approaches, behaviors, styles, activities, and characteristics displayed by supervisors are determinants for effective supervision. Some supervisors try to accomplish all the tasks by themselves rather than permitting others to participate. This might be an indicator of the supervisors less competency level to delegate responsibilities to others, and also others might fail to coordinate tasks orderly, which will help them to accomplish the assigned task.

On the other hand, the confidence of supervisors in their subordinates might also describe supervisor's competency level to build trust among teachers. In addition, feelings of security in certain situation also require abundant competency within supervisors. As a supervisor faces difficulties in practicing supervisory activities, his or her approach, behavior, or style those largely, if not unconsciously affected by those internalized forces as his/her own value systems by which how strongly does he/she feel that individuals should have a share in making the decisions, which affect them, his/her confidence in his /her subordinates which is explained by how much trust they generally have in other people his/her own leadership inclination in which for example how do they view group effort, and his/her feeling of security in uncertain situation which is explained by such example as the manager who releases control over the decision making process there by reduces the periodicity of the outcome (Sergiovanni and Starratt, 1971).

3. Shortage of Resources

Resources refer to this study are materials, time, human, and information and communication resources. Regarding this, both teachers and supervisors do not have sufficient resources even though there is a problem of usage. As the school staff members are many in number, most schools and the school supervisors are not well organized, and also there is no time to assist teachers individually as well as the group supervision is not that much effective. The supervision given to teachers is somewhat superficial. On the other hand supervisors as well as teachers need materials to prepare training manuals, research works, organize training seminars and the like. To this effect, as there is no sufficient resources to be used the instructional supervision might be in a problem.

In connection to this, MOE (1994) explained that the Issues of supervision in our context are: shortage of time, inefficient support system, inefficient fund and lack of qualified supervision personnel who are facilitating the teaching process are the major ones. As Amberbir (1975), cited in Million (2011), stated that one of the factors that affects supervisory activities is insufficient financial resources embarked for it in addition to lack of adequate and competent

supervisors, to apply principles and techniques of supervision and lack of skills in human relations and working with teachers.

4. Supervisors Engagement on Non-Instructional Tasks

From personal communications of some supervisors in the study area they work with rural development agencies, health extension professionals, and rural administrators for the development of the site where they are assigned. Of course, they can be encouraged, but the time given for their main task that is, assisting teachers has been forgotten. Therefore, supervisors' engagement in other non-educational tasks also affects instructional supervision.

5. Communication and Relationship between Supervisors and Supervisees

Supervisors need to communicate with teachers effectively as much as possible. Communication might be considered as the very large factor to enhance or facilitate instructional supervision if used effectively. Pajak (1989), indicate that good supervisor is one who is capable of communicating with his subordinates in order to provide necessary guidance and assistance to them for professional improvement. In order to infuse new ideas in the learning and teaching process the supervisor is supposed to observe and communicate rapidly to see the effectiveness of teachers. For effective instructional supervision there should be good relation between teachers and supervisors. Hence, supervisors are in a position to create smooth communication with teachers by organizing intensive in staff training and in-service training in supporting and Assisting teachers.

In a nut shell, impending factors of supervisory activities might be reduced by making supervisory activities professional, well financed, structured communication and creating awareness on teachers and supervisors about the objectives of instructional supervision.

6. Inequitable Access to learning Resources

While the COVID-19 pandemic did not cause social, economic, and racial inequalities, it did highlight how the accountability system of education we have accepted over the last 20 years has largely been built on principles of privileged class (Mette & Glickman, 2020). Schools in the urban areas have more access to communication resources than their peers in the rural areas. Now that students are required to learn from home, research is showing not only that the opportunity gap between peers is widening, but also that the limitations of standardized testing has once again highlighted the labeling of children based largely on access to resources and specialized instruction (Garcia & Weiss, 2020). Open in the educational context may be

perceived as a philosophy of learning that is based on the principle of flexibility, aimed at increasing access to and equity in education. Institutions that practice open learning philosophy offer a variety of ways to open access to credible learning opportunities for a diverse range of learners (Nkwenti, 2016). In this context, learners are allowed to determine what, how, when and where they want to learn.

According to Mette, (2020), the only way we will be able to dismantle the inequitable education system is to look towards the transformation of educational outcomes for students, and to use supervision as a tool to help promote transformative learning. The disruption to our education system as a result of COVID-19 has given educators a once-in-a-century gift – to closely examine the realities of inequities our students experience as a result of the system we have helped maintain and perpetuate. As such, the job of the supervisor is to empower both teachers and students to address the societal inequities that are experienced, as well as to help educators think more critically about the role education can play in institutionalizing opportunities in schools to create more democratic outcomes for all students (Glickman & Mette, 2020).

For teachers and supervisors alike, the switch to the new delivery of lessons within a short time frame often proved difficult, not only in the preparation of learning activities and experiences, but in the students' understanding and use of the technology (Brock et al., 2021). For students, some of the most pressing concerns have involved mental and physical health, accessibility to technological devices, accountability associated with completing assignments, and the negative impact on educational attainment and academic outcomes similar to those associated with summer learning loss (Kuhfeld & Tarasawa, 2020). These concerns not only revealed and widened equity gaps across ethnic groups and socio-economic classes, but also created new gaps within sub-student populations. Scholars and practitioners were worried that the COVID-19 crisis has become "a social crisis that will have long-lasting consequences" (Van Lancker & Parolin, 2020, p. 243). In Cameroon, just as in most sub-Saharan Africa, the situation is worse.

7. No Government Policy and Regulation on Distance Learning

Distance education has its legal backing in the laws, providing guidelines for education in Cameroon. Its effective implementation requires a detailed procedure on how the entire process will function and how it fits into national development goals. Ideally, the development and implementation of distance education policy should: create an enabling environment for economic and social benefits to be attained, lead to optimum utilization of resources, encourage

development of technological capabilities, and allow procurement decisions to be taken rationally (Nkwenti, 2016).

Even at the Higher Education, no policy on Distance Learning has been enacted. The Ministry of Higher Education as the coordinating organ of universities and institutions of higher learning in Cameroon does not have any policy framework to regulate ODL nationally or institutionally.

Malawi faced the same issue some years back, (Msiska, 2013) while most of what the 2008-2017 Plan is talking about activities that will be undertaken in order to strengthen open and distance learning, there is very little doubt that Malawi Government is gradually realizing the need to address issues pertaining to distance education at a national level. The only missing document is a national policy on open and distance learning to provide a framework and regulate provision of distance and open learning in Malawi. In the absence of such a policy, it becomes very difficult for Government to guide, regulate, monitor and harmonize provision of education and training through open and distance learning delivery mode.

The writer continues to argue that there is an urgent need to formulate both regional and national ODL policies to guide and regulate provision of education and training using the open and distance learning delivery mode, thereby, enhancing the credibility of qualifications obtained through the ODL mode. There is a need to have a policy which should act as a tool for harmonizing and regulating standards and scope for the delivery of programmes, as well as for monitoring and evaluation. The policy will also legitimize allocation of resources to ODL programmes across sectors and will act as a guide to new ODL providers. A policy on open, distance and e-learning put in place within the broader educational and human resource development strategies will foster in standardization, development and regulation of open, distance and e-learning. The policy should cover such areas as enrolment, entry requirements, materials development, tuition fees, quality assurance, curriculum, finance and governance, monitoring and evaluation, among others.

2.2.3. Practices of Pedagogic supervision in Distance Learning and Difficulties involved

According to Hartman & Morris, (2019), effective teachers are the most important determinant of student learning and academic achievement (Rowe, 2003). Few teachers start their careers as master teachers and professional growth is key to improving their instructional skills. The educational leader in an organization is responsible for ensuring the highest quality teachers possible for every classroom and each student. As part of preparing individuals to be effective education leaders, understanding and applying best practices of teacher supervision,

as well as providing opportunities for teachers' professional development and growth, are critical.

In conventional mode of teaching, the face-to-face component of supervision is common. However, this aspect becomes a challenge when teaching is offered through the open and distance learning (ODL) mode. Pedagogic supervision therefore means overseeing the practice and theory of the teaching and learning process. (Sayantani, G. 2019)

Some of the tools used for distance learning can be used for supervision. For instance, social media platform such as Whatsapp can be used to supervise distance lesson with the supervisor sitting in as one of the students, while also being one of the administrators of the group. Through the same platform, they can also have a pre-observation, post observation and evaluation discussions. Meanwhile observation proper can be done using other real time observation platforms such as zoom and Blackboard collaborate. This is called E-supervision. The model of supervision therefore, does not necessarily depend on the context and the of distance lesson used but on the availability and the ability of the supervisor to used them.

The approaches, principles, practices and concept of pedagogic supervision in face-to-face conventional method of teaching/learning process are basically the same as in the Distance learning delivery mode with some slight differences in the procedure depending on the format chosen. For instance, the clinical supervision, peer supervision, democratic and coercive or directive supervision approaches are applicable, but the supervisor, in the process will choose either to supervise in situ, that is, sitting with the teacher, or communicating with the supervisee from a distance, through telephone, or using some of the platforms used in distance learning. He/she could use both formats, that is, face to face or remote supervision, blended or hybrid supervision (a term we have coined from blended learning).

As for Vazquez C., & Sevillano G., (2013), traditional models of educational supervision do not guarantee adequate supervision of the teaching models based on Web 2.0 as well as the digital learning environments supporting classical lectures. "Today supervision is generally seen as leadership that encourages a continuous involvement of all school personnel in a cooperative attempt to achieve the most effective school program". However, the new school contexts based on ICT are in a constant and recurring mode, and need new forms of supervision to ensure proper alignment of laws as well as teaching-learning methodologies, resources, and evaluation on digital learning environments (Oliva, & Pawlas, 1997; Gordon, 1997; Bogden, 2003; Vázquez, 2011; Weld, 2012; Afshari & Abu Bakar, 2012).

It should be borne in mind that supervision does not mean an inquisition or fault finding, but rather signifies guidance, assistance, and sharing of ideas with all those involved in the

process of teaching and learning (Firth, & Pajak, 1998; Wiles & Bondi, 2000; Clark, 2008). Thus, supervision must integrate ICT from different perspectives for the development of different subsystems in which it operates (Glatthorn, 1990). However, the supervisors generally observe the teachers, evaluate the performance of the teachers, and take appropriate action. Their activities involve inspecting, checking, telling, rating, and monitoring, and for the development of these activities, supervisors behave as coordinators, consultants, group leaders, and evaluators. ICT can be a valuable resource that serves to enhance both these functions and processes of supervision of school contexts mediated by ICT.

Concept of E-Supervision

As teaching and learning process transitions from face-to-face delivery mode to distance learning mode, so also does the supervision process. Schools are quickly migrating to an online environment, and supervisory practices must adapt to the changing landscape of education (Nolan, 1997; Smith et al., 2006; Alper & Gülbahar, 2009; Vázquez, 2011). Supervision of a lot of projects and programs is done from a distance, especially in crisis situations`. According to (Vaiz et al., 2021) distance education enables the development of many skills through the development of students and teachers and the adaptation of technology to the lessons. Distance education, lack of time and place limitations in the process, and teaching students' own access to information is especially important in gaining lifelong learning skills. However, in order for the education to progress in a qualified and efficient manner, supervision is essential in distance education as in the traditional education process.

The advancement of technology and the change in the education model with today's conditions require the control to adapt to this. In this direction, the concept of e-supervision is emerging. In the traditional education environment, while supervision takes time and progresses slowly, e-supervision provides more effective and efficient control by using the advantages of distance education, while allowing the development of teachers and school administrators in line with educational technologies.

(Vazquez Cano & Sevillano García, 2013) Innovations and various tools in information and communication technologies have created a new learning dimension. Especially for educators, it has made clear activities that can be learned, recorded, discussed and evaluated. Most educational institutions are trying to integrate new information and communication technologies into existing curricula or to develop new paradigms for learning (Chan and Ngai, 2010). Distance learning is one of the new stages of education that facilitates learning for students with many applications and platforms offered. However, in this process, both students

and teachers need to be cared for (Guntoro et al., 2016). Using the same technology tools within the scope of distance learning and e-supervision ensures that teachers, school administrators and supervisors have the process and technology aptitude. However, it differs in its operation. Although the control is online, its purpose is to guide teachers and solve Issues in functioning. E-supervision systems include the following benefits for users; • Simplifies the process and makes it easier • Provides easy expression • It is more convenient in terms of time and cost. • Fast and continuous access to information is provided. • Offers better management opportunity. • Offers individual communication opportunity.

Vaiz et al., (2021) there is a need for developing a mechanism to regularly orient field work supervisors in supervising students in the ODL mode. It is recommended that regular field work practicum workshops be conducted for supervisors and students. Viva for field work could be made mandatory at different regional centres. Field work supervision could be enhanced through the use of technology, namely, Skype, e-mail, WhatsApp, and other platforms.

We can say that in Cameroon, the GCE Board is the National Supervisory platform that supervises the performance of teachers through the evaluation of students. It's also the regulatory board that assesses conformity to the curriculum and standards and norms. Practices of the Board evolved from paper-based format, when the examination was registered on hardcopy forms, then evolved e-registration when the registration was done using multimedia such as the CDs and Memory sticks. Certainly registration is gearing towards online format. Even the written examination will probably follow suit. For now, the examination scripts are still package mailed through the conventional mail delivery system.

The need for virtual supervision

In any job, it is important to assess a person's performance in completing the tasks required by the employer. Businesses and corporations supervise and evaluate employee performance for a variety of reasons, including retention, promotion, and accountability for completing job-related tasks. Education is no different, requiring supervision of classroom instruction to evaluate a teacher's effectiveness. This generally involves an administrator observing and evaluating lessons in a classroom, documenting the teacher's performance, and sharing suggestions for improvement (Waite, 1995; Sullivan & Glanz, 2005; Zapeda, 2007; Charles Farley, 2010; Shohet, 2011; Weld, 2012). As viewed by Karolyn J. Snyder (1997:20), "the supervisor's task is to develop professional learning communities, in work teams, that not only acquire new knowledge and skills but also learn how to study and respond exceptionally well to their natural work and learning environments." Today, more and more school contexts

incorporate the use of ICT, and this needs a new supervision model to guide, advice, and monitor the teaching-learning mediated by ICT. Thus, educational supervision of 2.0 learning processes needs new ways of addressing the techniques of educational supervision and monitoring of Web 2.0 in schools. We call this "virtual supervision" (Vázquez, 2008; Vazquez, & Sevillano, 2011) that requires researchers to examine instructional supervision in digital learning environments (Rosendale, 2009).

Supervisory practices need to be adapted to online learning environments, so that inspectors could observe lessons by logging onto Learning Management Systems to evaluate its functioning. This trend towards virtualized education needs new ways to monitor, control, counsel, and guide the entire school community for an effective and appropriate development of interactive models and virtual training. Sensitive areas, such as data protection and the suitability of certain ICT tools, need to be monitored with deep understanding of these mechanisms for teaching on e-learning environments (Sevillano, 2004; Behar-Horenstein, Mitchell & Dolan, 2004; Larreamendy-Joerns & Leinhardt, 2006). The current teaching and basic skills development are moving towards the evolution of virtual learning environments to support classroom education with certain educational activities based on e-learning. Thus, schools are quickly migrating to an online environment, and supervisory practices must adapt to the changing landscape of education (Nolan, 1997; Smith et al., 2006; Alper & Gülbahar, 2009; Vázquez, 2011). School 2.0 is emerging strongly in different processes, such as school management, organization, communication among different members of the educational community, and educational processes with teaching and learning dynamics based on Web 2.0. To fulfil these expectations, supervisors need considerable knowledge and skills to motivate and guide the teachers in their uses of ICT (Sevillano, 2007; Ukpokodu, 2008; Ferdig, et al., 2009).

This not only requires them to be computer literate (Akbaba-Altun, 2006), but also capable of helping teachers use computers and the Internet in teaching and learning (Oliva & Pawlas, 1997) as well as course design (Wiles & Bondi, 2000). Even where classrooms are well equipped with ICT, Rutherford (2004) observes that it is unlikely that most teachers will be able to exploit the power of these tools without encouragement and support; hence, the first step towards the effective use of technology in classrooms should be fostering positive attitudes in teachers towards technology (Bates & Poole, 2003; Albirini, 2006). Thus, this study has been carried out to describe the practices, criteria, and tools used in the supervision of an online learning environment, and for the development of supervisory functions. The rapid growth of online learning has not been supported by research on how inspectors supervise and evaluate

the performance of online activities. It seems obvious that online learning does not require physical attendance in a school, and differs from models of traditional instruction and supervision (Hoy & Forsyth, 1986; Sergiovanni & Starratt, 1993). As more teachers and students participate in online learning, inspectors will need to observe, guide, and evaluate instruction in this digital environment that has altered the face-to-face classroom observation and evaluation model of instructional supervision (Collins, 2004; Anderson, 2004). For example, the U.S. Department of Education, Office of Information Technology (USDOE-OIT, 2004), has recommended e-learning and virtual schooling opportunities for high schools; however, there is little research describing the process of supervising teaching and learning environments. Educational change in these new schools inserted into the information society and communication needs the transformation of schools in learning organizations (Fullan, 1995; Razik & Swanson, 2001; Leithwood, 2001). This implies a substantial change in educational supervision models that have traditionally been applied in Spain and all over the world.

The virtual supervision needs to have direct access to digital activities of teachers and students on Learning Management Systems, and use in a proper way the 2.0 tools in the supervisory functions; i.e. through the utilization of Internet Protocol -or IP-based videoconferencing equipment- supervisors can be empowered with the ability to make observations in any room that has a network or Internet connection. With several formats currently available, videoconferencing has not yet been standardized. However, IP is the preferred video format for this type of project due to its flexibility and cost. With IP video, there is no need for proprietary video lines, costly equipment or a high degree of technical skill. In addition, the size, price and quality of IP cameras vary a great deal and, like most evolving technologies, are always changing.

Advantages of Supervisory Application of Technology:

- The technology enables the observation to occur as scheduled and archives it for subsequent review by the supervisor at another time.
- A valid assessment of teacher and student performances is often compromised by the presence of an observer in the classroom. So, while we are not advocating this approach for every observation, the technology certainly offers an interesting option to address this issue.
- Finally, the teacher can view the archived observation prior to or during a post-observation conference. The ability to zoom in on a particular teaching episode will enrich the conversation about best instructional practice as it relates to improved student performance.

The creation of these digital classrooms means an adaptation of school organization, including staff of the centers. Furthermore, as an extension of space-time in the classroom, mentoring and contacts will form virtual families and virtual classrooms. This is a radical change in the way of teaching, learning, and assessment

Hartman & Morris, (2019) pointed out that conducting the pre-observation and post-observation conferencing is a key component of developing effective supervisory skills to help teachers improve their instruction. He warned that doing that in the face-to-face class was not difficult to implement. However, in the online course, use of the Blackboard Collaborate tool for partner/small group synchronous interactions was essential to provide this learning experience for the participants. In the online course design, another significant challenge was how to replicate the interactivity between candidates, particularly the pre and post conference role-plays along with instructor observation of small group work with feedback. There activities are most effectively implemented synchronously in the online course using a virtual classroom tool, Blackboard Collaborate (BBC). Blackboard Collaborate is a web-based meeting program that allows faculty and students to interact via the following features: video and audio chat, text chat, whiteboard sharing, desktop and application sharing, file sharing, polling, and breakout rooms for the same interactions with a smaller group of people.

E- supervision platforms

According to Juan N. D (2010) classifier is used as machine learning algorithm for obtaining the resources (e.g., questions, chapters, and concepts) that need to be further accessed by learners. The analysis is accomplished for disciplines that are well structured according to a concept map. The input data set for the recommender software system is represented by student activities that are monitored within Tesys e-learning platform. This platform has been designed and implemented within Multimedia Applications Development Research Center at Software Engineering Department, University of Craiova. Monitoring student activities is accomplished through various techniques like creating log files or adding records into a table from a database. The logging facilities are embedded in the business logic of the e-learning platform. The e-learning platform is based on a software development framework that uses only open source software. The software architecture of the e-learning platform is based on MVC (model-view-controller) model that ensures the independence between the model (represented by MySQL database), the controller (represented by the business logic of the platform implemented in Java) and the view (represented by WebMacro which is a 100% Java open-source template language).

F- Supervision Software

According to Juand, (2010), The Tesys e-Learning platform (Burdescu, Mihaescu, 2006) represents a collaborative environment in which all involved parties (e.g. secretaries, professors, students and administrators) accomplish their duties. The administrator, with the help of secretaries and professors are responsible for managing the environment in which the students will be through-out the e-Learning process. The platform has built in capability of monitoring and recording user's activity. The activity represents valuable data since it is the raw data for the machine learning and modeling process. The activity of each learner is seen as a sequence of sessions. A session starts when the student logs in and finishes when the student logs out. Under these circumstances, a sequence of actions makes up a session. User's activity is monitored and recoded through a dedicated module implemented within the business logic of the platform. This facility was taken into consideration since the design phase of the platform. It was one of the requirements for the platform to be able to record user's performed actions with fine granularity.

Regarding the student-tracking tool, we consider it should have the following general characteristics:

- Independent but easy to integrate with different LCMSs.
- Usable interface, preferably web-based. Data exportation in different formats (csv, xls,).
- Daily updated information. And, the reports would be Parameter-driven.
- Easy to interpret, which means, expressive and intuitive reports and graphs. Easy to handle.

Before describing the reports, some of the terms that are used in this section are defined:

- **Click stream**: the record of what a computer user clicks on while Web browsing.
- User: person who connects to the virtual course such as student or instructor.
- **User session**: a series of requests by the same identified student (user) from the moment he or she connects to the course until he or she disconnects or leaves it. This data can be difficult to calculate exactly, generally a timeout is defined.
- **Course access**: each time a student or instructor connects to the course.
- **Page view**: each time a web page or file is requested by a user. Content pages, urls, assessments, tests, etc. are included in this group.
- **Resource access**: each time a user accesses a communication tool (mail, chat, etc.) or a productivity tool (bookmark, calendar, etc.).

- **Session length**: amount of time that learner spends on the course each time he or she visits it. This data may not be exact due to the fact that the length of the final page view is difficult to obtain (timeout).
- **Total time**: amount of time that user has spent on the resources of the course.

Student identification report

This report allows instructors to have an initial overview of profile of their students very useful at the beginning of the course and includes the following parameters: previous knowledge level in topics related to the course contents, experience in the use of Internet and computer tools, motivation level with which learners enroll in the course and, the number of hours per week that they plan to dedicate to the course. All these parameters are considered with regard to gender, age, and the degree which students are studying. For each parameter and the value of each dimension, the report shows the number of students and, graphically, the number of different answers given at each score, as well as the average value can draw the conclusion that, in general, their students have some knowledge about the topics of the course and how they plan to dedicate few hours per week to the subject. Furthermore, they can appreciate that the age group "24 to 27" is the most numerous and heterogeneous with respect to any of the report parameters; and that the groups with older students are smaller in percentage but their members are more motivated and have more experience in the use of Internet. Consequently, with this report instructor will be able to determine if they must include additional material for learners with little knowledge on the subject, or propose activities which encourage students to participate and work in the course, or dissuade learners from following the course if their profile is not the appropriate one, etc.

Students Tracking Reports

An information system with which instructors can track their students is established. In summary, this information system will allow instructors to:

• Learn about the profile of their students.
• Track the frequency and time spent per student and group in each course component.
• Learn about the course periods of more or less intensity per student and group.
• Detect when a course drop-out is about to occur.
• Ascertain the most effective tool to communicate with their students.
• Organize collaborative activities in the most convenient timetable for students.
• Learn about how active students are in forums.

• Analyze the navigation paths of each student and evaluate each session with regard to instructor's learning goals.

• Get patterns about the students' performance, the use of the course resources and the instructor-learner communication ac- cording to their degree, age and gender.

• Assess the course design and structure with regard to how students have used the resources

With regard to the architecture it is possible to say that the software and the hardware necessary for its development and use can turn out to be a bit expensive but on the other hand, organizations will have an infrastructure that, besides giving support to all the virtual courses, will allow them to extend its use to give response to other academic needs of the institution (HEDW, 2008) such as to obtain academic indicators (graduation rate, dropout rate, etc.)

Difficulties and Challenges involved in Pedagogic supervision of Distance Learning

Schools faced many challenges regarding online learning services, including, but not limited to, low technological literacy among students and faculty, lack of technological resources such as computers and internet, technology-based Issues, assessment and evaluation techniques, creating and maintaining support systems (Anderson, 2008).

According to (Vaiz et al., 2021), during the pandemic process, only a small part of the world population is immune and the number of cases and deaths is increasing day by day and there is no clear solution yet, it is clearly seen that the opinions claimed that distance education will be the main method of education rather than being a temporary and alternative solution is highly likely to be true (Yamamoto and Altun, 2020).

The quality and effectiveness of education should be prioritized. At this point, it should be taken into account that the management of distance education, which differs from the management of educational institutions, is of great importance. Because the planning, coordination, adequacy of the system infrastructure, effective management and even supervision of distance education services are of great importance.

In the primary and the secondary sectors of education, the learners are immature and unfocused which calls for effective pedagogic supervision and close follow up in order to maintain the standards and guarantee the quality of education.

Farley (2010), in his study of instructional supervision practices in virtual, or what he called cyber schools, found:

(1) There was a lack of structure and disconnect between online teacher criteria and school policy, participants were eager to improve their practices;

(2) Online instruction presents many challenges to teachers and administrators they may not have experienced throughout their careers;
(3) Gaps in knowledge of technology were evident showing evidence of teachers with more experience in online instruction than their supervisors; and
(4) Respondents showed enthusiasm for their jobs and a willingness to improve in an online environment. (p.145–146)

Model of Pedagogic Supervision in Distance Learning for Secondary Schools

As described earlier at the beginning of this chapter, various formats of distance learning are employed by various institutions depending on the context and availability of resources such as telecommunication infrastructure and electricity or power availability. In most cases two or more formats are employed. By the same token supervision utilises some or combinations of these formats to interact with their supervisees, and a different telecommunication format may be used to supervise distance learning in a different telecommunication format. A short review of those communications format below with added supervision format could clarify the picture.

According to Alemnge, (2018), a review by Peters (98b.htm) reveals seven pedagogical models of distance learning that are mostly used by institutions of higher learning worldwide to de- liver distance learning. These models are used in different countries and regions of the world. This suggests that socio-economic, technological and other factors influence the selection of the pedagogical model used in each country. Following is a summary description of each of the models.

1. The Correspondence or Independent Study Model

This model is based on printed course materials and characterized by postal communication between the institution and students. The model does not promote interaction between tutors and students and among students. It represents the first generation of distance learning.

2. The Multi-Media or Study Centre Model

The multi-media model of distance learning delivers it programmes through a combination of asynchronous (print, audio and videotapes) and synchronous (interactive video and some computer based learning applications) technology. Face-to-face tutorials also provide interactivity.

3. The Telelearning or Online Learning Model

This model uses more advanced information and communication's technologies in the delivery of its programmes in order to facilitate a teacher to student and student to student interaction in real time. The interaction is not only audio (audio teleconferencing, autographic communication and radio) but equally audio-visual (video conferencing and broadcast television).

4. The Group Distance Learning Model

This model uses exclusively radio and television to deliver the content of the distance learning programme to students who attend obligatory classes. There are no specially prepared course materials and students rely on the traditional lecture notes of tutors as obtains in the face-to-face situations in classrooms.

5. The Autonomous Learners' Model

This model is the most learner-centred among the other models. In this model students determine their learning objectives, select the content, and determine the learning strategies and methods of evaluating their learning. Tutors interact with students through periodic meetings only.

6. The Technologically Extended Classroom Teaching Model

This model is characterized by the extension of a teacher's lecture in a classroom to two or more classrooms in real time using either cable or satellite television or a videoconference system.

7. The Network-Based or Flexible Education Model

This is currently the most versatile model of distance learning delivery. It presents teaching and learning resources using a variety of technological applications. These include interactive multi-media online resources, databases and computer mediated communication using automated response systems. The flexibility built into this model allows students to study at their pace and convenience either on or off line.

2.3. THEORETICAL FRAMEWORK

According to Education et al (1983) Kurt Lewin is renowned for claiming: "there is nothing so practical as a good theory". Theories allow us to make vast and complicated amounts of information into understandable concise pieces and to highlight the focal points of that vast amount of information. All mental health practitioners and their supervisors function according

to at least one theory but very often many supervision theories and models. The supervisor's challenge is to extend their appreciation of those theories to guide their supervisory work with practitioners. As supervision is an evaluative process, the theory or theories by which the supervisor chooses to use as a guide need credible and recognizable criteria. Patterson, (1986) proposed what he considered to be the six most vital proponents of a theory:

1. **Preciseness and clarity**: containing clear, consistent, unambiguous wording.

2. **Parsimony or simplicity**: containing the minimum of assumptions necessary to explain the focus of the point.

3. **Comprehensiveness**: regarding the use of the known data in that particular area of interest.

4. **Operationality**: in that the hypotheses and concepts are expressed in clear, evaluative terms.

5. **Practicality**: or useful to practitioners.

6. **Falsifiability**: it is important that the theory can be disproved.

According to Kalita (2017), the theoretical perspective implies the underlying ideas contributing in the formation of a concept or a phenomenon. The concept of educational supervision has passed through several developmental phases and has now been conceived in a more democratic outlook. In the present era of Information technology (IT), which has now revolutionized the whole education process, supervision becomes a major instrument to ensure quality and to develop the standard of education. Presently, the scope of educational supervision is widened to comprehend the functions of an educational institution in toto, the role of supervisors also upgraded to a facilitator and so on. The purpose of this paper is to study the different theoretical aspects contributing to this modern concept of educational supervision.

April and Bouchamma (2017) point out that the theoretical framework is based on the concept of pedagogical supervision and the theory of goal setting. According to them this framework is well suited to the context of Results-Based Management approach (RBM) in determining goal setting as it pertained to student achievement. They established that in this context, this supervision was an essential part of the process of achieving the desired outcomes (Brassard et al., 2013). Moreover, the theory of goal setting takes into account both the practices and the perceptions of the actor. RBM is thus defined as a management approach based on the measurable results of goals that have been pre-established according to the services that are to be provided. This approach operates within a context of transparency, accountability, and flexibility in terms of the means used to attain the desired outcomes.

2.3.1. The Theory of Goal Setting (Locke & Latham, 1990)

Goal-based management is essentially based on a joint setting of goals (Locke & Latham, 1990). This approach is thus likened to the prime directives of results-based management, in which the goals to be reached are clearly and jointly established by all three parties, in this case, the Ministry of Education, the regional or divisional inspectorates of education, and the schools. Pedagogical supervision is the ideal method to collect crucial data that will improve existing practices, as well as student achievement which is defined according to objectives. The development of a data culture thus appears to be essential to effectively gage progress toward the attainment of the initially set goals. Collection of data is an essential component of PS. It is now important to examine Distance Learning (DS) which is the object of our research, a process that requires supervision and in this case pedagogical supervision in order to ensure good quality.

Implication of theory to the study.

The objective of pedagogic supervision of Distance Learning is to ensure that quality education is given to students; that all students are engaged in study, that there is accountability, transparency and flexibility, that access and equitable experiences are given to all students and that the education is relevant. The end result is students' achievement.

2.3.2. Social Constructivism-Vygotsky (1962),

It is the role of the supervisor to assist teachers in their professional development. Social constructivism is one of the most appropriate theoretical frameworks that support the teacher professional development model (Nkwent, 2015). Dewey (1916) suggested that experience is the cornerstone from which new knowledge is created, promoting authentic learning and meaningful experiences that foster new knowledge growth. This perspective gave rise to a theoretical perspective known as constructivism. Widely accepted within the educational community, constructivism describes learning as a process whereby learners actively construct or build new ideas, concepts, or knowledge objects based upon existing understandings. Vygotsky (1962), a cultural psychologist theorized that language and conceptual development are linked to social phenomena and cultural contexts. Vygotsky (1978) extended the perspectives of constructivism by theorizing that learning occurs through sociocultural mediation, meaning that individuals construct new knowledge through their active participation within a social context and via interactions with its signs and tools. Social constructivism recognises that teachers grow from a relationship with a trusted confidant with whom they can

establish and continue dialogue about ways of developing their understandings (Nkwent, 2015). It guided the design of interactive activities that teachers undertook throughout a professional development programme.

2.3.3. Theory of Equivalence in Distance Learning

Stakeholders in education (Supervisors and teachers) should ensure that learners have the same learning experiences as far as distance learning is concerned. According to Michael Simonson, Charles Schlosser, and Dan Hanson (1999), theories guide the practice and research of distance education. Traditionally, theories of distance education have been derived from classical European or American models based on correspondence study. Recently, telecommunications systems have significantly altered the practice of distance education in the United States and have produced a uniquely American approach to this field. This has created the need for a new theory to guide the practice of distance education. This theory is called Equivalency Theory.

Michael Simonson et al, (1999), further assert that education at a distance should be built on the concept of equivalency of learning experiences. The more equivalent the learning experiences of distant learners are to those of local learners, the more equivalent will be the outcomes of the educational experiences for all learners. This approach to distance education advocates designing a collection of equivalent learning experiences for distant and local learners, even though they may be different for each student. The objective of the instructional designer of distance education is to provide for appropriate, equivalent learning experiences for each student. The objective of pedagogic supervision of Distance Learning is to ensure that quality education is given to students; that all students are engaged in study, that there is accountability, transparency and flexibility, that access and equitable experiences are given to all students and that the education is relevant.

In the face-to-face course of supervision, a portion of the first class meeting is spent on getting to know each other individually and reviewing course topics, structure, and policies. To provide an equivalent experience to candidates in the online environment, a variety of materials and activities are used. Upon logging into the course for the first time, online candidates are prompted to watch a video that introduces the professor. The candidates are then asked to introduce themselves in a discussion board assignment utilizing the “Discussions” feature of the learning manage system, Canvas. The discussion board function allows the instructor to create a prompt and students to create a post in response. Other students may respond directly to the prompt and/or to posts. Within the introduction discussion, candidates create a post on

the board to share several unique aspects about themselves, as well as basic information about where they teach. The student introduction discussion is intended to build social presence and provide an opportunity for student to student and student to instructor interaction.

2.3.4. Adult Learning Theory- Malcolm Knowles 1980

According to Hartman & Morris (2019), the planned instructional activities of the supervision course are consistent with adult learning theory that emphasizes the importance of engaging actively with learning content that is highly relevant to current problems of practice, providing opportunities to apply learning in real-life settings, and supporting professional collaboration with peers (Darling-Hammond & Richardson, 2009). For example, candidates observe teachers conducting instructional lessons in core content areas, collect observation data regarding teacher/student behaviors, and then role-play the pre and post observation conferences with a partner (one candidate being the teacher and the other being the supervisor). Candidates not only develop knowledge about effective supervision practices, they also develop interpersonal skills for facilitating teachers' professional reflection and improvement through interaction in mock conferences. Candidates write a clinical observation report with completed data collection tools and artifacts for each of six lessons observed.

Implication to this Study

According to Fon and Yuoh, (2010) in Supervision of Instruction in Cameroon (n.d), ensuring the continuous professional development of teachers is the primary goal of supervision of instruction, not as an end in itself but as a means to enhanced teaching and student outcomes. Supervision of instruction is based on the premise that the knowledge, skills and attitudes educational personnel begin their careers with cannot serve them till they retire. They need to keep abreast with new knowledge, skills and changing attitudes in order to provide quality educational environments for students. To do this will require a comprehensive human development strategy which will be grounded on research on adult learning.

2.3.5. Theory of Change - Carol Weiss, 1995

Adult learning theories have expanded to include an array of options since 1980 when educator Malcolm Knowles introduced the concept of andragogy. The seven principles of adult learning include self-direction, transformation, experience, mentorship, mental orientation, motivation, and readiness to learn.

Supervision of instruction is about changing or enhancing the capacity of teachers in the domains of knowledge, skills and attitudes. Against this backdrop, research on the change process (Haller 1968; Fullan 2001) is essential to instructional supervision. Many experts share the view that the bottom line of instructional supervision, seen from a developmental perspective, is to enhance student outcomes through bringing about desired changes in teachers' instructional practices (Glickman, Gordon & Ross-Gordon 1998; Pajak 1990; Sergiovanni & Starrat 2000). This has to do with changes in knowledge, skills and attitudes relevant to teaching and learning. Literature on the change process is therefore very relevant for supervision of instruction because it brings out pertinent issues that need to be recognized and addressed.

Implication to this study

If many teachers are apprehensive about change it is because they do not often get actively involved in the entire process (Glickman et al. 1998; Fullan 2001). Change can be disturbing to teachers because it affects familiar ways of doing things, often with little or no support and benefits. According to Sergiovanni and Starrat (2000), the readiness of teachers to change is therefore a critical point in the process of instructional supervision. The willingness of teachers to change will partly depend on their involvement in the process, and the relevance of the change to their professional lives, as well as the perceived benefits to their students, themselves and the school as an organization as we see in the adult learning theory.

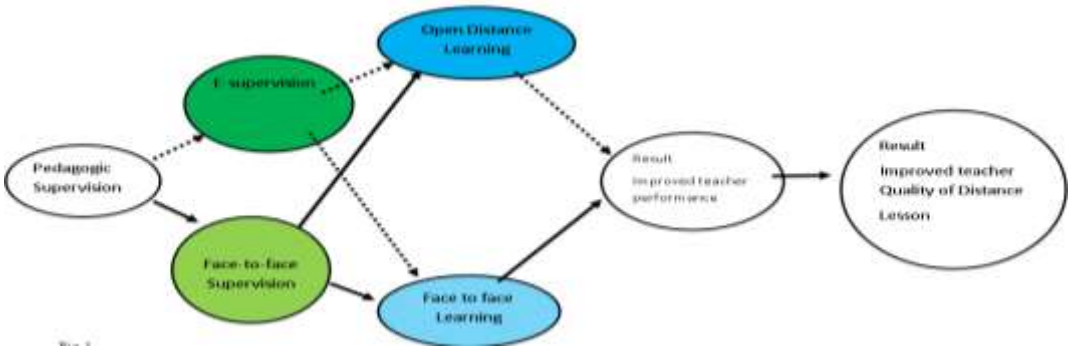
2.4. CONCEPTUAL FRAMEWORK

From the literature reviewed we realize that a lot has been documented regarding supervision of distance learning in tertiary education and very little in primary and secondary cycles. This goes on to prove the pertinence of this research. Even in developed countries, this practice is still not at its best. Our school administrators give a laisez-faire kind of attitude towards Distance Learning and teachers and instructors do it their own way. This attitude puts in question the quality of distance learning.

Also, as teaching and learning transition from face-to-face delivery to electronic and online delivery environment, so also does supervision, using essentially the same tools. In fact, supervision seems to have taken a greater step forward, since this has to do with lesser people and is basically observation. Thus in literature now we have the term electronic supervision (E-supervision), which has to deal with supervision from a distance. E-supervision is gaining more and more grounds very rapidly. Thus face-to-face instruction can equally be supervised from a distance as indicated on diagram 1. Distance learning can be supervised using face-to-face

supervision format or electronic format, or both. Hence, we have the term blended or hybrid supervision, a term we have borrowed from blended or hybrid learning. This means part of supervision can be carried out in face-to-face conventional format and the other part in electronic format.

Figure 5: Blended supervision of Face to Face Learning and Distance Learning



Source; Researcher

There are different models used to carry out Distance Learning. These models are carried out according to the availability of various telecommunication tools and infrastructure and according to the proficiency and motivation of teachers to use them. In like manner supervision is carried out using practically the same tools depending on the context in which the supervisor finds himself. This is illustrated in fig. 2 below

In a more advanced distance learning environment, which is the ideal for every e-learning educational system, a more integrated format combining, multimedia and web-based (internet- Web 2 and Web 3) formats are used for pedagogic supervision. This is practiced in cities and developed nations where the internet and telecommunication infrastructures and electric power are readily available. In Cameroon, as is the case with rural areas of sub-Saharan Africa, essentially multimedia and paper based pedagogic supervision formats are practiced.

In the best case scenarios more advanced technology such as Blackboard collaborate, Moodle and Learning Computer Management Systems, coupled with real time media such as zoom, skype and whatsapp are used. Tesys e-learning platform is a supervision software that integrates activities of Administrators, supervisors, secretaries, teachers and students.

Figure 6: Blended Supervision of Distance Learning and Aspects Supervised.

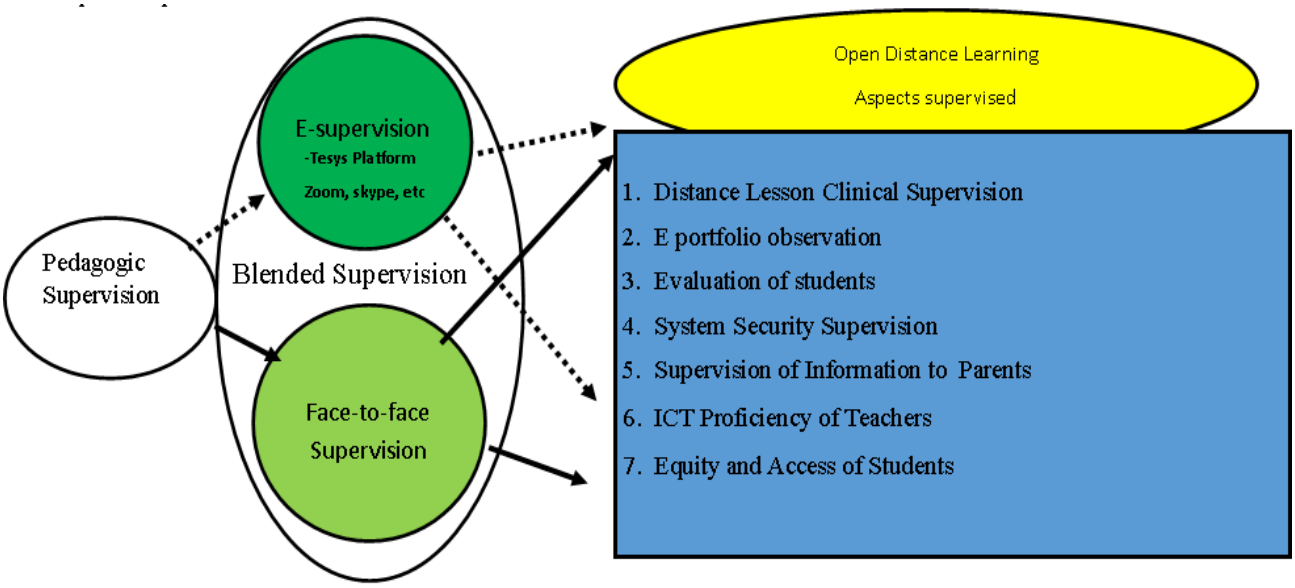
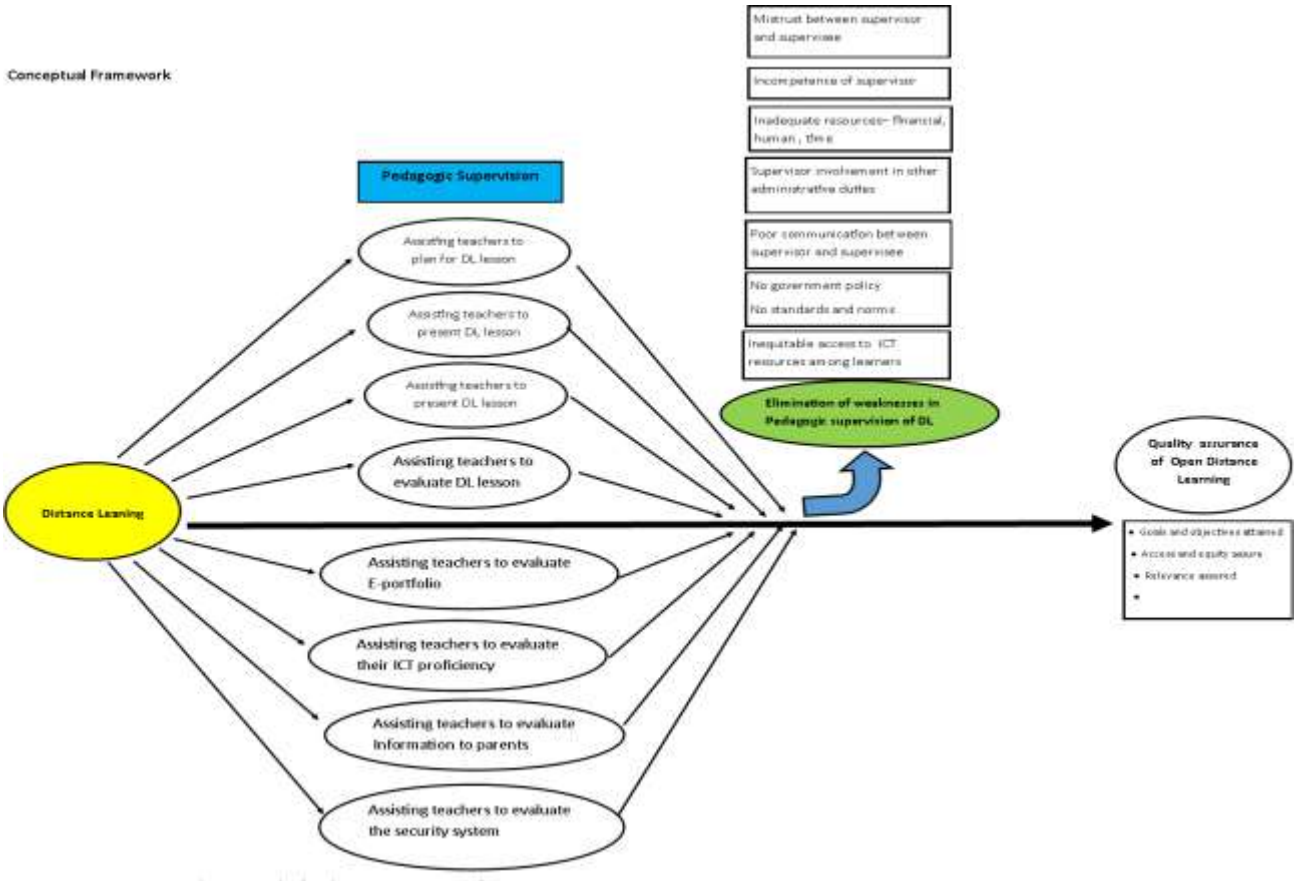


Figure 7: Conceptual Framework.



Source : Researcher

Table 5: Recapitulative Table of Variables and their indicators

Recapitulative Table of Variables and their indicators

Constructs	Independent variable	Indicators	Dependent variable	Indicators	Modalities	Items	Test
Pedagogic Supervision has a significant impact on the quality of distance learning in some secondary schools in the Yaoundé Municipality	Pedagogic Supervision	- Peer supervision - Collaboration in lesson plan - Evidence of group work - Clinical supervision - Demonstration of mastery of Technological Pedagogical Content Knowledge (TPACK)	Student's performance during a lesson from a distance	-accurate responses -high class participation -high performance -high attendance	1-strongly agree 2-agree 3-neutral 4- disagree 5-strongly disagree	1-40	Pearson correlation test and Linear Multiple regression
1. Pedagogic Supervision practices used have a significant impact on the quality of distance learning in some secondary schools	Supervision approaches	- Peer supervision - Peer evaluation - Collaboration in lesson plan - Evidence of group work - Evidence of Clinical supervision - Evidence of feedback of supervision	Student's performance During Distance Learning	-accurate responses -high class participation -high performance	1-strongly agree 2-agree 3-neutral 4- disagree 5-strongly disagree	1-9	Pearson correlation test and Linear Multiple regression

in the Yaounde municipality						
	Supervision practices -Classroom observation	-student centred lesson -teacher centred lesson -teacher/student interaction -class control - Mastery of the use of technology -work environment	Student's performance During Distance Learning	-accurate responses -high class participation -high performance - attendance roll call	1-strongly agree 2-agree 3-neutral 4- disagree 5-strongly disagree	Pearson correlation test and Linear Multiple regression
	Supervision practices - Documents/ Portfolios inspection	-work coverage -punctuality book -evaluation of scripts of students -lesson notes, students' notes -Open Educational Resources - computers -cell phone -modem, textbooks, boards -TV's and radio	Student's performance During Distance Learning	-accurate responses -high class participation -high performance -roll call		

	2. Models of Pedagogic Supervision - Techniques of supervision - Supervision tools - Aspects supervised	Face-to-face Supervision	- Presence of supervisor - participation of peer - participation mentor - participation of mentor	Student's performance During Distance Learning	-accurate responses -high class participation -high performance - attendance(Roll call)	1-strongly agree 2-agree 3-neutral 4- disagree 5-strongly disagree	10-29	Pearson correlation test and Linear Multiple regression
		E-Supervision	- Presence of supervisor - participation of peer - participation mentor - participation of mentor - use of technology mediation	Student's performance During Distance Learning	-accurate responses -high class participation -high performance - attendance(Roll call)	1-strongly agree 2-agree 3-neutral 4- disagree 5-strongly disagree		Pearson correlation test and Linear Multiple regression
		Blended Supervision	- Presence of supervisor - participation of peer - participation mentor - participation of mentor - use of technology mediation	Student's performance During Distance Learning	-accurate responses -high class participation -high performance	1-strongly agree 2-agree 3-neutral 4- disagree		Pearson correlation test and Linear

			- attendance(Roll call)	5-strongly disagree	Multiple regression
	Tools of supervision	- Printed work - Multimedia (USB stick, CD, DVD) - Audio Devices (cell phones, tape recorders, CD/VCD players, TV, Computer. - Social media accounts on What Sapp, Zoom, Instagram, Facebook, Skype etc. - Presence of Learning Management System such as Tesys e-learning platform, Blackboard collaborate, Moodle etc - Recording softwares such as amplitude, movie maker, PowerPoint, media converter etc.	Student's performance During Distance Learning	-accurate responses -high class participation -high performance - attendance(Roll call)	1-strongly agree 2-agree 3-neutral 4- disagree 5-strongly disagree	Pearson correlation test and Linear Multiple regression

	Aspects Supervised	- Teaching Methodology - Evidence of students evaluation - Schemes of work, work coverage, work progression, lesson plans, electronic books, articles ,etc. - Information to parents - ICT proficiency of teacher - Security system - Timetable - Attendance - Students engagement and participation - Evidence of statistics	Student's performance During Distance Learning	-accurate responses -high class participation -high performance - attendance(Roll call)	1-strongly agree 2-agree 3-neutral 4- disagree 5-strongly disagree		Pearson correlation test and Linear Multiple regression
3. Certain weaknesses and Issues in pedagogic supervision have a significant impact on the	Weaknesses in pedagogic inspection	- Wrong perception of pedagogic supervision - Incompetence of supervisor - Inadequacy of Open Educational Resource management - Insufficient time for supervision - Shortage of personnel - Poor communication	Student's performance During Distance Learning	-accurate responses -high class participation -high performance - attendance(Roll call)	1-strongly agree 2-agree 3-neutral 4- disagree 5-strongly disagree	30-38	Pearson correlation test and Linear Multiple regression

	quality of distance learning in some secondary schools in the Yaoundé municipality	- Inequitable access to ICT tools among learners - No supervision manual and standards

Chapter Summary

From the documents reviewed it is observed that there is very little literature as far as supervision of distance learning in the first and second cycles of education is concerned, especially in the sub-Saharan Africa, Cameroon inclusive. We also realize that practically e-supervision is probably the more convenient and effective supervision model in distance learning. According to Vazquez et al (2013) the new school contexts based on ICT are in a constant and recurring mode, and need new forms of supervision to ensure proper alignment of laws as well as teaching-learning methodologies, resources, and evaluation on digital learning environments (Oliva, & Pawlas, 1997; Gordon, 1997; Bogden, 2003; Vázquez, 2011; Weld, 2012; Afshari & Abu Bakar, 2012). Besides, inspection services educational supervision must face a technological restructuring of resources and networking, not only to develop their roles as supervisors, but understand how to implement right supervisory processes in contexts highly digitized (Clark, 2001; Rutherford, 2004; Zapeda, 2003; Sevillano, 2009). It should be borne in mind that supervision does not mean an inquisition or fault finding, but rather signifies guidance, assistance, and sharing of ideas with all those involved in the process of teaching and learning (Firth, & Pajak, 1998; Wiles & Bondi, 2000; Clark, 2008). Thus, supervision must integrate ICT from different perspectives for the development of different subsystems in which it operates (Glatthorn, 1990). However, the supervisors generally observe the teachers, evaluate the performance of the teachers, and take appropriate action. Their activities involve inspecting, checking, telling, rating, and monitoring, and for the development of these activities, supervisors behave as coordinators, consultants, group leaders, and evaluators. ICT can be a valuable resource that serves to enhance both these functions and processes of supervision of school contexts mediated by ICT (Vazquez Cano & Sevillano Garcia, 2013).

From literature review we have also come up with the concept of blended supervision, blending face-to-face supervision with E-supervision. This is a model we esteem is appropriate for the supervision of distance learning in the study area.

CHAPTER THREE

METHODOLOGICAL FRAMEWORK

The main purpose of this study was to first of all analyse the current practices and weaknesses of pedagogic supervision and secondly to identify pedagogic supervision practices in Distance Learning delivery mode carried out by school administration, namely, the principal with his collaborators (the dean of studies and heads of departments) and school inspectors from the Ministry of Secondary Education. Finally, this study was carried out to ultimately come up with an appropriate model of pedagogic supervision in some secondary schools in Yaounde municipality. To this effect, the research approach, the research design, population, sample size, and sampling techniques, data gathering instruments and its procedures, ethical considerations and finally analysis techniques are presented as follows.

3.1. RESEARCH APPROACH

According to Guba & Lincoln (1994); Denzin & Lincoln (1994a) there are two methods or approaches of research – qualitative and quantitative. The objective of a quantitative research is to discover the association between independent and dependent variables in a population. In most cases, quantitative methods used are contained by natural science and the plan is to explicate causal relationships and to make possible generalisation and also to forecast the future. It follows deductive logic. The research is also known as empirical research as it can be accurately and precisely measured.

The data collected by the researcher can be divided into categories or put into rank, or it can be measured in terms of units of measurement. Graphs and tables of raw data can be constructed with the help of quantitative research, making it easier for the researcher to analyse the results

On the other hand, qualitative research is a formless, exploratory research method based on small samples planned to provide insight and understanding of the dilemma situation (Mahotra & Peterson, 2006). It is predominantly used for any data collection such as interview or data analysis procedures that generates or uses non-numerical data. According to Leavy (1994), in the qualitative approach the aim is to explain rather than to predict phenomena and understanding things rather than to measure. It follows inductive logic.

Qualitative research is used to gain an in-depth understanding of human behaviour, experience, attitudes, intentions, and motivations, on the basis of observation and interpretation, to find out the way people think and feel. It is a form of research in which the researcher gives more weight to the views of the participants. Case study, grounded theory, ethnography, historical and phenomenology are the types of qualitative research.

Since this study is the beginning of a huge research we decided to adopt a quantitative approach because it can be measured accurately and precisely and because results can be generalized. In future a more robust and profound qualitative or mixed approach can be conducted. According to Elaine Eisenbeisz of Omega Statistics, an approach or method of a research is the logistics and the research design is the logic, recipe or blueprint of the research.

3.2. RESEARCH DESIGN

In this study we adopt a cross-sectional descriptive survey because the end results and be repeated and generalised. A descriptive study aims at identifying the various characteristics of a community or institution or problem under study but it does not deal with the testing of proposition or hypothesis. However, it can reveal potential relationships between variables thus setting the stage for more elaborate investigation later. A descriptive study also aims at a classification of the range of elements comprising the subject matter of study. The classification must satisfy two criteria, viz., (1) exhaustiveness and (2) mutual exclusiveness occurs when each item can be unambiguously placed in only one category in the system. Descriptive information could also be useful for explanation, prediction and creation of awareness.

Hence in in this research a cross-sectional descriptive survey was used to analyse current practices of pedagogic supervision and to identify practices of pedagogic supervision in distance learning environment, and also to explore different models of pedagogic supervision in the study area, as well as the difficulties and challenges that instructional supervisors face during supervisory activities. Quantitative data was collected using a questionnaire. Open-ended questions were added after a set of survey questions for each construct, to allow respondents to expand upon survey responses and to allow for elaboration in order to create rich discussions.

The reason behind choosing this method was its usefulness and pertinence to explain the phenomena evoked without simplification or over exaggeration of the authentic conditions (Yalew, 2006). Moreover, this research design enables the researcher to come up with valid conclusions of the study (McMillan &Schumacher, 1997). In addition to this, it is helpful to

collect descriptive information directly from the population, to employ simple statistical techniques and to facilitate drawing of generalizations about the large population on the basis of the representative sample of the study (Gay and Airasian, 2000; Yalew, 2006).

3.3. OF DATA

The prominent source of data for this study was essentially primary taken from members of the school administration, comprising heads of department, vice principals, principals, school supervisors and Inspectors from the divisional delegations of secondary education Office, and the Ministry of Secondary Education, who were working in these schools during the time this study was conducted in the Yaounde municipality.

3.4. POPULATION

The study was conducted in some secondary schools in Yaounde municipality. There were 454 secondary schools enlisted in the Divisional Inspectorate of secondary education. All these schools were involved in Distance and E-learning. Hence the target population of this study comprised, 454 principals, 612 vice principals, 10,896 heads of department working in these schools during the time of the study and 25 inspectors of the Ministry of Secondary Education.

3.5. SAMPLE SIZE AND SAMPLING TECHNIQUES

3.5.1. Sample size

As indicated above, from the total of 454 Secondary schools in Mfoundi Division, 6 schools were selected for this study. Hence from 454 principals, 612 vice principals, 10,896 heads of department working in these schools during the time of the study, 6 principals, 9 vice-principals, 110 heads of department and 25 school inspectors from the Ministry of Secondary Education were selected through random sampling technique. Having this number of principals, vice-principals and heads of department and inspectors we came up with a sample size of 150 administrators.

3.5.2. Sampling Techniques

At the beginning of all tasks of sampling, a list of all Secondary schools was taken from the Divisional Inspectorate of secondary education. Schools were grouped into the following categories; public, lay private and convectional. From these, schools were chosen by using simple random sampling. Two schools were chosen from each of these categories.

The members of school administration are all practically teachers. All principals, vice-principals and supervisors were taken as a sample using random sampling technique because, they were useful to give information and their number was manageable.

3.6. DATA GATHERING INSTRUMENTS AND PROCEDURES

The questionnaire was the main instrument used to collect data in the study.

Questionnaire

In order to get appropriate information to answer the research questions of this study a questionnaire was set for respondents mainly the administrative staff (principals, vice-principals, Heads of department) and some inspectors from the Ministry of Secondary Education. To develop the questionnaire; the researcher reviewed literatures and related materials. The focus of the questionnaire was made to target on analysis of pedagogic supervision practices, identification of the pedagogic supervision practices related to distance learning and challenges involved and finally to determining the various models of pedagogic supervision of distance learning. Moreover, it was made to contain the role of supervisors in Assisting teachers to plan, present, evaluate and classroom management, practices of pedagogic supervision in distance learning, the aspects of distance learning supervised and also, some selected Issues that affect the practice of supervision in the distance learning mode were included. It was structured in four parts. The first part was about demographic information of the respondent. The second part concerned the practices of pedagogic supervision related to distance learning with focus on supervisor's role to plan, present evaluate their lesson and classroom management. The third dwelled on tools and techniques used in supervision, and the aspects supervised. The last part was about issues and challenges involved in pedagogic supervision of distance learning.

The questionnaire comprised basically closed ended items. The closed ended items have five point Likert scale items (5=strongly agree, 4=agree, 3=undecided, 2=disagree, and 1= strongly disagree). This was because, scaled items are relatively objective, easy to respond and help respondents to choose one option based on their feelings. At the end of each a set of questions each construct there was an open-ended question to get the opinion of the respondent in order to complement the items.

Reliability of Instruments

Reliability of Instrument according to results from SPSS version 25 Cronbach's alpha value is .805.

Table 6: Reliability test

Item	Cronbach's Alpha if Item Deleted
Gender	.813
Level of Education	.813
Teaching Experience	.802
Experience as Sup	.806
Age	.804
Current Position	.813
Hours of Training	.811
I make informal classroom visits	.803
I inform before coming for lesson Observation	.800
I conduct pre-observation conference	.819
I conduct lesson observation	.809
I help teacher to evaluate their lesson	.802
I organize post observation conference	.808
I encourage collegial relationship among teachers	.803
Inspectors from Delegation of Secondary Education supervise lessons	.805
I encourage action research among teachers	.804
I carry out face-to-face supervision	.800
I carry out distance(e-supervision) supervision	.799
I do both face-to-face and e-supervision (blended supervision)	.826
I use paper or print-based delivery	.800
I use multi-media (USB sticks, CD,etc) delivery	.801
I use audio (phone calls, voice message) delivery	.804
I use social media(Whatsapp, facebook, skype) delivery	.807
I use integrated method combing all delivery formats	.802
I use learning management systems	.803
Methodology	.817
Digital Environment	.800
Statutory documents	.805
Information to parents	.803
ICT proficiency	.804
Security system of platform	.809
Timetable	.811
student attendance and dropout rate	.815
Student engagement	.814
collect statistics regularly	.803
Collect statistics on demand	.800

Supervision is perceived as a fault-finding mechanism	.800
Adequate budget is not allocated for supervision	.801
Supervisors do not have sufficient time for supervision	.801
No support system from higher officials	.799
Supervisors are not welled trained for distance learning supervision	.800
Supervisors are not well equipped to organize workshops and seminars	.801
Principals do not create smooth relationship among teachers	.803
Supervisors and staff members do not communicate freely	.799
No supervision manuals available	.799

The average Cronbach's Alpha is 0.805

3.7. DATA PROCESSING AND ANALYSIS

The data processing stage involved collection, organizing and analyzing raw data provided by volunteering school administrators. At the data collecting stage, a questionnaire in hard copies was given out to various school administrators with in schools selected.

The results of the information collected from the questionnaire were arranged in SPSS Excel overview lay-outs. It demonstrates the results of the questionnaire in a comparatively reader-friendly manner.

Some of the submitted questionnaires were returned empty for no obvious reason. Empty responses were excluded from the processing as they did not carry any information and could not contribute to estimating any coefficient or index for the study.

The data collected was subjected to descriptive and multiple ordinal logistic regression analysis using SPSS version 25.

The study was conducted using the cross-sectional descriptive survey design to analyse the practices, and weaknesses of pedagogic supervision, to identify practices of pedagogic supervision in distance learning and finally to determine a suitable model for pedagogic supervision of distance learning which were raised as the main objects of this study.

3.8. ETHICAL CONSIDERATIONS

According to University of Yaounde 1 standards and procedures, the researcher has to complete human subjects training before submitting the study proposal. The Divisional Delegation of Secondary Education in Mfoundi, Centre Region, Cameroon granted permission to conduct research in several secondary schools, and the research also received approval from the Dean of the Faculty of Education to conduct this study.

The researcher took all necessary precautions to protect research participants by ensuring that each participant understood his or her role in accordance with Ministry of Higher Education Policy for the Protections of Human Research Subjects under the IRB (Institutional Review Board) policies and procedures by ensuring that participants understood

(a) the goal and scope of the study;
(b) the requirements for participation;
(c) risks associated with the study;
(d) how the study may benefit participants and the school as a whole;
(e) that participation was voluntary and the submission of the survey served as consent to participate;
(f) that they could have chosen to withdraw from the study at any time;
(g) that the data collected would not be used for any other purposes; and
(h) The collection and storage of data.

The participants may have felt uneasy when responding to some of the survey and discussion topics, but there were no unexpected dangers linked with this study. Participants who felt uncomfortable with any of the questions avoided answering them in order to alleviate their discomfort.

Apart from the experience linked with thorough reflection on their supervising experience at their school, participants could not directly gain anything from participating in this study. The study's participants received no compensation or bonuses for taking part. The school as a whole could gain since they will receive a complete report of all study findings that could be utilized to support current procedures and enhance current models of supervision based on empirical research.

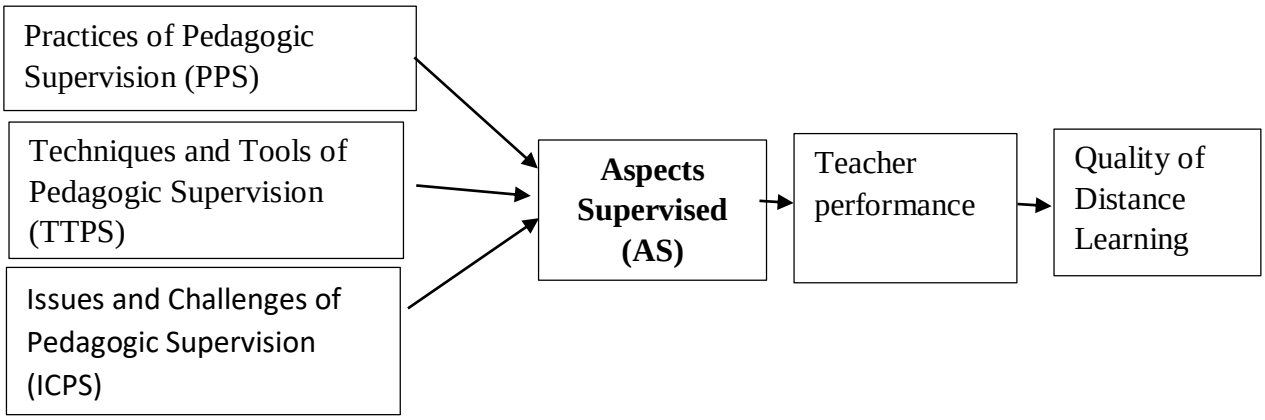
CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

This chapter presents the results of the Supervisor questionnaire survey, which was answered by 125 respondents. The chapter is divided into the following sections corresponding to various constructs of the research:

- Demographic information
- practices of pedagogic supervision
- Practices of pedagogic supervision in distance Learning with focus on techniques and tools used.
- Aspects of Distance learning supervised
- Issues and challenges related to pedagogic supervision of distance learning

Figure 8: Conceptual Framework simplified



4.1. RESULTS AND ANALYSIS

The researcher sent out 150 questionnaires and received back 132. Out of these, 5 were not filled at all for unknown reason and 2 were half-filled. 125 copies were taken for analysis.

4.2. DESCRIPTIVE STATISTICS

4.2.1. SECTION A: Demographic Information

Gender

Table 7: Frequency distribution for Gender

Gender	Frequency	Percent
M	78	62.4
F	47	37.6

The sample of supervisors consisted of 62.4 % male and 37.6 % female respondents, (total number of respondents N=125). The results of 62.4% male respondents was an indication that the supervisory work is still male dominated. Gender balance is not yet a reality in this field.

Age

Table 8: Frequency distribution for Age

Age range	Frequency	Percent
20-25	2	1.6
26-30	9	7.2
31-35	31	24.8
36-40	55	44.0
41 and above	28	22.4
Total	125	100.0

The average age of the participants was 37 years and most of the respondents 44.0 % (n=55) This is a ripe age to hold supervision function.

Level of Education

Table 9: Frequency distribution Level of Education

Level of Education	Frequency	Percent
DIPLOMA	11	8.8
FIRST DEGREE	34	27.2
HND	53	42.4
MASTERS DEGREE	26	20.8
PHD	1	.8
Total	125	100.0

Most respondents had Higher National Diploma (HND) as highest level of education, 42.4 % (n=53)

This appears low, considering the context in Cameroon where the educational sector needs revamping and the roll of supervisors is very crucial.

Teaching Experience in years

Table 10: Frequency distribution Teaching Experience

Teaching Experience in years	Frequency	Percent
1-5	7	5.6
6-10	29	23.2
11-15	39	31.2
16-20	46	36.8
20 AND ABOVE	4	3.2

Majority of respondents 36.8 % (n=46) had 16-20 years of teaching experience.

This is very appropriate as supervisors need to have considerable amount of teaching experience.

Experience as supervisor in years

Table 11: Experience as Supervisor

Experience in years	Frequency	Percent
1-5	34	27.2
6-10	51	40.8
11-15	20	16.0
16-20	18	14.4
20 AB0VE	2	1.6
Total	125	100.0

The average number of years of experience as Supervisor was 7 years, 40.8 % (n=51)

Current Position

Table 12: Frequency distribution of Current Position

Current Position	Frequency	Percent
Assigned supervisor (Inspector)	6	4.8
Principal	7	5.6
Vise Principal	13	10.4
Head of department	98	78.4
OTHER	1	.8
Total	125	100.0

Among the 125 respondents 4% (n = 5) were inspectors in the Ministry of Secondary Education, 5.5% (n = 6) were principals and 10.5% (n = 14) were vice- principals, 78.5 % (n=99) were heads of department, 0.8% (n = 2) performed disciplinary functions.

Majority of respondents were heads of department. This shows that heads of department play a great and vital role in the supervisory chain. They are closest to teachers. They are often undermined in the supervision chain.

Lastly, 56 % (n = 70) of the respondents stated having received training on teacher supervision, either during initial school training or through continuing education compared to 6.4 % who had received no training (n =8). Majority had received training on ICT.

The Mean Scores

The questionnaires was designed using a five-point Likert scale. As can be seen on the appendix.

Likert Scale Questionnaire

1. Strongly Disagree (SD) 2. Disagree (D) 3. Neutral (N) 4. Agree (A) 5. Strongly Agree (SA)

A five-point Likert scale is considered an interval scale. The mean is very significant. From 1 to 1.8, it means strongly disagree. From 1.81 to 2.6, it means disagree. From 2.61 to 3.40, it means neutral; from 3.41 to 4.20, it means agree; from 4.21 to 5, it means strongly agree.

4.2.2. Section B: Pedagogic Supervision Practices

Table 13: Means for Practices of Pedagogic Supervision (PPS) construct

Practices of Pedagogic Supervision	N	Minimum	Maximum	Mean	Std. Deviation
I make informal classroom visits	125	1	5	4.18	.817
I inform before coming for lesson Observation	125	1	6	4.08	.819
I conduct pre-observation conference	125	1	5	3.45	1.043
I conduct lesson observation	125	1	5	4.07	.650
I help teacher to evaluate their lesson	125	1	5	4.12	.747
I organize post observation conference	125	1	5	3.86	.989
I encourage collegial relationship among teachers	125	2	5	4.07	.686
Inspectors from Delegation of Secondary Education supervise lessons	125	1	5	4.15	.730
I encourage action research among teachers	125	2	5	4.16	.745

The results presented in table 4.7 show the mean scores of practices of pedagogic supervision. The cumulative mean score was 4.18. This indicates that most principals performed supervisory tasks such as regular informal(unannounced) visits to Classroom (Mean = 4.18) informing teachers before coming for lesson observation(4.08), conducting observation of lesson to improve teachers teaching skills (4.07), helping teachers to evaluate their lesson(4.12); Supervisors facilitate peer supervision among teachers to enhance collegial relationship(4.07), Inspectors from the Ministry of Secondary Education occasionally supervise lessons(4.15); Supervisors facilitate to engage teachers to participate in research activities to solve behavior issues(4.16).

With a mean score of 4.18 we assume that the respondents affirm that generally supervisors carry out their supervisory practices with regards to face to face pedagogic supervision. On one hand, conducting pre-observation conference before the actual lesson (mean = 3.46) and post observation conferences with teachers (mean = 3.86) were least performed and as such constitute major constraints to quality assurance practice in secondary schools, and on the other hand, Informal visits to classroom and helping teachers to evaluate their lessons were the most performed supervisory activities.

4.2.3. Section C: Practices of Pedagogic Supervision in Distance Learning

Techniques used for supervising Distance Learning.

Table 14: Descriptive statistics for Techniques used in pedagogic supervision

Techniques of Pedagogic supervision	N	Minimum	Maximum	Mean	Std. Deviation
I carry out face-to-face supervision	125	1	5	4.20	.783
I carry out distance(e-supervision) supervision	125	1	5	4.10	.821
I do both face-to-face and e-supervision (blended supervision)	125	1	5	2.82	1.100
Valid N (listwise)	125				

The table shows that respondents mostly carry out either face-to-face supervision or supervision from a distance and not both. Blended supervision a model I propose is the least practiced.

I. Tools used for supervision of Distance learning

Table 15: Tools used in Pedagogic Supervision of Distance learning

Tools used	N	Minimum	Maximum	Mean	Std. Deviation
I use paper or print-based delivery	125	1	5	3.85	.871
I use multi-media (USB sticks, CD, etc) delivery	125	1	5	4.05	.694
I use audio (phone calls, voice message) delivery	125	2	5	4.07	.674
I use social media(WhatSapp, Facebook, Skype) delivery	125	2	5	4.18	.587
I use integrated method combing all delivery formats	125	2	5	4.10	.766
I use learning management systems	125	1	5	3.54	1.167

I use paper or print-based (correspondence through regular mail delivery) (3.85). I use multi-media (USB sticks, CD,) delivery mode (4.05), I use audio (phone calls, voice messages) (4.07); I use social media (Email, Zoom, Whatsapp, skype etc) (4.18); I use integrated method

combining paper-based, phone calls, social media, online etc(4.10); I use Learning Management Systems such as Tesys e-learning platform, Blackboard collaborate, Moodle, etc.(3.54)

The most frequently used delivery format is social media, followed by phone calls and text messages. The least used delivery tools were regular mail correspondence and Learning Management Systems. Print based is an obsolete method of delivery whereas Learning Management Systems constitute modern and advanced form of delivery which most respondents are yet aware of. Leaning Management Systems are used especially in developed countries and in countries where distance learning is well advanced.

4.2.4. Section D: Aspects of Distance Learning Supervised

Table 16: Aspects Supervised (AS), indicate performance of the teacher

Aspects supervised	N	Minimum	Maximum	Mean	Std. Deviation
Methodology	125	1	5	3.54	.980
Digital Environment	125	1	5	3.85	.730
Statutory documents	125	2	5	4.09	.568
Information to parents	125	1	5	4.00	.751
ICT proficiency	125	1	5	3.98	.756
Security system of platform	124	1	5	3.15	.960
Timetable	125	1	5	3.16	1.043
student attendance and dropout rate	125	1	5	3.19	.965
Student engagement	125	1	5	3.29	.990
collect statistics regularly	125	1	5	3.80	.889
Collect statistics on demand	124	1	5	3.80	.855

I supervise methodology used in distance lesson proper (3.54); I supervise students' digital environment (3.85); I supervise schemes of work, work coverage, lesson notes, books, articles etc; (4.09) I supervise Information to parents (4.00); I supervise teacher ICT proficiency (3.98); I supervise System Security of the platform used (3.15); The Supervisor makes sure a strict timetable for distance learning is followed (3.16); I inspect attendance and students drop out rate (3.19); I inspect Students' engagement and participation (3.29); I collect statistics regularly (3.80); I collect statistics on demand (3.80)

The results indicate that only two aspects, supervision of statutory documents and information to parents, are sufficiently supervised in distance learning mode. Important aspects such are methodology, students' attendance and engagement are not sufficiently supervised. This is very pertinent and a great cause for concern; this is the object of this research.

4.1.5. Section E: Issues related to supervision of Distance Learning

Table 17: Issues and Challenges of Pedagogic Supervision of Distance Learning

	N	Minimum	Maximum	Mean	Std. Deviation
Supervision is perceived as a fault-finding mechanism	125	1	5	3.75	1.037
Adequate budget is not allocated for supervision	124	1	5	3.85	.955
Supervisors do not have sufficient time for supervision	125	1	5	3.88	.885
No support system from higher officials	125	1	5	3.93	.863
Supervisors are not welled trained for distance learning supervision	125	1	5	3.93	.854
Supervisors are not well equipped to organize workshops and seminars	125	1	5	3.91	.907
Principals do not create smooth relationship among teachers	125	1	5	2.98	.946
No supervision manuals available	125	1	5	3.96	.766
Supervisors and staff members do not communicate freely	125	1	5	3.71	.914
Valid N (listwise)	124				

Supervision is perceived as fault finding mechanism rather than a means to improve instructional process (3.75). Adequate budget is not allocated for supervision program of distance Education (3.85) Supervisors are highly engaged on other tasks so they do not have time to assist all teachers to improve Distance Learning (3.88). There is no support system from higher officials for supervision (3.93). Supervisors are not well trained to support teachers regarding distance learning improvement (3.93).

Supervisors are not well equipped to arrange workshops and seminars which help for distance learning improvement. (3.91) Principals do not create smooth relationship among teachers and between themselves for improvement of teaching and learning process. (2.98) Supervisors and staff members do not communicate freely during supervision. (3.71) Supervision manuals of distance learning are not available, so Supervisors do not follow standards and norms regarding supervision of distance Learning. (4.01)

From the statistics we can see that most of the respondents agree that manuals for supervision of distance learning are not available, this is probably due to the absence of policy on distance learning. Only a small proportion of respondents are of the opinion that principals do not create smooth relationship among teachers and between themselves for the improvement of distance learning. This is a major setback which policy makers have to work on in order to set proper supervision standards and yards sticks. Very significant proportions of respondents do agree that supervisors do not have enough resources and budget for the supervision purposes.

Most of the respondents agree that there are no sufficient manuals and guidelines for the supervision of distance learning. This aspect is very crucial as this is what sets the quality and standards of distance learning.

Modelling Using Multiple Regression

From the descriptive analysis we noticed that the various constructs in this research affect the quality of distance learning in varying degrees which we could not be determined at this point. This was very crucial for determining an appropriate model and important aspects to consider for supervision of distance learning. Of course we adopt an integrated model combining face-to-face supervision and e-supervision but what aspects should we lay emphasis on and how significant is the effect of each construct on the quality of distance learning and to what degree? Hence we proceeded to carrying out multiple regression analysis.

4.1.6. Multiple Regression Analysis

This is a statistical model that utilizes two or more quantitative and qualitative explanatory variables (x1, xp) to predict a quantitative dependent variable Y. Caution: have at least two or more quantitative explanatory variables.

Before carrying out regression analysis it was necessary to find out if the data set permitted linear regression or ordinal regression. This was done by carrying out normality test. If our data sets were normally distributed then we would carry out Linear Regression and

Pearson Correlation which constitute parametric methods, otherwise we would proceed with non-parametric method involving ordinal regression and Spearman Rank Correlation.

Table 18: How to choose appropriate regression analysis

Normally Distributed Likert Scale Data (Parametric method)	**Not Normally Distributed Likert Scale Data** (Non- parametric method)
Linear Regression	Ordinal Regression
Person Correlation	Spearman Rank Correlation

Test of Normality

1. Transformation of data sets
2. Test of Normality.

   Kolmogorov Smirnov - for data sets more than 100

   Shapiro Wilks - for data sets less than 100

In order to test for normality, the items or data sets were transformed according to the different constructs as follows: Practices Pedagogic Supervision (PPS), Aspects Supervised (AS), Techniques and Tools of Pedagogic Supervision (TTPS), Issues and Difficulties in Pedagogic Supervision (IDPS)

Table 19: Test of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Practices of Pedagogic supervision	.126	125	.000	.961	125	.001
Tools and techniques used in pedagogic supervision	.121	125	.000	.964	125	.002
Issues and challenges in pedagogic supervision	.174	125	.000	.882	125	.000
Aspects supervised	.134	125	.000	.800	125	.000

The results of the normality test we carried out showed that Kolmogorov-Smirnov (for data sets more than 100) value (.000) was statistically significant. This value is an indication that our data was not normally distributed. Therefore, we adopted Ordinal Regression and Spearman Rank Correlation

Ordinal Regression

$R^2 = \beta_0 + \beta_1(X_1) + \beta_2(X_2) + \beta_3(X_3) + \mu$ (for Multiple linear regression)

Pseudo $R^2 = \beta_0 + \beta_1 \ln X_1 + \beta_2 \ln X_2 + \beta_3 \ln X_3 + \mu$ (for Multiple ordinal logistic regression)

$AS = \beta 0 + \beta 1 \ln (PPS) + \beta 2 \ln (TTPS) + \beta 3 \ln (IDPS) + \mu$

Practices of Pedagogic Supervision (PPS)

Techniques and Tools of Pedagogic Supervision (TTPS)

Issues and Difficulties in Pedagogic Supervision (IDPS)

Aspects Supervised (AS)-teacher performance

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

Positive estimate or coefficient is interpreted as follows:

1. For every one-unit increase on an independent variable, there is a predicted increase (of a certain value) in the log odds of falling at a higher level on the dependent variable
2. More generally, this indicates that there is an increased probability of falling at a greater level on the dependent variable as values rise on an independent variable.

Negative Estimate or coefficient is interpreted as follows:

1. For every one-unit increase on the independent variable, there is a predicted decrease of a certain amount in the log odds of being in a higher level on the dependent variable.

This simply means that, as the values of independent variable increase, there is a decrease probability of falling at a higher level on the dependent variable.

Results of Ordinal Regression

Table 20: Model Fitting

Model Fitting Information

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	710.609			
Final	697.530	13.079	3	.004

Link function: Logit.

Goodness-of-fit

Goodness-of-Fit

	Chi-Square	df	Sig.
Pearson	2854.111	3143	1.000
Deviance	693.371	3143	1.000

Link function: Logit.

Table 21: Pseudo R-Square

Pseudo R-Square

Cox and Snell	.099
Nagelkerke	.100
McFadden	.018

Link function: Logit.

Table 4. 16: Parameter Estimates

	Estimate		Std. Error	Wald	df	Sig.
Threshold	[AS = 2.45]	1.540	2.113	.531	1	.466
	[AS = 2.73]	2.251	1.991	1.279	1	.258
	[AS = 2.82]	2.672	1.950	1.878	1	.171
	[AS = 2.91]	3.423	1.911	3.208	1	.073
	[AS = 3.00]	3.745	1.903	3.872	1	.049
	[AS = 3.09]	4.001	1.900	4.435	1	.035
	[AS = 3.18]	4.399	1.899	5.369	1	.020
	[AS = 3.20]	4.482	1.899	5.571	1	.018
	[AS = 3.27]	5.272	1.907	7.642	1	.006
	[AS = 3.36]	5.703	1.915	8.873	1	.003
Location	PPS	.594	.372	2.556	1	.110
	TTPS	1.102	.386	8.164	1	.004
	IDPS	-.026	.256	.010	1	.921

Table 22: Test of Proportional odds

Test of Parallel Lines[a]

Model	-2 Log Likelihood	Chi-Square	df	Sig.
General	642.478[b]	55.052[c]	75	.960

The null hypothesis states that the location parameters (slope coefficients) are the same across response categories.

a. Link function: Logit.

b. The log-likelihood value cannot be further increased after maximum number of step-halving.

c. The Chi-Square statistic is computed based on the log-likelihood value of the last iteration of the general model. Validity of the test is uncertain.

The model fitting information indicated a statistically significant value of 0.004 with a Chi-square value of 13.079; a goodness-of-fit statistically non-significant value of Pearson and Deviance both 1.000; for the Pseudo-R Square, the Nagelkerke value was not significant (.100). These are indicators that the model fits the data very well. Coherent

1. Practices of Pedagogic Supervision (PPS) was a positive predictor of change in Aspects Supervised (AS)-teacher performance, however the value wasn't statistically significant (.110). For every one-unit increase in PPS, there is a predicted increase of .594 in the log odds of being at a higher level on teacher performance.
2. Techniques and Tools of Pedagogic Supervision (TTPS) was a statistically significant positive predictor (.004) of change in Aspects Supervised (AS)-teacher performance. For every one-unit increase in TTSP, there is a predicted increase of 1.102 in the log odds of being at a higher level on teacher performance.
3. Issues and Difficulties in Pedagogic Supervision (IDPS) was negative predictor of Teacher performance or quality of distance learning but not statistically significant (.921).

The negative coefficients (value of -.026) shows that for every one-unit increase in IDPS, there a predicted decrease of -.026 in the log odds of being on a higher level on AS (teacher performance).

The results indicate that the construct that is statistically significant and can predict the quality of distance learning is the Techniques and Tools used in distance learning and they positively determine the quality of distance learning.

$AS=\beta0 + \beta1\ (PPS) + \beta2\ (TTPS) + \beta3\ (IDPS) + \mu$

$AS=\beta0 + .594\ (PPS) + 1.102\ (TTPS) + -.026\ (IDPS) + \mu$

From the equation we notice that techniques and tools used are a positively significant predictor of the aspects supervised (AS) which constitute an` indicator of the quality of distance learning. This implies that supervisors should pay attention to the techniques and tools used for improvement in these aspects will positively affect the quality of distance learning.

Conversely, issues and challenges are negative predictors of the quality of distance learning. These issues should not be overlooked even though they are not statistically significant predictors of the quality of distance learning.

CHAPTER FIVE

DISCUSSIONS, SUGGESTIONS AND CONCLUSION

5.1. DISCUSSIONS

5.1.1. Demographic Information

The results of 62.4% male respondents was an indication that the supervisory work is still male dominated. Gender balance is not yet a reality in this field. Our initial analysis showed that 56 % of respondents stated having received training (initial and/or continuing) in teacher supervision. This appears low, considering the context in Cameroon where the educational sector needs revamping and the roll of supervisors is very crucial. It must be mentioned here that studies on skills development and knowledge acquisition contexts for school principals are few and far between; indeed, the scope and depth of studies on teacher development far outweigh those targeting principals. Principals who had received teacher supervision training were more likely to ask their teacher to perform a self-evaluation during an individual post-observation meeting (April & Bouchamma, 2015). Indeed, principals and all supervisors need to take up appropriate training on the subject matter and be followed up longitudinally to implement the necessary supervisory practices.

Our analysis showed that there was no statistically significant correlation between the demographic information and supervisory practices contrary to a similar study carried out in Spain (Vazquez C., & Sevillano G., 2013).

5.1.2. Pedagogic Supervision Practices

The results presented in table 4.07 show the mean scores of practices of pedagogic supervision. The cumulative mean score was 4.18. This indicates that most principals performed supervisory tasks such as regular informal(unannounced) visits to Classroom (Mean = 4.18) informing teachers before coming for lesson observation(4.08), conducting observation of lesson to improve teachers teaching skills (4.07), helping teachers to evaluate their lesson(4.12); Supervisors facilitate peer supervision among teachers to enhance collegial relationship(4.07), Inspectors from the Ministry of Secondary Education occasionally supervise lessons(4.15); Supervisors facilitate to engage teachers to participate in research activities to solve behaviour issues(4.16).

With a mean score of 4.18 we assume that the respondents affirm that generally supervisors carry out their supervisory practices. On one hand, conducting pre-observation conference before the actual lesson (mean = 3.46) and post observation conferences with teachers (mean = 3.86) were least performed and as such constitute major constraints to quality assurance practice in secondary schools. Supervisors need to step up their efforts on these aspects. On the other hand, Informal visits to classroom and helping teachers to evaluate their lessons were the most performed supervisory activities. The most recent research on teacher supervision training for principals showed that the most used pedagogical action remains that of participating in more theoretical training activities with no particular longitudinal follow- up by external experts (Marshall, 2013). This type of training actually generates few sustainable changes in how principals supervise their teachers.

Our respondents gave the following answers in response:

- Supervise Time management in lesson preparation and execution,
- Supervise implementation of corrections after observation,
- Organize workshops, conferences and seminars on recent trends of assessment of students,
- Interview learners to get their perception of the lesson
- Hold departmental meetings to analysis, identify problems and seek solutions to them.

5.1.3. Pedagogic Supervision Practices in Distance Learning

According to (Eric G., 2009) differences between supervision in a traditional environment and supervision in a cyber-environment seem to lie mostly in the perspective the observer uses to view a lesson and the technology used to conduct the observation. The results from our data analyses fall in line with this observation. Multiple regression analyses showed a statistically significant relationship between the techniques and tools used in supervision and the aspects supervised.

5.1.4. Techniques used in Supervision of distance learning

I carry out Face- to- face supervision (4.2) I carry out supervision from a distance(E-supervision) by use of telecommunication technologies (4.1) I carry out both Face-to-face and E-Supervision (blended supervision) (2.82).

Figure 9: Face-to-Face Supervision

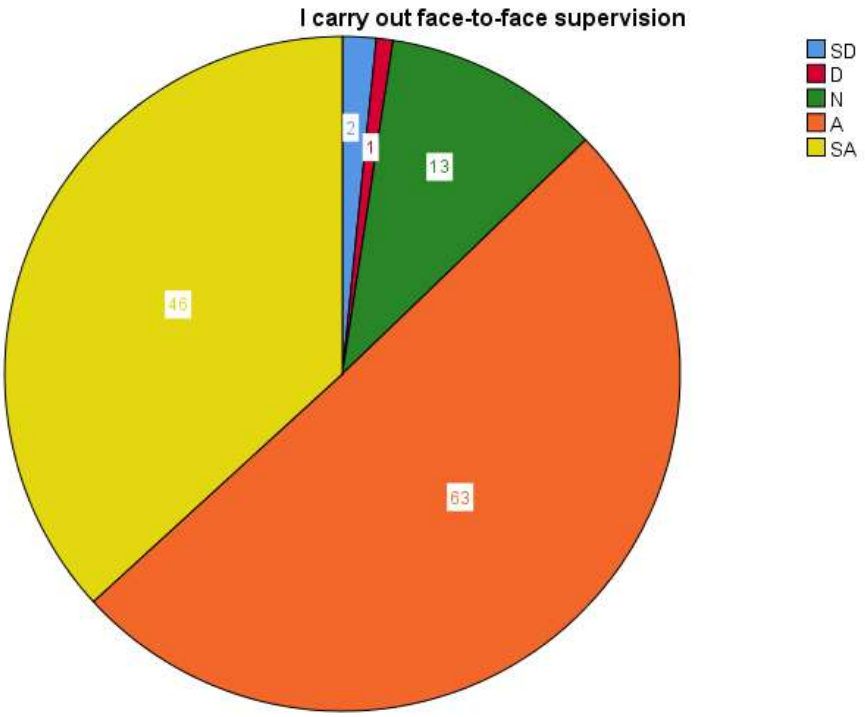


Figure 10: E-Supervision

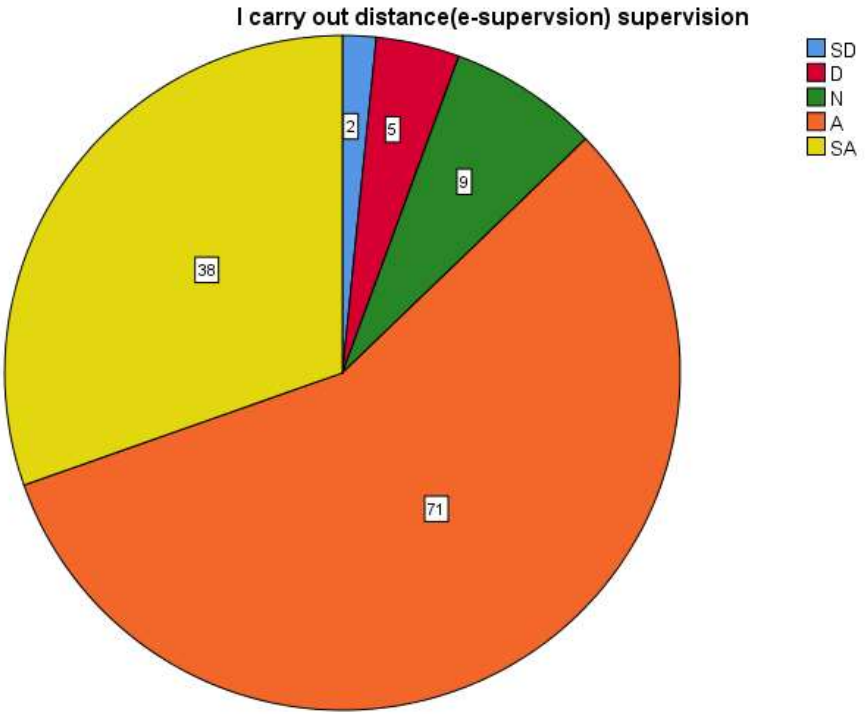
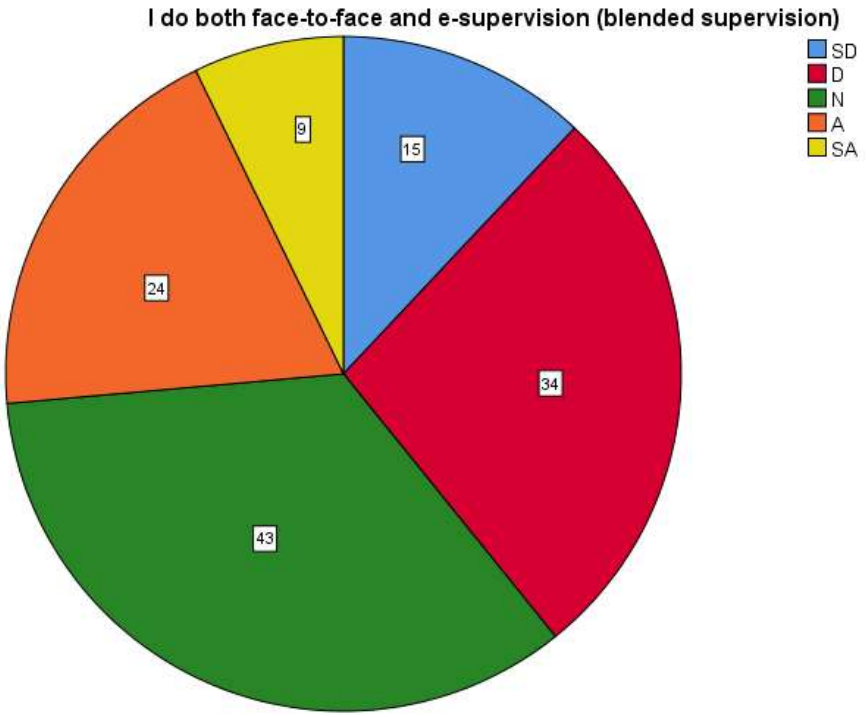


Figure 11: Blended Supervision



Blended Supervision is the model we advocate in this study. It is not yet known and popular in our educational system, that is why the mean score is so low. Most of the respondents agree carrying out entirely face-to-face supervision and the other fraction entirely E-supervision, but only few respondents admit integrating the two techniques. In the context of the study area where some parts are not having stable internet connection and power supply, it is farfetched to carry out entirely e-supervision.

The advantage of traditional face-to-face supervision is that there rests on the fact that there is ease of communication between the supervisor and teacher, no costly technological mediation, and the supervisor can conveniently monitor the digital environment, tools, techniques and methodology used and can make certain technical corrections instantly. However, carrying out entirely face to face supervision, the supervisor will not be able to get the feel and experience of a student or learner since the teacher and the learner are separated geographically. It is important to get the lesson from the perspective of the student.

On the other hand, carrying out e-supervision is more appropriate in the sense that the supervisor perceives the lesson just as the learner with the same experience and can give a better judgement on the quality of the lesson. This is the reason we suggest the integrated or blended

model of supervision whereby the pre-observation plan is done face-to-face and the observation aspect is done from a distance. The post-observation and evaluation aspects can be done face to face or from a distance.

Tools used in supervision of distance learning

This study shows how supervisors, who are responsible to carry out their functions in digital learning environments, are not adequately trained for monitoring and supervising these environments. Most of them are not aware of virtual tools used by teachers in developing their classes such as Learning Management Systems.

I use paper or print-based (correspondence through regular mail delivery) (3.85). I use multi-media (USB sticks, CD,) delivery mode(4.05), I use audio (phone calls, voice messages)(4.07); I use social media (Email, Zoom, Whatsapp, skype etc) (4.18); I use integrated method combining paper-based, phone calls, social media, online etc(4.10); I use Learning Management Systems such as Tesys e-learning platform, Blackboard collaborate, Moodle, etc.(3.54)

According to our survey the most used delivery format is through social media, followed by phone calls and text messages. The least used delivery tools were regular mail correspondence and Learning Management Systems. Print based is an obsolete method of delivery whereas Learning Management Systems constitute modern and advanced form of delivery which most respondents are not yet aware of. Leaning Management Systems are used especially in developed countries and in countries where distance learning is well advanced. Supervises need training workshops and seminars to get acquainted with these tools and techniques.

Aspects of Distance Learning Supervised

These aspects are indicators of quality digital lesson and teaching. These are the aspects the supervisor observes and assesses the teacher on in a digital environment.

I supervise methodology used in distance lesson proper (3.54); I supervise students' digital environment (3.85); I supervise schemes of work, work coverage, lesson notes, books, articles etc; (4.09) I supervise Information to parents (4.00); I supervise teacher ICT proficiency (3.98); I supervise System Security of the platform used (3.15); The Supervisor makes sure a strict timetable for distance learning is followed (3.16); I inspect attendance and students drop out rate (3.19);

I inspect Students' engagement and participation (3.29); I collect statistics regularly (3.80); I collect statistics on demand (3.80)

The results indicate that only two aspects, supervision of statutory documents and information to parents, are sufficiently supervised in distance learning mode. Important aspects such are methodology, students' attendance and engagement are not sufficiently supervised. This is very pertinent and a great cause for concern; this is the object of this research. These aspects are indicators of the quality of distance learning and must be duly followed up in order to ensure the quality of distance learning. It shows that supervision of distance learning is still practically done as in face to face mode.

Issues related to supervision of Distance Learning

Supervision is perceived as fault finding mechanism rather than a means to improve instructional process (3.75). Adequate budget is not allocated for supervision program of distance Education (3.85) Supervisors are highly engaged on other tasks so they do not have time to assist all teachers to improve Distance Learning (3.88). There is no support system from higher officials for supervision (3.93). Supervisors are not well trained to support teachers regarding distance learning improvement (3.93).

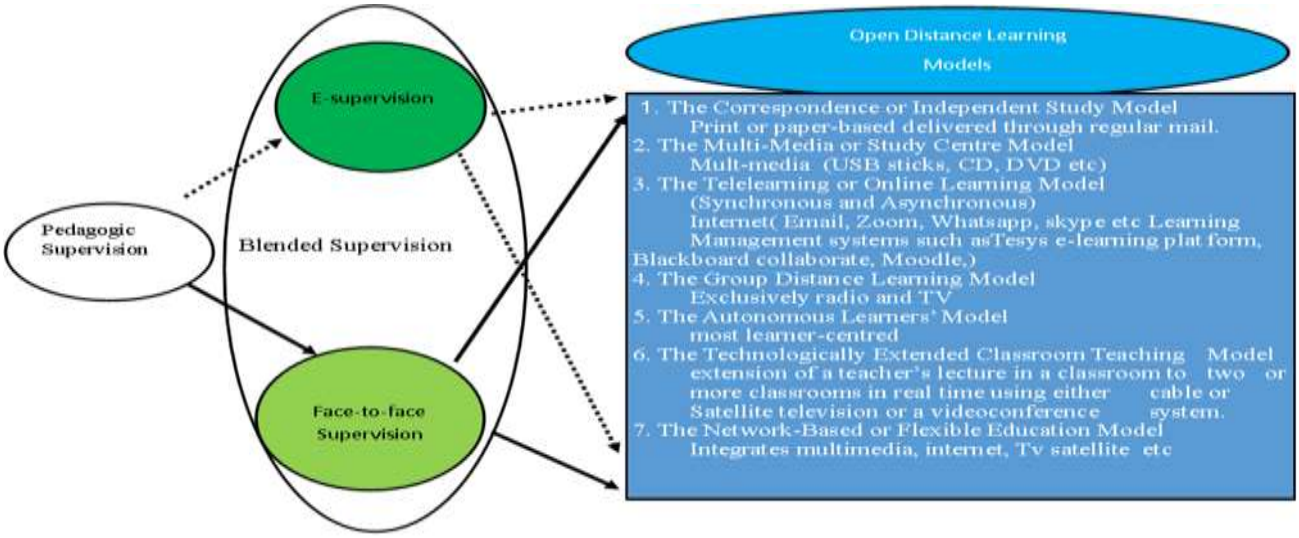
Supervisors are not well equipped to arrange workshops and seminars which help for distance learning improvement. (3.91) Principals do not create smooth relationship among teachers and between themselves for improvement of teaching and learning process. (2.98) Supervisors and staff members do not communicate freely during supervision. (3.71) Supervision manuals of distance learning are not available, so Supervisors do not follow standards and norms regarding supervision of distance Learning. (4.01)

From the statistics we can see that most of the respondents agree that manuals for supervision of distance learning are not available, probably due to the absence of policy on distance learning. This is a major setback which policy makers have to work on in order to set proper supervision standards and yards sticks. These documents provide a guide and blueprint for the follow up of distance learning. Otherwise each institution and teacher will do it their own way. Only a small proportion of respondents are of the opinion that principals do not create smooth relationship among teachers and between themselves for the improvement of distance learning. Very significant proportions of respondents do agree that supervisors do not have enough resources and budget for the supervision purposes. If we want things to work well, we must be ready to genuinely put the necessary resources.

5.1.5. Blended Pedagogic Supervision (BPSM) of Distance Learning

Blended Pedagogic Supervision Model (BPSM) or Integrated Pedagogic Supervision (IPSM) is what we deem appropriate for pedagogic supervision in distance learning according to the outcome of this research. This involves blending Face-to-face Supervision with E-supervision (30-70%). In the context of the study area where some parts are not having stable internet connection and power supply, it is farfetched to carry out entirely e-supervision. This takes advantage of the positive aspects of the two techniques. In this light emphasis should be laid on tools and techniques when E-supervision is involved. Results of Ordinal Logistic Analysis show that techniques and tools used in distance learning constitute a positively significant predictor of distance learning. We can use basically the same tools and techniques for carrying out distance learning in supervision.

Figure 12: Blended Supervision



Source: Researcher

5.2. SUGGESTIONS

In light of the results of the present study, it is evident that teacher supervision regarding distance learning must be a priority shared not only by the school principal and district leaders but also the Ministry of Education and universities in terms of initial teacher training and follow-up. These professionals and institutions must strive together to welcome changes in existing training formats, examine networking and collaborative opportunities, and rethink how the competencies of school principals in individual and collective pedagogical supervision of distance learning can become more effective. We make the following suggestions for the improvement of pedagogic supervision in distance learning:

1. The Ministry of Secondary Education sets standards and norms of Quality Distance Learning in the Secondary Education and disseminated to all institutions of Learning involved in distance learning. An efficient mechanism for identifying, categorizing, setting standards and quality indicators of a virtual school and reaching types of digital or e-learning institutions is necessary. A collaborative effort between officials and experts of the Ministries of Education, and the Schools develop a document to be used as a reference tool for educational entities to begin the thought process around collecting data about schools, teachers, and students engaged in distance learning. The guide provides recommendations for data collection, establishing the groundwork for identifying the data elements necessary to meet the information needs of policymakers, administrators, instructors, and parents.

The major emphasis of the document is that decision makers need access to quality data to make accurate, reliable and cost-effective decisions about their virtual programs and that unless these issues are addressed, the non-existent or inconsistent collection and reporting of virtual education information will have negative effects on the quality of data and decision making at the classroom, school, division, region, and national levels. The new data would allow one to speculate on a course of action for professional development for digital administrators by providing valuable insight as to what the artifacts and quality indicators are for quality instruction and offer guidance on how digital administrators could use their time most efficiently and effectively to support their staff.

2. Principals and all supervisors be regularly trained and accompanied longitudinally in their teacher supervision projects through learning community approach. This approach will meet the cognitive, affective, and ideological demands of these school leaders through co-training activities, collaborative initiatives, and the sharing of knowledge and effective practices.

According to (Vazquez C. & Sevillano G., 2013), a supervisor must be able to live with change and help teachers adapt to the changing needs of the society and of children and youth. To accomplish this mission, he/she should be able to work effectively in both one-to-one relationships and in groups, as well as profoundly use and understand the way in which new digital learning environments are developing new ways of learning and interaction in classrooms. As we can observe in the results, supervisors do not perform effective oversight of virtual learning environments and online teaching-learning processes. These virtual learning environments are unobservant, badly monitored, and targeted.

3. Design a working network to support internal work of supervisors. This social network should be orientated to develop work in group and share the work with 2.0 tool
4. The fourth Sustainable Development Goal recommends that policy-makers ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. Inclusive and equitable quality education can be achieved, if adequate measures are in place, to widen access to learning. Developing ODL facilities can be one strategy of achieving this goal (Nkwenti, N. 2016).

A synergy between telecommunication companies, the Ministries of Education and institutions offering distance learning would bridge the gap between the disadvantaged areas and more privileged ones, by providing accessibility to power and internet facilities, especially in the remote areas.

5.3. PROSPECTS

Many research projects generate a list of questions which serve as a basis for further research. The following points which this researcher could not investigate could serve as a spring board for further research.

- A quantitative approach was adopted for this Study in order to ultimately generalize results. Also a more vigorous qualitative approach, seeking opinions and perceptions of respondents through interviews would be more robust and profound.

A qualitative approach can henceforth be carried out on the same actors in order to have a profound and thorough research through interviews and focus groups.

- This study focused entirely on the administrative side of supervision. To paint a more comprehensive picture of the nature of supervision in distance learning, questions need to be addressed from the teacher's point of view to see how they align with the impressions of the administrators. Therefore, a logical next step would be to examine how the teachers feel about the quality of supervision in their schools.
- Since many traditional schools are getting increasingly involved with in distance learning, a study that investigated artifacts and quality indicators for this environment would be very beneficial. Along these lines, the field would benefit from knowing what measures these schools have in place to assess and assists the ranks of teachers who provide this service? A study such as this would prove especially valuable if it concluded with an electronic database-driven observation and assessment tool capable of prescribing an instructional improvement plan.

- All along we have been working with the concept and notion that distance learning instructors need to be computer literate. It is possible to carry out a great distance lesson using expertise of computer technicians just as a TV broadcaster would use the skills of sound and video technicians to pass out information. It would be interesting to investigate this notion profoundly.
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CONCLUSION

Due to advancement in telecommunication industry and the fact that the world is plagued with socio-political and health crisis, Distance Learning has become a major means of imparting education. This calls for effective ways and means of supervision of this new form of education in order to guarantee the quality and ensure conformity with norms and standards of education. This is what pushed the researcher to investigate in order to come out with an appropriate model for pedagogic supervision of Distance Learning. Hence the following specific questions were posed:

- What are the current Pedagogic Supervision Practices in Distance Learning delivery mode?
- How can Pedagogic Supervision be carried out in Distance Learning mode?
- What Model of Pedagogic Supervision can be used to supervise Distance Learning in secondary schools in the study area?

In order to respond to these questions a general objective was set up to analyse current practices of distance learning in a bid to come up with a model of pedagogic supervision of distance learning suitable for secondary schools. Hence the follow following specific objectives:

- Analyse current practices of pedagogic supervision in Secondary Schools.
- Identify practices of pedagogic supervision in Distance learning.
- Develop a model of pedagogic supervision in distance learning for secondary schools

A thorough literature review was carried out in order to avail the researcher with the state of art of pedagogic supervision of distance learning and various theories involved. The theory of social constructivism by Vygotsky supports teacher's professional development. The theory of equivalence advocates equal learning experiences for all learners irrespective of the environment, whereas the theory of adult learning emphasizes the importance of engaging actively with learning content that is highly relevant to current problems of practice, providing

opportunities to apply learning in real-life settings, and supporting professional collaboration with peers (Darling-Hammond & Richardson, 2009). Teachers and supervisors are apprehensive about change. Supervision is about change or enhancing the capacities of teachers. According to the theory of change teachers are ready for positive change in attitude if they are involved in decision making and if they see relevance to the problems they face.

We adopted quantitative research approach due to its ability to generalize results and because it doesn't require a large population. From a population of 3200 school administrators and inspectors, we got our sample. A descriptive cross-sectional design survey was employed on a sample size of. 150 participants with a 5 point Likert scale. Before applying the instrument, its reliability was tested which gave an acceptable Cronbach's Alpha value of 0.805 and the necessary ethical considerations such as the anonymity and consent of the respondents.

Descriptive statistics and multiple ordinal logistic analysis techniques were used to analyze the data collected to get our results presented in the paragraphs that follow.

This study demonstrates how distance learning in secondary schools in the Yaounde municipality is not sufficiently supervised and how supervisors, who are responsible for carrying out their functions in digital learning environments, are not adequately trained for monitoring and supervising these environments. They are not aware of up-to-date digital tools and techniques used in the supervision of distance learning. Most of them use the same method to supervise distance learning as if it were face-to-face format without taking note of the peculiarities in a digital environment. The theory of change is manifested here as administrators are resistant to change. There is need for capacity building as the theory of adult learning and social constructivism advocates. In the light of the theory of equivalence, it the place of the pedagogic supervisors to ensure learners have equitable access to learning experiences irrespective of their environment to bridge digital divide gap, for example, between those in the rural and urban areas and between the poor and the rich.

The multiple ordinal regression analysis results showed that emphasis should be laid on tools and techniques used in supervision. Supervisors should avail themselves with modern tools and techniques used in distance learning which can also be used in supervision. Learning Management Systems such as MOODLE and Blackboard collaborate are great tools used in modern digital learning environments. Most of the supervisors are found to use computers to support their supervisory duties, observation of practice and provision, and research, but they are far less well-versed in educational applications of ICT.

As illustrated in fig. 1, and from literature, supported by research analysis we realize that the appropriate model to supervise distance learning is E-supervision, wherein the supervisor, at a distance, sits in as one of the students, sharing the same experience. This is probably the most convenient model to supervise distance learning in secondary schools and even brick-and-mortar learning format. However, given the context of the study area, inadequate resources, weak internet band width, low and frequent power cuts, it is most convenient to use mixed supervision methods, that is, Blended Pedagogic Supervision Model (BPSM), wherein part of the process (30-70%) is done from a distance and another part carried out face-to-face. We believe that with this model and the suggestions we have made, the quality of Open and Distance Learning (ODL) in our secondary schools would be greatly enhanced.

In perspective, a qualitative study can be carried out to a more profound and robust through interviews and focus group with the same target population. Also, a comparative study of Pedagogy of Distance Learning in various secondary schools would be a good pedagogic supervision tool to spur up schools to enhance the quality of their distance learning.

We acknowledge that this work is not perfect, because first of all, the researcher is a still at an infant stage. Secondly, because resources, material and financial are not readily available. Thirdly, accessibility to the necessary documents, target population and other resources was an uphill task. Therefore, all constructive criticisms and suggestions are welcome in order to improve on this work as this is just the beginning of a long journey.

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APPENDICES

Appendix A

REPUBLIQUE DU CAMEROUN
Paix-Travail-Patrie
UNIVERSITE DE YAOUNDE I
FACULTE DES SCIENCES DE L'EDUCATION
DEPARTEMENT DE CURRICULA ET EVALUATION

REPUBLIC OF CAMEROON
Peace-Work-Fatherland
UNIVERSITY OF YAOUNDE I
FACULTY OF EDUCATION
DEPARTEMENT OF CURRICULUM AND EVALUATION

The Dean

N° 52 /UY1/FSE/VDSSE

AUTHORISATION FOR RESEARCH

I the undersigned, **Professor MOUPOU Moïse,** Dean of the Faculty of Education, University of Yaounde I, hereby certify that **YOVNGUE Peter,** Matricule **19P3905,** is a student in Masters II in the Faculty of Education, Department **Curriculum and Evaluation**, Specialty **Conception and Evaluation of Educational Projects.**

The concerned is carrying out a research work in view of preparing a Master's Degree, under the supervision of **Dr. NKWENTI Michael.** His work is titled « ***Pedagogic supervision of distance learning and academic success in secondary and high school*** ».

I would be grateful if you provide his with every information that can be helpful in the realization of his research work.

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

Done in Yaounde 12 MAR 2021

For the Dean, by order

MONGO Etienne
Professeur

Appendix 2 Authorization to carry out Research in Schools in the Mfoundi Division

University of Yaounde I
Faculty of Education
[illegible]

The Divisional
Delegation of
Secondary Education
for Mfoundi

COURRIER ARRIVÉE
26 AVR 202[illegible]
0607

Madam,

An Application For Authorisation
To carry out research in Mfoundi

I am a Master II student of the Faculty of Education, University of Yaounde 1. I am carrying out a research titled: Pedagogic Supervision of distance Learning and academic success in Secondary and high School in the Yaounde Municipality (Mfoundi).

I would be grateful if you grant me an authorization to collect data from some Secondary schools in your Division of authority.

Yours Sincerely,

Yongeh Peter

Attachment
- Copy of research authorization of the Dean of our faculty.

Appendix 3

REPUBLIQUE DU CAMEROUN
Paix-Travail-Patrie
****
UNIVERSITE DE YAOUNDE I
****
FACULTE DES SCIENCES DE L'EDUCATION
****
DEPARTEMENT DE CURRICULA ET EVALUATION
****

REPUBLIC OF CAMEROON
Peace-Work-Fatherland
****
UNIVERSITY OF YAOUNDE I
****
FACULTY OF EDUCATION
****
DEPARTEMENT OF CURRILUM AND EVALUATION
****

The Dean

N° 51 /21/UYI/FSE/VDSSE

INTERNSHIP AUTHORISATION

I the undersigned, **Professor MOUPOU Moise,** Dean of the Faculty of Education, University of Yaounde I, hereby certify that **YOVNGEH Peter,** Matricule **19P3905,** is a student in Masters II in the Faculty of Education, Department **Curriculum and Evaluation**, Specialty **Conception and Evaluation of Educational Projects.**

The concerned is carrying out an internship in view of preparing a Master's Degree, under the supervision of **Dr. NKWENTI Michael.** His work is titled « ***Pedagogic supervision of distance learning and academic success in secondary and high school*** ».

I would be grateful if you provide his with every information that can be helpful in the realization of her internship.

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

Done in Yaoundé 04 MAR 2021

For the Dean, by order

DONGO Etienne
Professeur

Appendix 4 A 43 item survey Questionnaire

Questionnaire

Pedagogic Supervision of Distance Learning in some Secondary Schools in the Yaounde Municipality

It is my pleasure to ask for your assistance to complete this questionnaire. I am a student in the University of Yaounde 1, carrying out research on the above-mentioned topic, in view of obtaining the Master's degree.

Be assured that the information you give shall be confidential and used only for the purpose of this study.

Yovngeh Peter.

***Please place a Tick** (√) on the box you choose. For open questions, write on the space provided.*

Section A: Personal information

Gender: ❑ Male ❑ Female
Level of Education: ❑ Diploma ❑ First Degree ❑ HND ❑ Master's degree ❑ PHD
Teaching experience (in Years): □ 1-5 □ 6-10 □11-15 □ 16-20 □ 20 and above
Experience as supervisor (in Years): □ 1-5 □ 6-10 □11-15 □ 16-20 □ 20 and above
Age: ❑20-25 ❑26-30 ❑31-35 ❑36-40 ❑41 and above
Current Position: ❑ Assigned Supervisor ❑ Principal ❑ Vice Principal □Head of department
Hours of in-service training related to using computing tools ❑ None ❑1-3 ❑ 4-6 ❑7-10 ❑ 11 and more

NB: Supervisor here refers to School administrators: **Principal, Vice Principal, and Head of Department (HOD) Assigned Supervisor or inspector from the delegation of secondary education**

Section B: Current Practices of Pedagogic supervision

	1. Strongly Disagree(SD) 2. Disagree(D) 3. Neutral (N) 4. Agree (A) 5. Strongly Agree (SA)	**SD 1**	**D 2**	**N 3**	**A 4**	**SD 5**
1	Supervisors regularly make informal (unannounced visits) to Classroom	❑	❑	❑	❑	❑
2	Supervisors inform teachers before coming for lesson observation	❑	❑	❑	❑	❑
3	Supervisors and teachers conduct pre-observation conference before the actual lesson.	❑	❑	❑	❑	❑
4	Supervisors conduct observation of lesson to improve teachers teaching skills.	❑	❑	❑	❑	❑
5	Supervisors help teachers to evaluate their lesson.	❑	❑	❑	❑	❑
6	Supervisors organize post observation conferences with teachers.	❑	❑	❑	❑	❑
7	Supervisors facilitate peer supervision among teachers to enhance collegial relationship.	❑	❑	❑	❑	❑
8	Inspectors from the Ministry of Secondary Education occasionally supervise lessons.	❑	❑	❑	❑	❑
9	Supervisors facilitate to engage teachers to participate in research activities to solve behavior issues.	❑	❑	❑	❑	❑
	What other practices do you carry out? Please explain					
	Section C: Practices of Pedagogic Supervision in Distance Learning	**1**	**2**	**3**	**4**	**5**
	I. Techniques used for supervising Distance Learning.					
10	I carry out Face- to- face supervision	❑	❑	❑	❑	❑
11	I carry out supervision from a distance(E-supervision) by use of telecommunication technologies	❑	❑	❑	❑	❑
12	I carry out both Face-to-face and E-Supervision (blended supervision)	❑	❑	❑	❑	❑
	What other techniques do you use? Please explain **1. Strongly Disagree (SD) 2. Disagree (D) 3. Neutral (N) 4. Agree (A) 5. Strongly Agree (SA)**					
	II. Tools used for supervision of Distance learning	**1**	**2**	**3**	**4**	**5**
13	I use paper or print-based (correspondence through regular mail delivery)	❑	❑	❑	❑	❑
14	I use multi-media (USB sticks, CD,) delivery mode	❑	❑	❑	❑	❑

15	I use audio (phone calls, voice messages)	❑	❑	❑	❑	❑
16	I use social media (Email, Zoom, Whatsapp, skype etc)	❑	❑	❑	❑	❑
17	I use integrated method combining paper-based, phone calls, social media, online etc	❑	❑	❑	❑	❑
18	I use Learning Management Systems such as Tesys e-learning platform, Blackboard collaborate, Moodle, etc.	❑	❑	❑	❑	❑
	Which other tools do you use? Please explain					
	III. Aspects of Distance learning Supervised	**1**	**2**	**3**	**4**	**5**
19	I supervise methodology used in distance lesson proper	❑	❑	❑	❑	❑
20	I supervise students in digital environment	❑	❑	❑	❑	❑
21	I supervise schemes of work, work coverage, lesson notes, books, articles etc	❑	❑	❑	❑	❑
22	I supervise Information to parents	❑	❑	❑	❑	❑
23	I supervise teacher ICT proficiency	❑	❑	❑	❑	❑
24	I supervise System Security of the platform used	❑	❑	❑	❑	❑
25	The Supervisor makes sure a strict timetable for distance learning is followed	❑	❑	❑	❑	❑
26	I inspect attendance and students drop out rate	❑	❑	❑	❑	❑
27	I inspect Students' engagement and participation	❑	❑	❑	❑	❑
28	I collect statistics regularly	❑	❑	❑	❑	❑
29	I collect statistics on demand	❑	❑	❑	❑	❑
	What other aspects do you supervise? Please explain					
	SECTION D: Issues related to supervision of Distance Learning	**1**	**2**	**3**	**4**	**5**
30	Supervision is perceived as fault finding mechanism rather than a means to improve instructional process.	❑	❑	❑	❑	❑
31	Adequate budget is not allocated for supervision program of distance Education.	❑	❑	❑	❑	❑
32	Supervisors are highly engaged on other tasks so they do not have time to assist all teachers to improve Distance Learning.	❑	❑	❑	❑	❑

33	There is no support system from higher officials for supervision.	❑	❑	❑	❑	❑
34	Supervisors are not well trained to support teachers regarding distance learning improvement.	❑	❑	❑	❑	❑
35	Supervisors are not well equipped to arrange workshops and seminars which help for distance learning improvement.	❑	❑	❑	❑	❑
36	Principals do not create smooth relationship among teachers and between themselves for improvement of teaching and learning process.	❑	❑	❑	❑	❑
37	Supervisors and staff members do not communicate freely during supervision.	❑	❑	❑	❑	❑
38	Supervision manuals of distance learning are not available, so Supervisors do not follow standards and norms regarding supervision of distance Learning.	❑	❑	❑	❑	❑
	What other issues have you experienced? Please explain					

Thank you for completing this questionnaire.