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**CONTINUOUS PROFESSIONAL DEVELOPMENT
AND TEACHERS' ATTITUDE TOWARDS
CURRICULUM CHANGE THE CASE OF
SECONDARY SCHOOLS IN MFOUNDI DIVISION**

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award of the degree of Doctor of Education (Ph. D) in Curriculum and Evaluation*

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DEDICATION

To my parents and Siblings.

CERTIFICATION

This is to certify that, this thesis entitled “Continuous professional development and teachers’ attitude towards curriculum change in secondary schools in Mfoundi-Division:” submitted to the Faculty of Education, Department of Curriculum and Evaluation, University of Yaoundé 1, is the original work of AGBOR Constance EBOT, Matricule 17S3192 and was carried out under the supervision of:

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ABSTRACT

This study investigates the relationship between continuous professional development and teachers' attitudes towards curriculum change in secondary schools in Mfoundi Division. With the rapid evolution of educational standards and practices, understanding how continuous professional development influences teachers' attitude and responses to curricular changes is critical. This research focuses particularly on the resistant attitudes exhibited by educators towards these changes. To meet this educational need, the researcher decided to carry out a quantitative study under five specific research objectives. The total population consist of 4642 secondary school teachers and a sample size of 493 teachers were selected through simple random and stratified sampling technique. The data was collected from teachers and questionnaire was used as an instrument for data collection on a five-point Likert scale. However, validity and reliability of these research instruments were assessed and determined. The correlational research design was used. Frequency, percentages, mean, and standard deviation for descriptive statistics of the variables, and the hypotheses were tested using multiple regression to show the extent of the relationship between continuous professional development and teachers' attitudes towards curriculum change. Ultimately, in order to communicate ideas and understand processes related to the study, pertinent models like, Lewin's model of change, the training model, the coach mentoring model and action research model were used. The results were interpreted using major psychological theories like Adult Learning Theory (Knowles, 1984), Theory of Change (Weiss, 1995), Transformative Learning Theory, and Social Learning Theory (Bandura, 1977). The regression results showed a significant positive relationship between Pedagogical seminars and teacher attitude towards curriculum change ($t = 4.185, p < 0.000$), The regression results showed a significant positive relationship between Pedagogical animation and teacher attitude towards curriculum change ($t = 3.609, p < 0.000$), The regression results showed a significant positive relationship between training in teaching techniques and teachers attitude towards curriculum change ($t = 2.936, p < 0.004$), The regression results showed a significant positive relationship between training in remediation techniques and teachers attitude towards curriculum change ($t = 2.700, p < 0.007$) and ($t = 3.218, p < 0.002$) for resource/support and teachers attitude towards curriculum change. By recognizing the importance of pedagogic seminars, animation, training in teaching techniques, and remediation techniques and availability of resource and support, educational stakeholders can foster a positive and constructive environment that empowers educators to adapt effectively to evolving curricular frameworks. Based on recommendations, teachers should understand that certification is not enough in the teaching profession, with advancement of technology and global trends in education, there is need for continuous professional development. Lastly, educational policymakers and school administrators should facilitate a collaborative environment where teachers can voice their concerns and contribute to decision-making, this may significantly mitigate resistance and enhance the overall effectiveness of curriculum implementation.

Keywords: continuous professional development, teachers, teachers' attitude, curriculum, curriculum change.

RÉSUMÉ

Cette étude examine la relation entre le développement professionnel continu et l'attitude des enseignants à l'égard des changements apportés aux programmes scolaires dans certaines écoles secondaires du département de Mfoundi. Compte tenu de l'évolution rapide des normes et des pratiques éducatives, il est essentiel de comprendre comment le développement professionnel continu influence l'attitude et les réactions des enseignants face aux changements apportés aux programmes scolaires. Cette recherche se concentre en particulier sur l'attitude de résistance manifestée par les éducateurs à l'égard de ces changements. Pour répondre à ce besoin éducatif, la chercheuse a décidé de mener une étude quantitative avec cinq objectifs de recherche spécifiques. La population totale est composée de 4 642 enseignants du secondaire et un échantillon de 493 enseignants a été sélectionné à l'aide d'une technique d'échantillonnage aléatoire simple et stratifié. Les données ont été recueillies auprès des enseignants et un questionnaire a été utilisé comme instrument de collecte de données sur une échelle de Likert à cinq points. Cependant, la validité et la fiabilité de ces instruments de recherche ont été évaluées et déterminées. Une conception de recherche corrélationnelle a été utilisée. La fréquence, les pourcentages, la moyenne et l'écart type pour les statistiques descriptives des variables, et les hypothèses ont été testées à l'aide d'une régression multiple afin de montrer l'étendue de la relation entre le développement professionnel continu et les attitudes des enseignants à l'égard du changement de programme. Enfin, afin de communiquer des idées et de comprendre les processus liés à l'étude, des modèles pertinents tels que le modèle de changement de Lewin, le modèle de formation, le modèle de mentorat par un coach et le modèle de recherche-action ont été utilisés. Les résultats ont été interprétés à l'aide de grandes théories psychologiques telles que la théorie de l'apprentissage des adultes (Knowles, 1984), la théorie du changement (Weiss, 1995), la théorie de l'apprentissage transformatif et la théorie de l'apprentissage social (Bandura, 1977). Les résultats de la régression ont montré une relation positive significative entre les séminaires pédagogiques et l'attitude des enseignants à l'égard du changement de programme ($t = 4,185, p < 0,000$). Les résultats de la régression ont montré une relation positive significative entre l'animation pédagogique et l'attitude des enseignants à l'égard du changement de programme ($t = 3,609, p < 0,000$). Les résultats de la régression ont montré une relation positive significative entre la formation aux techniques d'enseignement et l'attitude des enseignants à l'égard du changement de programme ($t = 2,936, p < 0,004$). Les résultats de la régression ont montré une relation positive significative entre la formation aux techniques de remédiation et l'attitude des enseignants à l'égard du changement de programme ($t = 2,700, p < 0,007$) et ($t = 3,218, p < 0,002$) pour les ressources/le soutien et l'attitude des enseignants à l'égard du changement de programme. En reconnaissant l'importance des séminaires pédagogiques, de l'animation, de la formation aux techniques d'enseignement et aux techniques de remédiation, ainsi que de la disponibilité des ressources et du soutien, les acteurs du monde de l'éducation peuvent favoriser un environnement positif et constructif qui permet aux éducateurs de s'adapter efficacement à l'évolution des cadres curriculaires. Sur la base des recommandations, les enseignants doivent comprendre que la certification ne suffit pas dans la profession enseignante. Avec les progrès technologiques et les tendances mondiales en matière d'éducation, il est nécessaire de se former en continu. Enfin, les décideurs politiques en matière d'éducation et les administrateurs scolaires devraient faciliter la mise en place d'un environnement collaboratif dans lequel les enseignants peuvent exprimer leurs préoccupations et contribuer à la prise de décision, ce qui pourrait réduire considérablement la résistance et améliorer l'efficacité globale de la mise en œuvre des programmes scolaires.

Mots clés: Développement professionnel continu, enseignants, attitude des enseignants, programmes scolaires, changement de programmes scolaires.

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LIST OF ACRONYMES AND ABBREVIATION

(AAS)	Association for the Advancement of Science.
ANOVA	Analysis of Variance
CBA	Competency Based Approach
CBAM	Concern Based Adoption Model
CAPS	Curriculum Assessment Policy Statement
CPD	Continuous Professional Development
DSA	Diplôme Supérieur d’Aptitude
DV	Dependent Variable
EFA	Education For ALL
ENS	Ecole Normale Superior
FSE	Faculty of Sciences of Education
GCE	General Certificate of Education
HTTC	Higher Teachers Training College
GTTC	Government teacher training college
GTTC	Government Teachers Training College
IV	Independent variable
IC	Innovation Configuration
ICT	Information Communication Technology
ILO	International Labor Organization
ISCED	International Standard Classification of Education (ISCED)
IV	Independent Variable
LMC	lewins Model of Change
LOU	Level of Use
M.ED	Master of Education
MINEDUC	Ministry of Education
MINESEC	Ministry of Secondary Education
NRC	National Research Council
NEF	National Employment Fund
NGO	Non-Governmental Organization
OECD	Organization for Economic Co-operation and development
OBA	Objective Based Approach
PD	Professional Development

PhD	Doctor of Philosophy
PISA	International Student Association
PSM	Problem Solving model
PS	Statistical Package for Social Science
RH	Research Hypothesis
SDGs	Sustainable Development Goals
SLT	Social Learning Theory
SDG	Sustainable Development Goals
SOC	Stages of Concern
SPSS	Statistical Package for the Social Sciences
ToC	Theory of Change
UNESCO	United Nations Education, Scientific and Cultural Organization
ZPD	Zone of Proximal Development



GENERAL INTRODUCTION

This section of the research work presents the background of the study, statement of the problem, objectives of the study, research questions, significance of the study, scope of the study, delimitation of the study, and presentation of the work. In response to the accelerating global environmental changes and ongoing social justice and equity challenges, the role of teachers as pivotal figures in educational and social transformation has been increasingly recognized (UNESCO, 2021). This shift has drawn significant attention from researchers and educational policymakers toward enhancing teachers' autonomy, competence, and relatedness (Santana-Monagas et al., 2022), as well as their engagement with educational and societal issues (Jordan et al., 2014). Education is described as an engine for any nation's social and economic development (Paulo, 2014). However, the field of education all over, and particularly in Cameroon is marked by constant and rapid changes. This can be seen in the curriculum and other structures. So, for a professional teacher to be up to date with the changing curriculum, he/she needs to be constantly developing. According to Antley (2020), the professional world is becoming increasingly competitive and is constantly changing, so continuous professional development is more important than ever in being successful and practices are evolving and progressing in every industry, making it crucial for both new and experienced professionals to continue developing their skills and honing their knowledge. Teacher learning is deemed critical for changing teachers' instructional practices (Sleegers and Leitwood 2010). That is why continuous professional development programs are often used to bring about school improvement, especially in the domain of science and technology education (Sandholtz et al. 2019). Furthermore, many reasons account for the swing of the pendulum in Cameroon. As she seeks to become an emerging nation by the year 2035, the education of her young citizens becomes of prime importance. It has the responsibility to offer quality training and education to young Cameroonians within a context marked by large classes. Also, it has to prepare them for smooth insertion into a more demanding job market worldwide, through a pertinent teaching/learning process. Therefore, there has been a change of focus from a school that was mostly based on contextualized knowledge acquisition to a school that aims at empowering learners to help them cope with complex and diversified real-life situations. Instead of a school cut off from society, we now have a school deeply rooted in society that takes into account sustainable development, local knowledge, and cultures (MINESEC, 2014). Most developed countries owe their source development to technical and economic innovations (Momanyi & Rop 2020). From this perspective, there is a need for curriculum change in most developing countries. Change in instructional practices will lead to a change to empower its citizens with the required skills, knowledge, values, and attitudes, which enable them to be endowed for

personal and national development (Gruber, 2018). Change in instructional practices comes about through the implementation of competency-based practices which was one of the strategies addressed by Sustainable Development Goal 4 (SGD 4), which aims to solve the serious economic and social issues that concern third-world countries the most (Kurt, 2017).

To support the agenda for Sustainable Development Goal 4 (SGD 4), most developing countries adopt competency-based strategies in which one of its goals was for all countries to make sure that by 2030 all students had the knowledge and skills necessary to promote sustainable development, including, among other things, through education for sustainable development and sustainable lifestyles, human rights, gender equality, global citizenship, appreciation of other cultures and promotion of a culture of peace and nonviolence society OECD (Organization for Economic Cooperation and Development, 2018). Importantly, SDG 4 moves beyond access to education and focuses on learning outcomes and relevance, particularly in developing contexts where education systems often struggle with quality and application (UNESCO, 2017).

Furthermore, curriculum change is not only about policy adoption but also about effective implementation at the classroom level. Continuous professional development is therefore essential in enhancing teachers' capacity to adopt to new pedagogical approaches and implement competency-based strategies effectively (Darling-Hammond et al.,2017). In addition, integrating local knowledge and cultural context enhances its relevance and effectiveness. Education system that reflects learners' socio-cultural realities are more likely to promote engagement, identify formation, and sustainable development (Tikly,2020). This aligns with the vision of education as a tool for both individual empowerment and societal transformation.

In sum, teachers are central agents of educational change and their attitudes towards curriculum change significantly influence implementation outcomes. According to the theory of Planned Behavior, teachers' beliefs, subjective norms and perceived behavioral control shape their willingness to adopt new instructional practices. This highlights the critical role of continuous professional development in facilitating curriculum change. Continuous professional development provides teachers with the pedagogical skills, knowledge and professional confidence required to implement new curricula. Effective continuous professional development is sustained, collaborative, and practice oriented rather than episodic or theoretical. (Desimone 2015).

Context and justification of the study

Historical Review

Education is an old concept that started with the creation of human society. As such, it has been evolving, beginning with traditional concepts or traditional educational practices. These are the practices that are linked to individuals, groups, cultural backgrounds, and countries. History has it that traditional education has grown from generation to generation and some concepts fade out and new ones are brought in as reforms. This traditional system is the one given by parents to children when they are born. This includes teaching the children in your language. The mother language includes their cultural beliefs and practices such as dressing, speaking, cooking, eating, and dancing.

Dewey (1938) defines traditional education as “an educational system that focuses on curriculum and cultural heritage for its content”. It consists of regimentation, ignoring the capacities and interests of the learners. It encourages an attitude of docility, receptivity, and obedience among learners. “Professionalism is commonly understood as an individual’s adherence to a set of standards, code of conducts or collection of qualities that characterize accepted practice with a particular area of activity” (UK et al.2004).

During the period of colonialism, education had a particular mission and teachers who were trained had to serve the mission for which they were trained. The missionaries trained teachers for their interests and those of their countries. But today, the situation is not the same. There is much expected from education today. The new expectations for education are where the interest and focus are on having visionary leaders to ensure sustainable education. The paradigm shifted from teacher-centered teaching where the teacher is the “know-all” to that of participatory between the teacher and learner and their peers.

Thus, shift or change is conceptually rooted in constructivism and social construction that focuses on participatory teaching or pedagogy. The International Alliance of Learning Education Institute (2008) says continuous training is transforming teacher education and a key avenue for developing the knowledge, skills, and dispositions needed to reach higher student outcomes. The promotion of continuous training is also very much likely to the idea that schools are vulnerable places for teachers, and learners and the development of alternative programs in the teaching profession.

Furthermore, based on teachers' attitudes towards curriculum change, the subsequent paragraphs lay a bedrock for the teachers' attitude, the evolution of CBA, and digitalizatio in

Cameroon secondary schools as important aspects of curriculum change. Teachers' attitudes towards curriculum change may be influenced by their emotions, beliefs, learning, and reasoning amongst other factors and teachers' attitudes towards their classroom practices can either be positive or negative depending on their beliefs and emotions towards the curriculum. The teachers' attitudes can either enhance or impede the implementation of curriculum change. This suggests that positive teacher attitudes will positively influence classroom practices while negative teacher attitudes will negatively influence classroom practices which may lead to failed implementation of the curriculum (Blackman, S. et al, 2012).

Hancock, et al (2012) defines curriculum change as the transformation of the curriculum schemes, for example, their design, goals, and content. That is, it refers to the linkages or close working relationship between developers of syllabi, assessors of the syllabi (examination bodies), implementers of the syllabi (teachers), consumers of the syllabi (students), evaluators of implementation of the syllabi (school inspectors), consumers of the graduates (employers), and supporting education stakeholders (parents and community members). However, the bedrock of curriculum change in secondary education in Cameroon is based of CBA and digitalization.

Modern competency-based education and training movements began in the United States of America when efforts were made to reform teacher education and training in the 1960s (Hodges & Harris, 2012). Competence Based Approach (CBA) is currently an emerging concept in Cameroon's educational system. The shift in teaching in Cameroon's educational paradigm has propelled the gradual move from Objective Based Approach (OBA) also called the communicative approach (CA) to the CBA over the years. Elbaz (2018) opined that competency-based curricula are the best paradigm to use because they have the greatest potential to transform traditional teaching and learning by developing the best competencies on the part of learners in a variety of areas, including self-efficacy, digital literacy, problem-solving abilities, communication and collaboration, critical thinking, imagination and creativity, citizenship, and the development of the capacity for self-learning. Currently, the CBA is used in public secondary schools in the country. According to Tabe (2019), this current trend from the OBA to the CBA should normally go alongside an alteration of the syllabus approach, course objectives, material designing, and more especially instructional material development.

The Cameroon Ministry of Secondary Education (2012/2013) had distinguished three main components of the competence to be taught: subject competence (knowledge), transversal competence (knowledge resulting from all the subjects in a child's learning), and life

competence which results from the development of the right attitudes, behavior, and problem-solving skills for real-life situations. Teaching and learning in Cameroon secondary schools are gradually moving from the traditional-based approaches to the Competence-Based Approach (CBA) which is largely supposed to be learner-centered. With the introduction of the CBA, teachers in Cameroon schools and colleges are compelled to master and use the approach in facilitating the teaching-learning transaction.

The new role of the teacher consists of encouraging the learners to acquire the knowledge, which must be facilitated but not mechanically transmitted, and entrusting the preparation of certain tasks to the students. In CBA, a teacher is supposed to switch from the role of an expert who transfers knowledge to a coaching role of facilitating and guiding the learning process (Biemans, et al, 2004). This means teachers implementing this approach encourage learners to be creative, ensure the planning and organization of activities, and suggest ideas without imposing them on the learners. The teacher is required to be active in supporting the learning process rather than transferring contents.

According to Zineb, et al, (2017), in implementing the CBA, the teacher should use the didactical approach that is based on the facilitation of active learning including group work, presentations, and self-study. According to Anane, (2013), CBA demands a different approach to teaching and even assessment and certification. This is because conceptually, CBA is different from the traditional system. It is based on defined competency standards which are industry oriented. The education and training is more learner-centered.

Furthermore, based on the digitization of secondary education, Bisong (2015) argues that educational technology is a key factor in achieving success in education, as it involves the systematic and organized application of modern technology to enhance the quality of education. This includes the use of modern teaching techniques, teaching materials, and the organization of work and relationships among all participants in the educational process.

According to a study by Alshammari & Wanous (2021), institutions need to establish clear leadership structures and governance frameworks to ensure effective decision-making and resource allocation. Wang et al. (2021) suggest that institutions need to invest in the development of a comprehensive digital infrastructure that is flexible, scalable, and adaptable to changing needs. Tondeur et al. (2020) argue that institutions need to provide faculty with training and support to effectively integrate digital technologies into their teaching. Yang et al.

(2021) suggest that institutions need to prioritize student engagement and provide students with access to digital resources that enhance their learning experience.

Tchombe (2008), also argues that the availability, access, and use of ICT in education may open up opportunities for many to develop technological skills that are in high demand in the 21st-century labor market and knowledge economy. Haddad and Draxler (2002), in Teneng (2017), argue that modern education systems that utilize digital technologies are more beneficial to learners, considering the rapidly changing skills demanded by the globalizing labor market. Fonkoua (2006) also suggests that the pedagogical integration of technologies should be introduced in teacher training programs to avoid teachers becoming obsolete.

The digital transformation of the Cameroonian education sector started more than two decades ago. The main activities performed during that period were the purchase of computing equipment for the different ministries and the establishment of websites under the “. gov.cm” domain name prescribed by the Prime Minister in Circular No. 007/CAB/PM of August 23, 2000. In 2001, the President of the Republic, His Excellency Paul Biya, in his speech to the youth on the 10th of February, emphasized the need to master ICTs and his desire to see schools join this dynamic. In 2003, syllabi for computing studies in secondary education were developed, and through a decree by the Ministry of National Education, computing education was made a compulsory subject beginning in September 2003 (Fouda et al., 2013 as cited in Nsolly & Charlotte, 2016). Apart from purchasing computing equipment, establishing websites, and setting up the inspectorate in charge of computer science, another major program aimed at digitalizing Secondary Education is the equipping of public schools with multimedia resource centers (MRCs). This project was launched in 2001, and in November of the same year, the President of the Republic, His Excellency Paul Biya, inaugurated two MRCs in two schools in Yaoundé (the Government Bilingual High School Yaoundé and "Lycée Général Leclerc").

The following year, three other MRCs were installed in Douala and Garoua (Lycée Joss Douala, 2013). By 2007, 17 multimedia resource centers were in Cameroon (Josue, 2007, Lycée Joss, 2013). As of December 2021, there are 92 MRCs in Cameroon (IP-INFO, 2021b). In Decree No. 2005/139 of April 25, 2005, which was later amended in Decree No. 2012/267 of June 11, 2012, there is the inclusion of an IT unit, which among its many responsibilities is also in charge of the availability, security, and integrity of computing systems and the promotion of information and communication technology in the Ministry of Secondary Education. In this same decree, the Human Resource Department has a unit in charge of the SIGIPES project, which is focused on the maintenance of computer systems linked to payroll. In the 2005 decree,

there is the creation of CAAP ("Cellule D'Appui à l'Action Pedagogique" which is translated as Teachers' Resource Unit in English) as a component of the Inspectorate General of Education. The Teachers' Resource Unit in the 2005 decree did not have an explicit role in the integration of ICTs in the teaching-learning process.

The revision of the decree in 2012 made it responsible for the production and validation of digital pedagogic resources. Other digitalization's endeavors have been performed in the Ministry of Secondary Education, such as the development of a web application for the human resource department (<https://minesecdrh.cm>), the creation of an information technology series in the French subsystem in Order No. 25/11/MINESEC/CAB of the 13th of January 2011, the creation of computing systems to manage student registration during exams, the creation of computing systems to manage student results, the payment of school fees and examination fees through electronic means, and more.

The outbreak of the COVID-19 pandemic that led to the closing of schools was a clarion call on the necessity to push the digitalization of secondary education to another level. The Ministry of Secondary Education, under the leadership of Professor Nalova Lyonga, picked up this challenge and other digitalization endeavors such as the Distance Education Programme, which has led to the creation of a Distance Education Centre, a web application that can be accessed through <https://minesec-distancelearning.cm/>, a YouTube channel that can be accessed through <https://www.youtube.com/user/minesecdistancelearning1724>, and counseling service. The beginning of the academic year 2022-2023 started with the Minister of Secondary Education launching the e-counseling helpline as part of the Distance Education Programme and placing the academic year 2022-2023 under the theme: "Digitalization of teaching: an effective and efficient determining factor for the provision of training at the Ministry of Secondary Education".

Conceptual Review, according to the Organization for Economic Co-operation and Development (OECD)-Teaching and Learning International Survey (TALIS, 2009), CPD can be defined as "the one which involves those activities that develop an individual's skills, knowledge, expertise and other characteristics as a teacher". According to Melanie Allen (the UK, 2009), CPD refers to "the process of tracking and documenting the skills, knowledge, and experience that teachers gain both formally and informally as they work, beyond any initial training. It's a record of what they experience, learns and then apply". Thus, CPD can be defined as "an ongoing process which involves formal, non-formal and informal activities that aim at developing teacher educators' intellectual abilities and build self-confidence, attitudes, values,

interest, skills, and competences for personal improvement which will enable him to carry out his work effectively”.

Continuous Professional Development (CPD) covers a wide range of staff development activities, both formal and informal, designed to address individual teachers' development needs and improve their professional practice through sharing effective practice knowledge and skills. It is one of the major factors elements required in the advancement of the quality and professionalism of a teacher (Collin et al.,2012). Kizibas (2016) states that there are three major goals of professional development programs for teachers. These are “change in classroom practices of teachers, change in their attitudes and beliefs, and change in the learning outcomes of students”. CPD is essential for upgrading and upgrading teachers because the rate of social and educational change makes pre-service training an inadequate basis for long-term professional competence. The design of these CPD programs must be informed by an effective needs analysis that stems from the teachers' curricula, instructional, content, and pedagogical knowledge bases. The knowledge basis is the conceptual framework upon which professional development should be based. Research shows that teachers perform better in professional development programs of which design they are part (Luneta, 2012).

Continuous professional development can be divided into two categories: cognitive and affective, which are both essential factors in determining teacher efficacy. The cognitive part relates to the development of pedagogical information and better instructional skills that will aid teachers in classroom management and teaching. Teacher dedication and commitment to their profession is an essential part of teacher development. Professional development activities are successful in achieving the desired outcomes. Professional development is influenced by several elements that both help and hinder efficacy. Contextual aspects include the involvement of schools' leadership, organizational culture, external agencies, and the extent to which side-based initiatives are supported. Conceptual factors include how change, teaching, and teacher development are perceived. Processes or procedures developed to enhance teachers' professional development are referred to as methodological factors.

Continuous professional development (CPD) involves teachers engaging in continuous learning, becoming aware of their learning processes, and applying theoretical and practical knowledge to enhance student outcomes (Svendesen, 2020). CPD is an ongoing process, emphasizing that learning should be a fundamental principle for every educator. It is crucial for improving the quality and professionalism of teachers (Collin et al., 2012). According to Kuranchie and Bampo (2023), CPD programs for teachers aim to achieve three main objectives:

transforming classroom practices, altering attitudes and beliefs, and improving student learning outcomes. CPD is vital for keeping teachers updated due to the rapid pace of social and educational changes, which render pre-service training insufficient for long-term professional competence.

According to Walker (2005), satisfied employees will become loyal when they perceive their organization is offering opportunities to learn, and grow and at the same time providing an established career path that they can pursue in the organization. He also found that training and development are some of the biggest factors that lead to a teacher's effectiveness. According to the report, teachers want the opportunity for them to be effective, and they want development paths and opportunities that allow them to advance within the company. This was supported by Carlson (2005), who concluded that for teachers to be committed, which is a broad definition of effectiveness, they look forward to opportunities of continuous learning to improve their skills and knowledge.

According to the recent UCET CPD Discussing Paper (Vare et al 2021), all CPD seek to develop teachers as: Competent and confident professionals, Epistemic agents, Critical and reflective practitioners and Responsible professionals

The paper also suggests that CPD should aim to: Adhere to broad principles such as research-informed practice while ensuring that it is context-specific. Avoid being too narrowly focused on student attainment organizations, Develop teacher agency, and Individualized/personalized

As reforms and changes are made to the current CPD provision for schools, it is vital to raise the importance of effective practice and research as well as mentoring and coaching. CPD can often become a professionally narrowing experience for teachers and the paper highlights some of the wonderful opportunities that exist to help teachers grow and develop professionally. It is often the case that CPD is embedded fairly well for teachers at the start of their careers, however, it is felt strongly that it needs to be contextualized, individualized, and fully mapped to support teachers throughout their careers to enable them to harness their passion to contribute to the learning of others and to be part of a constructed learning community.

According to MVEDU's School Management Software (2021), Continuous Professional Development is the process and learning activities professionals undertake to enhance their knowledge, skills, competence, and expertise. It records what professionals learn, experience and apply in their field. Instead of being reactive and passive, teachers who engage in CPD become proactive and apply the newly acquired skills and knowledge to teach more efficiently.

They attend conferences, workshops, online training classes, or relearning courses to develop themselves professionally.

A curriculum entails all experiences learners gain through workshops, classrooms, playgrounds, and interaction with educators (Blackmore & Kandiko, 2012). Consequently, a curriculum encompasses all aspects of a student's life, necessitating the need for educational stakeholders to devise a curriculum that enriches learners' social, political, and economic well-being. A sound curriculum should exhaustively align learners with the prevailing market needs on a global scale (Kandiko et al, 2021).

Therefore, teachers and other stakeholders should adhere to a curriculum issued by the government to ensure that learners get helpful knowledge and skills of the twenty-first century. The economic, social, and political aspects change over time, revealing that a curriculum is likely to become less effective after a period of adoption. The tremendous advancement in science and technology leads to new knowledge and skills, necessitating timely revision of existing curriculums to avoid instances where learners gain obsolete skills that lack global competitiveness. Curriculum change is a learning process for learners and teachers as they endeavor to gain new knowledge about the market and societies (Blackmore & Kandiko, 2012).

However, the attitudes of the teachers can be defined in terms of the process by which they organize and interpret their sensory impression to give meaning to their environment, which may not be the objective reality (Okwara, 2016). This means that the teachers' attitudes towards their classroom practices may be influenced by their emotions, beliefs, learning, and reasoning amongst other factors and teachers' attitudes towards their classroom practices can either be positive or negative depending on their beliefs and emotions towards the curriculum. The teachers' attitudes can either enhance or impede the implementation of curriculum change. This suggests that positive teacher attitudes will positively influence classroom practices while negative teacher attitudes will negatively influence classroom practices which may lead to failed implementation of the curriculum (Blackman, et al, 2012).

Curriculum change is a learning process for learners and teachers as they endeavor to gain new knowledge about the market and societies (Blackmore & Kandiko, 2012). Curriculum change means making the curriculum different in some way, to give it a new position or direction. This often means alteration to its philosophy by way of its aims and objectives, reviewing the content included, revising its methods, and re-thinking its evaluator procedures. Hancock, et al (2012) define curriculum change as the transformation of the curriculum

schemes for example its design, goals, and content. According to Dziwa (2013), curriculum change is not a matter of supply of appropriate technical information rather it involves changing attitudes, values, skills and relationship.

According to Dziwa (2013), curriculum change is not a matter of the supply of appropriate technical information; rather, it involves changing attitudes, values, skills, and relationships. Curriculum change is a learning process for teachers and their schools. A good understanding of change and a clear conception of the curriculum are necessary conditions for improved implementation of the new curriculum into practice. Policymakers, education leaders, and teachers need to know more about the drivers of successful curriculum change in schools. Therefore, learning about curriculum change and its key features should become integral elements of any serious curriculum reform process.

Theoretical Review

Theories are formulated to predict, understand phenomena and in many cases, challenge existing knowledge within the limit of critical bounding assumptions. To serve this purpose, the researcher expatiated on a widely applied psychological theories like Adult Learning Theory (Knowles, 1984), Theory of change (Weiss 1995), Transformative Learning Theory and Social learning theory (Bandura, 1977).

Adult learning theory helps explain how adults learn, how they acquire new knowledge and skills, and how to facilitate their learning in effective ways. The theory holds that adults have unique learning needs and preferences that differ from those of children. Understanding these needs is crucial for creating effective educational programs and experiences for adults. Adult learning theory emphasizes the importance of self-directed learning, experiential learning, and the relevance of learning to the learner's life and goals.

It also recognizes that adults come to the learning process with a wealth of prior knowledge and experience. They can leverage this to enhance their learning. One of the key principles of this theory is that adults are motivated to learn when they perceive a need or desire to do so. This means that effective educational programs must be designed to appeal to the learner's interests and goals. As well as provide clear and relevant learning objectives. Another important principle is that adults learn best when they are actively engaged in the learning process. This means that educational programs must provide opportunities for learners to interact with the material, practice new skills, and receive feedback on their progress.

Additionally, the theory of change is a theory that explains how a change effort can be directed toward the achievement of its objectives through a set of preconditions indicators, interventions, and assumptions carried out by the change agents (Weiss, 1995). The historical roots of a theory of change come from the field of theory-driven evaluation, which came to prominence in the 1990s (Chen, 1990; Coryn, et al, 2011). Theory-driven evaluation aimed to move beyond a simplistic input-output notion of evaluation and instead required that program designers explicitly state how they expect a program to work, thereby making their implicit assumptions explicit. This allows an evaluator to better understand what is being implemented and why, making clear connections between a given intervention and its outcomes. By making the underlying rationale of an initiative explicit, it can be interrogated, assessed, and revised systematically as it is being implemented (Cobb, et al, 2003).

This theory emphasizes the examination of the context where the change is to occur, the determination of the outcomes of the project or program, the preconditions to arrive at the long-term outcomes, and the rationales for it. This theory is important to this study because it determines changes that should occur in the education system when there is a transition from one instructional approach to another; OBA to CBA (Tabe, 2019). The theory emphasized the context, outcomes, indicators, interventions, and assumptions. This implies that there is a need to contextualize the main aspects of curriculum change to Cameroonian realities, set the expected outcomes, set measures to determine if the intended outcomes are achieved or not, and also set mechanisms for intervention when the project is not pursued as planned. This will make the project feasible and easy to intervene when the need arises.

Furthermore, the next influential figure in the field of adult learning is Jack Mezirow, who developed the theory of transformative learning. This approach emphasizes the importance of critically reflecting on one's assumptions and beliefs; it also holds that adults can experience profound changes in their understanding of the world through the process of learning. Transformative learning theory is based on the idea that humans are inherently meaning-makers (Mezirow et al., 1990, p. 1). It proposes that learning involves using existing interpretations to form new or revised understandings of our experiences, guiding our actions accordingly (Mezirow et al., 1990,p.5). This process can occur intentionally, inadvertently, or unconsciously, drawing upon a complex framework of meanings available to us.

At certain points in life or in response to significant events, we may feel a sense of dissonance, prompting us to reconsider our established beliefs. This discomfort can catalyze transformative learning by encouraging us to question assumptions previously taken for

granted. Mezirow views this pursuit of meaning through a constructivist lens akin to George (1963) ideas and describes transformative learning as a unique form of adult metacognitive development (2003, p. 58). It involves becoming increasingly aware of and in control of ingrained habits of perception, inquiry, learning, and growth (Maudsley in Mezirow, 1981, p. 12).

Additionally, The Social Learning Theory (SLT) serves as a conceptual link between behaviorism and cognitive theories, focusing on how cognitive factors influence learning (McLeod, 2011). This theory highlights observational learning, where individuals acquire knowledge, skills, attitudes, and beliefs by observing others and noting the consequences of their actions, leading to the modeling and adoption of observed behaviors. Bandura (1977) emphasized that behaviors are learned through observational learning processes influenced by the environment (McLeod, 2011). He posited that behaviorism alone could not fully explain learning and proposed that behaviors and the environment interact reciprocally.

Bandura's development of social learning theory was inspired by observing changes in children's behaviors after witnessing aggression, prompting him to underscore the role of self-regulation in behavior control. Self-regulation involves self-observation, judgment of the environment and oneself, and subsequent response. Social learning theory, synonymous with observational learning, asserts that individuals can acquire new behaviors by observing others and emphasizes the reciprocal relationship between social cues, individual perception, and the motivation and capability to replicate observed behaviors (Newman & Newman, 2007).

These theories will provide a framework for understanding the relationships between variables in the study and will help guide the research process. By exploring these theories, the researcher can gain insights into the underlying mechanisms at play and make informed predictions about the outcomes of the study. Overall, an in-depth examination of these theories will enhance the validity and reliability of the research findings. Understanding these theories will allow the researcher to make more informed decisions about the design of the study, including the selection of variables to measure and the methods of data collection and analysis. By grounding the study in established theories, the researcher can ensure that the study is built on a solid foundation and is more likely to produce meaningful and reliable results. Furthermore, by building on existing theories, the researcher can contribute to the broader body of knowledge in the field and potentially advance the understanding of the topic being studied.

Statement of the problem

Curriculum change in Cameroon secondary schools focus on several key areas: Competency-Based Approach, Integration of Technology, Assessment Methods, inclusive education, interdisciplinary learning. This promotes active learning, where students engage in real-world tasks and problem-solving activities that foster critical and reflective thinking (Awuah, 2021). It also aligns with global educational standards and practices, aiming to prepare students for the demands of the 21st century (Etoh, 2022) and intended to prepare students for a digital economy (Nguime, 2022). This approach encourages ongoing engagement, allowing educators to identify and address learning needs promptly.

It is to this consent that the government, through the Ministry of Education, has dedicated efforts towards implementation where pedagogic seminars, pedagogic animations, workshops and training in teaching techniques are being organized by MINESEC to enable teachers to acquire the necessary competencies for effective implementation during the teaching and learning process. Also, government, through the Ministry of Education, has established a national policy framework that aligns with global educational standards. This framework supports a shift from traditional teaching methods to a competency-based model that fosters critical thinking, problem-solving, and collaborative skills (Republic of Cameroon, 2022).

Ultimately, the government has allocated funds to develop teaching materials and resources that facilitate the implementation of CBA. This includes the production of textbooks that incorporate competencies and practical exercises (UNESCO, 2021). Recognizing the impact of technology in education, MINESEC has launched programs aimed at integrating Information and Communication Technology (ICT) into the teaching and learning processes. Initiatives such as training programs for teachers on e-learning platforms have been established to enhance instructional methods and foster digital literacy among students (MINESEC, 2023).

Despite the efforts of government and stakeholders to ensure the effective implementation, teachers still exhibit resistant attitudes towards these approaches, which are the bedrock of curriculum change. Teachers often develop strong emotional attachments and beliefs to existing curricula. These beliefs create cognitive dissonance when faced with new curricular demands, leading to resistance (Snyder, 2012). Many teachers have strong attachment to traditional teaching methods, which creates reluctance to adopt new practices introduced through continuous professional development programs (Tchamyou & Mbouh, 2021).

Teachers fear that new curricula require them to learn new skills for which they feel ill-prepared, leading to anxiety and resistance to curriculum change (Njeuma, 2021). This feeling of inadequacy can stem from a lack of professional development opportunities to master new content and methodologies that's why observations during our findings revealed that teachers who have undergone training in continuous professional are better prepared to implement this changes effectively in their classroom rooms. Also, teachers feel overwhelmed by the amount of new material they are expected to cover, so they regard it as time-consuming, absenteeism during pedagogic seminars and workshops.

Moreover, peer influence and institutional culture is another contributing factor to resistant attitude of teachers. Teachers often work collaboratively and if a significant number of teachers in a school are resistant to curriculum change, others follow suit to avoid isolation. This aspect hinders curriculum implementation. It is important to note that certification is not enough in the teaching profession because with the advancement of technology and global trends in education, there is need for continuous professional development of teachers.

The perception that new curricula are time-consuming may lead teachers to prioritize other duties over engaging with new materials. For instance, if teachers feel they cannot adequately prepare for upcoming classes due to these new demands, they may choose to skip continuous professional development seminars or workshops altogether. This absenteeism not only prevents them from gaining valuable insights and strategies but also reinforces their feelings of inadequacy when they return to the classroom without the knowledge that their peers may have acquired. These attitudes hinder the successful implementation of new curriculum initiatives and ultimately impact student learning outcomes. That is why, Tanyi (2016, p. 210) emphasizes the importance of special training in teacher education to instill ethical values and enhance positive attitudes in the classroom, fostering the expected norms and standards for quality education in Cameroon.

Objectives of the study

A research objective is a statement of intent for the study that declares specific goals that the investigator plans to achieve in a study (Klassen, et al 2012). According to Admin (2005), the purpose of the study is sometimes referred to as general objectives. However, the objectives of the study were looked upon from the general and specific points of view which will be stated below.

The general objective

The main objective of the study is to examine the significant relationship between continuous professional development and teacher's attitude towards curriculum change in secondary schools in the Mfoundi-Division.

Specific objectives

The specific objectives of this study include the following:

- To describe the relationship between pedagogical seminars and teachers' attitudes towards curriculum change in secondary schools in Mfoundi Division
- To investigate the correlation between pedagogical animations and teachers' attitudes towards curriculum change in secondary schools in Mfoundi Division.
- To analyze the interconnection between training in teaching techniques and teachers' attitudes towards curriculum change in secondary schools in the Mfoundi Division
- To examine the link between training in remediation techniques and teachers' attitudes towards curriculum change in secondary schools in the Mfoundi Division
- To explore the interrelation between support, resources and teachers' attitudes towards curriculum change in secondary schools in the Mfoundi Division

Research question

This dissertation will be guided by general and specific research questions.

General research question

- What is the relationship between Continuous professional development and teachers' attitudes towards curriculum change in secondary schools in the Mfoundi Division?.

Specific research questions

- What is the relationship between pedagogical seminars and teachers' attitudes towards curriculum change in secondary schools in the Mfoundi Division?
- What is the correlation between pedagogical animations and teachers' attitudes towards curriculum change in secondary schools in Mfoundi Division.?
- What is the link between training in teaching techniques and teachers' attitudes towards curriculum change in secondary schools in the Mfoundi Division.?

- What is the link between training in remediation techniques and teachers' attitudes towards curriculum change in secondary schools in the Mfoundi Division.?
- What is the relationship between support, resources, and teachers' attitudes towards curriculum change in secondary schools in the Mfoundi Division?

Significance of the study

This study aims to assist the government in appointing pedagogic inspectors to monitor classroom activities, ensuring that teachers apply their training effectively. Regular classroom observations by these inspectors will help assess the success of training programs and identify areas for improvement. This oversight ensures teachers possess the skills and knowledge required to deliver quality education.

Also, inspectors provide accountability, encouraging teachers to consistently use best practices and maintain high standards. Continuous support and guidance from inspectors can create a more dynamic and effective learning environment. Their presence also validates teachers' efforts, boosting morale and fostering a positive teaching atmosphere. The collaboration between teachers and inspectors can lead to continuous improvement, raising education standards and benefiting students. For instance, in schools with regular inspections, teachers may be more motivated to try new teaching methods, leading to a more engaging and effective learning environment. Feedback from inspectors can help teachers refine their techniques, ultimately improving student outcomes.

The study is significant because, it will lead to the revising of the curriculum in teacher training colleges to emphasize collaborative teaching techniques, enhancing teacher effectiveness and their ability to address curriculum changes. By focusing on teacher learning, these colleges can ensure educators are well-equipped to guide students. Collaborative teaching fosters a supportive learning environment, and using research-based techniques helps teachers adapt to curriculum changes and implement innovative strategies. Ongoing continuous professional development through seminars is also crucial for staying current with educational trends and technological advancements, enabling teachers to confidently integrate new approaches into their classrooms. Such development opportunities not only enhance teachers' skills but also inspire students to become lifelong learners. Staying updated with educational trends and technology prepares students for the digital age. For example, teachers who attend professional development workshops on virtual reality can enhance learning by making subjects more immersive and engaging, equipping students with valuable technological skills.

This study provides insights for other researchers, guiding them in their research methodology and design. By understanding the approach used in this study, researchers can replicate or modify methods to suit their objectives, avoiding potential pitfalls and enhancing the quality of their research. This understanding aids in developing clear, focused research questions aligned with their goals, contributing to high-quality research and advancing the field.

Furthermore, Teachers will understand that certification alone is insufficient in the evolving education landscape. Continuous professional development is necessary to stay relevant and provide the best education. This includes attending pedagogic seminars, and pedagogic animations, collaborating with peers, and staying informed about the latest research. Embracing new ideas ensures teachers meet students' needs effectively.

Moreover, Globalization has increased the importance of cultural competency and global perspectives in education. Teachers must incorporate diverse viewpoints into their curriculum to prepare students for a globalized workforce. This requires continuously seeking resources and strategies that promote inclusivity and cultural understanding, emphasizing lifelong learning and professional growth.

Additionally, teachers will recognize the importance of adapting to curriculum changes through continuous professional development. This training equips them with tools and strategies to improve their teaching. Collaborative continuous professional development fosters a supportive network among educators, enhancing their professional growth and creating a community for sharing ideas and seeking guidance. Staying updated with research and advancements allows teachers to incorporate evidence-based practices into their teaching, meeting diverse learners' needs and preparing them for future success.

This research work will also inform curriculum planners about necessary integrations, such as skills enabling learners to contribute to their country's development across cognitive, affective, and psychomotor domains. It highlights the importance of critical thinking, problem-solving, and social-emotional learning, and preparing students for modern challenges.

Incorporating social-emotional learning into the curriculum helps develop well-rounded individuals. Teaching empathy, resilience, and emotional intelligence enables students to manage emotions, build relationships, and navigate conflicts peacefully. Educators must integrate social-emotional learning to develop these essential life skills. For example, regular classroom discussions on empathy and perspective-taking can deepen students' understanding and foster empathy. Role-playing activities can teach conflict resolution, helping students

communicate effectively and find peaceful solutions, essential for personal growth and societal harmony.

The scope of the study

Geographical Scope of Mfoundi Division in the Centre Region of Cameroon

Mfoundi Division is one of the ten administrative divisions of the Centre Region of Cameroon and serves as a critical political, economic, and administrative hub in the country. It is geographically unique in that it is entirely urbanized, and its territory is coterminous with the capital city of Yaoundé, making it one of the smallest divisions in terms of land area but one of the most densely populated and influential. Mfoundi Division is situated in the southern part of the Centre Region of Cameroon. It is bounded by several other divisions of the Centre Region, including Lekie to the north, Nyong-et-So'o to the west, and Nyong-et-Kelle to the south and east (Neba, 1999). The division is geographically located at approximately 3.87°N latitude and 11.52°E longitude, placing it within the equatorial rainforest zone, characterized by high humidity and two rainy seasons.

Covering an estimated area of 297 square kilometers, Mfoundi is the smallest division in Cameroon by surface area (Institut National de la Statistique [INS], 2015). Despite its small size, it holds Yaoundé, the political capital of Cameroon and the second-largest city after Douala. Administratively, Mfoundi is subdivided into seven sub-divisions or urban districts (arrondissements): Yaoundé I to Yaoundé VII, each governed by a sub-divisional officer under the oversight of a divisional officer (préfet) appointed by the central government (MINATD, 2020). As of the 2015 national estimates, Mfoundi Division had a population of approximately 2.8 million people, making it the most populous division in the Centre Region (INS, 2015). The division is characterized by high levels of urbanization, with Yaoundé functioning as a center of government, commerce, education, and health services. The rapid population growth in Mfoundi has led to increased demand for infrastructure, housing, and public services (Tchindjang, 2012).

Mfoundi lies within the Guinean-type equatorial climate zone, which experiences two rainy seasons (March-June and September-November) and two dry seasons (December-February and July-August). The average annual rainfall is around 1,500 to 2,000 mm, and temperatures range from 20°C to 30°C (Suchel, 1987). The vegetation is mainly tropical rainforest, although much of it has been cleared due to urban expansion and settlement growth.

Mfoundi Division plays a crucial role in national governance and policy implementation. Being the location of key national institutions such as the Presidency, National Assembly, Supreme Court, and ministerial headquarters, it is often referred to as the administrative heart of Cameroon (Ndongko & Nyamnjoh, 2000). It also hosts several international organizations, NGOs, and educational institutions, including the University of Yaoundé I and II.

Historical scope of Curriculum Change and continuous professional development in Cameroon.

The history of curriculum change in Cameroon is shaped by the country's colonial past and post-independence educational policies. During the colonial era, Cameroon was governed by both the French and the British, resulting in the development of two distinct education systems the francophone system based on the French model, and the anglophone system modeled after the British system. Each system featured different curricula, assessment methods, and pedagogical philosophies (Fonkeng, 2007). This dual legacy has continued to influence education policy and reform, even after unification in 1961. After gaining independence in 1960 (French Cameroon) and reunification in 1961 (with British Southern Cameroon), the Cameroonian government undertook several initiatives to harmonize the educational system. The goal was to promote national unity while addressing disparities in educational content and access. The early post-independence reforms focused on localization of the curriculum moving away from colonial content to indigenized and relevant curricula that reflected Cameroon's sociocultural realities (Tambo, 2003).

A major turning point in curriculum change came in the 1980s, during which Cameroon adopted Structural Adjustment Programs (SAPs) under the influence of the World Bank and International Monetary Fund (IMF). These reforms pushed for education systems that aligned with global economic and labor market demands. As a result, the curriculum in secondary schools shifted toward practical skills, vocational training, and science education (Ngwa, 2004). The emphasis was on producing graduates with employable skills to reduce youth unemployment and contribute to economic development. The 1998 National Forum on Education marked another critical milestone in curriculum change. The recommendations from this forum led to the adoption of the 1998 National Curriculum Reform, which stressed curriculum diversification, competency-based learning, and learner-centered pedagogy. It emphasized inclusive education, moral instruction, and the integration of Information and Communication Technologies (ICTs) in teaching and learning (MINEDUB, 2001). This reform

laid the foundation for future curriculum updates that aimed to address the changing socio-economic and technological landscape.

However, the concept of Continuous Professional Development (CPD) for teachers has evolved globally over the past century. Initially, CPD was limited to pre-service teacher education, but by the early 20th century, educational systems began to recognize the importance of lifelong learning for teachers. In the 1950s and 1960s, in-service training programs were introduced, particularly in Europe and North America, as mechanisms for keeping teachers updated with new pedagogical techniques and curriculum requirements (Guskey, 2002; Day & Sachs, 2004).

By the 1980s and 1990s, CPD was increasingly seen as essential for teacher effectiveness, especially as the demands of education shifted in response to globalization, technological advancement, and societal change. Michael Fullan (2007) emphasized the role of CPD in educational change, arguing that professional development should be ongoing, collaborative, and linked to student learning outcomes. In the early 2000s, CPD became more formalized and structured, integrating a mix of face-to-face workshops, online learning platforms, mentorship programs, and competency-based models (Kennedy, 2014). The global movement toward evidence-based education strengthened the need for data-informed CPD programs, focused on improving instructional quality and curriculum implementation. In Sub-Saharan Africa, CPD has historically been implemented through in-service training programs, workshops, and professional learning communities (UNESCO, 2017). However, challenges such as limited funding, inadequate infrastructure, and resistance from educators have hindered its full effectiveness. Many African countries, including Cameroon, have sought to improve CPD policies to enhance teacher quality and ensure the successful implementation of curriculum changes (Hardman et al., 2011).

Thematic Scope

The theme of this work “Continuous professional development and teachers attitude towards curriculum change in selected secondary schools in Mfoundi division”. The Organisation for Economic Co-operation and Development (OECD, 2020) define CPD as “all activities that develop an individual’s skills, knowledge, expertise, and other characteristics as a teacher.” However, in this work, the researcher has limited herself only to the confines of education and specific education at the secondary level. This is to say that though continuous professional development is very important in every field, the researcher has concentrated on

secondary education. There is continuous professional development in Basic, Secondary, and Higher education. However, the scope of this work is limited to secondary education.

Also, Teachers' attitudes can be described as the process through which they interpret and organize sensory impressions to understand their environment, which may not always reflect objective reality (Okwara, 2016). These attitudes towards classroom practices are shaped by emotions, beliefs, learning, and reasoning, among other factors. Positive attitudes among teachers towards their classroom practices can enhance the implementation of educational reforms, whereas negative attitudes can hinder it, potentially leading to unsuccessful curriculum implementation (Blackman, et al, 2012).

Furthermore, Curriculum change refers to the systematic process of revising, updating, or transforming educational content, teaching strategies, learning outcomes, and assessment methods in response to emerging societal needs, technological advancements, policy reforms, and research-based innovations in education (Ornstein & Hunkins, 2023).

Curriculum change involves modifying the curriculum to adopt a new position or direction. This typically entails revising its underlying philosophy, redefining its goals and objectives, reviewing included content, adjusting teaching methods, and reevaluating evaluation procedures (Hancock, et al, 2012). According to Dziwa (2013), curriculum change is not merely about updating technical information but rather requires transforming attitudes, values, skills, and relationships. It is a complex process that necessitates a comprehensive reevaluation of the educational system, encompassing not only what is taught but also how it is taught and assessed. The primary goal of curriculum change is to enhance the relevance and effectiveness of the learning experience, equipping students with skills necessary for the contemporary world.

Limitations of the study

In the course of carrying out this research, the researcher was faced with several challenges. These challenges, however, did not stop or prevent the researcher from carrying out the research. Some of the prominent challenges faced were finance, the reluctance of teachers to answer questionnaires, and ill health.

Financial limitations are a common barrier in educational research, particularly in developing contexts where researchers may lack institutional support or external sponsorship. According to Creswell and Creswell (2018), insufficient funding can affect the ability to access

research sites, reproduce questionnaires, or hire research assistants. In this study, the researcher initially struggled to finance various aspects of the fieldwork and data collection.

Also obtaining data from human participants, particularly busy professionals like teachers, often poses ethical and logistical difficulties. In this study, several teachers displayed reluctance or hesitation in completing the research questionnaires, likely due to workload pressure, survey fatigue, or concerns about confidentiality. This reluctance aligns with what Cohen, Manion, and Morrison (2018) describe as a common challenge in field-based educational research, where participants may doubt the usefulness of the study or feel that it adds to their workload. To address this, the researcher emphasized anonymity, explained the purpose and potential impact of the research, and engaged in multiple follow-ups to build trust and increase response rates.

Personal health also emerged as a challenge during the research period. Health setbacks temporarily affected the researcher's ability to meet deadlines and conduct fieldwork efficiently. As Babbie (2020) notes, unforeseen personal factors, including illness, are part of the realities of field research. Despite experiencing periods of ill health, the researcher showed perseverance and adaptability, using recovery time to engage in less physically demanding tasks such as literature review and data transcription. These adaptive strategies allowed the researcher to maintain overall progress toward the research objectives.

Although these challenges threatened to delay or diminish the study, they did not ultimately compromise its quality. The financial support from family, friends, persistence with participants, and resilience through health challenges ensured that the research was completed successfully. This experience reflects what Maxwell (2013) describes as the importance of researcher adaptability, perseverance, and ethical engagement in navigating real-world research contexts.

Delimitation of the study

This research focused on the continuous professional development of teachers and their attitude toward curriculum change in selected secondary schools in Mfoundi-Division. The researcher limited herself to some public and private secondary schools in the Mfoundi Division Center region of Cameroon. Due to time and resource constraints, the study was unable to include teachers from other regions or levels of education. Despite these delimitations, the researcher was able to gather valuable insights and draw meaningful conclusions that contribute to the existing literature.

This chapter explores the study's issues through various sub-headings: context and justification of the study, statement of the problem, objectives of the study, research questions, significance of the study, and delimitation of the study. The study is organized into two main parts. The first part, titled "Conceptual and Theoretical Framework," is divided into two chapters: Chapter One addresses teachers' attitudes towards curriculum change, while Chapter Two focuses on continuous professional development. The second part, titled "Methodology and Empirical Framework," consists of three chapters: Chapter Three covers the research methodology, Chapter Four presents the results and findings, and Chapter Five includes discussion and recommendations. The study concludes with a general conclusion, references, a glossary, and appendices.

CHAPTER ONE**TEACHERS' ATITUDE TOWARDS CURRICULUM CHANGE**

Introduction

This chapter presents literature on the dependent variable of study which is teachers' attitudes towards curriculum change. It shall describe the body of knowledge surrounding teachers' attitudes toward curriculum change.

1.1. The concept of teacher's attitude towards curriculum change

The way teachers perceive curriculum change might be the reason curriculum change impacts negatively or positively on teaching and learning. Many teachers appear confused and lack clarity about these changes, which are crucial for successful implementation at the grassroots level. Teachers are essential in the execution of curriculum changes and play a pivotal role in its delivery. Therefore, their attitudes and perceptions towards the curriculum and its implementation are of utmost importance.

Curriculum change is a central element in improving educational systems, but its success largely depends on the attitudes of the teachers who are tasked with implementing the new policies and practices. In the context of secondary education in Cameroon, teachers' attitudes towards curriculum change can significantly influence whether reforms are embraced or resisted. Curriculum changes have been motivated by the need to respond to globalization, technological advancement, socio-economic challenges, and the demand for 21st-century skills such as critical thinking, problem-solving, and digital literacy (Tambo, 2012). Despite the intention behind these reforms, many teachers in secondary schools may show reluctance toward curriculum change due to several factors, including inadequate training, insufficient resources, top-down reform processes, and a lack of involvement in decision-making (Mbibeh, 2020; Ngum, 2021).

Positive attitudes such as openness to innovation, enthusiasm for professional growth, and a belief in the benefits of new curricula tend to foster successful implementation. Teachers with such attitudes are more likely to experiment with new teaching strategies, adapt lesson plans to meet updated standards, and engage students in innovative learning experiences (Guskey, 2002). On the other hand, when teachers feel unprepared, unsupported, or excluded from the planning stages of reform, they may resist changes either passively or actively. This resistance can lead to poor implementation, where curriculum goals remain unmet despite formal policy shifts (Chikoko et al., 2015). The Cameroonian education system, especially in the Anglophone regions, has faced challenges with curriculum implementation due to limited stakeholder engagement, political tensions, and infrastructural disparities.

To improve teachers' attitudes toward curriculum change, it is essential to provide continuous professional development, mentorship, adequate teaching resources, and create a collaborative culture where teachers feel valued and empowered (Ngum, 2021; Tchombe, 2019). Attitudes are formed based on experiences and guide behaviors over time (Yildirim & Tezci, 2016). Teachers' attitudes towards curriculum changes can either facilitate or hinder effective learning environments (Iskan & Senemoglu, 2009). Positive attitudes among teachers make learning easier, whereas negative attitudes can impede it. Prospective teachers' positive attitudes toward curriculum changes are crucial as they influence their approach to learning and their effectiveness as educators (Oguz, 2012).

Educators often face challenges and uncertainties when dealing with curriculum changes, such as unclear expectations and insufficient instructional materials (Lizer, 2013). These factors contribute to resistance among teachers, complicating the implementation process. Despite efforts to adapt to local contexts, teachers encounter obstacles like large class sizes and behavioral issues, which hinder their ability to fully embrace new curricular demands. The introduction of new policies like the Curriculum and Assessment Policy Statement (CAPS) adds to the burden on teachers, potentially fostering negative attitudes towards ongoing changes in the curriculum. Hargreaves (1995) notes that teachers often resist new knowledge and skills until they see their practical benefits, leading to delays in acceptance or partial adoption of reforms.

In summary, teachers' perceptions and attitudes towards curriculum changes significantly influence their willingness and ability to implement these changes effectively. Addressing their concerns and providing adequate support are crucial steps in fostering a positive environment for curriculum development and reform.

According to social psychologists, attitudes consist of three dimensions:

- cognitive,
- affective
- behavioural

Attitudes towards a specific change include an individual's thoughts about the change, emotional responses to it, and behavioral inclinations (Mukhtar & Fook, 2020). For instance, teachers' attitudes towards curriculum change encompass their perceptions, emotional reactions, and behavioral tendencies regarding alterations in educational practices. Understanding teachers' attitudes towards change allows for proactive measures and informed

decisions throughout the change process, from planning to evaluation (Benveniste & McEwan, 2000). Teachers may either embrace or resist change, affecting the successful implementation of new educational methods. A positive attitude among teachers facilitates the adoption of new pedagogies, enhancing educational outcomes. Conversely, resistance hampers effective implementation. Therefore, addressing and comprehending teachers' attitudes toward change are critical for successful educational reforms.

Continuous Professional development programs represent one approach to addressing teachers' attitudes toward change. These programs equip educators with the necessary skills and knowledge to implement new educational practices effectively. Ongoing support and guidance provided through such initiatives build teachers' confidence and readiness for change. Additionally, fostering a supportive and collaborative school environment encourages teachers to embrace innovation. For instance, a school district might introduce a professional development initiative focused on integrating technology into teaching. This program includes training on technology usage and ongoing coaching support. While such efforts generally empower teachers, challenges may arise, such as varying levels of comfort and proficiency among educators in utilizing technology effectively despite training and support.

1.1.1. Types of Attitudes

Attitudes can be categorized broadly into three types: job satisfaction, job involvement, and organizational commitment (Bala et al., 2013). In the context of teachers, job satisfaction could be reflected in their satisfaction with their salary, work environment, and relationships with colleagues and students. Job involvement for teachers may be seen in their willingness to go above and beyond in their duties, such as staying late to help students or volunteering for extracurricular activities.

Organizational commitment in teachers may be demonstrated through their loyalty to the school, dedication to improving student outcomes, and willingness to support school initiatives. These factors are crucial in ensuring that teachers are motivated, engaged, and committed to their roles, ultimately leading to better outcomes for students (Bala et al., 2013; Okwara, 2016). Additionally, teacher involvement can also be observed in their active participation in continuous professional development opportunities, collaboration with colleagues to improve teaching practices, and their enthusiasm for implementing innovative teaching strategies in the classroom.

Research has shown that when teachers are actively engaged in continuous professional development and collaborative efforts with their peers, it leads to higher student achievement (Bala et al., 2013; Okwara, 2016). By investing in these factors, schools can create a positive and supportive environment that fosters teacher growth and ultimately benefits student learning. Therefore, it is essential for schools to prioritize teacher involvement and support in order to enhance the overall educational experience for students. This dedication to continuous improvement not only benefits the teachers themselves but also has a positive impact on student learning and overall school culture. As educators, it is essential for teachers to remain committed to their profession and the success of their students, as this dedication is key to creating a supportive and nurturing learning environment.

By fostering a sense of ownership and pride in their work, teachers can inspire and motivate students to reach their full potential and achieve academic success. For example, a teacher may regularly attend professional development workshops to learn new instructional techniques and incorporate them into their lesson plans. This dedication to improving their teaching skills can lead to increased student engagement and improved academic outcomes in the classroom. Additionally, by actively seeking feedback from students and colleagues, teachers can identify areas for growth and make necessary adjustments to better meet the needs of their students.

1.1.2. Teachers' Attitudes

Teachers' attitudes are defined as the mental and emotional approaches teachers adopt toward educational innovations, often shaped by their personal beliefs, past experiences, training, and the institutional environment (Fullan, 2007).

These attitudes can manifest in a positive, neutral, or negative manner depending on how teachers perceive the rationale, feasibility, and relevance of the curriculum changes being introduced. Teachers' attitudes can be described as the process through which they interpret and organize sensory impressions to understand their environment, which may not always reflect objective reality (Okwara, 2016). These attitudes towards classroom practices are shaped by emotions, beliefs, learning, and reasoning, among other factors.

Positive attitudes among teachers towards their classroom practices can enhance the implementation of educational reforms, whereas negative attitudes can hinder it, potentially leading to unsuccessful curriculum implementation (Blackman, et al, 2012).

Scholars have noted that attitudes are influenced by teachers' preparation and experiences, impacting their job satisfaction, job involvement, and organizational commitment (Robbins, 2009).

Teachers with high job satisfaction tend to hold positive attitudes toward their classroom practices (Gibson et al., 2014), which can stem from their belief in the teaching profession (Gibson et al., 2014). Research indicates that high job satisfaction correlates with lower absenteeism and greater dedication to delivering quality teaching (Robbins & Lucas, 2007). Overall, teachers' attitudes, influenced by their beliefs and emotions, significantly affect their commitment to implementing curriculum objectives in their classrooms.

1.1.3. Teachers' Attitudes towards Curriculum Change

Teachers' attitudes towards curriculum change play a crucial role in its successful implementation. If educators are resistant or hesitant towards new curriculum initiatives, it can hinder the effectiveness of the change. On the other hand, if teachers are open-minded and enthusiastic about adapting to new curriculum standards, it can lead to a more seamless transition and improved student learning outcomes. Curriculum change relies on teachers' cooperation and positive attitudes for successful implementation (Park & Sung, 2013). Positive attitudes are thought to impact teaching practices, influencing learners' opportunities and performance (Okwara, 2016).

Therefore, fostering a positive and supportive environment among educators is essential for ensuring the success of curriculum change efforts. In the context of Cameroon, teachers resistant attitudes towards curriculum change may stem from a lack of training to effectively implement new initiatives. Additionally, resistance to change could also be attributed to a fear of the unknown or a sense of loss of control over their teaching practices. It is important to acknowledge these factors and address them through continuous professional development opportunities, ongoing support, and clear communication to help alleviate concerns and promote a more positive attitude towards curriculum change. By understanding and addressing the root causes of resistance, educators can work towards creating a more collaborative and supportive environment that ultimately benefits student learning outcomes.

One reason why teachers may have a negative attitude towards curriculum change is the fear of the unknown. According to Fullan (2001), teachers may be hesitant to embrace new curriculum initiatives because they are unsure of how it will impact their teaching practices and student outcome. Furthermore, Darling-Hammond (2010) suggests that inadequate preparation

and support for teachers during the transition process can also contribute to resistance towards curriculum change. Additionally, teachers may be concerned about the impact of the changes on their students' learning outcomes and their own performance evaluations.

Again, some teachers may feel overwhelmed by the constant cycle of change and innovation in education and prefer to stick with familiar practices. These fears and concerns can be valid, but it is important for teachers to remember that change is often necessary for growth and improvement. Embracing new curriculum materials or methods can lead to increased student engagement, improved learning outcomes, and professional growth for teachers. By seeking out support from colleagues, administrators, and professional development opportunities, teachers can successfully navigate curriculum changes and adapt to new challenges.

Ultimately, being open to change and willing to try new approaches can lead to a more dynamic and effective teaching practice. This will ultimately lead to more successful implementation and positive student outcomes (Darling-Hammond, 2010). Effective communication, collaboration, and professional development opportunities can also play a crucial role in helping teachers feel empowered and confident in their ability to adapt to and effectively implement new curriculum changes. By prioritizing teacher well-being and professional growth, schools can create a more supportive and conducive environment for successful curriculum innovation and implementation.

For example, a school district may provide teachers with ongoing training and resources to support the implementation of a new project-based learning curriculum. Through regular communication and collaboration with colleagues and administrators, teachers can share best practices and troubleshoot challenges together. This collective effort fosters a sense of community and empowerment among teachers, ultimately leading to more successful implementation of the new curriculum and improved student outcomes.

1.1.4. Factors Influencing Teachers' Negative Attitudes

Several factors contribute to teachers' negative attitudes towards the curriculum. In the subsequent sections, the researcher will examine the impact of these factors

➤ Lack of Involvement in Decision-Making

In many educational systems, particularly in centralized systems like that of Cameroon, curriculum reforms are often designed and implemented by government bodies or higher level authorities without meaningful input from teachers the individuals expected to carry out the

reforms at the classroom level (Mbibeh, 2020). When teachers are excluded from the early stages of curriculum planning, they tend to perceive the reform as externally imposed rather than collaboratively developed. This top-down approach creates feelings of alienation and professional disempowerment, which in turn foster resistance to change. Teachers may view new policies as impractical, disconnected from classroom realities, or lacking relevance to their specific teaching contexts (Chikoko et al., 2015). Consequently, they are less likely to be committed to the goals of the reform or to implement it with enthusiasm and fidelity.

Michael Fullan (2007), a leading scholar in educational change, argues that teacher buy in is essential for successful change. He emphasizes that meaningful teacher involvement increases a sense of ownership, motivation, and professional responsibility. When teachers are engaged in decision-making, they are more likely to understand the purpose of the reform, feel valued in the process, and take initiative in adapting the curriculum to fit their learners' needs. Conversely, when teachers are not consulted, the reforms may be seen as bureaucratic directives rather than opportunities for pedagogical improvement.

Moreover, involving teachers in decision-making promotes a collaborative school culture, where feedback is encouraged and innovation is nurtured. This collaborative environment empowers teachers to share insights from their classroom experiences, contribute to policy refinement, and build collective strategies for successful implementation (Guskey, 2002). It also fosters trust between teachers and policymakers, which is essential for long-term educational development.

➤ **Increased Workload and Time Constraints**

Another significant factor contributing to teachers' negative attitudes toward curriculum change is the increased workload and limited time available to meet new demands. Curriculum change often introduces new content, teaching strategies, and assessment techniques that require additional time and effort from teachers. These changes usually come without corresponding adjustments in teachers' schedules, compensation, or support systems, leading to feelings of frustration, stress, and ultimately resistance. Teachers are already burdened with a variety of responsibilities, including lesson planning, classroom instruction, grading, student counselling, administrative duties, and extracurricular involvement.

The introduction of a new curriculum typically necessitates relearning instructional strategies, developing new teaching materials, attending workshops or training sessions, and aligning existing practices with new evaluation criteria (Guskey, 2002). If these responsibilities

are added without reducing other tasks or increasing support, teachers often perceive the reforms as impractical or overwhelming.

According to Chikoko et al. (2015), when teachers are overworked and under-resourced, they may interpret reforms not as opportunities for improvement but as additional burdens imposed by authorities who are disconnected from classroom realities. This perception reduces morale and increases the likelihood of superficial compliance, where teachers adopt reforms only to the extent necessary to meet formal requirements but without genuine engagement or belief in their value.

Moreover, time constraints limit teachers' ability to reflect critically on the new curriculum, collaborate with colleagues, or experiment with innovative approaches. Effective curriculum change requires a period of adjustment, professional dialogue, and iterative feedback all of which are hindered when teachers are under time pressure (Ngum, 2021).

➤ **Teachers' Lack of Continuous Professional Development**

Teachers engage in various activities and interactions that enhance their knowledge, skills, and teaching practices, while also fostering personal, social, and emotional growth that benefits their current and future roles in schools (El Afi, 2019). Continuous Professional development is crucial for teachers in effectively implementing curriculum changes in the classroom (Gibson & Brooks, 2012), as it enables them to acquire new knowledge and instructional strategies necessary for adapting to curriculum changes and enhancing classroom practices (Desimone, 2009).

Teachers' openness to change is pivotal for successful curriculum implementation, and a lack of essential pedagogical and content knowledge can contribute to their resistance to curriculum changes. Engaging in professional development before implementing curriculum changes can boost teachers' confidence and readiness to embrace new initiatives. Furthermore, teachers' beliefs about curriculum changes, shaped by their individual characteristics and belief systems, significantly influence their attitudes toward these reforms (Okwara, 2016).

➤ **Resistance to Change and Fixed Beliefs about curriculum change**

Some teachers may hold deeply rooted traditional beliefs about teaching and learning that are inconsistent with new educational paradigms. This resistance to change can be psychological, stemming from fear of the unknown or a perceived threat to professional identity. As Fullan (2007) argues, changing long-standing habits and values is a complex process that requires time, support, and motivation. Teachers' beliefs, such as their belief

system, significantly shape their attitudes toward curriculum changes (Kontovourki, et al, 2018). Here, the belief system refers to teachers' confidence in their ability to organize and execute teaching aligned with curriculum objectives to enhance learning. Teachers who hold optimistic views about curriculum changes or whose beliefs align with the reform are more likely to embrace new ideas and adopt the reforms compared to those whose beliefs are not aligned. These beliefs not only influence their attitudes towards reforms but also their willingness to experiment with new teaching methods and materials in their classrooms.

Some teachers express concerns that the new curriculum may not benefit their students (Ryder, et al, 2014). This suggests that teachers' confidence in embracing curriculum changes affects their attitudes toward implementing reforms. Therefore, analyzing teachers' beliefs and their content knowledge is crucial for the success of any educational reform effort (Okwara, 2016), as these factors inform their attitudes toward new curricula or curriculum changes.

According to Roehrig et al, (2007), the persistence and stability of teachers' belief systems pose challenges even during their professional development before implementing curriculum changes. Teachers often harbor concerns about curriculum changes, including doubts about their ability to meet the demands of the new curriculum, pressures from daily responsibilities, and inadequate resources for effective implementation. These uncertainties may increase resistance to change or contribute to negative attitudes towards it. Furthermore, teachers' attitudes toward curriculum changes can be influenced by their apprehensions about how the new curriculum might impact their school's culture (Ibrahim, et al, 2013). This occurs when teachers are uncertain whether the values and norms promoted by the change align with their school's existing culture, potentially leading to resistance.

➤ **Psychological factors**

Psychological factors such as feelings of loss, threat, doubt, discomfort, and worries can contribute to teachers' negative attitudes toward curriculum changes and increase their resistance (Janko & Pešková, 2017). These emotions often stem from a sense of discomfort because curriculum changes push teachers out of their familiar "comfort zones." Janko and Pešková argue that unfamiliar new practices are typically met with doubt by teachers, influencing their responses to educational reforms. Teachers' reactions to reforms are largely shaped by whether they perceive the changes as a threat to their professional identities or as supportive measures. If reforms are seen as threatening their professional identity, resistance is

likely. Additionally, excluding teachers from the planning process of reforms can lead to feelings of imposition rather than collaboration (Ibrahim et al., 2015). In contrast, involving teachers early on and ensuring they have prior knowledge of reforms prepares them better for implementation. However, the stress associated with curriculum changes can also contribute to teachers developing negative attitudes towards these changes.

1.2. The concept of curriculum

As formal education continues to expand globally, defining the term ‘curriculum’ accurately has become increasingly crucial. It remains a primary concern in education, with educators deliberating over choices regarding teaching content and methods. Parents are eager to understand what their children will be learning, and learners themselves are concerned about the content presented in class. "Curriculum" primarily refers to what teachers teach and what learners learn, and is closely linked to learning outcomes. Despite efforts to reach a consensus and provide a clear educational focus, the definition of "curriculum" remains subject to ongoing differentiation and debate in academic literature. Historically, the term has been discussed by education writers such as Power (Ed, 2019), reflecting its long-standing relevance.

Today, there is significant global interest in curriculum matters, with diverse theoretical discussions occurring around international standards set by entities like the Sustainable Development Goals (SDGs) and the International Student Assessment (PISA). Achieving a common understanding of what constitutes an effective curriculum is crucial, given that educational achievements measured by implemented curricula are compared globally. The term "curriculum" is now commonly used in media and community discussions, underscoring the responsibility of curriculum scholars to guide on these issues.

As the study of curriculum becomes more sophisticated, its complexity poses challenges, especially for scholars from other disciplines approaching it systematically for the first time. Therefore, a concise definition is essential. Curriculum is fundamentally the program of education that embodies the intentions of education, encompassing beliefs, values, attitudes, skills, and knowledge.

Unfortunately, many in education assume they understand curriculum without a focused study, leading to confusion and misguided decision-making in educational institutions. This assumption is particularly problematic in developing countries like those in Africa, where a lack of specialized expertise in curriculum development has been identified as a significant challenge (Mulenga & Mwanza, 2019). This deficiency contributes to inconsistencies in

curriculum implementation and compromises the quality of education received by graduates in primary and secondary schools.

Furthermore, definitions play a crucial role in guiding our actions concerning how we understand and apply concepts. This principle, long acknowledged by Bloom in his cognitive domain of learning objectives, emphasizes that comprehension precedes application. Therefore, to effectively apply a concept or idea, one must first grasp it thoroughly. This insight underscores the significance of having a genuine understanding of concepts like "curriculum," which we earlier identified as central to every educational institution.

As a comprehensive term, "curriculum" encompasses various dimensions such as teaching curriculum, learning curriculum, testing curriculum, administrative curriculum, and the hidden curriculum. The term itself elicits diverse definitions and interpretations among stakeholders including students, educators, researchers, administrators, and evaluators, reflecting its complex nature. This lack of uniformity necessitates a clear conceptualization of "curriculum" before embarking on any curriculum-related activities such as planning, implementation, evaluation, and empirical studies conducted by educational professionals.

According to Pratt (2022), the etymology of "curriculum" traces back to the Latin verb *currere*, meaning "to run." Cicero extended this term to include *curriculum vitae*, referring to "the course of one's life," and *curricula mentis*, metaphorically representing "the educational course of the mind." The term gained prominence in the educational field during the nineteenth century. Researchers and educators, including Goodson (2002), have elucidated curriculum as a multifaceted concept shaped through negotiation across various arenas. This view acknowledges curriculum as a historical construct evolving in response to the complexities of educational decision-making rather than a deliberate design with clear purposes.

Moreover, curriculum serves as a tool to achieve specific educational goals and objectives, often outlined as a checklist of desired outcomes. In curriculum development, objectives are typically articulated in clear, observable terms, emphasizing outcomes and aligning with either teacher-oriented or administrative-oriented models. When curriculum is solely determined by politicians without teacher consultation, it can diminish teachers' sense of ownership over the material they are tasked to teach. Additionally, curriculum is defined as courses of study or content, involving the selection and description of formal instruction's content and goals while relegating instructional methods to a secondary role. This definition focuses more on the breadth and depth of courses offered within a study program, exemplified by the approach taken at institutions like the University of California, Berkeley,

where the curriculum is viewed as the totality of courses constituting a student's educational journey (Wood & Davis, 1978).

A curriculum can be viewed as a plan or blueprint for systematically organizing educational activities. This definition encompasses both content and instructional methods, making it broader than previous paradigms that focused solely on content. Pratt & Nesbit (2000) describe curriculum as a structured framework for teaching and learning processes, emphasizing the planning aspect rather than the actual execution of teaching methods. They liken curriculum to architectural blueprints: just as a blueprint is not the actual building, a curriculum is not the direct act of teaching or learning.

According to Su (2012), a curriculum is often perceived as a written document outlining a course program. This view aligns with Barrow & Milburn (1990), who associate curriculum with official written programs of study issued by educational authorities or specialized teams. This document typically includes objectives, content, methods, and assessment criteria, serving as a guide for educators during curriculum development and implementation. In essence, curriculum is often interchangeable with the term "syllabus" in educational contexts.

Furthermore, curriculum can be understood as a series of experiences rather than narrowly defined classroom content or learning objectives. Marsh (2009) conceptualizes curriculum as a comprehensive set of plans and experiences that students undergo within a school's guidance. This perspective acknowledges that while planning precedes action, learning experiences often include unplanned occurrences in classroom settings. Marsh (1997) further notes that teaching and learning involve a blend of intentional planning and spontaneous events, extending beyond formal classroom settings to encompass activities such as school clubs, excursions, and academic competitions. These experiences collectively contribute to what can be termed as the extended curriculum.

Similarly, the American Educational Research Association's Encyclopedia of Educational Research defines curriculum as all the experiences a learner encounters under school guidance (Kearney & Cook, 1961). Barrow & Milburn (1990) echo this view by describing curriculum as encompassing all the experiences students have in school, including subject matter, teacher actions, student reactions, and instructional materials. This holistic interpretation of curriculum also encompasses the notion of the "hidden curriculum," referring to the unstated social norms and expectations that shape behavior within educational settings (Hyles, et al, 2004). The

hidden curriculum is deeply intertwined with cultural contexts, influencing language use, communication styles, and interpersonal interactions in educational environments.

In sum, curriculum is not merely a static set of learning objectives or content; rather, it is a dynamic framework that incorporates instructional planning, experiential learning, and cultural dimensions. It serves as a reflection of societal values, educational goals, and organizational climates, shaping the educational experiences of students in profound ways (Nieto & Bode, 2007). In this context, culture pertains to the beliefs and symbols that influence the atmosphere within an organization. Owens (1987) suggests that the symbolic elements of school practices such as traditions, ceremonies, and rituals embody "the values passed down from one generation of the organization to the next". The significance of the hidden curriculum or learning culture lies in its crucial role in nurturing well-rounded, accomplished students.

Educators have focused on four main philosophies over time, known by different names but commonly recognized as social reconstructionism, progressivism, essentialism, and perennialism.

➤ **Social reconstructionism:**

Social reconstructionism, rooted in nineteenth-century socialist and utopian ideals, emerged in response to economic pressures (Ornstein & Hunkins, 1998). Initially, it evolved alongside progressivism, a popular educational movement at the time. However, disillusionment grew among some progressive educators who felt that progressivism overly focused on individual middle-class learners in private schools. They argued for a shift towards education that centered on society as a whole, catering to the needs of all classes, not just the privileged (Reed & Davis, 1999).

According to Mulenga (2018), social reconstructionism is concerned with how the curriculum can equip learners with skills, values, knowledge, and attitudes necessary to address the social, political, and economic challenges facing society. It advocates that educational institutions should not merely transmit cultural heritage or study social issues but should actively engage in solving societal problems (Oliva, 1997).

This educational philosophy prioritizes critical thinking, problem-solving, and active citizenship to empower individuals to effect positive societal change. It emphasizes curriculum designs that tackle systemic issues and promote social justice. Ultimately, social reconstructionist aim to cultivate responsible, proactive individuals who engage with their communities and advocate for a fairer society. By fostering critical analysis and addressing

societal challenges, this approach aims to inspire learners to take action and contribute to a more inclusive and equitable world.

➤ **Progressivism:**

Progressivism emerged during the late nineteenth and early twentieth centuries as part of a broader social and political reform movement (McNeil, 1996; Ornstein & Hunkins, 1998). Educational roots of progressivism can be traced back to the influential work of John Dewey in the early twentieth century, particularly highlighted in his comprehensive work "Democracy and Education," where Dewey asserted the integral relationship between democracy and education. He envisioned educational institutions, like schools, as microcosms of democratic societies, where learners could acquire and practice the skills essential for democratic citizenship (Ornstein & Hunkins, 1998). Progressivism emphasizes teaching methods that prioritize problem-solving and scientific inquiry, focusing more on how to think rather than what to think. This movement encompassed various aspects, prominently including learner-centered and activity-centered curricula. As noted by Ornstein & Hunkins (1998), the traditional focus on subject matter was replaced by an emphasis on the learner, placing their needs and interests at the forefront of curriculum design.

Progressivist educational philosophy advocates for curricula that promote hands-on learning experiences, often summarized by slogans such as "learning by doing." This approach encourages active experimentation where learners can test ideas firsthand. It also encourages educators to adopt a facilitative role, guiding learning experiences rather than simply delivering information. This flexibility allows students to pursue their interests and engage in meaningful learning experiences that resonate with their lives. In a progressivist classroom, for instance, students might conduct their scientific experiments, enabling them to actively participate in the scientific process and develop critical thinking skills. Such hands-on activities not only deepen their understanding of scientific concepts but also nurture a sense of curiosity and enthusiasm for learning.

Overall, progressivism champions a student-centered approach to education, empowering teachers to cultivate positive attitudes toward their students' learning by fostering environments that support exploration, discovery, and active engagement in learning.

➤ **Essentialism**

According to Ornstein & Hunkins (1998), essentialism represents another iteration of traditional and conservative educational philosophy. Grounded in both idealism and realism,

essentialism prioritizes an academic subject-focused curriculum, emphasizing educators' role in fostering order, discipline, and diligence (Ornstein & Levine, 1993). Notably, essentialism gained prominence after a period when progressivism briefly dominated educational philosophy, facing criticism from essentialists during that time. By 1957, essentialism had regained its leading position (Oliva, 1997). The fundamental aim of an essentialist curriculum is the preservation rather than the transformation of cultural heritage, contrasting with the social reconstructionists' desire for societal change (Oliva, 1997).

According to Ornstein & Behar (1995), an essentialist curriculum aims to cultivate the intellectual development of learners by prioritizing core subjects such as English, Mathematics, Science, History, and foreign languages at the secondary level. Carl (2012) affirmed that essentialists believe knowledge is grounded in essential skills, academic disciplines, and mastery of concepts and principles within the subject matter. Organized courses serve as vehicles for transmitting cultural knowledge and promoting cognitive discipline. In essence, essentialism adapts learners to the curriculum, while progressivism adapts the curriculum to meet learners' needs and interests (Oliva, 1997). Essentialist curricula emphasize rigorous academic training, substantial homework, and intellectual challenge, with minimal emphasis on enjoyment in learning (Ornstein & Hunkins, 1998). In essentialism, teachers are seen as masters of specific subjects or disciplines. Therefore, a curriculum is defined by its focus on imparting essential academic and moral knowledge, which constitutes a robust core curriculum and maintains high academic standards.

➤ **Perennialism:**

Perennialism is recognized as the oldest and most traditional educational philosophy grounded in realism. According to Oliva (1997) and Ornstein & Behar (1995), the objectives of education within perennialism include fostering mental discipline, cultivating reasoning skills, seeking absolute truth, and nurturing intellectual growth. Unlike progressives who see truth as relative and evolving, perennialists assert that truth is eternal, timeless, and unchanging. Ornstein & Hunkins (1998) argued that perennialism draws upon historical and universally accepted knowledge, as well as cherished societal values. Perennialists perceive concepts such as the universe, human nature, truth, knowledge, virtue, and beauty as immutable. They maintain that the purpose of education remains constant across all eras and societies.

The curriculum in perennialism is centered on academic subjects, heavily influenced by defined disciplines or logically structured bodies of knowledge known as 'liberal' education.

This approach places emphasis on subjects such as language, literature, mathematics, grammar, rhetoric, and the great works of Western civilization (Oliva, 1997). Similar to essentialism, perennialists regard the teacher as an authoritative figure whose knowledge and expertise are beyond question. Instruction is predominantly conducted through the Socratic method, featuring oral exposition, lectures, and explanations. In perennialism, learner interests are considered irrelevant to curriculum design due to the belief that learners are immature and lack the judgment to determine the most valuable knowledge and values to acquire. Perennialists tend to seek solutions to contemporary social issues by looking back to enduring ideas and concepts.

From the perennialist perspective, a curriculum is defined as a collection of enduring ideas that have been relevant and meaningful throughout history, maintaining their relevance and significance in the present day. Scholars and educators have provided diverse definitions of curriculum over time, reflecting their varying perspectives on its essence. One of the most common definitions traces back to the Latin root 'currere,' meaning 'racecourse,' emphasizing the continuous and dynamic nature of the learner's educational journey. This emphasis on experiential learning is also evident in the definition and curriculum development model presented by Hunkins & Hammill (1994). Taba, for instance, focused extensively on planned experiences in curriculum development, although the broader dimensions of curriculum encompass both planned and unplanned learning encounters, indicating areas for refinement in Taba's approach.

Moreover, Glatthorn et al. (2012) highlight the diversity of curriculum definitions, categorizing them as descriptive, prescriptive, or a combination of both. Prescriptive definitions typically outline what should occur within a curriculum, often taking the form of structured plans, intended programs, or expert opinions on educational practices. In contrast, descriptive definitions extend beyond mere prescriptions, encouraging contemplation not only on how things should ideally transpire in educational settings but also on the actual experiences that occur. Ellis (2011) exemplifies this perspective by defining curriculum as encompassing all experiences for which a school assumes responsibility, underscoring the comprehensive nature of educational influence.

Furthermore, Brown (2012) offers a descriptive view, defining curriculum as encompassing all school experiences aimed at enhancing critical and creative thinking, problem-solving skills, collaborative work, effective communication, proficient writing, analytical reading, and research capabilities among students. These varied interpretations

illustrate the evolving nature of curriculum definitions, shaped by ongoing educational discourse and the changing needs of learners in contemporary educational settings.

1.2.1. Curriculum change

Curriculum change refers to the systematic process of revising, updating, or transforming educational content, teaching strategies, learning outcomes, and assessment methods in response to emerging societal needs, technological advancements, policy reforms, and research-based innovations in education (Fullan, 2020).

Hancock, Dyk, & Jones (2012) define curriculum change as the transformation of the curriculum schemes, for example, their design, goals, and content. Curriculum change refers to the process through which the content, structure, and methods of teaching and learning are adjusted to meet new educational needs. Fullan (2007) further argues that successful curriculum changes are not merely the introduction of new materials but the result of a collaborative and systemic effort involving teachers, administrators, students, and policymakers. For curriculum change to be effective, it must align with the broader goals of the education system and consider the local context in which it is implemented (Levin, 2008).

By continuously adapting and evolving the curriculum, educators can better prepare students for the challenges and opportunities of the future. Embracing curriculum change also allows for innovation and creativity in teaching and learning, ultimately leading to improved student outcomes and success. Furthermore, curriculum change can also help address issues of equity and diversity within the education system. By incorporating diverse perspectives and experiences into the curriculum, educators can create a more inclusive and culturally responsive learning environment. This can help students from all backgrounds feel valued and represented in their education, leading to increased engagement and motivation. In addition, curriculum change can also help address emerging trends and developments in various fields, ensuring that students are equipped with the knowledge and skills necessary to succeed in an ever-changing world. Overall, embracing curriculum change is crucial for ensuring that education remains dynamic, relevant, and impactful for all students.

According to Dziwa (2013), curriculum change is not merely about updating technical information but rather requires transforming attitudes, values, skills, and relationships. It is a complex process that necessitates a comprehensive reevaluation of the educational system, encompassing not only what is taught but also how it is taught and assessed. The primary goal of curriculum change is to enhance the relevance and effectiveness of the learning experience,

equipping students with skills necessary for the contemporary world. The challenges associated with implementing new curriculum changes or reforms globally have spurred significant academic interest, leading to intensified research into curriculum changes and their implementation. Steyn (2020) highlights the critical issue of art's marginalization within modern education systems, attributing it to outdated curriculum frameworks that prioritize subjects like math and science. This omission restricts students' creative expression and impedes their cognitive and emotional development. Advocates now argue for a more holistic curriculum design that integrates art and promotes interdisciplinary learning, crucial for preparing students to meet the complexities of the 21st century and fostering a well-rounded education system.

Integrating art into the curriculum enables students to develop essential skills such as critical thinking, problem-solving, and collaboration. Art encourages students to explore diverse perspectives and think innovatively, enhancing their ability to analyze and interpret information. Furthermore, artistic expression fosters emotional intelligence and empathy as students learn to express and understand their own emotions and those of others. This comprehensive educational approach not only improves academic performance but also equips students to navigate the diverse demands of the modern world effectively. For instance, when studying historical events like the Civil Rights Movement, students can create artwork that reflects different viewpoints and emotions associated with that period. This exercise facilitates critical analysis of complex issues and promotes empathy towards individuals involved in the movement. Collaboration among students during such projects allows for discussions that deepen their understanding of historical contexts. Achieving these educational goals requires considering various factors, including student needs and interests, evolving labor market dynamics, and technological advancements.

The process of curriculum changes demand collaboration among stakeholders, including educators, administrators, parents, and students themselves. Their input is vital in ensuring that the curriculum aligns with community needs and aspirations. Moreover, continuous professional development for teachers is essential to equip them with the skills and knowledge necessary for effective implementation of new curricula. This involves training programs, workshops, and ongoing support aimed at refining instructional methods and assessment practices. For example, in adopting a project-based learning curriculum, collaboration would entail teachers and administrators jointly designing the curriculum and seeking input from parents and students on engaging project ideas. Continuous professional development for

teachers would involve attending workshops, peer observations, and receiving instructional coaching to enhance their facilitation of project-based learning experiences.

Additionally, Hoyle (1972) defines curriculum change as a broad term encompassing a range of concepts such as innovation, development, and renewal within educational frameworks. He argues persuasively that the curriculum is in a constant state of evolution to adapt to the evolving needs of society, changing knowledge landscapes, and diverse learner populations. Curriculum change involves the infusion of new ideas whether social, cultural, political, economic, or technological into educational programs, thereby enhancing both internal school processes and external perceptions. These new perspectives broaden students' understanding and foster critical thinking about the world around them. By integrating social, cultural, political, economic, and technological concepts, schools can better equip students to navigate the complexities of contemporary society. This infusion not only enhances teaching methods and student engagement within schools but also positions the institution as responsive and progressive in addressing societal shifts.

Moreover, incorporating new ideas into the curriculum promotes inclusivity and diversity within school communities. Exposing students to various viewpoints cultivates an environment that celebrates differences, encourages empathy, and nurtures mutual understanding among peers. This inclusive atmosphere not only fosters respect but also equips students with essential skills to interact effectively in an interconnected global society. Furthermore, introducing new ideas stimulates innovation and creativity within schools. Encouraging educators and students to explore unconventional approaches fosters a culture of innovation that inspires new problem-solving methods and nurtures a lifelong passion for learning. For example, schools could implement buddy programs pairing students from different backgrounds to promote cross-cultural understanding and empathy. Such initiatives provide opportunities for students to learn about each other's traditions, languages, and experiences, contributing to a more cohesive and accepting school environment. Additionally, organizing multicultural events or projects encourages students to share their unique perspectives, stimulating creativity and fostering innovation within the school community.

Furthermore, educational change, as viewed by Igbokwe Uche and Eke (citation needed), involves a critical reassessment of the goals and objectives of education. They argue that the value of any educational system lies in its ability to continually serve stakeholders effectively and remain pertinent to national development. Curriculum change is also synonymous with terms like educational reforms, development, and innovation. While innovation denotes

introducing entirely new aspects to the curriculum, development, and reform signify improving existing educational frameworks. Education's role in shaping society ensures that a universal, perfect curriculum for all ages is unattainable due to ongoing societal changes (Otunga, et al, 2011).

According to Otunga, et al (2011), curriculum change can manifest at three distinct levels: minor, medium, and major. Minor changes typically involve reorganizing the sequence of subject content or learning activities, or simply adding a new topic or method to the instructional framework. Medium changes may include innovations such as integrating subjects, introducing a new subject, or adopting a novel approach to an existing subject. Major changes, on the other hand, encompass comprehensive modifications across multiple aspects of the curriculum, including content, methods, approaches, and materials, and potentially removing or adding substantial components. These changes are often driven by factors such as technological advancements, societal demands, and shifts in educational ideologies. Implementing minor changes is generally straightforward, requiring minimal adjustments to the current curriculum. Medium-term changes, however, may necessitate more extensive planning and teacher training to effectively incorporate new elements into teaching practices. Major changes typically demand substantial collaboration and consultation among various stakeholders to ensure a seamless transition and successful integration.

For instance, a minor curriculum change could involve introducing a new computer software program to enhance student learning in a specific subject area. This adjustment might only require brief teacher training sessions and minimal adaptations to lesson plans. In contrast, a major curriculum change could entail transitioning from traditional classroom instruction to a blended learning approach, combining online and in-person teaching methods, necessitating comprehensive planning, training, and stakeholder involvement to achieve effective implementation.

History of Curriculum Change in Cameroon

- **Pre-Independence Educational System (Before 1960)**

Before Cameroon gained independence, education was largely influenced by colonial powers-France and Britain. The colonial education system focused on training clerks and administrators rather than developing critical thinking and problem-solving skills among students (Njeuma, 1999). Teacher training was limited, and there was little emphasis on continuous professional development beyond initial teacher education. This resulted in a lack

of qualified teachers and a curriculum that did not adequately prepare students for the challenges of a rapidly changing world. As a result, many students were not equipped with the necessary skills to compete in the global job market. Additionally, the colonial education system perpetuated inequalities by favoring urban areas over rural regions, further widening the gap between the rich and the poor. Overall, the pre-independence educational system in Cameroon was not designed to foster innovation or creativity but rather to maintain the status quo. This lack of innovation in the educational system hindered the country's ability to adapt to new technologies and advancements in various industries, ultimately stunting economic growth and development. According to Nkwi, Nyamnjoh, and Song (1998), the colonial education system in Cameroon was primarily focused on producing a workforce that could serve the interests of the colonizers, rather than empowering individuals to think critically and contribute meaningfully to society. This legacy of educational inequality and lack of emphasis on creativity continues to impact the country's education system to this day, highlighting the urgent need for reforms that prioritize innovation and equity.

The impact of colonial education systems on post-colonial societies has been well-documented in academic literature. Nkwi, Nyamnjoh, and Song (1998) argue that the legacy of educational inequality perpetuated by colonial policies continues to hinder the development of critical thinking skills and creativity among students in Cameroon. This lack of emphasis on innovation and equity in the education system has far-reaching consequences for the country's economic growth and development. As such, there is an urgent need for reforms that prioritize empowering individuals to think critically and contribute meaningfully to society. Investing in education that fosters creativity and critical thinking is essential for breaking the cycle of inequality and promoting sustainable development in Cameroon. By equipping students with the skills necessary to question, analyze, and innovate, the country can cultivate a workforce that is capable of driving progress and prosperity. It is imperative that policymakers and educators work together to create a more inclusive and dynamic educational system that empowers individuals to reach their full potential and positively impact their communities. Only through these reforms can Cameroon truly harness the talents and capabilities of its people for a brighter future.

Post-Independence Reforms and the Introduction of CPD (1960–1990)

Following independence in 1960, Cameroon sought to unify its dual French and British educational systems. The government introduced several reforms to improve teacher training, including the establishment of teacher training colleges and ongoing in-service training

(Tambo, 2003). By the 1980s, the government recognized the need for CPD as a strategy to enhance teacher performance and facilitate curriculum development.

This led to the introduction of Continuing Professional Development (CPD) programs for teachers in Cameroon during the period of 1960 to 1990. These programs aimed to not only improve teacher performance but also to facilitate curriculum development in order to meet the changing needs of the education system. Through the establishment of teacher training colleges and ongoing in-service training, the government took steps towards unifying the educational systems and addressing the colonial legacy of power and gender inequality in the country.

During this period, the CPD programs in Cameroon were structured to provide teachers with opportunities for professional growth and skill enhancement.

According to Beteck, Nkengasong, and Foncha (2018), these programs included workshops, seminars, and conferences that focused on areas such as pedagogy, curriculum development, and assessment techniques. The goal was to ensure that teachers were equipped with the necessary knowledge and skills to effectively deliver quality education to their students. Furthermore, the introduction of CPD programs in Cameroon also aimed to address the disparities in educational outcomes among different regions of the country. As noted by Ngoh (2016), the colonial legacy of unequal access to education had resulted in significant disparities in educational outcomes, with students in urban areas generally outperforming those in rural areas. By providing teachers with ongoing training and support, the government sought to bridge this gap and ensure that all students had access to high-quality education.

In addition to improving teacher performance and addressing regional disparities, the CPD programs in Cameroon also played a crucial role in curriculum development. As highlighted by Nkengasong and Foncha (2017), the changing needs of the education system required constant updates to the curriculum to ensure that it remained relevant and responsive to the needs of students and society. Through CPD programs, teachers were able to collaborate with curriculum developers and education experts to design and implement curriculum changes that better met the needs of students. Overall, the introduction of CPD programs for teachers in Cameroon during the period of 1960 to 1990 was a significant step towards improving the quality of education in the country. By providing teachers with ongoing training and support, the government was able to enhance teacher performance, address regional disparities, and facilitate curriculum development to meet the changing needs of the education system.

During this period, CPD was primarily conducted through face-to-face workshops, seminars, and refresher courses organized by the Ministry of National Education. However, these programs often lacked consistency and adequate funding, limiting their overall impact on teachers' professional growth (Ndille, 2016). As a result, the government recognized the need to explore alternative methods of delivering CPD to teachers that would be more sustainable and accessible. In response to this, the Ministry of National Education began to invest in online platforms and virtual resources for professional development.

This shift allowed teachers to engage in continuous learning opportunities from the comfort of their own homes, enabling them to stay up-to-date with the latest teaching strategies and educational trends. As a result, the quality of education in the country began to improve, as teachers were better equipped to meet the diverse needs of their students. Furthermore, the online platforms also provided a space for teachers to collaborate with colleagues from different regions, sharing best practices and innovative ideas. This virtual community of educators fostered a culture of continuous improvement and professional growth, leading to a more cohesive and supportive teaching environment.

The 1995 Education Forum in Cameroon marked a turning point in curriculum changes and CPD. The government adopted a new educational vision that emphasized competency-based learning and professional growth for teachers (MINESEC, 1995). Teacher training institutions were expanded, and new pedagogical strategies were introduced to improve instructional quality. The forum also highlighted the need for CPD to help teachers adapt to curriculum changes. As a result, more structured CPD programs were introduced, though their effectiveness varied across regions due to logistical and financial challenges. One key initiative to address these challenges was the establishment of regional training centers to provide ongoing support and resources for teachers. These centers offered workshops, seminars, and mentoring opportunities to help educators enhance their skills and stay up-to-date with best practices in teaching. Additionally, partnerships with universities and educational organizations were formed to offer online courses and professional development opportunities for teachers in remote areas.

According to a study by Smith et al. (2018), teachers who participated in structured CPD programs reported feeling more confident in their ability to implement new teaching strategies and adapt to changes in the curriculum. This highlights the importance of investing in high-quality CPD programs that are tailored to the needs of teachers in different regions. By

prioritizing professional growth and providing ongoing support, the government can continue to improve instructional quality and enhance student learning outcomes in Cameroon.

In a study conducted by Smith et al. (2018), it was found that teachers who engaged in structured CPD programs not only reported increased confidence in their teaching abilities but also demonstrated a greater willingness to experiment with new pedagogical approaches. This is particularly crucial in a rapidly evolving educational landscape where teachers must constantly adapt to changes in the curriculum and teaching methodologies. By investing in high-quality CPD programs that are specifically tailored to the needs of educators in different regions, the government can effectively support teachers in their professional development journey.

Furthermore, research has shown that ongoing professional growth opportunities can lead to improved instructional quality and ultimately enhance student learning outcomes (Smith et al., 2018). By providing teachers with the necessary resources and support to continuously develop their skills, the government can ensure that educators are well-equipped to meet the diverse needs of their students. This not only benefits individual teachers but also has a positive impact on the overall quality of education in Cameroon. Lastly, prioritizing professional development for teachers through tailored CPD programs is essential for promoting continuous improvement in instructional quality and student learning outcomes. By investing in the growth and development of educators, the government can create a more dynamic and effective educational system that empowers teachers to excel in their roles.

1.2.2. The Key Curriculum Change in Cameroon Secondary schools.

The curriculum of secondary schools in Cameroon has undergone several changes over the years. These changes reflect an ongoing effort to modernize the educational framework in Cameroon, making it more relevant to current societal and economic needs.

Competency-Based Approach. The transition from a content-based to a competency-based curriculum is a major change. This new approach encourages students to acquire skills and knowledge that are applicable in real-life situations. According to Ndongko (2021), this shift emphasizes critical thinking, problem-solving abilities, and the application of knowledge in practical contexts. Unlike traditional rote learning, which focuses on memorization and repetition, CBA fosters critical thinking, problem-solving, and practical skills essential for real-world contexts (O'Neil & Schreiber, 2020).

In CBA, students advance upon mastering competencies rather than progressing through a predetermined curriculum timeline. This mastery-based approach allows learners to spend as much time as needed to achieve full understanding and readiness (Wiggins & McTighe, 2005). This shift from a time-based to a mastery-based system ensures that all students are adequately prepared before moving on to more complex concepts.

Integration of Technology: With the rapid advancement of technology, the new curriculum integrates digital literacy and information technology as fundamental components. This change is intended to prepare students for a digital economy (Nguime, 2022). The use of ICT in education enhances learning experiences, promotes engagement, and improves academic performance (Baker, 2019). The introduction of digital tools and resources allows for varied teaching methodologies, catering to diverse learning styles (Higgins, 2020). Curriculum integration of ICT should focus on more than just the tools; it must emphasize critical thinking, problem-solving, and creativity (Voogt & Roblin, 2012). This approach can be realized through project-based learning, where students utilize technology to research, collaborate, and present their findings.

Assessment Methods: Changes in assessment strategies (continuous and formative assessment) reflect the new curriculum (Etoh, 2020). Continuous assessment is an instructional strategy focused on gathering information about student learning throughout the course rather than at a single point in time, such as during a final exam. This approach encourages ongoing engagement, allowing educators to identify and address learning needs promptly. Research indicates that continuous assessment can enhance motivation and improve academic performance by providing timely feedback (Black & Wiliam, 1998).

Also, Formative assessments are tools used by educators to monitor student learning and provide constructive feedback during the instructional process. These assessments can take various forms, including quizzes, discussions, peer reviews, and reflective journals. The primary purpose of formative assessments is to inform both teaching and learning, ensuring that students understand the material and are on track to meet learning objectives (Shute, 2008). Evidence suggests that when implemented effectively, formative assessment can lead to significant improvements in student outcomes (Hattie & Timperley, 2007). as well as project-based assessments that require students to demonstrate their competencies in real-world scenarios (Republic of Cameroon, 2022).

Inclusive education: This refers to the practice of educating all students together, regardless of their physical, intellectual, or emotional challenges (UNESCO, 2017). It emphasizes the removal of barriers to access and participation in education, ensuring that every student receives equitable opportunities for learning and development. It promotes an educational environment where diversity is valued, leading to a culture of understanding and respect (Florian & Linklater, 2010). This approach not only benefits students with special needs but also enhances the educational experience for all learners.

Interdisciplinary learning: This is an educational approach that integrates insights and methods from different disciplines to facilitate a more cohesive and comprehensive learning experience. According to Tchombe (2020), the revised curriculum emphasizes this methodology to enable students to draw connections between diverse subjects, thereby enhancing their overall understanding and fostering innovative thinking. Interdisciplinary learning involves breaking down the traditional silos of subject-specific education, allowing students to explore concepts that span multiple fields. This approach encourages learners to engage with content in a way that reflects real-world complexities. For example, a student studying environmental science might also delve into economics and sociology to understand the multifaceted impact of climate change. By connecting knowledge from various disciplines, students develop a more comprehensive understanding of subjects.

This holistic perspective prepares them for real-world challenges where problems are rarely confined to a single discipline. Interdisciplinary learning encourages creative problem-solving by exposing students to diverse viewpoints and methodologies Tchombe (2020). By synthesizing ideas from different fields, they can generate innovative solutions. **Enhanced Engagement:** Students are often more engaged when they see the relevance of their studies to real-world applications. Interdisciplinary projects tend to capture their interest and motivate them to explore topics further. Working on interdisciplinary projects often requires collaboration among students with different expertise or interests. This teamwork can enhance communication skills and foster a spirit of collaboration.

1.2.3. Importance of curriculum changes

Advancement of Knowledge:

Knowledge is continually advancing, with new theories emerging that were previously unrecognized. Students need to be aware of these developments. As knowledge evolves, the curriculum must also adapt. Updating the curriculum ensures that students remain current with

the latest theories and information, better preparing them for the changing job market. By integrating new knowledge, educators can equip students with the most relevant skills and information necessary for their future success. Moreover, revising the curriculum promotes critical thinking and encourages students to engage with innovative ideas and challenging concepts. This dynamic approach fosters a learning environment where students are motivated to question, analyze, and explore different perspectives. Introducing new topics and concepts stimulates students' curiosity and instills a passion for lifelong learning, which is essential for personal and professional growth.

As students acquire the skills needed to adapt to an ever-changing world, they become better prepared for success in the 21st century. For instance, in an arts class, a teacher might introduce a topic like climate change. By presenting various scientific viewpoints and fostering open discussion, students are encouraged to question existing beliefs and critically evaluate evidence. This approach not only deepens their understanding but also enhances critical thinking and problem-solving skills. Consequently, students become active learners with a broader perspective on complex issues, equipping them for future academic and professional challenges.

Progress of Technology:

As technology advances, its impact on education necessitates changes in the teaching-learning process. For instance, the integration of ICT in classrooms exemplifies this shift. The curriculum must evolve to incorporate technological tools, enhancing students' understanding of subjects and equipping them with skills essential for navigating a digital world. This integration prepares students for future academic and professional challenges where technology is integral. It fosters creativity, collaboration, and innovation, allowing students to approach problems in novel ways. Furthermore, technology provides access to a vast array of resources, enabling students to engage in independent research and expand their knowledge beyond the classroom.

Online platforms offer educational materials, interactive simulations, and multimedia presentations, enhancing the learning experience. This not only deepens subject matter understanding but also encourages critical thinking and the development of unique perspectives. Technology also facilitates communication and collaboration among students, allowing them to connect with peers from diverse backgrounds and work together on projects. This fosters global awareness and empathy, as students learn to appreciate different perspectives and

collaborate in multicultural teams. The needs, interests, and abilities of learners have significantly changed from those of the past. In the 21st century, computer literacy has become essential, necessitating its inclusion in the curriculum. This was not a priority in previous generations.

Additionally, technology can personalize language learning through apps and online platforms, helping students practice listening, speaking, reading, and writing skills. The rapid advancement of technology makes developing digital literacy crucial. This includes proficient use of computers and software, as well as the ability to critically evaluate online information. By incorporating computer knowledge into the curriculum, educators ensure students have the necessary skills for modern success, reflecting the changing job market where many professions now require computer proficiency.

Reconstruct curriculum according to teaching methods:

Currently, the teaching approach is student-centered, emphasizing the importance of the child in the education process. Various innovative teaching methods, such as collaborative learning, spaced learning, flipped classrooms, self-learning, and cross-over learning, are now being utilized. Consequently, the curriculum is frequently updated to align with these new teaching methods. This adjustment is also driven by the increasing emphasis on computer proficiency.

The curriculum must evolve to incorporate new teaching methods to ensure that students develop the skills and knowledge necessary for success in the modern job market. The integration of technology in education is essential as industries rely more on digital tools and platforms, requiring candidates who are adept at navigating various digital environments. As a result, educational institutions are restructuring their curricula to prepare students for these professional demands. By embedding new teaching methods that enhance computer proficiency, educators can better equip students with the essential skills for their future careers. For instance, a business school might add coding and data analysis courses to its curriculum to prepare students for finance careers where these skills are increasingly vital. Additionally, partnerships with technology companies can provide students with practical experience and internships, allowing them to apply their digital skills in real-world contexts.

Globalization:

Globalization refers to the process of interaction and integration among people, companies, and governments worldwide. This interconnectedness provides a unique

opportunity to observe how curricula are implemented in different countries, allowing for comparisons based on specific interests. By evaluating and adopting more effective elements from these comparisons, the curriculum can be improved and adapted. To prepare students for the globalized world they will enter upon graduation, educators can incorporate a global perspective into their teaching methods. This can involve including multicultural literature, encouraging cultural exchanges, and providing opportunities for students to collaborate with peers from different countries. Such practices help students develop a deeper understanding and appreciation for other cultures, while also gaining cross-cultural communication and collaboration skills that are highly valued in today's global job market.

Incorporating a global perspective into teaching methods also fosters empathy and open-mindedness among students. Exposure to different cultures and perspectives helps students understand the importance of diversity and inclusion. This approach contributes to creating a more inclusive and tolerant society, where individuals can work together towards common goals despite their differences. Moreover, providing opportunities for students to collaborate with peers from different countries helps them develop essential skills such as adaptability, teamwork, and problem-solving in diverse settings.

These skills are valuable not only in the global job market but also in promoting a sense of global citizenship and fostering a more interconnected world. For example, a school could implement a program that pairs students from different cultural backgrounds to work on projects together. This initiative would allow students to learn about each other's traditions, values, and perspectives, thereby promoting understanding and empathy. Working together towards a common goal would help students develop key skills like communication and compromise, which are essential for success in diverse settings. Such experiences benefit students individually and contribute to a more inclusive and harmonious society.

Curriculum Research:

Curriculum research aims to enhance and update educational programs. Through this process, numerous new findings are uncovered, prompting a need for curriculum redesign. The updated curriculum should integrate diverse perspectives and cultural content, providing students with a thorough understanding of various traditions and values. By incorporating these findings, the curriculum can foster inclusivity and empathy among students. Additionally, it should emphasize the development of critical thinking and problem-solving skills, preparing students to succeed in diverse environments and contribute to a cohesive society. Thus,

curriculum research is vital in creating an educational framework that aligns with the evolving values and needs of society.

Moreover, curriculum research keeps educators abreast of the latest advancements in various fields, allowing them to integrate these developments into the classroom. This ensures students receive a relevant and up-to-date education that equips them for future challenges and opportunities. Continuous review and updating of the curriculum enable educators to adapt to changing societal needs and prepare students with the necessary skills and knowledge for an ever-evolving world. Additionally, curriculum research helps identify gaps and areas for improvement, allowing educators to address deficiencies and provide a comprehensive education for all students.

For instance, curriculum research in secondary schools can lead to the integration of technology and digital literacy skills across subjects. Educators conduct research to discover the most effective methods for incorporating technology into the classroom, ensuring students acquire essential digital skills for the future workforce. This approach identifies shortcomings in current teaching methods and aids in developing relevant, engaging lessons that prepare students for technology-driven careers.

An example of how curriculum research is applied in secondary school curricula is through the integration of technology and digital literacy skills into various subjects. Educators research to determine the most effective ways to incorporate technology into the classroom, ensuring that students are equipped with the necessary digital skills for the future workforce. This research helps identify gaps in current teaching methods and allows educators to develop relevant and engaging lessons that prepare students for technology-driven skills.

1.2.4. Factor influencing curriculum change

Societal Changes.

Cultural, socio-economic, and political shifts within a society can drive changes in the curriculum. For instance, the curriculum before independence in Cameroon was primarily designed to train clerks and secretaries for colonial administrators. Following independence, the Cameroonian society required a more diverse set of skills to function in various sectors, leading to significant curriculum modifications. Societal changes are an inevitable aspect of progress, encompassing advancements in technology and shifts in cultural norms. These changes, while sometimes met with resistance, are essential for growth and improvement. Embracing change is crucial for shaping a better future. In education, societal changes have

prompted a reevaluation of traditional teaching methods and curricula. As the world becomes more interconnected and globalized, students need to acquire skills that enable them to thrive in an ever-changing workforce.

This has led to a shift towards a more holistic and interdisciplinary approach to education, encouraging students to think critically, solve problems, and collaborate effectively. Moreover, there is an increasing emphasis on emotional intelligence and social skills as crucial components of modern education. Schools now focus more on fostering empathy, resilience, and adaptability, recognizing these traits as vital for navigating the complexities of contemporary society. For example, a high school might introduce project-based learning where students collaborate to address real-world issues, such as developing sustainable solutions for their community or creating business plans for social enterprises. This approach not only imparts technical skills but also encourages critical thinking, teamwork, and adaptability. Additionally, schools might integrate mindfulness and social-emotional learning programs to help students cultivate empathy, resilience, and self-awareness.

Technological Advances.

Updating the curriculum to reflect technological advancements is essential. For instance, the integration of computers and ICT has led to the inclusion of computer science in school programs and the adoption of new teaching methods such as computer-assisted instruction, web-based learning, and open distance learning. Besides updating the curriculum to align with technological changes, schools must also focus on equipping students with skills needed for success in a digital era. This includes fostering digital literacy, critical thinking, and problem-solving abilities essential for managing the vast amount of online information. By doing so, schools can better prepare students for the challenges and opportunities that technological advancements bring.

Moreover, schools should emphasize teaching online safety and responsible digital behavior. Given the rise in cyberbullying, identity theft, and online scams, students must learn how to protect their personal information and navigate the internet safely. Educating students about potential risks and informed online decision-making will empower them to become responsible digital citizens. Additionally, integrating technology into the classroom can enhance learning experiences and engage students in innovative ways. This might involve using interactive online tools, virtual reality simulations, and collaborative platforms that enable real-time communication with peers and experts globally.

Incorporating technology into the curriculum can create a dynamic and engaging learning environment, preparing students for a digital future. For example, a school might use computer-assisted instruction with interactive software that helps students practice math through engaging exercises and simulations. This not only improves their understanding of the subject but also hones their tech skills. Furthermore, promoting web-based learning by developing online platforms for educational resources, peer collaboration, and virtual classrooms can help students build the digital literacy and communication skills needed in today's workforce.

Political Factor.

Curriculum modifications are sometimes initiated by the government for political reasons. Even when these changes are proposed by curriculum developers, they require government support to be effective. For instance, the decision to shorten the course duration in English-speaking schools from seven to six years in Cameroon was a governmental policy aimed at harmonizing the English and French educational subsystems. Government policy changes can significantly impact the education system, necessitating thorough evaluation to measure their effectiveness and make necessary adjustments. The ultimate objective is to provide high-quality education that adequately prepares students. In Cameroon, the reduction in course duration sought to create a more standardized and balanced education system.

However, it's crucial to carefully assess the implications of such changes, as they can affect both the curriculum and the overall quality of education. Curriculum developers and government officials must collaborate to ensure these policies are effectively implemented and beneficial to students, preparing them for the modern workforce. This collaboration is vital to address potential challenges and maintain an effective and relevant education system. Moreover, involving educators, parents, and other stakeholders in the decision-making process is crucial to ensure their perspectives and concerns are considered. This inclusive approach can lead to the development of a comprehensive education system that meets the needs of all students. Continuous evaluation and assessment of the implemented policies are essential to ensure that students acquire the necessary knowledge and skills to thrive in an increasingly competitive global economy.

Globalization:

The growing interconnectedness of the world has led to a heightened focus on global education and cultural competency within school curricula. Globalization has interconnected nations through increased trade, migration, and communication, prompting schools to prepare

students for this globalized reality by integrating global education and cultural competency. This involves teaching students about diverse cultures, languages, and global issues, while fostering critical thinking, problem-solving, and collaboration skills necessary for navigating a complex global society. By doing so, schools equip students with the knowledge and skills needed to succeed in a global workforce and contribute positively to a diverse and interconnected world. Moreover, global education and cultural competency are crucial in fostering empathy and understanding among students. Learning about different cultures and perspectives broadens students' worldviews, helping them appreciate and respect the diversity of our global community. This education breaks down barriers and promotes unity and harmony among individuals from various backgrounds.

Additionally, global education encourages students to become active global citizens, empowering them to address global issues and positively impact their communities and beyond. By instilling a sense of global responsibility and awareness, schools are not only preparing students for the future but also nurturing compassionate and socially conscious individuals capable of making a difference in the world. A prime example of global education in action is the International Baccalaureate (IB) program, offered in schools worldwide. The IB curriculum emphasizes intercultural understanding and global perspectives, encouraging students to explore global issues such as climate change, poverty, and human rights. Students are empowered to take action through service projects and advocacy initiatives, providing them with the knowledge, skills, and mindset needed to address pressing global challenges.

Economic Factors:

Economic factors, such as shifts in job markets, workforce demands, and funding, significantly influence curriculum changes. For instance, an increase in service-oriented jobs might lead to a stronger emphasis on vocational training in schools. Conversely, reduced funding for education can result in smaller budgets for curriculum development and implementation, limiting the resources and opportunities available to students. Additionally, technological advancements and globalization necessitate the integration of new skills and knowledge relevant to the evolving job market. In today's fast-paced world, schools must adapt their curricula to align with workforce needs. As industries evolve, schools must ensure that students are prepared for future jobs by continuously evaluating and updating the necessary skills and knowledge.

Adequate funding is crucial in this process; without it, schools may struggle to provide the resources needed for a high-quality education. Insufficient funding can negatively impact students, hindering their ability to acquire essential skills and knowledge for the workforce. For example, in the technology sector, schools may need to update their curricula to include courses in coding and artificial intelligence, which are in high demand. Without proper funding, schools might not be able to afford the necessary software or equipment, leaving students underprepared for the job market. This underscores the importance of sufficient funding for schools to keep pace with industry changes and equip students with relevant skills for future employment opportunities.

Research and Development:

Advances in educational research and development significantly impact curriculum changes. For instance, new insights into how students learn and retain information can lead to revisions in teaching methods and curriculum design. Additionally, technological advancements enable the integration of digital resources and interactive learning tools into the curriculum, enhancing the learning experience and preparing students for the digital era. Furthermore, research on effective assessment methods may prompt educators to refine their evaluation strategies to more accurately measure students' knowledge and skills. Keeping up with educational research and development is essential for continuously improving and adapting the curriculum to meet students' evolving needs.

A particularly important area of research and development in education is the integration of technology. As technology rapidly advances, educators must stay updated on the latest tools and resources. Incorporating digital resources and interactive learning tools into the curriculum can enhance the learning experience and better prepare students for the digital age.

Moreover, integrating technology can engage students who might struggle with traditional teaching methods. Interactive learning tools offer a hands-on and visual approach to education, allowing students to actively participate and benefiting those with different learning styles or additional support needs. Digital resources provide a wealth of information and opportunities for exploration, enabling students to delve deeper into subjects and pursue their own interests.

New discoveries.

New discoveries can render certain subjects or knowledge outdated, necessitating changes in curriculum content and teaching methods. For instance, to effectively integrate technology into

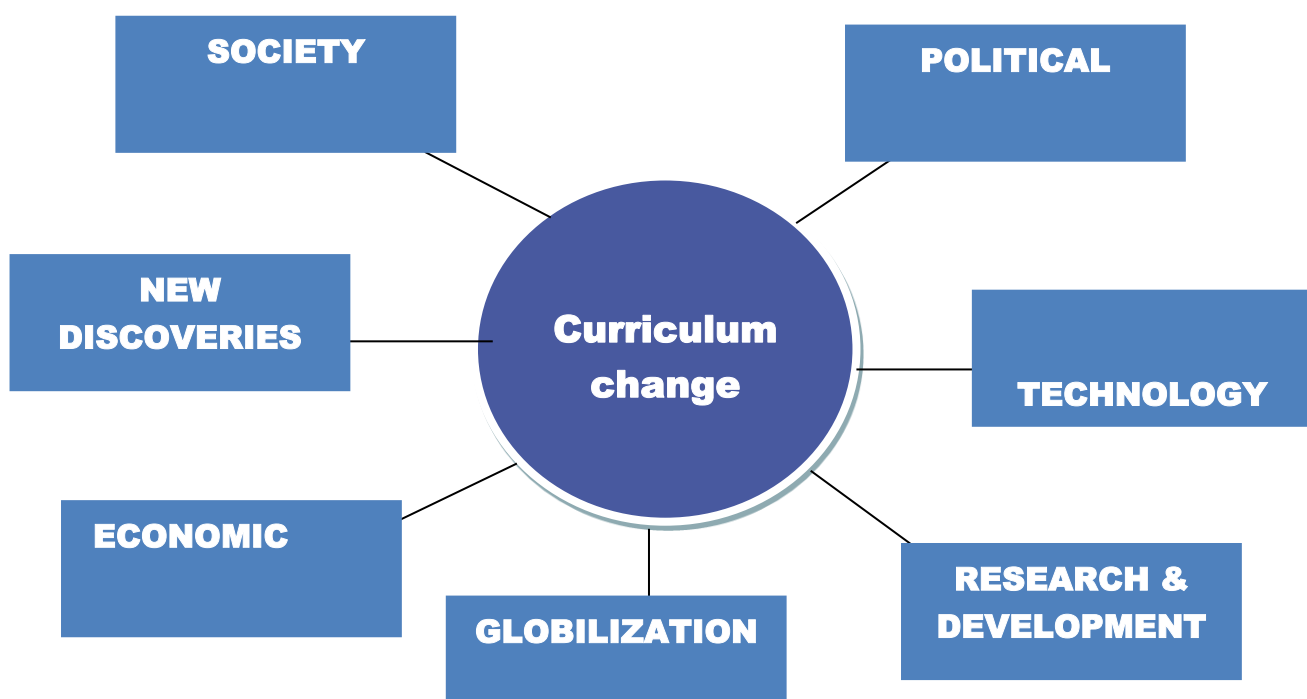
the education system, schools could partner with local tech companies to provide training and resources for educators and students. This collaboration would ensure the effective and relevant use of technology in the classroom, preparing students for future careers in the digital age. Additionally, involving parents and stakeholders in the decision-making process can help identify and address potential barriers, such as limited access to technology at home.

For example, the discovery of HIV/AIDS has led to its inclusion in the content of many school subjects. The school's curriculum is designed to facilitate smoother and faster progress through the academic year, addressing common complaints from students about workload and study time. These curriculum changes help streamline the educational process, reducing issues for both students and teachers. Integrating HIV/AIDS education across various subjects allows students to develop a comprehensive understanding of the disease, its societal impact, and the importance of prevention.

This interdisciplinary approach not only enhances knowledge but also fosters empathy and compassion for those affected by HIV/AIDS. Including HIV/AIDS in the curriculum promotes open discussions, breaking down the stigma associated with the disease and encouraging meaningful conversations about sexual health and responsible behavior. By addressing HIV/AIDS in multiple subjects, schools play a crucial role in equipping students with the knowledge and skills to combat this global epidemic.

For example, in biology classes, students may learn about the science behind HIV/AIDS transmission and prevention, including the importance of safe sex practices. In social studies classes, they might study the history and impact of HIV/AIDS on different communities worldwide, fostering understanding and empathy for those affected.

Figure 1: Factors influencing curriculum change



Source: [https://prepwithharshita.com › factors-influencing-curriculum change](https://prepwithharshita.com › factors-influencing-curriculum-change)

1.2.5. Approaches of Curriculum Change

➤ **The Administrative Approach:**

In this method, the superintendent of schools or another school administrator initiates curriculum development upon recognizing its necessity and establishes mechanisms to implement the required revisions. Faculty meetings focused on Curriculum Change, Research, and Curriculum are arranged to present the need for improvements. An advisory committee comprising administrative officers and teachers is then appointed to create general plans, develop guiding principles, and prepare a statement of overall objectives for the entire school system, forming the curriculum development manual.

The steering committee also devises plans for teacher training in curriculum development, determines the necessary consultants, and identifies activities to familiarize teachers with curriculum theory and practice. They establish production committees mainly consisting of teachers to prepare new courses aligned with the steering committee's objectives and guiding principles. Once these courses are completed, they are reviewed by either the steering committee or a specially formed committee. Finally, the courses are implemented and tested in classrooms. The administrative approach to secondary school curriculum change in Cameroon emphasizes involving teachers in curriculum development. By educating teachers on curriculum theory and practice, this approach ensures that new courses align with the objectives and guiding principles established by the steering committee. After thorough review and approval, the courses are implemented and tested in classrooms, allowing for feedback from teachers and students to refine the curriculum. This iterative process ensures the curriculum is effective and responsive to students' needs.

Regular monitoring and evaluation assess the curriculum's impact on student learning outcomes. For instance, during the implementation and testing phases, teachers might introduce a new mathematics curriculum focused on problem-solving skills. They collect student feedback through surveys and classroom discussions to gauge their learning experience and

identify improvement areas. Based on this feedback, the curriculum is adjusted to include more hands-on activities and real-life examples, enhancing its engagement and relevance. Continuous monitoring and evaluation allow teachers to track students' progress in math and identify any gaps or challenges, ensuring the curriculum remains effective and aligned with student needs.

➤ **The grass-roots approach.**

In its most extensive form, the grassroots approach encompasses the entire community, involving not just teachers but also students, parents, and other community members. This approach is based on several key principles. One principle is that when teachers are actively involved in shaping goals, selecting, defining, and solving problems, and evaluating results, their commitment to curriculum change is more likely to be secured. The grassroots procedure starts with individual schools within each neighborhood, encouraging each to work collaboratively on program development.

A crucial aspect of this approach is that it allows teachers, administrators, students, and parents to address common issues directly and collaboratively. The central administration's role is to offer leadership, resources, and support, including free time and materials as needed by the schools. Workshops and seminars are the primary techniques used in this approach. Additionally, it relies on consultants and informational resources such as bulletins and study guides from the central administration on topics like child development, community needs, and curriculum innovations.

In Cameroon, the grassroots approach aims to equip teachers and school leaders with the necessary knowledge and skills for informed curriculum change. Workshops and seminars help educators learn about the latest advancements in curriculum theory and practice, while consultants and study guides provide essential information on child development, community needs, and resources. This approach ensures continuous professional development, enhancing the overall quality of education in secondary schools. Effective curriculum change requires empowering teachers and school leaders with the right knowledge and skills. Workshops and seminars offer valuable opportunities for educators to learn about the latest innovations in curriculum theory and practice, facilitating idea exchange, collaboration, and expert insights. Consultants and study guides further support by providing crucial information on child development, community needs, and resources.

This comprehensive professional development approach not only improves educators' capabilities but also elevates the quality of secondary education. For example, at a curriculum

theory and practice conference, educators might participate in workshops on innovative teaching methods like project-based learning and flipped classrooms. They can then discuss with peers how to implement these methods in their own classrooms. Additionally, consultants and study guides can offer resources on social-emotional learning or integrating technology into the curriculum, helping educators meet diverse student needs more effectively.

➤ **The Demonstration Approach:**

The purpose of this approach is to implement changes in the regular school program gradually, minimizing disruptions among faculty and the community. By piloting changes on a small scale first, this method reflects a cautious, experimental attitude towards curriculum innovation. There are two forms of this approach. The first involves establishing an experimental unit within the school, where a separate faculty and administration are designated to develop new programs, methods, and materials that may later influence the entire school. The second form serves the same purpose but without a clearly defined separation between the experimental project and the rest of the school. In this case, a few enthusiastic teachers dissatisfied with the current program are given time, leadership, and resources to innovate in their classrooms. The goal is for their successes to inspire other teachers to rethink and adjust their own programs.

In terms of secondary school curriculum change in Cameroon, the demonstrative approach supports continuous professional development by fostering a collaborative and supportive environment. It encourages teachers to experiment with new ideas and initiatives, ensuring they feel empowered and backed in their efforts to innovate. This approach facilitates ongoing learning and improvement among educators, benefiting both teachers and students. For instance, administrative staff can organize regular workshops where teachers share their innovative practices, enabling peer learning and providing a platform for exchanging ideas. This collaborative atmosphere not only encourages risk-taking but also ensures that resources and support are available for implementing effective teaching strategies in classrooms.

Implementation of Curriculum Change in Secondary Schools in Cameroon

Curriculum change in secondary schools is a complex and multifaceted process, especially in a diverse and developing context like Cameroon. The implementation of curriculum change involves various factors such as governmental policy, teacher preparedness, resource availability, and the socio-cultural context of the school environment. The points below seek to provide a comprehensive understanding of the main areas of curriculum change

in Cameroon like Competency Based Approach (CBA), STEM education, which integrates science, technology, engineering, ICT, and Digitalisation and the processes, challenges, and outcomes associated with the various implementation.

1. The Competency-Based Approach in Secondary Schools in Cameroon

The Competency-Based Approach (CBA) was introduced in Cameroon to improve the quality of education by focusing on students' development of skills, knowledge, and attitudes, rather than rote memorization. The shift aligns with global educational trends that emphasize learner-centered teaching, critical thinking, and the application of knowledge in practical settings. In Cameroon, this approach aims to better prepare students to face real-life challenges and meet the demands of the labor market (Bamou, 2016).

The Ministry of Secondary Education (MINESEC) began incorporating CBA into the secondary school curriculum in the early 2000s, gradually integrating it into subjects such as languages, sciences, and vocational training (Ndongo & Tchente, 2019). The goal was to align the education system with global trends and market demands, moving away from traditional teaching methods that emphasized theoretical knowledge and rote memorization. The CBA curriculum is designed to emphasize key competencies, including problem-solving, communication, teamwork, and critical thinking (Mendong, 2011).

Objectives

The primary objectives of the CBA implementation were:

- To develop learners' competencies rather than focusing solely on theoretical knowledge.
- To align Cameroon's educational system with global standards, emphasizing learner-centered teaching.
- To equip students with the skills necessary to navigate socio-economic challenges and succeed in the labor market.

Implementation Process

The Ministry of Secondary Education (MINESEC) spearheaded the rollout of the CBA in Cameroon, starting with the development of new curricula and teacher training programs. The process was phased over several years:

Curriculum Development and Integration: The CBA-based curriculum was introduced gradually, beginning with a few subjects and extending to others over time. The

curriculum was structured around key competencies in subject areas like languages, sciences, social studies, and vocational training. The Ministry of Secondary Education (MINESEC) began incorporating CBA into the secondary school curriculum in the early 2000s, gradually integrating it into subjects such as languages, sciences, and vocational training (Ndongo & Tchunte, 2019). The goal was to align the education system with global trends and market demands, moving away from traditional teaching methods that emphasized theoretical knowledge and rote memorization. The CBA curriculum is designed to emphasize key competencies, including problem-solving, communication, teamwork, and critical thinking (Mendong, 2011).

Teacher Training: In response to the pedagogical shift, the government organized in-service training programs to equip teachers with the skills needed for CBA implementation. The training emphasized learner-centered approaches, interactive teaching methods, and assessment techniques that go beyond rote memorization. A critical aspect of CBA implementation is teacher training. The government has made efforts to equip teachers with the necessary skills and strategies to implement learner-centered approaches in the classroom. Training programs were designed to enhance teachers' ability to engage students actively, facilitate learning, and assess competencies beyond traditional exams (Ndongo & Tchunte, 2019). However, the transition from traditional methods to competency-based pedagogy has faced challenges, as many teachers were initially unprepared for the new approach, and the change was met with resistance (Bamou, 2016).

Development of Teaching Materials: To support CBA, new teaching materials were developed, such as competency-based textbooks, digital learning resources, and interactive tools. These materials were designed to promote active learning, critical thinking, and practical application of knowledge.

Successes of CBA Implementation

Improved Student Engagement: One of the most notable successes of the CBA in Cameroon has been the increased engagement of students in the learning process. The learner-centered approach encourages students to take an active role in their education, which contrasts with traditional teaching methods that prioritize passive learning. Students are encouraged to engage in problem-solving, collaborative projects, and practical tasks that enhance their critical thinking and analytical skills (Ndongo & Tchunte, 2019). This shift has helped foster a more interactive and dynamic learning environment.

Enhanced Development of Competencies: The CBA has successfully emphasized the development of key competencies such as critical thinking, communication skills, teamwork, and problem-solving. These competencies are essential for students to navigate real-life challenges and succeed in the labor market. Studies show that students who are taught using a competency-based approach demonstrate better ability to apply knowledge in practical settings and are more adaptable to changing socio-economic environments (Mendong, 2011). The focus on practical skill development is seen as one of the most significant improvements in Cameroon's educational system.

Alignment with Global Educational Trends: Another success of the CBA in Cameroon is its alignment with global trends in education that emphasize 21st-century skills. The integration of the CBA into the curriculum is in line with global demands for education systems that prepare students for an ever-evolving world. By focusing on competencies such as collaboration, digital literacy, and adaptability, Cameroon's education system is preparing students for global challenges (Bamou, 2016).

Increased Teacher Reflection and Pedagogical Innovation: The implementation of CBA has also encouraged teachers to reflect on their pedagogical practices. Through training and professional development, teachers have adopted more diverse teaching strategies that incorporate student-centered learning. The shift from a teacher-led classroom to one that promotes active student participation has led to pedagogical innovations, including the use of new assessment methods such as portfolios and project-based learning (Ngongang, 2015). This has encouraged a more holistic approach to education that is seen as more effective in nurturing students' abilities.

Challenges of CBA Implementation

Resistance from Stakeholders: Resistance from both teachers and parents has also been a significant barrier to the full implementation of CBA. Teachers, particularly those with long-standing experience in traditional teaching methods, have expressed reluctance to adopt the new approach. They have cited difficulties in adjusting their teaching styles and concerns over the increased workload. Moreover, parents have raised concerns about the effectiveness of CBA in preparing students for national exams, which are still largely based on traditional academic knowledge and rote memorization (Mendong, 2011). This resistance has slowed down the widespread adoption of CBA and has contributed to its uneven success.

Curriculum Overload: Another failure of the CBA implementation has been the overwhelming nature of the new curriculum. The CBA curriculum includes a broad range of competencies that teachers are expected to cover, which has led to curriculum overload. Teachers often struggle to balance academic content with practical skills, and there is concern that the curriculum may not be manageable within the constraints of a typical school year. This has resulted in burnout among teachers and confusion among students, as they try to keep up with an extensive range of learning outcomes (Bamou, 2016).

Assessment and Evaluation: Challenges traditional methods of assessment, which focus on exams and standardized tests, are not fully compatible with the CBA's emphasis on practical competencies. The lack of a clear knowledge for assessing competencies such as teamwork, critical thinking, and creativity has been a challenge for teachers. As a result, many teachers revert to traditional assessment methods, which undermine the goals of the competency-based approach. There is also a need for more robust systems to track students' progress in acquiring competencies over time (Ndongo & Tchuente, 2019).

2. STEM Education in Secondary Schools in Cameroon:

STEM education, which integrates science, technology, engineering, and mathematics, has become a pivotal educational framework worldwide. Its integration into secondary education aims to prepare students for the complexities of the 21st century by equipping them with essential skills in innovation, problem-solving, and creativity. In Cameroon, STEM education has become a key focus of educational reforms aimed at aligning the country's educational system with the demands of the digital economy (Kouadio & Moke, 2017).

Implementation of STEM Education in Cameroon

The government of Cameroon has made significant strides to incorporate STEM education into its secondary school curriculum, especially in technical and vocational institutions. This shift reflects the global trend of prioritizing STEM fields to equip students with practical skills that are essential for success in an increasingly technological and interconnected world (Fonkem, 2018). The government's commitment to STEM education includes teacher training programs, the development of specialized STEM textbooks, and the establishment of modern science laboratories designed to support practical learning.

A major component of the STEM curriculum in secondary schools in Cameroon is the emphasis on practical applications of knowledge. For instance, students are encouraged to

engage in hands-on experiments, coding, and other technology-driven activities that allow them to apply theoretical knowledge in real-world contexts. This practical orientation helps to foster skills that are crucial for solving contemporary problems in various fields, including engineering, information technology, and environmental sustainability.

Successes of STEM Education in Cameroon

Increased Student Engagement in STEM Subjects: One of the major successes of the implementation of STEM education in Cameroon is the increased student engagement in STEM subjects. Students are now more actively involved in learning through practical experiments and projects, which are integral components of the STEM approach. According to Fonkem (2018), this active participation has led to a greater interest in STEM careers among students. By focusing on real-world applications of scientific knowledge, STEM education has sparked curiosity and innovation in the classroom.

Development of Modern Science Laboratories: The construction of modern science laboratories has been one of the most visible successes in the rollout of STEM education. These labs provide students with the opportunity to engage in hands-on experiments and apply theoretical knowledge in practical settings. Urban schools, in particular, have benefited from these infrastructure improvements, which have enhanced the quality of STEM teaching and learning (Kouadio & Moke, 2017). As a result, students in these schools have had access to resources that foster a deeper understanding of STEM subjects.

Improved Teacher Capacity and Professional Development: Teacher training and professional development programs have been pivotal in supporting the successful implementation of STEM education. These programs have helped to enhance the teaching capabilities of educators, especially in areas such as integrating technology into the classroom, fostering inquiry-based learning, and using innovative teaching methods (Bamou, 2016). Teachers who have undergone these programs report feeling more confident in their ability to teach STEM subjects effectively, contributing to better educational outcomes.

Alignment with Global Trends: The integration of STEM education into Cameroon's secondary schools aligns with global educational trends that emphasize 21st-century skills, such as problem-solving, creativity, and collaboration. This alignment not only prepares students for local job markets but also positions them to compete on a global scale (Kouadio & Moke, 2017). By adopting STEM as a core component of the curriculum, Cameroon is preparing students for the challenges of the evolving digital economy.

Challenges of STEM Education Implementation

High Costs of Resources: The costs associated with delivering practical STEM education such as purchasing laboratory equipment, computers, and educational software remain a significant barrier. For schools with limited budgets, the high cost of acquiring and maintaining these resources has slowed down the implementation of STEM education. Furthermore, the need for continual updates to technology and materials to keep up with global advances in STEM education presents an ongoing financial challenge (Mendong, 2011).

Resistance to Change: Some educators and parents have expressed resistance to the new STEM curriculum. In particular, there is a perception that the traditional education system, which focuses more on theoretical knowledge, is more effective for preparing students for exams. The emphasis on practical skills and problem-solving in STEM education requires a shift in mindset that has not been fully embraced by all stakeholders. This resistance has slowed the widespread adoption of STEM across all schools, particularly in areas where traditional teaching methods are still deeply ingrained (Bamou, 2016).

3. ICT Integration in Cameroon Secondary Schools

Information and Communication Technology (ICT) integration in education has been recognized as a key driver for improving teaching and learning processes in the 21st century. In Cameroon, the government has initiated several policies to promote the use of ICT in secondary schools. These initiatives align with global educational trends that emphasize digital literacy as an essential skill for students in an increasingly digital world (Fonkem, 2018). Also, ICT integration in Cameroon's secondary schools has made significant progress, particularly in terms of providing digital learning resources, enhancing the teaching experience, and increasing government investment in educational technology. However, challenges such as inadequate infrastructure, the digital divide between urban and rural schools, limited teacher training, and the high cost of ICT equipment continue to hinder the full implementation of ICT in education.

Government Initiatives and Policy Framework

The Cameroonian government has taken significant steps to promote ICT integration in education through various policies and projects. Among the key initiatives are:

The National ICT Policy

The government developed the National ICT Policy to ensure that technology plays a central role in education. This policy outlines strategies for equipping schools with ICT

resources, training teachers in digital pedagogy, and integrating digital content into the national curriculum (Mbua, 2017).

The "Digital Cameroon" Project

This initiative aims to modernize Cameroon's education system by encouraging the use of technology in secondary schools. The project focuses on providing schools with digital tools such as interactive whiteboards, educational software, and online learning platforms to enhance teaching and learning processes (Fonkem, 2018).

ICT Teacher Training Programs

Recognizing the importance of teacher preparedness, the Ministry of Secondary Education (MINESEC) has introduced several training programs aimed at equipping teachers with the necessary skills to effectively integrate ICT into their pedagogical practices. These training programs focus on digital literacy, the use of multimedia resources, and the incorporation of e-learning methods into traditional teaching approaches (Mbua, 2017).

✚ Successes of ICT Integration in Secondary Schools

Improved Access to Digital Learning Resources

One of the notable successes of ICT integration in Cameroon's secondary schools is the increased availability of digital learning resources. The introduction of educational software, e-books, and online platforms has enhanced students' ability to access learning materials beyond traditional textbooks. In some urban schools, students can now use digital tools to conduct research, collaborate on projects, and improve their technological skills (Fonkem, 2018).

Enhanced Teaching and Learning Experience

The use of ICT in classrooms has improved the teaching and learning experience by making lessons more interactive and engaging. Tools such as multimedia presentations, video tutorials, and online simulations have helped to simplify complex concepts, particularly in science and mathematics subjects (Ngongang, 2015). Additionally, teachers who have received ICT training have reported greater confidence in using technology to facilitate student-centered learning.

Government Commitment to ICT Development

The Cameroonian government's commitment to ICT development in education has led to increased investments in digital infrastructure. Programs such as the distribution of

computers to schools and the establishment of ICT centers in some secondary schools demonstrate the government's dedication to fostering digital education (Mbua, 2017). These efforts have helped bridge the technological gap in some urban schools, allowing students to develop essential ICT skills.

Introduction of Online Learning During COVID-19

The COVID-19 pandemic accelerated the need for digital education, leading to the implementation of online learning platforms in some secondary schools. Although this transition was unevenly distributed, it highlighted the potential of ICT in ensuring the continuity of education during disruptions. Schools that had already integrated ICT were able to shift to remote learning more effectively compared to those that had limited digital resources (Fonkem, 2018).

Challenges of ICT Integration.

Lack of Adequate Infrastructure

One of the most significant challenges facing ICT integration in Cameroon's secondary schools is the lack of adequate infrastructure. Many schools, particularly in rural areas, do not have access to electricity, internet connectivity, or sufficient computers for students (Ngongang, 2015). Even in some urban schools unreliable internet access hinder the effective use of digital learning tools.

Digital Divide Between Urban and Rural Schools

The disparity in access to technology between urban and rural schools remains a major concern. While some urban schools have access to modern ICT tools, rural schools struggle with basic infrastructure, making it difficult for students and teachers to benefit from digital learning opportunities (Mendong, 2011). This digital divide has contributed to inequalities in the quality of education across the country.

Resistance to Change

Despite government efforts to train teachers in ICT integration, many educators still lack the necessary skills to effectively incorporate technology into their lessons. Some teachers, especially older ones, are resistant to using digital tools, preferring traditional teaching methods (Mbua, 2017). Without proper training and continuous professional development, the full potential of ICT in education cannot be realized.

High Cost of ICT Equipment and Maintenance

The high cost of purchasing and maintaining ICT equipment is another major obstacle to successful ICT integration in secondary schools. Many schools operate on limited budgets, making it difficult to afford computers, projectors, and internet subscriptions (Fonkem, 2018). Additionally, the cost of repairing and updating outdated technology further limits the sustainability of ICT programs in schools.

Cybersecurity and Digital Literacy Issues

With the increased use of ICT in education, concerns about cybersecurity and digital literacy have also emerged. Many students and teachers lack awareness of online safety, making them vulnerable to cyber threats such as hacking, misinformation, and inappropriate content (Ngongang, 2015). Furthermore, without proper digital literacy training, students may struggle to differentiate between credible and unreliable sources of information online.

4. Digitalization of Secondary Education in Cameroon

The digitalization of secondary education in Cameroon represents a transformative shift toward modernizing the education system. Digitalization in education refers to the integration of digital technologies into teaching, learning, and administrative processes to enhance the efficiency and effectiveness of the education system. In Cameroon, the government has made efforts to digitalize secondary education through various policies, including the Digital Cameroon 2020 strategy and the National ICT Policy, aimed at integrating digital tools and platforms into schools (Fonkem, 2018). Despite these initiatives, the process of digitalization has been met with both successes and challenges.

Implementation of Digitalization in Cameroon's Secondary Schools

The Cameroonian government has launched several initiatives to promote the use of digital tools in secondary education. These initiatives focus on the integration of technology into the curriculum, the establishment of digital learning environments, and the training of educators to use digital platforms effectively.

1. National Policies and Strategies on Digitalization

- **Digital Cameroon 2020 Strategy:** This initiative aimed to modernize Cameroon's education sector by equipping schools with digital resources, internet connectivity, and

digital management systems (Mbua, 2017). It emphasized the adoption of e-learning platforms, digital textbooks, and cloud-based education services.

- **National ICT Policy for Education:** This policy focused on incorporating ICT into school curricula, training teachers in digital pedagogy, and ensuring equitable access to digital education resources (Ngongang, 2015).
- **Smart School Initiative:** Some secondary schools in Cameroon have adopted smart classroom technologies, including interactive whiteboards, digital assessment tools, and **online learning management systems (Fonkem, 2018).**

2. Infrastructure Development and Digital Resources

To facilitate digital learning, the government has invested in the development of digital infrastructure in secondary schools. This includes:

- **Provision of computers and tablets:** Schools, particularly in urban areas, have received ICT equipment to enable digital learning.
- **Internet connectivity initiatives:** Efforts have been made to provide broadband internet access to schools, though this remains inconsistent, particularly in rural areas (Mendong, 2011).
- **E-learning platforms:** Some secondary schools have adopted online learning platforms that allow students to access educational materials remotely.

3. Teacher Training and Digital Literacy Programs

Recognizing that teachers play a critical role in digital education, the government and private organizations have launched digital literacy training programs. These programs focus on: Training teachers on digital tools and platforms such as Microsoft Teams, Google Classroom, and Moodle (Mbua, 2017), Encouraging blended learning approaches that combine face-to-face instruction with online learning, Promoting coding and programming education to prepare students for careers in technology (Ngongang, 2015).

Successes of Digitalization in Secondary Education

The digitalization of education has expanded access to online learning materials, e-books, and multimedia educational content. This has allowed students to supplement their classroom learning with self-paced digital resources, improving their academic performance (Fonkem, 2018).

Digitalization has introduced interactive teaching methods that make learning more engaging. Teachers now use digital simulations, video lessons, and online quizzes to reinforce lessons, particularly in STEM subjects (Ngongang, 2015). This approach has been shown to improve student participation and understanding.

The COVID-19 pandemic accelerated the shift toward digital education. Schools that had already integrated digital tools were able to transition to online learning more effectively. This highlighted the importance of digital education in ensuring the continuity of learning during disruptions (Mbua, 2017).

The government's commitment to digitalizing education has resulted in increased investment in ICT infrastructure. Programs such as the distribution of digital devices and internet connectivity projects have helped lay the foundation for a more technology-driven education system (Fonkem, 2018).

Schools have started using digital platforms for student assessment, attendance tracking, and administrative management. This has improved efficiency in school operations and reduced the reliance on paper-based processes (Mendong, 2011).

Challenges of Digitalization in Cameroon's Secondary Schools

Despite efforts to digitalize education, many secondary schools, especially in rural areas, lack the necessary infrastructure and Many schools do not have enough devices to serve all students (Ngongang, 2015).

Many schools experience frequent internet outages, making online learning inconsistent and some rural schools lack stable electricity, further hindering digital education efforts (Mendong, 2011).

The digitalization process has been uneven, with urban schools having better access to digital resources than rural schools. This has widened the gap in educational opportunities, as students in rural areas have limited exposure to digital learning tools (Mbua, 2017).

Many teachers are not adequately trained in digital pedagogy. Some educators, particularly those accustomed to traditional teaching methods, are resistant to using technology in the classroom. Challenges include: Lack of confidence in using digital tools due to inadequate training. Resistance to change among older teachers who prefer conventional teaching methods (Fonkem, 2018). Inconsistent professional development opportunities for teachers in remote areas (Ngongang, 2015).

The cost implementing and maintaining digital education tools is a major challenge. Many schools struggle to afford: Purchasing new digital devices and software licenses. Regular maintenance of ICT infrastructure and Subscription fees for online learning platforms.

As digital education expands, cybersecurity risks become a growing concern. Many students and teachers lack awareness of online safety measures, making them vulnerable to cyber threats such as: Phishing attacks and online scams, Exposure to inappropriate online content and data privacy concerns regarding student information.

1.2.6. Management of curriculum change for effective curriculum implementation

The most successful digital transformations start with a shift in mindset at the employee, leadership, and organization levels. This shift produces a culture change that allows the school to be more agile, risk-tolerant, experimental, and collaborative (Kane, 2019). Change management is "the application of a structured process and set of tools for leading the people side of change to achieve a desired outcome; it is both a process and a competency" (Creasy, 2018). Change management is a widely accepted methodology to help organizations successfully implement substantial transformation and may be used to alter anything from the organizational structure or business environment to technology or job roles (Galli, 2018). Programs introduce change throughout their duration.

Lewin believed that any level of behavior is maintained in a condition of quasi-stationary equilibrium by a force field comprising a balance of forces pushing for and resisting change. This level of behavior can be changed by either adding forces for change in the desired direction or by diminishing the opposing or resisting forces. Lewin preferred the method of achieving change that is based on reducing the restraining forces in preference to increasing the 37 forces pushing for change (Schein, 1995). He argued that approaches involving the removal of restraining forces within the individual, group, or organization are likely to increase commitment and result in more permanent change than approaches involving the application of outside pressure for change.

Managing change effectively is crucial in educational settings. The school principal, central to the school's operations, significantly influences its success or failure during periods of change. An educational leader should actively lead change rather than simply being subject to it (McDonald & Van Der Horst, 2007). According to Briggs, principals must possess the skills to manage and lead the change process. This involves ensuring access to necessary policy documents, circulars, and guidelines, and thoroughly understanding the fundamentals of

curriculum changes. The process includes several phases: diagnosing issues, planning change, implementing adjustments, and reviewing progress.

Collaboration with staff ensures that those affected by the change are involved from the outset. Regardless of who makes the final decision, staff should feel consulted both as a group and as individuals, knowing their input influenced the outcome. This collaborative approach fosters ownership and commitment among staff, leading to smoother and more successful curriculum implementations. Moreover, regular communication and feedback sessions address concerns promptly, creating an open environment conducive to continual growth and development for both staff and students.

Furthermore, ongoing professional development opportunities are essential. These include workshops, seminars, and training sessions focused on the new curriculum and instructional strategies. Investing in staff professional growth equips them with the skills and knowledge to effectively implement changes, thereby enhancing education quality and boosting staff morale. Additionally, fostering collaboration among staff members cultivates a culture of shared responsibility, enabling them to overcome challenges together during the implementation phase. For instance, principals can organize regular professional development sessions where teachers share innovative teaching practices and learn from one another's experiences. This collaborative environment empowers teachers to experiment with new ideas, supported by their peers and administration.

Additionally, Graetz et al. (2014) outline the change process involving unlearning, changing, relearning, and institutionalizing change. This structured approach ensures that changes are effectively integrated into the school culture, reinforcing continual improvement aligned with desired outcomes. The new learner-centered curriculum emphasizes community-based learning activities and skills-oriented approaches, moving away from traditional teacher-centric models. This approach encourages active student engagement and critical thinking, transforming the teacher's role into that of a facilitator guiding students towards conceptual understanding. By empowering students to explore and interpret community resources independently, the curriculum fosters autonomy and self-direction in learning. This learner-centered approach not only enhances educational effectiveness but also prepares students for real-world challenges by promoting creativity, problem-solving, and lifelong learning skills. In summary, prioritizing holistic learning experiences over standardized assessments ensures that every student receives a quality education tailored to their individual strengths and passions.

This educational philosophy encourages intellectual growth, prepares students to navigate complexities beyond the classroom, and contributes to societal advancement.

Also, Kobola (2007) identifies several factors that contribute to resistance to change. At the individual level, resistance may stem from a perceived lack of personal control over unfolding events and attitudes shaped by past experiences of organizational change, which often include distrust and misunderstanding of the change intentions. At the group level, resistance can be attributed to factors such as group cohesiveness, social norms, participation in decision-making, and autonomy in actions. The distribution of organizational power and authority plays a mediating role, influencing resistance levels under different circumstances. Changes originating externally to a group may be viewed as threats to the status quo, particularly in tightly-knit groups that highly value their social interactions but have limited influence over the change process.

At the school level, factors like organizational structure, climate, culture, and strategic alignment with goals and values significantly impact the change process. Schools with hierarchical structures and rigid cultures may resist change due to a preference for stability and tradition over innovation. Conversely, schools with flexible structures and open climates tend to be more receptive to change, fostering collaboration and experimentation. Effective leadership strategy also plays a crucial role in driving and sustaining change; well-defined visions communicated by school leaders can inspire teachers to adopt new practices. Moreover, the level of support and resources provided by school administrations greatly affects the success of change initiatives. When leaders prioritize professional development, collaboration time, and necessary resources, teachers feel empowered and motivated to embrace change. Conversely, inadequate support may lead to resistance or apathy among teachers.

Therefore, school leaders must cultivate a culture of trust, collaboration, and continuous improvement to successfully initiate and maintain change within their communities. This begins with leaders modeling desired behaviors, fostering open communication, and demonstrating a commitment to professional growth. Leaders should create opportunities for teachers to collaborate, share ideas, and problem-solve both within their teams and across the school community. By establishing platforms for collaboration, such as regular team meetings and professional learning communities, leaders can enhance camaraderie among teachers and promote the exchange of best practices. Additionally, facilitating cross-grade-level observations and peer coaching allows teachers to learn from each other, fostering a culture of ongoing learning and improvement.

In summary, effective change management involves addressing individual and group concerns, aligning changes with organizational values, and providing sufficient support and resources to encourage adoption. By ensuring stakeholders understand and participate in the change process, leaders can mitigate resistance and promote positive outcomes that benefit both individuals and the broader educational community. Unrelated concerns also play a significant role in curriculum change implementation. During this phase, teachers may not perceive a direct connection to the intended curriculum changes. For instance, if the curriculum aims to enhance technological literacy among students, new programs will be introduced to achieve this goal. At this initial stage, teachers may not be informed about these efforts, and even if they are aware, they may not feel personally affected or engaged in influencing the changes (Bank et al., 2017).

In contrast, personal concerns arise when teachers become aware of how the proposed changes will impact their personal and professional lives. This awareness prompts them to respond to curriculum changes and motivates them to understand how the newly introduced innovations compare with their current practices. Curriculum developers should establish clear procedures to help teachers understand their evolving roles to these changes.

Task-related concerns are centered on the practical implementation of the desired changes. Teachers in this phase are focused on effectively integrating the newly introduced changes within the prescribed guidelines. Issues such as the availability of materials and appropriate teaching strategies are critical considerations that all stakeholders must address to ensure that teaching and learning processes positively impact educational outcomes.

Furthermore, impact-related concerns focus on how the innovation will influence broader societal aspects. Teachers in this phase are concerned with preparing learners for future job markets and leveraging the changes to enhance individuals' competitiveness and productivity. Curriculum developers must continuously address emerging issues related to personal, task-related, and impact-related concerns throughout the curriculum implementation process (Bank et al., 2019).

Ultimately, achieving widespread support for a new curriculum requires a critical understanding of the legitimacy of the changes. It necessitates personal endorsement from all involved parties, including teachers who must be informed about the proposed changes and guided through the implementation of new programs. During the implementation stage, developers introduce and adjust new programs within organizational structures to ensure

effectiveness. The incorporation stage involves integrating these proposed changes into established guidelines. Success in curriculum implementation depends on factors such as organizational readiness, the capabilities of administrative and academic staff, and the specific characteristics of the intended changes. Financial and personnel support are also crucial during this phase to expedite success. Moreover, empowering learners through choice and tailored learning experiences reduces resistance and enhances the effectiveness of curriculum incorporation. Institutional leaders play a vital role in motivating both students and teachers to support ongoing changes, ensuring a successful transition that is embraced by all stakeholders.

The Impacts of Curriculum Change on Secondary Education

Despite the challenges, the curriculum changes have had significant positive impacts in certain areas:

Enhanced Competencies

The changes have resulted in an emphasis on developing critical thinking, problem-solving, and practical skills among students. For instance, the 1995 reform emphasized competency-based education, which has been gradually integrated into secondary schools, particularly in urban areas (Bamou, 2016). This shift towards competency-based education has been beneficial in preparing students for the demands of the modern workforce. Students are not only learning theoretical knowledge but also gaining hands-on experience and practical skills that are highly valued by employers. As a result, graduates are better equipped to succeed in their chosen careers and contribute meaningfully to society. Overall, the impact of curriculum changes on secondary education has been largely positive, setting students up for success in a rapidly evolving world.

Furthermore, Smith and Johnson (2020) emphasize that the emphasis on competency-based education has also led to a greater focus on personalized learning and individualized instruction. This approach recognizes that students have unique strengths, weaknesses, and learning styles and aims to tailor education to meet their specific needs. By allowing students to progress at their own pace and focus on areas where they need the most support, educators are able to better address the diverse learning needs of all students. This personalized approach not only enhances student engagement and motivation but also fosters a deeper understanding of the material being taught. In this way, curriculum changes in secondary education are not only preparing students for the workforce but also promoting a more inclusive and effective learning environment for all.

- **Increased Access to ICT**

The integration of ICT into the curriculum has contributed to improving students' digital literacy. Fonkem (2018) highlights that schools that have received support for ICT resources have seen improvements in student engagement and learning outcomes. Furthermore, increased access to ICT allows students to develop essential skills that are required in the modern workforce. By incorporating technology into the curriculum, students are better prepared for the digital demands of the 21st century. This not only benefits individual students but also helps to bridge the digital divide and create a more equitable education system for all. As schools continue to prioritize ICT integration, students will have the opportunity to thrive in a technology-driven world and succeed in their future careers.

In addition to enhancing students' digital literacy and preparing them for the workforce, integrating ICT into education can also improve overall academic performance. Research has shown that incorporating technology into the classroom can lead to increased engagement, motivation, and collaboration among students (Jones & Moreland, 2020). Furthermore, ICT can provide personalized learning opportunities, allowing students to learn at their own pace and in a way that suits their individual learning styles (Smith et al., 2019). By leveraging technology in education, schools can create a more dynamic and interactive learning environment that fosters critical thinking, creativity, and problem-solving skills (Johnson & Smith, 2018).

- **Improved Teacher Training**

There have been some positive outcomes where teachers have had access to professional development workshops and seminars. These opportunities have helped some educators adopt new teaching methods aligned with the updated curriculum (Mbua, 2017). As a result, students are benefiting from more engaging and effective instruction that caters to their diverse learning needs. With improved teacher training, educators are better equipped to incorporate technology into their lesson plans and adapt their teaching strategies to meet the demands of the 21st-century classroom.

Overall, investing in teacher training can lead to better academic outcomes for students and a more innovative and successful education system. Furthermore, research has shown that teachers who receive ongoing professional development are more likely to stay in the teaching profession and feel a sense of job satisfaction. By investing in teacher training, schools can create a supportive and collaborative environment that fosters continuous growth and improvement among educators. This not only benefits teachers themselves but also has a

positive impact on student achievement and overall school performance. Additionally, teacher training can help address disparities in education by providing all educators with the tools and resources they need to effectively support diverse student populations. By prioritizing teacher training, schools can ensure that all students have access to high-quality instruction that prepares them for success in the modern world.

- **Curriculum Relevance**

Reforms have focused on making the curriculum more relevant to the socio-economic context of Cameroon. The inclusion of technical and vocational education in the secondary curriculum has aimed to better prepare students for the workforce (Ngongang, 2015). This shift in curriculum has been crucial in bridging the gap between education and employment opportunities for students in Cameroon. By incorporating practical skills and knowledge that are applicable to real-world scenarios, schools are better able to equip students with the tools they need to thrive in today's competitive job market. Additionally, by emphasizing the importance of technical and vocational education, schools are helping to break down societal barriers and provide all students with equal opportunities for success.

According to a study by Mba, N. E. (2019), the integration of technical and vocational education in the curriculum has resulted in a significant increase in the employability of students in Cameroon. This shift towards a more practical and skills-based approach has not only improved the quality of education but has also helped to address the skills gap that exists in the labor market. By focusing on hands-on learning and industry-relevant skills, schools are preparing students for the demands of the modern workforce and setting them up for success in their future careers.

1.2.7 Models of Curriculum Change.

Wheeler model of curriculum development (1967)

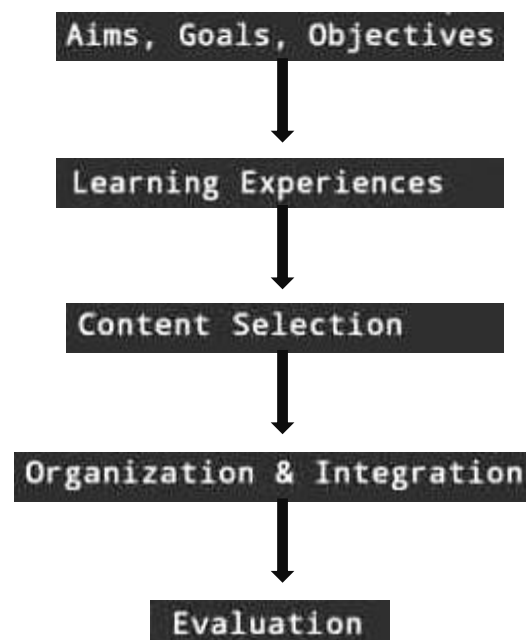
The Wheeler model of curriculum development is a cyclical and dynamic model. It views curriculum development as a continuous, interactive and flexible rather than a linear sequence. Unlike linear models, Wheeler's framework views curriculum development as a dynamic process in which evaluation provides feedback for ongoing improvement (Carl, 2009). The model consists of five interrelated phases arranged in a cycle. These phases or stages operate

in a continuous cycle ensuring that the curriculum remains responsive to changing educational needs (Hurix, 2023).

The first phase includes aims, goals and objectives. This is the starting point of curriculum planning. Aims are broad educational intentions, goals are subject specific intentions and objectives are measurable learning outcomes. These guide all other curriculum decisions. The second phase is selection of learning experiences. It focuses on the activities learners engage in, emphasizes learner-centered approaches example: group discussion, practical work and projects. The third phase is selection of content. This refers to what is taught (Knowledge, skills, and attitude), content is selected based on learning experiences and it must be relevant, meaningful and appropriate.

The fourth phase of wheelers model is organization and integration. It arranges content and experiences in a logical sequence, ensures continuity, progression, integration and aligns teaching methods with objectives. The last phase is evaluation. It assesses whether the objectives are achieved, it also includes tests, observation, feedback and ensures that findings are fed back into the system. This makes the model cyclical continuous.

Figure1: The Five phases or stages of Wheelers model



The cyclical nature of wheelers model aligns with the concept of continuous professional development, which promotes continuous improvement in teachers' knowledge

and instructional practices. Evaluation with the mode mirrors the role of CPD in providing feedback that enhances teaching effectiveness and supports curriculum implementation. Wheelers model strongly aligns with this study in the following ways: Firstly, wheeler emphasizes continuous evaluation and revision while continuous professional development provides teachers with ongoing training and skills update. Continuous professional development feedback mechanisms in wheelers model, ensuring curriculum implementation improves over time.

Secondly, Wheeler model is responsive to change because curriculum is not fixed but continuously adapted. Curriculum helps teachers accept and respond positively to change. Thirdly, Wheelers model sees teachers as active participants while continuous professional development empowers teachers with skills and confidence and teachers with adequate skills are more likely to: participate in curriculum decisions, show positive attitudes towards curriculum change. Wheelers model provides a suitable theoretical framework for examining the relationship between continuous professional development and teachers attitude towards curriculum change.

Organizational Developmental Model (ODM)

Organizational development encompasses various strategies aimed at enhancing school productivity and effectiveness. According to Barnard (1998), the Organizational-Developmental Model evaluates and incorporates techniques that help teachers and schools adapt more effectively to changing circumstances (Schmuck & Miles, 1971). One key technique within this model is team building, which encourages collaboration and communication among teachers and staff, fostering a cohesive and supportive work environment. Another essential aspect is leadership development, focusing on training and nurturing effective leaders within the school who can inspire and guide others.

Moreover, the organizational development model emphasizes continuous learning and improvement, encouraging teachers and staff to participate in professional development activities and remain updated on the latest educational research and best practices. These techniques enable schools to navigate the evolving educational landscape and enhance overall performance. They not only benefit the school community as a whole but also positively impact individual teachers and staff members. Creating a supportive and cohesive work environment through team building promotes camaraderie and mutual support among colleagues, leading to

higher job satisfaction and productivity. When teachers feel valued and supported, they are more likely to be motivated and engaged in their work, ultimately improving student outcomes.

Leadership development plays a critical role by equipping individuals with the necessary skills to lead effectively. By investing in leadership growth, schools cultivate a culture of strong leadership that permeates all levels of the institution. For instance, within a collaborative environment, teachers frequently collaborate on lesson planning and resource sharing, which enhances their ability to meet students' diverse needs and improves learning outcomes. Additionally, developed school leaders can provide mentorship and guidance, fostering continuous learning and growth across the school community.

This holistic approach contributes to positive student achievement and overall school success. When teachers feel valued and supported by their leaders, their motivation and engagement increase, benefiting students directly. Furthermore, a culture of collaboration and ongoing learning fosters a sense of community among staff members, promoting a positive and inclusive school environment. By investing in the professional development of teachers and leaders alike, schools establish a solid foundation for success, ensuring that every student receives a high-quality education.

The focus areas of this model are as follows:

- Improve the school problem-solving and renewal processes;
- Emphasis on teamwork and school culture;
- Treat curriculum implementation as an ongoing and interactive process; and
- There are always new programs, new materials, and new methods to try out.
- The school's ability to work as a team and to fit the needs of its members. According to Barnard (1998), the model focuses on developing practices to foster:
 - supervisory behaviors.
 - Teamwork among workers and between workers and management.
 - Confidence, trust, and communication among workers and between workers and management.
 - More freedom to set their objectives.

Organizational Development Process

Step 1: Identification of Problems

The first step in organizational development involves identifying the issues that require change. To pinpoint the underlying causes of these issues, senior management may seek

assistance from consultants who specialize in the relevant field of expertise. This process focuses on uncovering the fundamental reasons behind performance problems.

Step 2: Collection of Data and Information

Management must gather data and information concerning the working environment and performance issues within a school. This information can be collected through methods such as interviews, questionnaires, or direct observation of employees' behaviors and perceptions. These methods are essential for identifying discrepancies between actual activities and the expected standards.

Step 3: Feedback and Confrontation

Once data and information about problems and opportunities are collected, another crucial step in the organizational development process is systematically analyzing the data. A concise summary of the data should be prepared to understand the study's feedback. This summary should be handled constructively to reduce conflict among involved parties.

Step 4: Preparation of Action Plans

A comprehensive plan must be developed to address the identified issues. A team should be engaged to handle the problems during the planned change process. This team will generate alternative solutions, evaluate their impacts, and make recommendations for organizational change. Detailed plans are essential for this purpose.

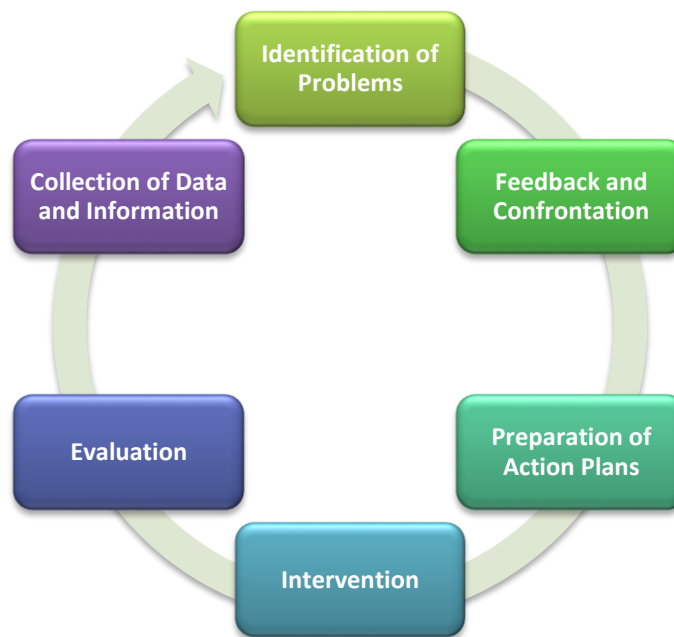
Step 5: Intervention

Organizational development emphasizes leveraging human and social interactions to address resistance to change. At the school level, the principal can employ multiple techniques to enhance the school's performance. These methods include sensitivity training, survey feedback, process consultation, team building, intergroup development, counseling, and coaching. These activities are designed to cultivate a positive attitude and adaptive behavior among teachers towards embracing change.

Step 6: Evaluation

Assessment marks the final phase in the organizational development journey. Organizational development remains an ongoing process that extends to the operational aspects of the organization. Evaluating the outcomes of organizational initiatives is crucial to assessing their influence on organizational performance and efficiency. This evaluation informs future action planning and interventions aimed at enhancing performance outcomes going forward.

Figure 2: The six steps of the organizational development process



Source: (Barnard, 1998)

1.2.8. Concerns-Based Adoption Model. (CBAM)

The concern-based adoption model (CBAM) is specifically tailored for educators. It aims to facilitate the adoption of policies and curricula by identifying and addressing group and individual needs, thereby easing the process of adapting to curriculum changes. By addressing both the emotional and cognitive concerns of teachers, CBAM seeks to streamline the change process. This model primarily focuses on describing, measuring, explaining, and comprehending how teachers change when implementing new curriculum materials and instructional practices (Bellah & Dyer, 2007).

It outlines the developmental stages individuals go through as they become familiar with innovations in curriculum change and implementation (Sweeny, 2008). CBAM places the teacher at the center of school curriculum change and implementation efforts, while also recognizing and addressing social and organizational influences. The model operates on several assumptions and assertions that guide its application in educational settings. These assumptions form the basis of the three components of the concern-based adoption model, which include:

- Stages Of Concern (SOC)
- Level Of Use (LOU)
- Innovation Configuration (IC)

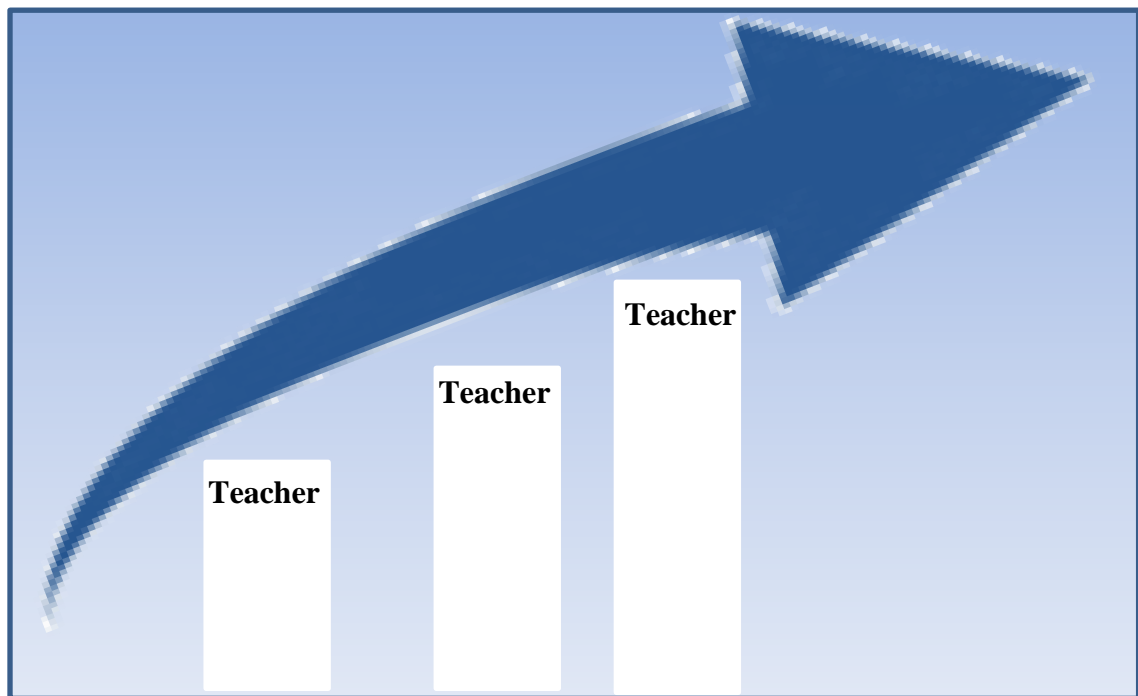
However, the foundational assumptions underpinning the concern-based adoption model (CBAM), which was developed to observe and facilitate policy and curriculum change and implementation (Straub, 2009, p. 633), are explicit. Change is viewed as a gradual process rather than a sudden event, necessitating time for effective implementation. The model emphasizes that for institutional change to occur, individual transformation must precede it. The experience of change is deeply personal, and individual perceptions significantly shape its outcomes.

Additionally, the model posits that change involves developmental growth, where individuals progress through emotional and capability stages as they adopt new practices and innovations. A diagnostic approach centered on teachers can enhance their facilitation during curriculum implementation and staff development. The focus of facilitation should encompass individuals, innovations, and the specific context. Furthermore, continuous monitoring is essential for those overseeing the change process.

Similarly, the concern-based adoption model addresses three fundamental assumptions. Firstly, it concentrates on the individual concerns regarding innovation or change, specifically examining teachers' attitudes toward curriculum change in this study. Secondly, it explores the manner in which the change or innovation is introduced and implemented by teachers. Lastly, CBAM considers how the adaptation of change aligns with the individual teacher (Hall & Hord, 2001). The diagram below illustrates CBAM as a roadmap for policy and curriculum implementation. As curriculum change and implementation are process-driven, teachers vary in their responses.

In this study, teachers implement curriculum changes at different paces, stages, and levels within CBAM. Some quickly adapt to curriculum implementation at higher stages, acting as facilitators who inspire others to follow suit. Conversely, others progress at lower stages. As teachers resolve their concerns through support from policymakers, school management, professional development, and ongoing training, they advance to higher levels of implementation effectiveness in their classrooms. This journey is likened to travelers on a road to a shared destination, with some teachers well ahead, others in the middle, and some starting out, as depicted below.

Figure 3: Concerns-Based Adoption Model Road Map



Source: (Hall & Hord, 2001, adapted from Mugweni, 2020, p. 77)

An examination of the assumptions underlying the Concerns-Based Adoption Model reveals that curriculum change is a gradual process and a deeply personal experience. Therefore, interventions such as continuous professional development should prioritize addressing teachers' needs before focusing on curriculum change itself. In Cameroon, the Ministry of Education and school management act as facilitators whose role includes clarifying expectations for teachers and attentively addressing their concerns during curriculum change implementation.

Facilitators should align support and resources with the specific implementation needs of teachers at this stage of change. It is crucial to establish a clear vision of curriculum change to serve as a roadmap for successful implementation. Teachers require motivation from school management and knowledgeable colleagues to embrace changes such as competency-based approaches, which have been introduced in Cameroonian secondary schools since the academic year 2012/2013.

The Concerns-Based Adoption Model functions as a diagnostic tool rather than a prescriptive one, guiding facilitators (school management) on effective adoption strategies. The Stages of Concern assess the intensity of teachers' feelings and perceptions towards policy and

curriculum implementation. The Levels of Use gauge behaviors related to how teachers implement or utilize the change, such as competency-based approaches.

Innovation configurations involve creating maps that outline the operational components of an innovation and how they can be adapted, reinvented, or adjusted (Dirksen & Tharp, 1997, p. 1065). These tools are essential for facilitators to effectively support teachers throughout the adoption process. By understanding teachers' concerns, levels of adoption, and innovation configurations, facilitators can tailor their support to meet individual needs.

This personalized approach enhances the prospects of successfully implementing new policies and curricula. Additionally, these tools enable facilitators to monitor progress and make necessary adjustments to ensure a seamless transition.

➤ **Stages of concern (soc)**

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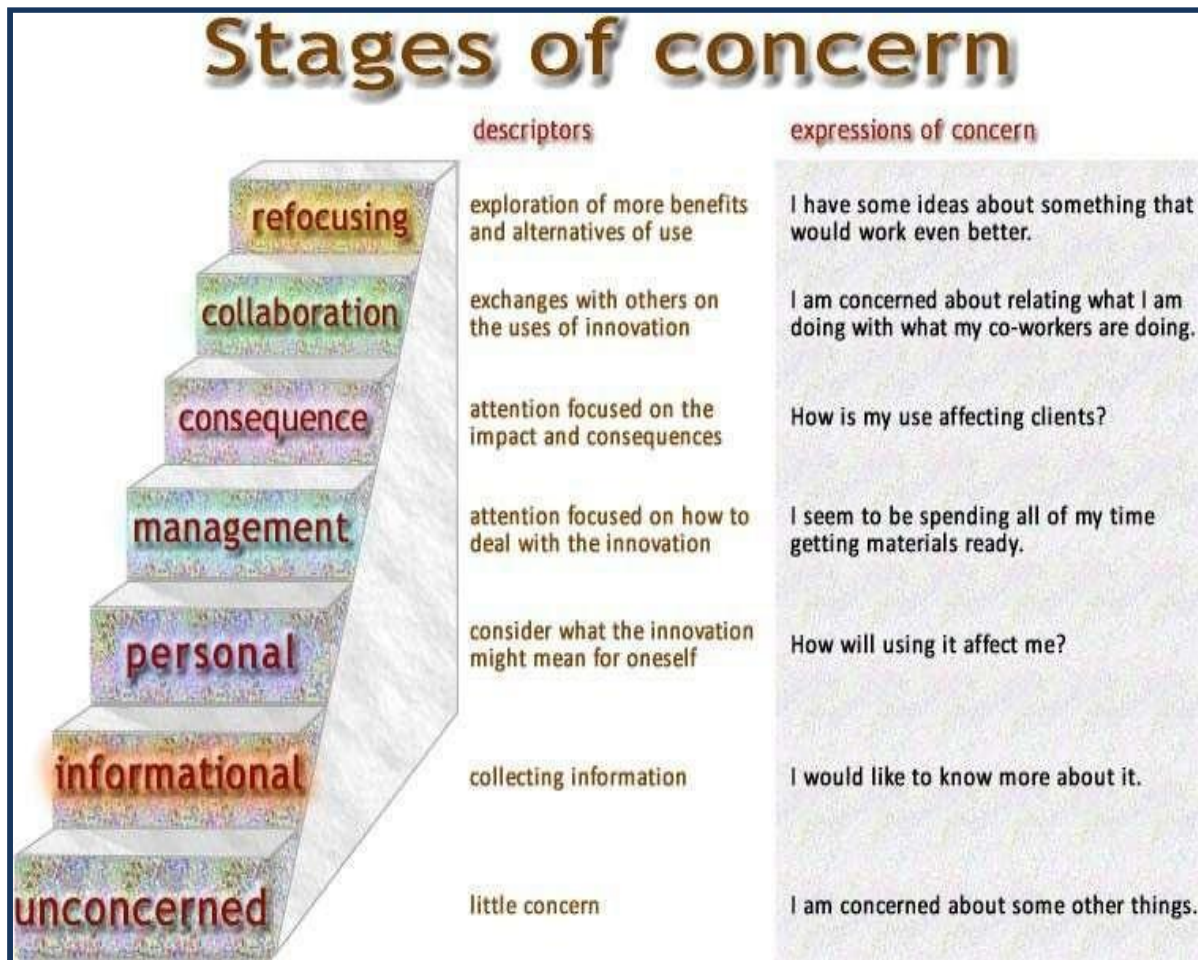
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Figure 4: Stages and Expression of Concern



Source: (Hall & Hord, 2001, adapted from Mugweni, 2020, p.80)

As mentioned earlier, during the unconcerned or awareness stage, teachers exhibit minimal interest or knowledge about the impending change or innovation (Anderson, 1997, p. 334). They may begin seeking information to gain a better understanding of the subject matter. At this stage, teachers are primarily focused on learning more about the curriculum change or innovation and its potential implications, showing little worry about its adoption (Straub, 2009, p. 635). Additionally, Hall and Hord (2001) argue that during the initial stages of implementing a change or innovation, teachers are primarily concerned with fundamental aspects of the innovation, such as its general characteristics, effects, and requirements for practical use.

The personal stage signifies heightened anxieties among teachers regarding their ability to effectively implement the curriculum, its appropriateness, and the personal costs associated with involvement. Moving to the management stage occurs when teachers begin experimenting with implementing the curriculum change. Here, concerns intensify around logistical challenges and the new behaviors required to implement the change effectively (Straub, 2009, p. 635). Issues related to efficiency, organization, management, scheduling, and time become paramount for teachers.

During the consequence stage, teachers shift their concerns predominantly towards evaluating the impact of the change on students in their classrooms and exploring opportunities to modify the innovation or its use to enhance its effectiveness. Hall & Hord (2001) suggest that this stage emphasizes the relevance to students and necessary adjustments to improve student outcomes.

Subsequently, the collaboration stage reflects teachers' interest in collaborating with their colleagues to collectively enhance the benefits of the curriculum change for students. Eventually, some teachers may progress to the highest stage known as refocusing. At this stage, teachers contemplate making significant modifications to how they use the innovation or possibly replacing it with a more effective alternative (Anderson, 1997, p. 334). This stage encourages teachers to consider their comparative effectiveness with peers and their collaborative potential in implementing curriculum changes.

In the final stage, also termed refocusing, teachers concentrate on enhancing the implementation of the innovation (Straub, 2009, p. 635). They explore broader benefits from the innovation, including the potential for substantial changes or replacements with more impactful alternatives for effective curriculum implementation. The second major dimension of the concern-based adoption model is the level of use of an innovation.

➤ **Levels Of Use (LOU)**

The Concerns-Based Adoption Model (CBAM) focuses on the levels of use that track general trends in teacher behavior as they prepare for, initiate, and gain proficiency in implementing classroom changes. LOU delineates the behavioral aspects of change, detailing what teachers do in their classrooms when transitioning from one instructional method to another (Horsley & Loucks, 1998).

Progressing through these levels involves critical decision points and corresponding actions across multiple domains: information acquisition, assessment, sharing, planning, status

reporting, performance, and knowledge (Anderson, 1997). Levels of Use illustrate how performance evolves as teachers become more acquainted with and skilled in utilizing a change. Essentially, these levels document teacher actions regarding the educational change at hand.

Hall & Hord (2001) outline eight levels that depict where a teacher stands in terms of their adoption and implementation of an innovation. These levels include non-use (0), orientation (1), preparation (2), mechanical use (3), routine (4a), refinement (4b), integration (5), and renewal (6). Newhouse (2001) contends that these levels represent the sequence through which teachers progress as they grow more comfortable with adopting educational innovations, with level 0 indicating minimal familiarity and no immediate plans for implementation. Orientation (level 1) begins when a teacher decides to adopt an innovation (Anderson, 1997).

Preparation (level 2) follows, during which a teacher actively readies themselves for implementation without yet putting it into practice in the classroom. Mechanical use (level 3) marks the beginning of implementation, where teachers face challenges in logistics, information acquisition, new content, and teaching skills associated with the change, focusing on making the innovation more manageable for themselves. Routine use (level 4) is achieved when a teacher establishes a consistent pattern of utilizing the innovation with minimal changes or adaptations.

According to Hall & Hord (2001), most teachers typically settle into a routine level of using innovations. However, some teachers actively assess how the innovation impacts their students and may refine their implementation strategies, progressing to Level 4b Refinement. At Level 4a, teachers' adoption of innovations becomes more focused on student-centered approaches.

Level 5, Integration, describes a phase where teachers collaborate with peers to enhance implementation for student benefit (Hall & Hord, 2001). During integration, teachers extend the impact of their implementation efforts beyond their own classrooms. Eventually,

However, Level 6, some teachers begin exploring alternative practices for innovation. Anderson (1997) emphasizes that the Concerns-Based Adoption Model's Levels of Use schema represents a potential, rather than mandatory, developmental progression in teacher behaviors and classroom practices focused on implementing specific changes.

Anderson further asserts that teachers often engage in orientation behaviors to learn about promising innovations but may not implement all tasks they are introduced to. Teachers might choose to discontinue new policies, curricula, or practices even while at the mechanical level

of use due to factors like inadequate support, curriculum challenges, or resource limitations. Those who achieve routine use of new practices typically continue using them without substantial modifications to implementation strategies that benefit both themselves and their students.

Therefore, the level of use a teacher attains in implementing change depends on interactions among various factors such as teacher norms, characteristics of the innovation, support during implementation, available resources, time, experience with implementation, and administrative encouragement and backing.

The Concerns-Based Adoption Model illustrates that individuals initially adopt and implement innovations at the mechanical level (Level 3) and management stage (Stage 4). During this phase, teachers' planning tends to be short-term, and their organization and coordination of the innovation might be fragmented. Through increased experience and familiarity with the innovation, teachers progress to routine use and refinement stages where adjustments are made based on student needs, thereby facilitating adaptation to curriculum changes and active participation in the implementation process.

Loucks et al. (2003) suggest that when changes are well-planned, experienced users develop concerns that align with stages such as consequences, collaboration, and refocusing. Teachers who reach the collaboration stage understand the value of change and, given time and opportunities, continue providing collaborative support to colleagues regarding change initiatives. These behaviors correlate with a positive response to policy and curriculum implementation efforts, ensuring sustained effectiveness over time as teachers, the agents of change, continue to develop their practices.

According to Hall & Hord (2001), the levels of innovation use also evolve in predictable patterns from non-use (Level 0) through routine use (Level 4a) to renewal (Level 6). At the renewal stage, individuals may progress to higher levels, revert to mechanical use (Level 3), or remain at the routine level indefinitely. Understanding how teachers' concerns and levels of innovation use are likely to evolve over time equips policy makers and school administrators with a framework for planning and supporting interventions effectively.

Finally, the Concerns-Based Adoption Model acknowledges that once teachers' practices become routine, they may not always progress to higher levels. This could stem from constraints such as limited time and resources, which hinder their ability to reflect on whether their pedagogical approaches align with policy expectations and reform objectives. Psychological

factors, as noted by Hope (1997), also play a role when teachers encounter curriculum changes, particularly in terms of adjusting to new instructional practices. Hall and Hord (2001) observed that teachers often face challenges when implementing curriculum changes due to insufficient training and unclear guidance on their roles in the new initiatives, which can lead to variations in implementation outcomes compared to the intended goals of the developers.

Table 1: Teacher Levels of Use of an Innovation and Typical Behaviors

Level of Use	Behavioural Indicators
6. Renewal	The user seeks more effective alternatives to the established use of the innovation.
5. Integration	The user makes deliberate efforts to coordinate (collaborate) with others in using the innovation.
4b. Reinforcement	The user makes changes to increase outcomes.
4a. Routine	The user makes few or no changes and has an established pattern of use.
3. Mechanical	The user makes changes to better organize use of the innovation.
2. Preparation	The user has definite plans to begin using the innovation.
1. Orientation	User takes the initiative to learn more about the innovation.
0. Non-Use	No action is being taken with respect to the innovation.

Source: (Hall et al,1987, adapted from Mugweni,2020)

According to Burgess et al. (2010), lower levels (mechanical and routine) signify a superficial adoption or adaptation of an initiative, involving day-to-day practices without deeply engaging with underlying principles or integrating them contextually. Conversely, higher levels indicate teachers who demonstrate reflective behaviors and collaborate meaningfully, showing a deeper engagement with the subject matter (Kember & Mezger, 1990).

The risk associated with teachers operating at the mechanical level is that implementation may remain superficial (Hall & Hord, 1987; 2001), where changes are adopted without thorough integration into practice or consideration of contextual nuances (Burgess et

al., 2010). This pattern appears consistent with typical practices observed among teachers in school settings.

Furthermore, the Concerns-Based Adoption Model highlights that inadequate resources for introducing, implementing, and sustaining innovations can exacerbate challenges faced by teachers during implementation. Insufficient resources and lack of support often leave teachers struggling to grasp and effectively utilize newly introduced educational innovations (Hall & Hord, 2001). Consequently, Bellah & Dyer (2007) note that evaluation measures, when employed, tend to focus on whether teachers are using the innovation, often overlooking the adequacy and appropriateness of available resources.

If teachers are using the innovation, regardless of resource constraints, it is often considered a success and conversely, non-use is deemed a failure. In this study, the Stages of Concern and Levels of Use serve as valuable analytical tools to examine how secondary school teachers perceive, respond to, and implement curriculum changes or innovations.

➤ **Innovation Configurations (IC)**

As part of the CBAM, innovation configurations enable teachers to clearly define what effective innovation looks like in a specific context, such as the classroom, and to identify what adjustments can be made to minimize complexity without compromising the innovation's effectiveness.

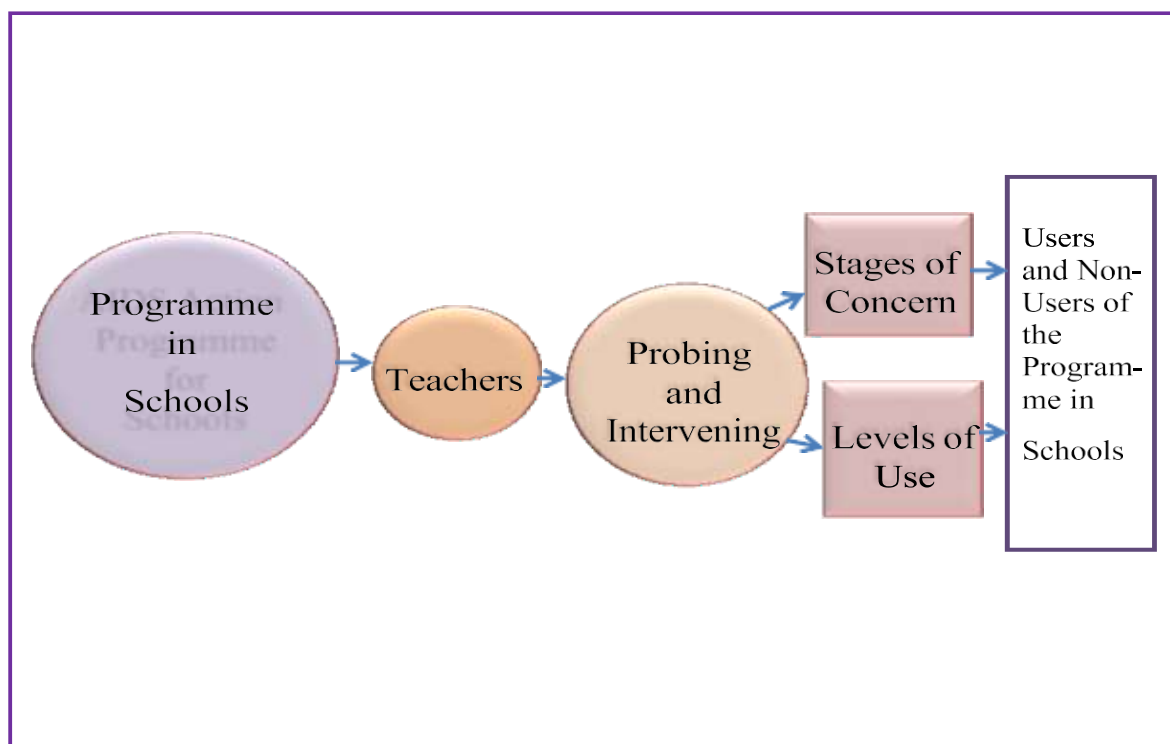
Additionally, innovation configurations illustrate the different patterns of use that emerge when various teachers implement changes in their classrooms (Hall & Hord, 2001). This tool assists school administrators and evaluators in ensuring that teachers are implementing the innovation correctly.

Hall & Hord (2001) emphasize that innovation configurations help delineate the essential components of a new program intended for classroom implementation. It is crucial to identify the main elements of any new program. Innovation configurations provide school management with insights into why certain behaviors are observed in the classroom.

According to Hall & Hord (2001), data from innovation configurations can be used to monitor implementation progress and identify issues related to the innovation's adoption. Through innovation configurations, CBAM seeks to understand more about innovations and find better ways to support teachers during the implementation process by observing what occurs naturally.

This method helps track the change process. The Innovation Configurations framework ensures that all teachers have a shared understanding. Effective implementation requires active involvement and support from policymakers, curriculum developers, school administrators, and knowledgeable colleagues. Teachers progress through Stages of Concern and Levels of Use, which results in varying levels of engagement with the new program, depending on each teacher's stage of concern and level of use.

Figure 5: Innovation Configurations (IC)



Source: (Adapted from WestEd 2000)

Relating the innovation configuration (IC) model to our work, the stages of concern and levels of use among teachers significantly impact the effective implementation of curriculum changes. School management's probing and intervention can boost teachers' motivation and performance by enhancing their understanding of policies, curriculum components, and requirements. As previously mentioned, teachers can be categorized as either users or non-users of the innovation in their classrooms, based on their stage of concern and level of use (Hall & Hord, 2001).

Facilitators need to establish a support system for innovation implementation, where probing and intervention are integral to achieving change. This intervention may include continuous professional development workshops, seminars, or the provision of resources. Probing can be conducted by monitoring the implementation process of the subject area,

ensuring teachers receive the necessary support to effectively implement the innovation and address any arising challenges or concerns.

By offering ongoing support and resources, facilitators can help teachers progress from non-users to proficient users of the innovation in their classrooms. Combining probing and intervention enables facilitators to guide teachers through the implementation process, ultimately leading to successful change within the school environment.

Additionally, by monitoring the implementation process, facilitators can collect valuable feedback on the innovation's effectiveness and identify areas for improvement. This feedback can inform adjustments to the implementation plan, ensuring teachers have the tools and support needed to integrate the innovation into their teaching practices successfully. Maintaining open communication lines with teachers allows facilitators to promptly address any concerns or challenges, preventing potential obstacles to successful implementation.

For example, if a school is rolling out a new technology program, facilitators can regularly gather feedback from teachers about their experiences with the technology in the classroom. This feedback can highlight areas where additional training or resources might be required, supporting teachers in effectively using the new technology. By proactively addressing these needs, facilitators can ensure a smoother and more successful integration of the innovation into teaching practices.

1.2.9. Lewin's model of change

Lewin's change management model, developed by psychologist Kurt Lewin, is one of the earliest frameworks to explore group dynamics in organizational settings (Immordino, 2017). Often hailed as the pioneer of social psychology, Lewin used applied and action research to develop practical methods for addressing challenges faced by individuals and organizations. He introduced the classic three-step change model: Unfreeze, Change, and Refreeze. This model requires old behaviors and beliefs to be discarded and replaced.

In the first step, "Unfreeze," Lewin emphasizes the need to create a sense of urgency and motivation to abandon old behaviors. The "Change" step involves implementing the desired changes, which necessitates new learning and a shift in mindset. The final step, "Refreeze," focuses on stabilizing and reinforcing the new behaviors to make them the norm, ensuring long-term sustainability. Lewin's model offers a clear framework for understanding how to let go of old behaviors and adopt new ones.

According to Lewin, the behavior of both groups and individuals is influenced by restraining forces, which ultimately determine the success of change efforts. These restraining forces often manifest as resistance to change and serve as significant barriers. Lewin suggests that balancing these forces through effective communication, employee involvement, and training is crucial. Change agents should implement stress management techniques, ensure compliance, and use persuasive reasoning to facilitate the change process.

In the context of our study, Lewin's theory can help understand the behaviors of groups (teachers) and individuals (individual teachers) when adopting new teaching practices. Restraining forces, such as fear of leaving their comfort zones, resistance to new methods, or lack of confidence, can impede change. Effective communication and teacher involvement are essential to balance these forces and encourage the adoption of new practices. Providing training, implementing stress management techniques, ensuring compliance with new standards, and using convincing reasoning can aid in facilitating positive and successful changes in teachers' continuous professional development.

Educational institutions should create a supportive environment where teachers feel safe to voice their concerns and seek assistance. Addressing the underlying fears and anxieties that may hinder acceptance of change can foster a culture of openness and collaboration. Additionally, ongoing feedback and evaluation processes can help identify areas for improvement and provide necessary guidance for navigating changes. A comprehensive approach that addresses both individual and organizational factors is essential for successful change in teachers' professional development.

For instance, workshops and group discussions can be effective in addressing teachers' fears and anxieties during changes in professional development. These sessions provide a safe space for teachers to express their concerns and receive support from colleagues and administrators, helping them navigate through changes more effectively.

The 3 Stages of Change in Lewin's Model

To support his Force Field Theory, Lewin proposed a simple three-step model that helps employees adapt to change. This model includes three main stages: unfreeze, change, and refreeze.

➤ Stage 1: Unfreeze

The first stage in Lewin's model focuses on managing perceptions and preparing stakeholders for the forthcoming organizational change. Change leaders need to enhance their

readiness for change and create a sense of urgency, similar to Kotter's change model. This initial phase is often the most challenging as it involves disrupting the current status quo and convincing employees of the necessity of the proposed transformation (Burnes & Bargal, 2017).

During this stage, effective communication is crucial for gaining buy-in and support from team members involved in change management. This involves clearly explaining the reasons behind the change and its benefits for the organization and its stakeholders. Change leaders must address any concerns or resistances that arise, providing reassurance and support to those affected. Properly managing this unfreezing stage is essential for setting the groundwork for a successful transition to the subsequent stages of the change model.

Furthermore, open and transparent communication builds trust and credibility among team members, fostering a positive and collaborative environment. Change leaders should actively listen to feedback and encourage dialogue, facilitating a two-way communication process. This approach not only addresses any misconceptions or doubts but also empowers employees to feel valued and involved in the change process. Through effective communication, change leaders can create a shared understanding and commitment towards the desired change, thereby increasing the likelihood of successful implementation and long-term sustainability.

➤ **Stage 2: Change**

Once the old values, structures, and expectations are discarded, it is essential to establish a new direction to maintain the initial momentum (Randall et al., 2018). This stage focuses on the implementation of change after the disruption of the status quo. An agile and iterative approach that incorporates employee feedback is crucial for a smooth transition. Open communication and transparency are necessary to keep employees informed and involved throughout the process. By integrating employee feedback, organizations can identify potential obstacles and make necessary adjustments to ensure a successful transition.

This agile approach allows for flexibility and adaptability, facilitating a more effective implementation of change. Involving employees or teachers in the change process helps build trust and buy-in, as they feel their input is valued. This involvement can lead to higher engagement and motivation, as employees or teachers are more likely to feel invested in the success of the change. Additionally, incorporating their feedback can reveal valuable insights and perspectives that might have been overlooked. By listening to and addressing their

concerns, organizations can tackle potential resistance or challenges directly, fostering a more supportive and collaborative environment for change.

The following activities under the 'refreeze' stage will help you embrace change better.

- Ensure a continuous flow of information to obtain the support of your team members.
- Organize change management workshops and sessions for change management exercises.
- Empower employees to deal with the change proactively.
- Generate easy wins, as visible results will motivate your team.
- **Stage 3: Refreeze**

Finally, Jabri (2017) emphasizes the need to firmly establish and formalize new values, structures, and procedures. In this phase, teachers or employees transition from change to stabilization or acceptance, moving towards the 'refreezing' stage where these elements are solidified. Failure by change leaders to consistently embed these changes in the organizational culture risks reverting to previous behaviors, undermining the progress achieved during the transition.

To prevent regression, leaders must provide ongoing support through training, communication, and recognition of those embracing the new culture. Soliciting feedback from employees helps identify resistance or challenges during refreezing, enabling leaders to address concerns promptly. Furthermore, emphasizing accountability through regular evaluations reinforces desired behaviors and values. These efforts ensure the new culture becomes deeply integrated within the organization, laying a strong foundation for sustained success (Jabri, 2017).

For instance, in the context of a secondary school curriculum change, change leaders can foster collaboration among teachers and students. They can promote teamwork and encourage innovative teaching methods that foster active student engagement. Regular meetings and workshops can ensure accountability in implementing the new curriculum effectively, promoting continuous improvement and student-centered education.

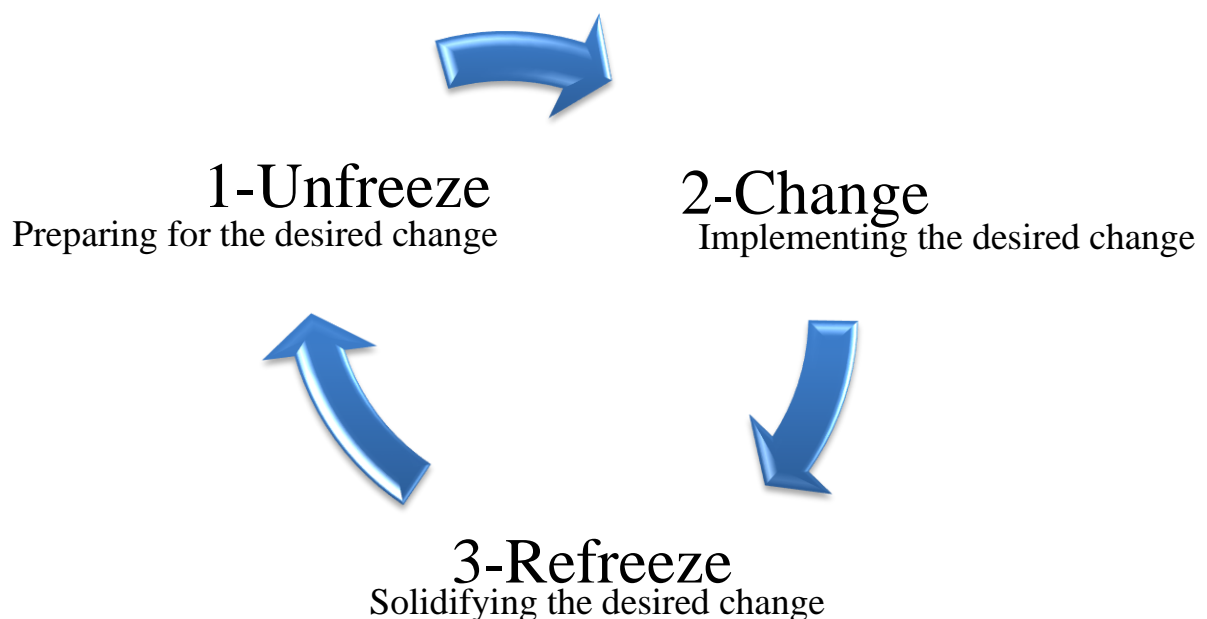
Establishing feedback systems allows leaders to assess and adjust the new culture based on input from teachers and students. Additionally, providing professional development opportunities supports teacher growth, reinforcing the new culture and ensuring its longevity.

Ultimately, by nurturing a collaborative and innovative environment, change leaders enhance the educational experience for all stakeholders involved (Jabri, 2017).

The following activities under the 'refreeze' stage will help you embrace change better:

- Identify and reward early adopters and change champions.
- collect employee feedback regularly.
- offer on-demand employee training and support.
- Explore adoption platforms.

Figure 6: Lewin 'model of change



Source: (Caglar 2019)

1.2.10. The Problem-Solving Model (PSM)

The Problem-Solving Model (PS), initially developed by Lippitt and further refined by Havelock, is also known as the Need Reduction Model, as described by Havelock (1971). This model is recognized for its user-friendly approach, emphasizing the active involvement of stakeholders in identifying and addressing the root causes of issues. By engaging with those impacted by the problem, the PS change model aims to develop sustainable solutions that meet everyone's needs. Havelock's contributions have advanced collaborative and inclusive problem-solving practices across various fields.

Central to the PS change model is its focus on communication and transparency throughout the problem-solving process. Open dialogue and information-sharing among

stakeholders are promoted to build trust and consensus, leading to more effective and enduring solutions. Additionally, the model underscores continuous evaluation and adaptation, acknowledging that problems and circumstances evolve over time. This iterative approach ensures flexibility and responsiveness, thereby maintaining the relevance and impact of solutions.

Havelock's PS change model supports user-driven change, where users of a curriculum identify problems, propose changes, test them, and implement effective solutions. This approach fosters ownership and empowerment among users, enhancing motivation and commitment to sustaining changes. By tailoring solutions to specific needs and goals, the model promotes successful implementation and cultivates a culture of ongoing improvement and learning.

For instance, in education, when teachers are involved in identifying areas for improvement and developing solutions, they feel empowered in their professional growth. This engagement fosters accountability and collaboration among stakeholders, enriching the problem-solving process with diverse perspectives and innovative ideas. Ultimately, Havelock's PS model highlights the importance of involving users to achieve successful and sustainable outcomes in addressing complex challenges.

This last stage according to Havelock is the adoption of the solution

The model is built around the user of the innovation, who follows the steps below.

- ✚ Determine the problem.
- ✚ Search for innovation.
- ✚ Evaluate the trials.
- ✚ Implement the innovation.

The user then needs to evaluate the effectiveness of the innovation through trials and experiments. This step is crucial to determine if the innovation effectively addresses the identified problem. Once the trials have been assessed and proven successful, the user can proceed to integrate the innovation into their regular routines or workflows. Following these steps enables the user to seamlessly incorporate the innovation into their daily practices and reap the benefits of its potential solutions. This systematic approach ensures that the innovation is thoroughly tested before full implementation.

By carefully evaluating the trials and experiments, the user can gather valuable data and feedback to make well-informed decisions about the innovation's effectiveness. This evidence-based approach helps to identify any potential issues or areas for improvement before fully integrating the innovation into their routines. Overall, this methodical process of identifying problems, searching for innovations, evaluating trials, and implementing solutions is essential for successful problem-solving and continuous improvement.

Blankie et al. (1975) affirm that the model is user-friendly because it empowers the user as the initiator rather than a passive recipient of change. They suggest that external individuals or groups involved in the process contribute collaboratively. Engaging users throughout the entire process enhances the likelihood of successful implementation and adoption of the innovation. This collaborative approach ensures that user needs and preferences are carefully considered, resulting in a solution tailored to their specific circumstances.

Consequently, the model not only fosters ongoing improvement but also empowers users to take ownership of the change process. This level of engagement and ownership fosters a sense of investment and commitment among users, ultimately driving the innovation's success. By involving users in decision-making, they feel valued and respected, which enhances motivation and engagement. Additionally, user involvement promotes trust and transparency, fostering positive relationships between users and change agents. Overall, this collaborative approach to change management can lead to sustainable and impactful outcomes for all stakeholders involved.

Advantages of the problem-solving model

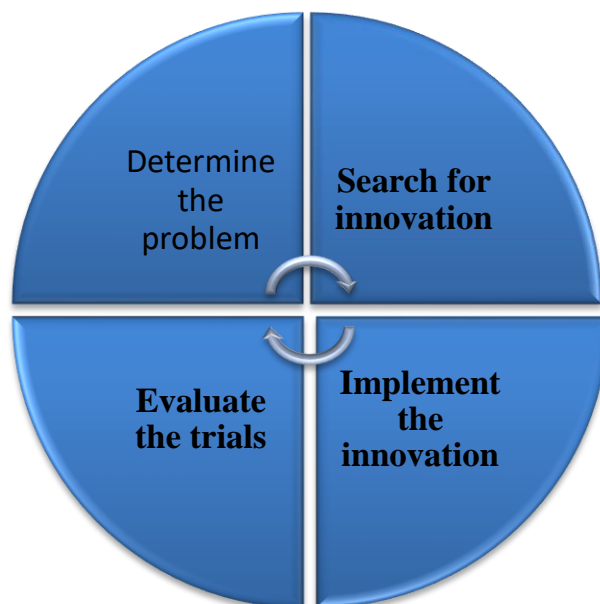
- The model is so flexible that it can apply to various aspects of the curriculum, like teaching methods and materials.
- It ensures consistency as everyone understands the approach to be used.
- It helps to remove division and encourages collaborative work.
- It helps Problem-solving groups reach a consensus.
- As the change is school-based, it is designed in such a way that it will be able to meet the needs of the school in question.
- Since the teachers who will implement the change are active participants, they are likely to be more committed to their implementation. This can lead to a more collaborative

and supportive school environment as teachers work together to address issues and find solutions.

- Additionally, the problem-solving model encourages critical thinking and creativity among both teachers and students, helping to foster a culture of lifelong learning. Overall, the advantages of the problem-solving model extend beyond just solving immediate problems; they also promote growth and improvement within the school community.
- By utilizing this model, schools can create a more dynamic and adaptive approach to addressing challenges and achieving goals. Teachers and administrators can work together to identify the root causes of issues, brainstorm innovative solutions, and implement strategies that will lead to long-term success. This collaborative process not only improves problem-solving skills but also strengthens relationships and fosters a sense of ownership and pride in the school community.
- As a result, the problem-solving model can have a lasting impact on the overall culture and effectiveness of a school. For example, if teachers are struggling with incorporating technology into their lessons, administrators can provide targeted training sessions and resources to help them develop their skills.

By working together to address this issue, teachers can improve their instructional practices, enhance student engagement, and ultimately achieve the goal of integrating technology effectively in the classroom. This collaborative approach not only benefits the individual teachers but also contributes to the overall success of the school by creating a more innovative and dynamic learning environment.

Figure 7: Four steps the problem-solving



Source: (Havelock ,1971.)

However, in order to understand the ways in which educational institutions are altered (or maintained) in a globalized world, the interplay between the conceptual framework of ideas, Actors, language, and legitimating operating at different levels must be taken into consideration.

➤ **Ideas (what)**

Schmidt (2008) categorizes ideas as the substantive content of discourse and distinguishes three types based on their generality and stability. These include policy ideas, programmatic ideas, and philosophical ideas. Policy ideas are characterized as rapidly changing concepts that address surface-level issues, often seizing upon 'windows of opportunity' created by external crises or internal ideational processes. The focus is on analyzing the policy problem, its historical legacies, and the institutional and actor capacities involved (Schmidt, 2011).

Programmatic ideas, which are more enduring than policy ideas but less stable than philosophical ideas, serve as broader frames of reference. They are often constructed from various, sometimes conflicting ideational elements. Consequently, translating policy ideas into cohesive programs typically requires negotiation and adaptation, especially across different institutional contexts (Nordin & Sundberg, 2014).

Philosophical ideas represent the most stable type, rooted in shared values, moral principles, and symbols that have evolved over extended periods within political, public, and academic domains. Unlike programmatic ideas, which rely on expert knowledge, philosophical ideas draw upon broader societal consensus and historical development (Jobert, 1989).

In summary, these categories illustrate the varying levels of generality and stability among ideas within discourse, highlighting their roles in policy transformation dynamics.

➤ **Arenas (where)**

As highlighted, the field of curriculum studies is increasingly shaped by globalization and internationalization. National, regional, and local contexts are now more interconnected with each other and with various global spheres (Anderson-Levitt, 2008). This interconnectedness has led to an expansion of boundary-crossing processes, where discourse plays a central role in analysis (Schriewer, 2012). Given this heightened complexity, we advocate for a multi-level analysis that examines how ideas evolve across different arenas—transnational, national, and local.

The premise is that educational concepts such as 'competencies' or 'standards' undergo transformations within and between these arenas. It raises pertinent questions about how these ideas travel and are re-contextualized across ideational and research realms, international policy domains (intersecting economy and education), formal sectors (administration and management), public spheres (culture, media, and politics), and professional domains.

➤ **Actors (who?)**

When examining various policy arenas, it is essential to consider the diverse actors operating within and across these arenas. Transnational entities like the OECD, the EU, the World Bank, as well as various advocacy groups and NGOs, play significant roles in shaping education policies at national and local levels. Within national and local contexts, actors include governments, trade unions, educators, students, and parents, among others. It is crucial to acknowledge the involvement of these diverse actors to avoid oversimplifying conclusions that attribute curriculum change solely to transnational organizations or national governments.

In the context of curriculum change, there are intricate connections among different actors who form influential discourse coalitions. These coalitions impact the perspectives and actions of professionals, teacher unions, advocates for specific reforms, educational authorities, politicians, consultants, and experts.

➤ **Language (how?)**

An expanded understanding of ideas allows for an examination of how various languages are employed to modify or uphold educational institutions. The choice of language reflects the types of ideas involved and consequently influences the pace of policy development. Consistent with the categorization of ideas into three levels, it is crucial to differentiate between a 'slow language', often associated with historical institutionalism and grounded in tradition, ideology, or academic scholarship, and a 'pragmatic language' used by politicians in navigating conflicting viewpoints during their daily decision-making processes.

➤ **Legitimation (why?)**

Irrespective of policy arenas, it is essential to differentiate between cognitive and normative ideas. Cognitive ideas provide guidelines and shared frameworks for political actions, while normative ideas imbue political actions with values (Schmidt, 2008). In other words, cognitive ideas establish a common basis for action, whereas normative ideas justify specific courses of action. These ideas are closely tied to discourse and influence how ideas are expressed in discursive interactions.

Moreover, discourse analysis distinguishes between coordinative and communicative discourses. Coordinative discourse involves interactive processes among policy actors—such as transnational actors, government officials, consultants, experts, and union leaders—who shape cognitive ideas and discourse content. It aims to achieve cognitive justification and coordinate discourse around specific themes arising from interactions among diverse actors and interests.

Conversely, communicative discourse addresses the public sphere and the formation of mass public opinions. It involves politicians, policymakers, media figures, opinion leaders, social movements, and ordinary citizens, including through social media, influencing public opinion formation. In communicative discourse, cognitive ideas developed by policy elites are conveyed to the public sphere, seeking normative justification.

In practice, the coordinative and communicative spheres are intertwined in complex ways and cannot be easily separated. This conceptual framework provides a robust basis for analyzing curriculum change by examining how educational ideas circulate across different policy levels, the engagement of various actors in policy-making processes, the language they employ, and the justifications they present. It enables nuanced analyses that account for both agency and institutional contexts, discourse dynamics, and material influences. Thus, this framework offers

diverse methodologies for exploring curriculum change comprehensively, both vertically and horizontally.

Synthesis

This chapter sets out to review the works and opinions expressed by some authors and researchers as related to the study. The next chapter will focus on continuous professional development and theoretical framework.

CHAPTER TWO
CONTINUOUS PROFESSIONAL DEVELOPMENT

This chapter reviews the literature on continuous professional development, it also presents continuous professional models like the training model, the coach mentoring model, action research model, problem-solving model and the theoretical framework as explained in the subsequent paragraphs below.

2.1. The concept of continuous professional development

According to Ndedi (2018), continuous professional development is defined as a lifelong learning process that enhances the knowledge and skills of professionals to improve their performance. According to Ogunyinka et al. (2015), continuous professional development (CPD) involves educators' ongoing professional education to acquire attitudes, skills, and knowledge necessary for effective performance, tailored to specific contextual needs at a given time.

Friedman & Phillips (2004) underscore CPD as enhancing, maintaining, and broadening professional and technical competencies alongside personal qualities through a reflective process aimed at improving current and future professional practices (Ryan, 2003; Shibankova et al., 2019). Areas such as global citizenship education (Yemini, et al 2019), social justice education (Kohli et al., 2015), and sustainability education (Fischer et al., 2022) are reorienting educational goals and teachers' ongoing professional development (CPD) to address complex social and ecological issues.

These developments create new expectations for teachers and highlight the necessity of CPD opportunities (Brevik et al., 2019). Innovations in the field have built upon previous generations' work (Avalos, 2011), particularly concerning CPD objectives (Chaaban et al., 2021) and the collaborative learning activities teachers engage in (Bragg et al., 2021) (Sancar, et al, 2021).

In the 21st century, the teaching profession is undergoing significant changes due to various factors and the integration of digital tools. Therefore, to prepare future educators effectively, teacher educators must continuously update their skills and competencies to maintain high professional standards and meet societal needs (Goodwin, 2010). Goodwin (2010) identifies three emerging norms influencing education: increasingly diverse classrooms, recruitment of teachers from diverse locales, and teaching students with unique needs. Continuous learning and development are essential for educators to effectively fulfill their roles; those who cease learning after initial training may struggle to meet professional demands (Srinivasacharlu, 2019).

Continuous professional development (CPD) benefits teachers by enhancing their instructional methods, adapting to evolving student needs, and improving learning outcomes. Moreover, CPD boosts teachers' self-esteem, motivation, and job satisfaction. Cameroon, a bilingual and multicultural nation in Central Africa with over 26 million people, operates an education system rooted in its colonial past, comprising anglophone and francophone subsystems. These systems differ and overlap in terms of examinations, curriculum, instructional language, and structure. Numerous challenges plague Cameroon's education sector, including insufficient funding, gender disparities, inadequate vocational training, substandard facilities, and low educational quality.

According to Sarah Lillywhite in his publication on June 23rd, 2021, Career Development, job market, personal development, and continuous professional development, essentially ensure that you continue to be proficient and competent in your profession while also furnishing you with essential skills that could help you progress with your career. It continues and develops throughout your career. So, whether you are looking to succeed as a newly qualified teacher or starting in nursing, Continuous Professional Development can make you shine. Also, Sarah Lilly White still that continuous Professional Development is the term used to describe the supplementary learning that professionals undertake. Usually, continuous Professional Development helps to enhance and augment their abilities in the workplace. However, it encompasses much more than simply learning.

Rather than being passive and reactive, Continuous Professional Development makes learning conscious and proactive to enhance personal skills for application in the workplace. In addition, there are a variety of different methodologies involved, such as workshops, conferences, and e-learning or online classes. By engaging in Continuous Professional Development, you will ensure that neither your academic nor practical qualifications will become obsolete. Continuous Professional Development offers you the opportunity to upgrade skills regardless of where you are in your career, your age, or even your level of education. Not only does Continuous Professional Development help to enhance your skill set, but it also enables you to adapt to changes in the whole environment.

In an ever-changing world, engaging in Continuous Professional Development can help you prepare for the “jobs of the future”, while also showing your commitment to self-development and professionalism. Education is one of the things that can build a society and bring economic growth. To achieve all these, the teacher is the one looked upon to bring this achievement. As such, there is always the need for teachers to have proper educational and

professional training to possess appropriate knowledge and teaching skills and to be able to commit themselves to the teaching profession. Teachers are the main drivers of curriculum implementation. It is important for people not only to be good but also effective.

Formally society emphasized the goodness of teachers in terms of their moral and social behaviour learning out their effectiveness in terms of knowledge and skills. Addressing these issues is crucial because they impact the quality of education. CPD plays a pivotal role in this context, as highlighted in educational literature (Creemers, Kyriakides, & Antoniou, 2012; Hargreaves, 2014).

During curriculum Change, CPD becomes essential to align teacher expectations with new educational standards. Without adequate training, teachers may inadvertently misinterpret and improperly implement new curricula (LaChausse, Clark, & Chapple, 2014). Introducing new curricula often necessitates adopting fresh pedagogical approaches that may challenge teachers' educational philosophies (Roehrig & Kruse, 2005). Effective CPD is therefore indispensable to facilitate these transitions (Smith, 2015).

Beyond fostering professionalism, collaboration, and reflection among teachers, CPD enhances their confidence, commitment, and understanding of students' diverse needs. It shapes teachers' classroom practices and enables them to apply new knowledge effectively, thereby enhancing student engagement, motivation, and academic success in preparation for the twenty-first century challenges.

In Cameroon's secondary education institutions, CPD is increasingly relevant, particularly amidst global educational changes. Teachers' professional development is crucial for equipping students with the complex skills needed in today's world (Darling-Hammond et al., 2017). The COVID-19 pandemic underscored this need when schools shifted abruptly to online learning, highlighting the pivotal role of CPD in adapting teaching methods to unforeseen challenges (Béché, 2020).

As secondary education institutions in Cameroon strive to adopt competency-based approaches to skill acquisition, continuous professional development of teachers becomes indispensable. While having qualified teachers is crucial, CPD ensures they remain effective amidst challenges like high student-teacher ratios. It aligns with Africa's developmental aspirations for educated, skilled citizens equipped with knowledge and innovative skills (African Union, 2015).

Thus, while conceptual knowledge is vital, the ability to impart and apply this knowledge effectively is crucial for enhancing learners' skills and performance. Continuous professional development of teachers remains a cornerstone in achieving these goals and sustaining educational quality amidst evolving global dynamics. The continuous evolution of pedagogy and the lessons learned from the COVID-19 lockdown in Cameroon have underscored the increasing relevance of continuous professional development (CPD) for teachers. One significant impact of the pandemic was reduced student performance due to ineffective online teaching caused by insufficient knowledge and skills in online pedagogy (Béché, 2020; Etomes, 2022).

The concept of CPD addresses the need for teachers to stay current with subject knowledge, teaching methods, and innovative ideas throughout their careers. CPD encompasses ongoing education for teachers and other educators, promoting their professional growth through various courses and activities that enhance their knowledge, interests, and skills. Professional education is a series of activities aimed at the continuous growth of in-service teachers and educational personnel. These programs provide new insights, foster cooperative practices, and motivate teachers to improve themselves comprehensively.

CPD and performance are critical inputs in education, with quality teacher training being essential to advancing and strengthening the educational system. Effective teacher education plays a pivotal role in shaping future societies by preparing competent teachers who can effectively fulfill their professional responsibilities. Teacher education goes beyond producing graduates or degree-seekers; it aims to prepare individuals to fulfill their responsibilities effectively.

An exemplary quality teacher positively impacts student learning and development by mastering content, employing broad pedagogical skills, and demonstrating strong communication and interpersonal abilities. Quality teachers are lifelong learners committed to their subject areas, reflective in their teaching practices, and capable of transferring knowledge through effective communication, diagnostic skills, understanding of diverse learning styles, and cultural influences. They are knowledgeable about child development and adept at employing a wide range of techniques to meet students' needs. Setting high expectations and supporting students to achieve them, quality teachers create conducive learning environments and utilize resources both inside and outside the classroom. Thus, well-trained, efficient, and honest teachers are invaluable assets to any education system and nation.

Continuous professional development (CPD) is crucial for maintaining high education quality and enhancing student learning outcomes (Rivers & Sanders, 2002, p.13). Effective teachers foster habits of mind and knowledge structures necessary for success. Competent and well-performing teachers are vital resources in educational institutions, directly responsible for student learning. Teacher attitudes towards curriculum change are essential and often discussed in education. Reluctance to engage in professional training and development can lead to dissatisfaction with teaching quality and resistance to curriculum changes, adversely affecting students' educational experiences. Without ongoing professional development, teachers may miss out on the latest research and best practices, hindering their ability to provide high-quality instruction. Prioritizing professional growth and embracing curriculum changes are essential for student success.

Engaging in CPD allows teachers to refine their teaching methods and adapt to new curricula effectively. Teachers involved in continuous professional growth are likely to be more effective, employing innovative strategies that enhance student engagement and learning experiences. Embracing curriculum changes demonstrates a commitment to lifelong learning, inspiring similar attitudes in students. For instance, a science teacher incorporating hands-on experiments and technology can foster critical thinking and a passion for learning among students. Staying informed about advancements and best practices through CPD allows teachers to provide a well-rounded education, preparing students for future careers, particularly in STEM fields. Transitioning from traditional, theory-based teaching to research-based teaching has significant implications for education.

Teachers should integrate new research findings into their practices to improve learning outcomes. CPD supports curriculum change, innovations, and effective teaching, enhancing teachers' attitudes and skills, which in turn boosts student performance. It also changes teaching procedures, approaches, and practices, ensuring that teachers stay informed about the latest educational advancements. CPD not only enhances subject knowledge but also equips teachers with new instructional techniques and tools, fostering a more engaging and effective learning environment. Incorporating new research into teaching benefits both teachers and students, promoting continuous improvement and high-quality education.

Continuous professional development also enables teachers to stay updated with technological tools and resources, enhancing their teaching methods. By integrating digital tools and online platforms, teachers create interactive and dynamic learning experiences that cater to diverse learning styles. This approach makes learning more enjoyable and equips

students with essential digital skills. Using online collaboration tools, teachers can facilitate group projects and discussions, promoting teamwork and communication skills essential for future careers. Effective CPD programs positively impact teachers and schools, enhancing teachers' knowledge, motivation, and readiness to face curriculum changes.

Continuous professional development promotes lifelong learning among teachers, improving the quality of education and aligning with sustainable development goals. It is essential for the continuous growth of teachers, enabling them to acquire new understandings and instructional skills. Continuous training drives change in teaching and learning, helping teachers stay current with the latest concepts and research. It fosters professional growth, promoting excellent and effective teaching practices. CPD enhances teachers' professionalism and helps them positively respond to curriculum changes, ultimately improving student outcomes and the overall success of the education system. Investing in CPD ensures that teachers remain effective and responsive educators, capable of adapting to evolving classroom needs and challenges. Professional growth fosters a culture of excellence in teaching, leading to improved student outcomes.

Continuous professional development (CPD) benefits teachers by enhancing their instructional methods, adapting to evolving student needs, and improving learning outcomes. Moreover, CPD boosts teachers' self-esteem, motivation, and job satisfaction. Cameroon, a bilingual and multicultural nation in Central Africa with over 26 million people, operates an education system rooted in its colonial past, comprising anglophone and francophone subsystems. These systems differ and overlap in terms of examinations, curriculum, instructional language, and structure. Numerous challenges plague Cameroon's education sector, including insufficient funding, gender disparities, inadequate vocational training, substandard facilities, and low educational quality.

CPD is fundamental for enhancing teacher professionalism and supporting curriculum changes. It allows teachers to critically evaluate and bring positive changes to school culture. CPD provides opportunities for teachers to learn new concepts, methods, and approaches, crucial for improving performance and attitudes toward curriculum changes. CPD training plays a significant role in improving teacher performance and encouraging a positive attitude toward curriculum change (Saeed, 2023). Education is vital for building strong, developed societies, and teachers are key agents in achieving this.

Adequate educational and professional training is essential for teachers to possess the necessary knowledge and skills for effective teaching. Without proper CPD, teachers may struggle to keep up with educational changes and become resistant to curriculum changes, hindering their ability to inspire students. Investing in CPD ensures teachers are equipped to provide high-quality education and contribute to societal development. Engaging in CPD helps teachers stay motivated, maintain a positive attitude toward their profession, and enhance instructional practices. Continuous professional development is essential for teachers to stay informed about educational advancements, adapt teaching methods, and improve student outcomes.

Ultimately, CPD benefits both teachers and students, fostering a culture of continuous improvement and ensuring high-quality education. It helps teachers stay updated with technological advancements, creating engaging learning experiences and equipping students with essential digital skills. Effective CPD programs enhance teachers' knowledge, motivation, and readiness to face curriculum changes, positively impacting the overall success of the education system.

Through ongoing professional development, teachers can provide the best possible education, preparing students for future success and contributing to the development of society. Sustainability is crucial in CPD, as short-term training events have a limited impact on transforming teaching practices compared to ongoing, embedded learning experiences (Lawlor, 2014). Subject-specific CPD is particularly beneficial in secondary education, aligning with the unique pedagogical demands of different subjects and enhancing both teacher practice and student learning outcomes (Whitehouse, 2011).

However, Collaboration plays a pivotal role in effective CPD, as emphasized by Hargreaves (2003), where teachers benefit from sharing knowledge and practices with colleagues, thereby enriching the learning environment. This collaborative approach not only enhances professional learning but also fosters a culture of continuous improvement within schools (Hargreaves and Fullan, 1992; Borko, 2004).

CPD is a career-long commitment essential for improving classroom outcomes and teacher effectiveness. It requires teachers' active engagement in ongoing learning, collaboration with peers, and integration of innovative practices into daily teaching routines (Hargreaves, 2003; Weston, 2014; Sherrington, 2014). The strategic planning by teaching councils and educational institutions further supports the diverse responsibilities of teacher educators (Boyd

& White, 2017), highlighting the varied contexts in which CPD must be tailored to meet the needs of educators across different settings and disciplines.

The European Commission (2013) identifies several key responsibilities for teacher educators (TEs), encompassing the preparation of prospective teachers, continuous development of practicing teachers, instruction on integrating theory with practice and fostering reflective teaching practices. TEs are also tasked with providing guidance and counseling to practicing teachers, modeling effective teaching methods, and conducting research on teaching and learning processes (Valcke, 2013; Smith and Krumsvik, 2007).

This modeling approach is rooted in the idea of building upon student teachers' prior knowledge (Kosnik et al., 2015) and engaging in empirically grounded and practically oriented activities that bridge theory and practice (Korthagen et al., 2006). Moreover, TEs are expected to guide pedagogical decision-making among student teachers (Korthagen et al., 2006) and exhibit professional behaviors integral to the teaching profession.

Central to their role, TEs are also urged to engage actively in scholarly or research activities (Murray et al., 2009), aiming to address classroom challenges and enhance educational practices. Goodwin et al. (2014) argue for an integrated approach where teaching and learning practices inform each other rather than being viewed as separate entities. These responsibilities align with Loughran's (2014) assertion that TEs bear direct responsibility for training both pre-service and in-service teachers in the fundamentals of teaching and learning, equipping them with essential skills to excel as educators.

The Evolution of Continuous Professional Development in Education

Global Perspectives on Continuous Professional Development

The concept of CPD has its origins in the early 20th century when teacher training programs began to shift from initial teacher education to lifelong learning models (Day & Sachs, 2004). This shift was driven by the recognition that teaching is a dynamic profession that requires ongoing development and adaptation to new pedagogical approaches and educational trends. As technology has advanced and globalization has increased, the need for continuous professional development in education has become even more pressing. Today, CPD programs can be found in schools and educational institutions around the world, helping educators stay current and effective in their practice. In the 1950s and 1960s, education systems in Europe and North America introduced in-service training programs as part of teacher career development (Guskey, 2002). The 1980s and 1990s saw an increased emphasis on CPD as a

key factor in teacher effectiveness, with policies advocating for lifelong learning approaches in response to evolving educational demands (Fullan, 2007).

By the early 2000s, CPD became more structured, integrating online learning, mentorship programs, and competency-based training (Kennedy, 2014). The shift toward evidence-based education further strengthened the need for CPD programs aimed at improving teaching quality and adapting to new pedagogical approaches. One example of the emphasis on evidence-based education is the use of data-driven decision making in CPD programs. Teachers are encouraged to use student data to inform their instructional practices and target areas for professional growth (Desimone, 2009). This approach has been shown to improve student outcomes and teacher effectiveness (Wayman, Cho, & Johnston, 2007).

Additionally, the integration of technology in CPD programs has become increasingly common in response to the digital age. Online learning platforms allow teachers to engage in professional development at their own pace and convenience, while mentorship programs provide ongoing support and guidance (Garet et al., 2001). Competency-based training ensures that teachers are equipped with the knowledge and skills necessary to meet the diverse needs of today's learners (Darling-Hammond, Hyler, & Gardner, 2017). Overall, the evolution of CPD in the 21st century reflects a growing recognition of the importance of continuous learning and improvement in the teaching profession. By adopting evidence-based practices, integrating technology, and focusing on competency development, CPD programs are better able to support teachers in their efforts to enhance student learning outcomes and adapt to the changing landscape of education. As a result, teachers are better able to engage students, differentiate instruction, and create inclusive learning environments that promote academic success for all learners. In addition, CPD programs help teachers stay current with the latest research and best practices in education, allowing them to continually refine their teaching strategies and stay ahead of the curve. By investing in high-quality CPD opportunities, schools and districts can ensure that their teachers are well-prepared to meet the challenges of today's educational landscape and provide all students with the support they need to succeed.

Continuous Professional Development in Africa

In Sub-Saharan Africa, CPD has historically been implemented through in-service training programs, workshops, and professional learning communities (UNESCO, 2017). However, challenges such as limited funding, inadequate infrastructure, and resistance from educators have hindered its full effectiveness. Many African countries, including Cameroon,

have sought to improve CPD policies to enhance teacher quality and ensure the successful implementation of curriculum changes (Hardman et al., 2011). In Cameroon, the government has made efforts to address the challenges facing CPD by implementing policies that prioritize continuous professional development for educators. For example, the Ministry of Secondary Education has established a National Teacher Training Centre to provide ongoing training and support for teachers (Hardman et al., 2011). Additionally, partnerships with NGOs and international organizations have helped to secure funding for CPD initiatives in the country (UNESCO, 2017).

These efforts have resulted in improvements in teacher quality and the successful implementation of curriculum changes in Cameroon. By investing in CPD and addressing the barriers to its effectiveness, the government is working towards ensuring that teachers are equipped with the necessary skills and knowledge to deliver quality education to students.

The commitment to improving CPD policies in African countries like Cameroon is essential for advancing education and achieving sustainable development goals on the continent (Hardman et al., 2011). Furthermore, the focus on CPD in Cameroon is not only benefiting teachers but also having a positive impact on student learning outcomes. Research has shown that when teachers participate in high-quality professional development programs, students tend to perform better academically and are more engaged in their learning. This correlation between teacher development and student achievement highlights the importance of continued investment in CPD initiatives in the country. Additionally, by addressing the barriers to effective CPD implementation, such as limited resources and access to training opportunities, the government is taking proactive steps towards creating a more sustainable and equitable education system in Cameroon.

2.2. Pedagogical seminar and teachers' attitude towards curriculum change

Pedagogic seminars are formal gatherings organized for teachers to engage in reflective discussions on pedagogical theories, current teaching methodologies, and innovations in curriculum. These seminars often feature educational specialists, curriculum developers, and pedagogic inspectors who guide teachers in understanding and implementing new curriculum standards and instructional strategies (Tambo, 2003). Pedagogic seminars are vital in preparing teachers for curriculum reforms. By exposing teachers to new ideas and the rationale behind curriculum change, these seminars can foster positive attitudes, reduce resistance, and promote

a sense of professional responsibility. Teachers who understand why change is necessary are more likely to support and implement it effectively (Fullan, 2020).

By actively engaging with both panel members and the audience, pedagogic seminars foster a sense of community and shared learning experience that can be beneficial for all involved (Jones, 2020). Overall, pedagogic seminars serve as valuable platforms for intellectual growth and the advancement of knowledge within academic circles. The effectiveness of curriculum changes is significantly influenced by pedagogical seminars and teachers' attitudes toward these changes. Teachers who participate in these workshops acquire the necessary knowledge and skills to implement new curriculum revisions effectively in their classrooms. This can lead to improved student outcomes and overall success in the educational setting. Furthermore, by providing a space for collaboration and discussion, pedagogic seminars can also help teachers stay informed about the latest trends and research in their field. Ultimately, these seminars play a crucial role in shaping the future of education and ensuring that students receive the highest quality instruction possible.

In addition to enhancing their teaching practices, attending these workshops can also help educators build a strong professional network. By connecting with colleagues from different schools and districts, teachers can share ideas, resources, and best practices, enriching their own teaching methods. This collaboration not only benefits the individual teachers but also has a ripple effect on the larger educational community as a whole. Through ongoing continuous professional development opportunities like pedagogic seminars, educators can continue to grow and evolve in their practice, ultimately benefiting the students they serve. Therefore, it is crucial for educators to actively seek out opportunities to engage with their peers and participate in collaborative learning experiences. By doing so, teachers can stay current with the latest research and trends in education, ensuring that they are providing the best possible learning environment for their students (Goddard 2017). This commitment to professional growth not only enhances the individual teacher's effectiveness but also contributes to the overall success of the educational system.

Moreover, teachers' perceptions of curriculum changes play a crucial role in their willingness to adopt and adapt to new methods and approaches. Thus, educational institutions should prioritize pedagogical seminars and promote a positive and flexible attitude among teachers toward curricular changes to ensure the successful implementation of educational reforms. According to a study by (Smith, et al, 2019) teachers who have a positive attitude towards curriculum changes are more likely to embrace new teaching strategies and enhance

student learning outcomes. By investing in continuous professional development opportunities and fostering a supportive environment for teachers, educational institutions can create a culture that encourages innovation and growth in the classroom. For example, a school district could offer workshops and training sessions on new teaching methodologies to help teachers feel more confident in implementing changes. Additionally, creating a mentorship program where experienced teachers can support their peers in adapting to the new curriculum can further promote a positive and flexible attitude among educators (Smith et al., 2019)

Furthermore, by prioritizing teacher training and promoting a flexible attitude towards curriculum changes, schools can ensure that students receive a high-quality education that prepares them for success in an ever-changing world. (Smith, et al, 2019). This emphasis on ongoing learning and adaptability not only benefits teachers and students in the present but also helps to future-proof education systems against the challenges of tomorrow. By equipping educators with the tools and resources they need to stay current and effective in their roles, schools can stay ahead of the curve and provide students with the skills they need to thrive in an increasingly complex and dynamic global landscape.

In this way, investing in teacher development is not just an investment in the present, but in the future of education as a whole. Continuing to prioritize professional development for teachers is essential for ensuring that they are able to meet the evolving needs of students and the demands of a rapidly changing world. As technology advances and new pedagogical approaches emerge, educators must be equipped with the knowledge and skills to effectively incorporate these tools and strategies into their practice. This ongoing investment in teacher development ultimately leads to improved student outcomes and a more innovative and resilient education system.

Pedagogic seminars play a crucial role in enhancing teachers' resistance to curriculum change by providing them with opportunities to learn about new teaching methods, technologies, and approaches that can help them adapt to evolving educational standards. These seminars offer a platform for teachers to engage in meaningful discussions, share experiences, and collaborate with colleagues on how to effectively implement changes in the curriculum. By attending these seminars, teachers are able to stay current with best practices, gain confidence in their abilities, and feel more prepared to navigate and embrace changes in the curriculum. Ultimately, this continuous professional development empowers teachers to be more flexible, innovative, and resilient in the face of curriculum changes, leading to improved student outcomes and a more successful education system.

Additionally, participating in continuous professional development seminars allows teachers to network with other educators and exchange ideas on how to enhance their teaching strategies (Sawatzky, 2012). This collaboration fosters a sense of community among teachers and promotes a culture of lifelong learning (Schleicher, 2016). As a result, teachers are better equipped to adapt to the evolving needs of students and the demands of a changing educational landscape (Darling 2017).

Lastly, continuous professional development plays a crucial role in empowering teachers to excel in their profession and ultimately benefit students and the education system as a whole (Schleicher, 2016). These seminars provide a platform for teachers to network and build relationships with other educators who may offer valuable insights and support. The opportunity to exchange ideas and strategies with peers can inspire creativity and foster a sense of community among teachers. These continuous professional development opportunities can help teachers stay motivated and passionate about their work, ultimately benefiting both their own professional growth and the overall success of their students. It is through these continuous learning experiences that teachers are able to adapt to new teaching methods and technologies, ultimately leading to improved student outcomes and a more successful education system.

2.3. Pedagogical animation and teachers' attitude towards curriculum change

Pedagogic animation is an interactive form of professional development that includes model teaching sessions, group work, and lesson demonstrations. It emphasizes collaborative learning, real-time feedback, and peer support. In the Cameroonian context, pedagogic animation is widely used to encourage professional dialogue and hands-on learning (Tambo, 2003). This method enhances teacher engagement and encourages a community of practice, making curriculum change less intimidating. When teachers collaborate and see practical demonstrations of new teaching strategies, they become more confident and open to change. According to Fullan (2020), meaningful collaboration is a strong predictor of positive teacher response to reform.

Pedagogic animation is an integral part of a modern school focused on the development of teachers. According to authors Smith and Johnson (2020), pedagogic animations can be defined as the deliberate use of multimedia tools and interactive techniques to engage students in the learning process. Pedagogic animation helps to make learning more engaging and interactive, ultimately leading to better retention of information and improved academic performance. By incorporating multimedia tools and interactive techniques, teachers can create

a dynamic learning environment that caters to different learning styles and preferences. Overall, pedagogic animation plays a crucial role in enhancing the overall educational experience for both students and teachers alike.

Research has shown that integrating pedagogic animation into the classroom can significantly enhance student motivation and participation. According to Smith and Johnson (2018), students are more likely to be actively engaged in their learning when presented with interactive tools such as animations. Furthermore, Wang et al. (2019) found that the use of multimedia tools in education can improve students' comprehension and critical thinking skills. Therefore, it is essential for educators to utilize these techniques to create a more dynamic and effective learning environment.

By incorporating pedagogic animation into their teaching strategies, educators can cater to diverse learning styles and keep students engaged in the material. This approach not only fosters a deeper understanding of the subject matter but also encourages students to think critically and creatively. In today's digital age, leveraging multimedia tools in education is crucial for promoting active learning and preparing students for success in an increasingly technology-driven world. Ultimately, integrating pedagogic animation into the classroom can revolutionize the way students learn and interact with course content. By incorporating animated visuals and interactive simulations, educators can enhance the learning experience and make complex concepts more accessible to students. Research has shown that multimedia tools can improve retention rates and overall academic performance.

Therefore, embracing pedagogic animation in the classroom is essential for creating a dynamic and engaging learning environment that meets the needs of 21st-century learners (Smith, 2018). This innovative approach not only empowers students to take ownership of their education but also equips them with the skills needed to thrive in an ever-evolving digital landscape (Jones & Brown, 2019).

These animations are designed to enhance understanding, retention, and application of knowledge by making learning more enjoyable and interactive. Pedagogic animations aim to make education more effective and engaging for students, ultimately leading to better academic outcomes. As a result, it helps in shaping the positive attitude of teachers towards curriculum change as a basis for the humane and democratic approach of the teacher about students.

Animation aims to support the teaching process and the educational activities of the out-of-school environment, with an emphasis on the teacher, who can enrich the lesson and

stimulate not only the knowledge of the student but the overall growth of personality as well. Animation as an educational component can, through various plays, techniques, tools, and methods, make the lesson more attractive. Pedagogic animation can be fully applied as a creative activity that develops the potential of students and, at the same time, forces them to confront current social issues.

Pedagogical animation plays a crucial role in shaping teachers' attitudes toward curriculum changes. By providing dynamic and engaging learning experiences, it helps teachers recognize the benefits and potential of implementing new curricula. This method allows educators to see firsthand the positive impact on student engagement and learning outcomes, fostering greater openness and receptivity to curriculum modifications. Pedagogical animation has been shown to enhance teacher motivation and confidence in implementing innovative teaching methods (Smith & Wilson, 2018). By actively involving teachers in hands-on learning experiences, this approach enables them to better understand the importance of addressing current social issues in the curriculum (Jones et al., 2019).

Ultimately, pedagogical animation empowers educators to advocate for meaningful changes in education that benefit both students and society as a whole. As a result, teachers are more likely to adopt and implement these changes, creating a more dynamic and effective learning environment. Moreover, pedagogical animation helps teachers understand the new curriculum and its fundamental principles. Visual aids and simulations make it easier for educators to grasp the core concepts and objectives of the curriculum, facilitating the adaptation of their teaching methods and materials. This deeper comprehension boosts teachers' confidence and competence, enabling them to deliver the curriculum content more effectively.

Additionally, pedagogical animation prepares teachers to anticipate and address potential challenges and obstacles in implementing curricular changes. The use of visual aids and simulations in teacher training has been shown to enhance understanding and retention of information (Mayer, 2009). By providing hands-on experiences and interactive learning opportunities, educators are better equipped to incorporate new curriculum elements into their lessons (Kalyuga, 2011). As a result, teachers are more likely to feel prepared and capable in delivering high-quality instruction that aligns with the goals of the curriculum (Darling-Hammond et al., 2017).

By modeling various scenarios and providing strategies for overcoming difficulties, teachers are better equipped to handle issues and ensure a smooth transition to the new

curriculums. By fostering a supportive and collaborative environment, educators can work together to share best practices and troubleshoot challenges that may arise during the implementation process (Hattie, 2009). This collective approach not only enhances the professional growth of teachers but also promotes a culture of continuous improvement within the school community (Fullan, 2016). Ultimately, by investing in ongoing professional development and supporting teachers in their efforts to adapt to new curriculum elements, schools can cultivate a culture of excellence and ensure that students receive a high-quality education that prepares them for success in the 21st century (Guskey, 2012).

For example, when a school decides to introduce a new project-based learning approach, pedagogical animation can simulate scenarios where students struggle with group work or where teachers face resistance from parents unfamiliar with the method. By training teachers on how to address these challenges, they can successfully implement the new curriculum, support their students, and effectively communicate with parents. This not only advances teachers' professional development but also enhances the educational experiences for students. In summary, pedagogical animation is a powerful tool for influencing teachers' perspectives on curriculum changes, supporting their professional growth, and improving the learning environment for both educators and students.

2.4. Training in teaching techniques and teachers' attitude towards curriculum change

Training in teaching techniques equips teachers with a range or collection of instructional methods suitable for diverse learner needs. It includes learner-centered approaches, inclusive education practices, ICT integration, and classroom management strategies. This training is crucial for aligning teaching practices with 21st-century education goals (Villegas-Reimers, 2003; OECD, 2019). When a curriculum changes, it often introduces new goals, content, and instructional methods.

Teachers trained in modern teaching techniques are more likely to feel competent and adaptable, resulting in a positive attitude toward implementing change. Without such training, teachers may feel overwhelmed, leading to resistance or ineffective implementation (Guskey, 2002). The success of implementing new educational policies is heavily dependent on teachers' attitudes toward curricular changes and their training in teaching techniques. Teachers who are open-minded and willing to adapt to new methodologies are more likely to successfully implement new policies in the classroom.

Additionally, providing teachers with adequate training and professional development opportunities can help them feel more confident in their ability to effectively teach using new techniques (Smith & Jones, 2020). By addressing both teachers' attitudes and training, educational institutions can increase the likelihood of successful implementation of curricular changes. When teachers receive proper training in teaching techniques, they feel more confident in their abilities to effectively implement new curricular changes. This training helps them understand the rationale behind the changes and equips them with the necessary skills to adapt their teaching methods accordingly. As a result, teachers are more likely to embrace and support curriculum changes, leading to a smoother implementation process and, ultimately, greater success in achieving educational goals. Ultimately, the success of curriculum changes hinges on the support and enthusiasm of teachers, making proper training in teaching techniques a crucial component of any educational reform effort.

According to Smith (2019), providing teachers with the necessary training in teaching techniques is crucial for the successful implementation of curriculum changes. When teachers are equipped with the skills and knowledge to understand and adapt to new curricular requirements, they are more likely to support and embrace the changes. This ultimately leads to a smoother transition process and enhances the likelihood of achieving educational goals.

Training in teaching techniques helps teachers feel more confident and prepared when faced with curriculum changes, as they are better able to understand the rationale behind the changes and how to effectively implement them in the classroom. This leads to a more positive attitude towards curriculum change, as teachers see the value in the new requirements and feel supported in their efforts to meet them. Additionally, training helps teachers see the potential benefits of the changes for their students, motivating them to fully engage in the implementation process. Ultimately, investing in training for teachers not only improves their ability to adapt to new curricular requirements but also fosters a culture of continuous learning and growth within the educational system.

By providing teachers with the necessary tools and knowledge to effectively implement new curriculum changes, they are better equipped to help their students succeed. This investment in training not only benefits teachers but also has a positive impact on the overall educational system. As teachers embrace a mindset of continuous learning and growth, they are able to create a supportive and dynamic learning environment for their students, ultimately leading to improved academic outcomes and a more engaged student body. By equipping

teachers with the skills and resources they need to adapt to new curriculum changes, schools can create a culture of continuous improvement that benefits both educators and students alike.

As teachers continue to engage in ongoing learning opportunities, they are better able to meet the diverse needs of their students and foster a love of learning that extends beyond the classroom (Brown & Green, 2020). Ultimately, investing in teacher training is essential for creating a successful and thriving educational system (Johnson et al., 2018). For example, a school district may invest in continuous professional development workshops for teachers to learn how to incorporate project-based learning into their classrooms. As a result, teachers can adapt their teaching methods to better engage students and foster critical thinking skills, leading to improved academic performance and student motivation.

According to Garcia, J. & Martinez, R. (2017). By investing in continuous professional development opportunities, teachers can enhance their instructional techniques and better meet the diverse needs of their students. When teachers are equipped with the skills and knowledge to address each student's unique needs and foster their learning, they are more likely to accept and be enthusiastic about curricular changes. This positive attitude helps teachers view curricular changes as opportunities for growth and improvement rather than burdensome tasks. Confidence in their ability to handle any challenges that arise contributes to a smoother and more effective implementation of the new curriculum. Furthermore, when teachers feel supported in their professional development and have access to ongoing training and resources, they are better able to adapt to changes in the curriculum. This ongoing support also helps to build a sense of community among educators, fostering collaboration and the sharing of best practices. Overall, investing in the professional development of teachers not only benefits the educators themselves but also has a positive impact on the academic success of their students (Garcia & Martinez, 2017).

2.5. Training in remediation techniques and teachers' attitude towards curriculum change

This form of training prepares teachers to identify and support learners who are falling behind academically. It involves diagnostic assessment, differentiated instruction, and intervention strategies aimed at promoting inclusive and equitable learning (UNESCO, 2017). Curriculum reforms often emphasize inclusive education and equity. Teachers equipped with remediation techniques are better able to address learner diversity and avoid marginalizing slow

learners. This competence fosters confidence and reduces anxiety associated with implementing new curriculum demands, thereby positively influencing teacher attitudes (OECD, 2019).

Remediation involves collaboration and supportive learning between students and teachers to address individual differences and support lagging students (Chitsa, 2017). These programs help reduce dropout rates, prepare students for the job market, and contribute to national development (Eric, 2014). They also help students build self-confidence by facing their weaknesses and developing self-help strategies.

Additionally, remedial teaching enhances teachers knowledge, skills, and attitudes both in school and in their daily activities (Kasran, 2012). The importance of remediation techniques to teachers includes improving their instructional practices, understanding the diverse needs of their students, and fostering a positive learning environment, but it also plays a crucial role in shaping their overall development. In turn, teachers who employ remediation techniques are able to tailor their instruction to meet the individual needs of their students, ultimately creating a more inclusive and effective learning environment (Eric, 2014).

By implementing remediation techniques, teachers can cater to individual learning styles and abilities, ultimately leading to increased student success and academic achievement. Overall, the importance of remediation techniques to teachers cannot be understated, as they play a crucial role in supporting student learning and development. Research has shown that when teachers incorporate remediation techniques into their instruction, students are more likely to grasp difficult concepts, stay engaged in learning, and achieve academic success (Brown, 2019). Therefore, it is imperative for teachers to continuously assess and adapt their teaching practices to ensure that all students have the opportunity to reach their full potential.

One key aspect of effective remediation techniques is providing differentiated instruction to meet the diverse needs of students. By tailoring instruction to individual learning styles and abilities, teachers can better support struggling students and challenge those who are excelling. For example, a teacher may use a combination of visual aids, hands-on activities, and auditory explanations to cater to different learning preferences in a single lesson.

Additionally, offering additional resources or assignments for students who need more support or enrichment can further enhance their learning experience and academic growth. By implementing differentiated instruction, teachers can create a more inclusive and effective learning environment for all students. This approach allows educators to address the unique

strengths and weaknesses of each student, ultimately fostering a more personalized and engaging educational experience.

According to Tomlinson (2001), differentiated instruction is essential for promoting student success and maximizing their potential in the classroom. By recognizing and accommodating diverse learning needs, teachers can help all students reach their academic goals. Teachers trained in remedial techniques are more likely to support curriculum changes because they understand the importance of addressing individual differences and helping students acquire the necessary skills. Incorporating remedial teaching methods into the curriculum allows teachers to tailor their instructional strategies to meet diverse student needs, leading to better learning outcomes and a more inclusive educational environment. By implementing remedial teaching methods that cater to individual learning needs, teachers can create a more equitable and supportive learning environment for all students.

Furthermore, by recognizing and addressing diverse learning needs, teachers can help students develop their full potential and succeed academically. Teachers with remediation training have access to a broader range of teaching resources and strategies. This enables them to adjust their methods to meet each student's unique needs effectively. Instead of a one-size-fits-all approach, these teachers can identify and address individual learning gaps with targeted interventions and support, promoting both inclusivity and a sense of belonging in the classroom. For example, a teacher trained in remediation might help a student struggling with reading comprehension by using graphic organizers, guided reading activities, and explicit instruction rather than simply assigning more reading tasks.

This approach demonstrates how remediation training empowers teachers to tackle specific challenges and help students reach their full potential. By providing personalized support and utilizing evidence-based strategies, remediation-trained teachers can make a significant impact on student learning outcomes. Research has shown that targeted interventions tailored to individual needs are more effective in addressing learning gaps and improving student achievement (Gajria, Jitendra, & Sood, 2007).

This approach enhances students' confidence and engagement by addressing their unique needs. Teachers who participate in remediation training gain valuable insights into identifying and meeting the specific needs of each student. They learn to create individualized lesson plans tailored to students' preferences and needs, helping students overcome learning obstacles,

boosting their self-esteem, and fostering a sense of achievement. In essence, remedial training enables educators to create a more effective and inclusive learning environment for all students.

Lastly, Teachers who participate in remediation training gain valuable insights into identifying and meeting each student's specific needs. This training equips them with the skills and knowledge to create individualized lesson plans tailored to the unique preferences and requirements of their students. By employing remediation strategies, teachers can help students overcome learning challenges, thereby increasing their self-esteem and sense of accomplishment. In essence, remedial training empowers educators to establish a more effective and inclusive learning environment for every student. Ultimately, by investing in remediation training, teachers foster a more inclusive and effective learning environment that supports all students, regardless of their distinct learning styles and abilities.

2.6. Support, resources, and teachers' attitude toward curriculum change

Support and resources refer to the materials, infrastructure, and ongoing professional guidance provided to teachers. This includes curriculum guides, teaching aids, access to ICT, mentorship programs, and regular monitoring and evaluation mechanisms (OECD, 2019). Teachers are more likely to adopt new curriculum practices when they are supported with adequate resources and mentoring. A lack of support can lead to frustration, burnout, and negative perceptions of curriculum reforms. Conversely, well-supported teachers exhibit resilience and openness to change (Fullan, 2020). This support can come in the form of professional development opportunities, mentorship programs, and access to instructional resources. Teachers who feel supported and equipped with the necessary tools are more likely to embrace and successfully implement changes to the curriculum.

Additionally, a positive attitude from school leadership and administrators towards curriculum change can help create a culture of innovation and continuous improvement within the school community. By fostering a culture of ongoing learning and growth, schools can ensure that teachers are well-prepared to adapt to new curriculum standards and methodologies. This continuous support also helps to boost teacher morale and job satisfaction, leading to a more positive and productive learning environment for students. Ultimately, investing in the continuous professional development of teachers is essential for the long-term success and effectiveness of any curriculum changes in a school setting.

According to Darling (2017), providing teachers with opportunities for professional development is crucial for improving student outcomes and overall school performance. By

investing in the growth and learning of educators, schools can create a more dynamic and engaging learning environment that benefits both teachers and students (Guskey & Yoon, 2009). Furthermore, continuous support and training for teachers can lead to increased teacher retention and job satisfaction, ultimately contributing to the success of any curriculum changes implemented within a school (Ingersoll & Strong, 2011).

Teachers play a crucial role in the success of any curriculum changes within a school. Their attitudes towards these changes can greatly impact the effectiveness of the implementation process. By providing continuous support and training to teachers, schools can help ensure that educators are equipped with the necessary skills and knowledge to successfully implement new curriculum initiatives. This, in turn, can lead to increased teacher retention and job satisfaction, creating a positive cycle of growth and improvement within the school community. According to Fullan (2007), supporting and empowering teachers is essential for successful curriculum implementation. Ensuring that teachers feel confident and supported in their ability to effectively deliver new curriculum content is essential for the overall success of the implementation process.

By fostering a culture of collaboration and communication among educators, schools can create a supportive environment where teachers feel empowered to embrace change and strive for continuous improvement. Additionally, recognizing and celebrating the efforts of teachers as they adapt to new curriculum changes can further motivate them to engage in professional development opportunities and drive positive outcomes for student learning. Ultimately, by prioritizing teacher support and development, schools can create a foundation for sustainable growth and improvement in the long term.

This can provide valuable insights and strategies for other schools looking to implement similar changes. By learning from successful experiences, educators can better understand the challenges and opportunities that come with curriculum changes and be better prepared to address them in their own schools. Sharing best practices and lessons learned can help create a more collaborative and supportive environment for teachers as they work towards improving student outcomes and overall school success. By fostering a culture of collaboration and continuous improvement, schools can create a positive and empowering environment for their staff to thrive in. This can lead to increased teacher morale, engagement, and ultimately, better student outcomes.

By sharing experiences and resources, educators can work together to overcome obstacles and achieve their goals of providing a high-quality education for all students. Through open communication and a willingness to learn from each other, schools can navigate curriculum changes more effectively and ultimately create a more successful learning environment for everyone involved. Research has shown that when teachers feel supported and valued in their work environment, they are more likely to be motivated and dedicated to their jobs (Hakanen, Bakker, & Schaufeli, 2006). This positive work environment can also have a trickle-down effect on students, as teachers who are happy and engaged are more likely to provide high-quality instruction and support to their students (Skaalvik & Skaalvik, 2017). By fostering a sense of community and collaboration among educators, schools can create a culture of continuous improvement and growth that benefits both staff and students alike (Bryk & Schneider, 2002).

2.7. Types of Continuous Professional Development

➤ Structured CPD / Active Learning

According to Griffiths et al. (2010), structured professional development can significantly enhance the research capacity of new faculty: "From their accounts, the teacher educators achieved best when they received structured support, through supervision and research mentoring, appropriate for the stage that they had reached" (260). This type of development involves interactive, participatory learning and is typically proactive. It may include attending training courses, conferences, workshops, seminars, lectures, e-learning courses, or CPD-certified events. Active CPD learning is also relevant when professionals take career-oriented exams, allowing them to engage actively in acquiring new knowledge and skills.

By participating in these activities, professionals can network with others in their field, exchanging ideas and best practices. Structured CPD/active learning keeps professionals up-to-date with the latest advancements and trends in their fields, ensuring they remain competent and competitive. Additionally, CPD-active learning enhances problem-solving and critical-thinking abilities. Interactive discussions, case studies, and practical exercises encourage participants to analyze complex scenarios and develop innovative solutions. This hands-on approach deepens their understanding of the subject matter and equips them to tackle real-world challenges.

Furthermore, CPD-active learning promotes a continuous improvement mindset, as professionals continually seek to refine their skills and knowledge. They are encouraged to reflect on their practices, identify growth areas, and seek opportunities for further development.

For instance, a teacher participating in CPD might attend a workshop on inclusive teaching strategies. Through interactive activities and discussions with peers, they learn how to create an inclusive classroom and effectively support students with diverse learning needs. This experience equips them to address the real-world challenge of promoting equity and inclusion in their classroom, ultimately leading to improved student outcomes. This mindset of continuous improvement also prompts the teacher to reflect on their practices and identify areas for enhancement.

➤ **Reflective CPD Learning**

Reflective CPD learning enables individuals to gain insights through self-reflection and critical analysis of their own experiences and practices. This approach involves evaluating what has been successful and identifying areas for improvement, fostering self-awareness and continuous professional development. Although direct interaction with others may be limited, meaningful learning can still occur as individuals actively reflect on their experiences and seek feedback from mentors or colleagues.

Engaging in reflective CPD allows individuals to better understand their strengths and areas for development, helping them identify patterns and trends in their experiences. This understanding informs their professional development goals and decisions. Additionally, feedback from mentors or colleagues offers valuable perspectives that might otherwise be overlooked. This collaborative learning approach ensures individuals are continually challenging themselves and striving for improvement in their practice.

Reflective CPD learning cultivates a culture of continuous improvement and professional growth, leading to enhanced performance and success in one's field. For example, a teacher engaging in reflective CPD might regularly assess their lesson plans and teaching strategies, soliciting feedback from students and colleagues.

By reflecting on lesson outcomes and incorporating feedback, the teacher can determine the most effective teaching methods and adapt their approach to better meet student needs. This process of reflection and collaboration ultimately improves student engagement and learning outcomes.

➤ **Informal CPD/Self-Directed Learning.**

Self-directed CPD encompasses all independent professional development activities, such as reading documents, articles, and publications in print or online. Examples include reading relevant publications, books by leading experts, industry journals, and trade magazines.

Additional informal CPD activities include attending webinars, watching online tutorials and videos, participating in online forums and discussion boards, and listening to podcasts. These activities allow individuals to expand their knowledge and skills at their own pace and convenience.

Informal CPD, or self-directed learning, is a flexible and accessible way to stay updated and engaged in one's field. It allows individuals the freedom to choose which topics to explore and when. With the abundance of information available online, it is easier than ever to find resources that cater to specific interests and needs. Moreover, self-directed CPD can be tailored to an individual's preferred learning style, whether they thrive in a structured setting or prefer the independence of self-directed learning.

Self-directed CPD also allows learners to pace their education according to their schedule and availability, which is particularly beneficial for those with busy lives or irregular work hours. It enables individuals to fit learning around their other commitments, ensuring that education remains a priority integrated into their daily life. Additionally, it encourages individuals to take ownership of their learning journey by allowing them to choose the resources and methods that best suit their needs and preferences, enhancing motivation and engagement.

For example, a working parent aiming to advance their professional development can take online courses during their child's nap time or after bedtime.

This approach allows them to balance job and family responsibilities while prioritizing personal growth. They can focus on specific areas of interest within their field, such as leadership skills or project management, aligning their learning with their career goals and personal interests. This autonomy empowers them to tailor their learning experience to be meaningful and relevant to their needs. Engaging in interactive activities and discussions with peers worldwide further broadens their perspectives and builds a global network of professionals. This not only enhances their knowledge and skills but also boosts confidence and motivation, creating a positive and fulfilling learning journey.

Importance of continuous professional development

- **Develop superior skills in organizing and time management:** Apart from teaching, teachers spend a large part of their time developing curricula, evaluating students, and doing other paperwork. But the advent of school management changed that and teachers adopted the technology. Continuous Professional Development will enable them to stay organized and

manage their time effectively. They will also learn to leverage technology to focus more on training and students.

- **Find new teaching strategies:** With Continuous Professional Development, teachers discover new teaching strategies and ways. This helps them identify their students' needs and implement the strategies to teach them better. They also understand the areas where they can improve and change their style to be more effective.
- **Contribute to better student learning outcomes:** Research shows that Continuous Professional Development could improve student achievements by as much as 21 percentile points. It enables teachers to keep pace with the best practices and latest trends in their profession. It also helps them in crafting personalized and practical lessons for their students.
- **Remain motivated and improve their learning curve:** Continuous Professional Development keeps teachers motivated as they get professional help to become better educators. It allows them to step out of their routine and become a learner. They learn from experienced learners and experts, which enhances their learning curves and their leadership skills.
- **Set smart, professional goals:** Continuous Professional Development makes teachers better goal-setters and helps them to set SMART goals. SMART stands for Specific, Measurable, Attainable, Relevant and Time-bound. With this, educators can define career goals that are realistic and achievable and can be measured by setting a timeline.
- **Get knowledge and insight into the subject:** Continuous Professional Development allows educators to get knowledge and insight into various areas of their subjects. With Continuous Professional Development, they also know what is happening in their industry and how they can improve their teachings to measure up against the high standards.
- **Equip their students for the future:** Rapid technological change will transform a lot of things in the future. It will make many jobs obsolete and create many new ones. Today's students will need to equip themselves with new technical skills and competencies to perform effectively as future professionals and teachers will play a key role in preparing their students for a brave new world.

2.8. Forms of Continuous Professional Development Activities.

According to Kosnik et al. (2015, p.215), formal CPD activities involve structured, often mandatory activities such as research mentoring and supervision, attending and presenting at

academic conferences, conducting or engaging in action research, and completing formal studies. These activities are typically performed in an official capacity.

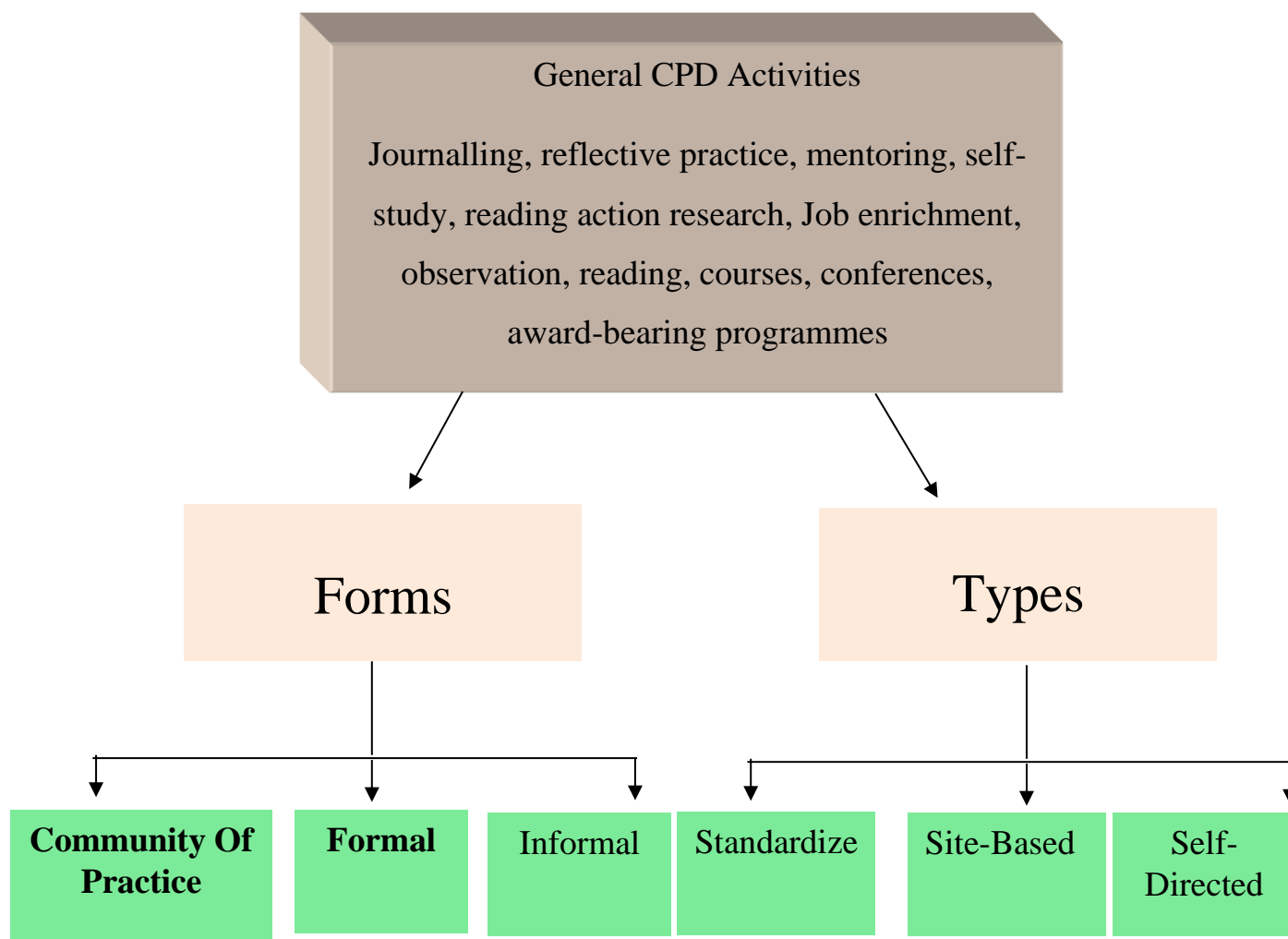
In contrast, informal CPD activities, as described by Kosnik et al. (2015,), are voluntary and may occur individually or in collaboration with others. Examples include reflective practice, discussions with professional colleagues, and team planning and teaching. They also mention that community of practice activities are "formalized and structured but not institutionally mandated," involving groups engaging in networking activities, online blogs, and forums to learn collectively and share knowledge.

Murray (2010) expands on the distinction between formal and informal learning, arguing that much learning occurs informally among colleagues as they work together, while formal learning typically leads to qualifications. Similarly, Vanessa et al. (2012) assert that professional learning should be situated within day-to-day practice and tailored to the professional's needs. They acknowledge the value of formal CPD but emphasize that informal CPD allows professionals to apply knowledge and skills in the work environment, fostering development.

Community of Practice (CoP) activities engage professionals in social practice through shared enterprises over time. Participants challenge and consolidate their learning, gaining professional identity and meaning through these interactions (Wideman & Owston, 2003).

Overall, formal CPD is easier to document and account for in certification and professional development hours due to its structured and institutionally sanctioned nature, while informal CPD and CoP activities offer contextual and practical learning experiences.

Figure 8: Forms and types of CPD within Teacher's World of Work



Source (Kosnit et al, 2015)

2.9. The Continuous Professional Development Plan

The plan outlines a framework for continuous practice, learning, and communication activities, signifying a commitment to the ongoing professional development of teachers. It specifies the goals, objectives, and strategies teachers will adopt to enhance their knowledge and skills in their respective fields. Additionally, the CPD plan acts as a tool for self-reflection and evaluation, enabling teachers to assess their progress and pinpoint areas for improvement. By engaging in continuous professional development, teachers show their dedication to staying current with best practices and delivering high-quality education to their students.

Moreover, the CPD plan acknowledges the dynamic nature of education, recognizing the necessity for teachers to evolve and adapt. It highlights the importance of keeping abreast of new research, technologies, and pedagogical approaches, and encourages teachers to seek

opportunities to integrate these advancements into their teaching. The plan underscores the significance of collaboration and networking, urging teachers to participate in professional learning communities and attend conferences and workshops to share ideas and learn from peers. It also promotes ongoing reflection and feedback, fostering a culture of continuous improvement, and encourages seeking mentorship and coaching to further develop skills. Overall, the CPD plan serves as a roadmap for teachers' professional growth, ensuring they remain knowledgeable, skilled, and effective throughout their careers.

An example of a detailed CPD plan implementation could involve a school organizing monthly professional learning community meetings where teachers collaborate and discuss best practices within their subject areas. These meetings would facilitate the exchange of ideas, resource sharing, and peer feedback, ultimately enhancing instructional methods. Additionally, the CPD plan could allocate funds for teachers to attend conferences and workshops, allowing them to learn from field experts and acquire new strategies for classroom implementation. Exposure to external expertise and innovative strategies can further enrich teachers' knowledge and skills, resulting in improved student outcomes.

For each of the practising, learning and communicating areas in the plan, teachers need to state:

- Goals and Targets
- Countermeasures to close Gaps Vision
- Strengths and Gaps
- Goals and Targets
- Countermeasures to Close Gaps

2.9.1. The ‘doing’ activities

Practicing and learning are the primary activities in continuous professional development (CPD). Practicing encompasses projects, programs, and activities carried out as part of CPD. Learning is achieved through education, training, and conferences. Communication activities include teaching, sharing, writing, coaching, and mentoring.

These activities help professionals stay current with the latest developments in their fields and enhance their skills and knowledge. Practicing enables professionals to apply their learning in real-world settings, while learning activities provide new information and insights. Communication activities allow professionals to share their expertise with others and contribute

to the growth of their profession. Together, these activities ensure that professionals are continuously improving and remaining relevant in their chosen fields.

Continuing education is vital for professional growth and development. By engaging in ongoing learning, professionals can keep pace with the ever-changing demands of their industry and maintain a competitive edge. Whether attending workshops, conferences, or pursuing advanced degrees, these educational activities offer numerous opportunities for professionals to expand their knowledge base and stay current with the latest trends and best practices. Additionally, mentoring programs provide valuable guidance and support from experienced individuals in the field. Through these relationships, mentees gain insights, learn from their mentor's experiences, and navigate their profession more effectively.

For example, a teacher engaged in continuous professional development might attend a workshop on innovative teaching strategies, learning about the latest research-based techniques and collaborating with other educators. They could also be paired with an experienced teacher mentor who offers guidance on classroom management and provides feedback on lesson plans. Through these educational activities and mentoring relationships, the teacher can enhance their teaching skills, stay updated on current pedagogical approaches, and improve student learning outcomes.

Table 2: A list of 'doing' activities

Activity	Meaning	Example
Practicing	Practising is about teachers using their skills in the workplace, applying knowledge length and engaging in an activity for improvements and solving problems	- Participating in improvement events - Undertaking specific projects
Learning	Learning is about acquiring lean-oriented knowledge or skills through formal education, training, research, studying and on the Job experience	- Participating in formal training courses
Communication	Communication is about sharing opinions, and exchanging or imparting knowledge amongst colleagues. Communication is sub-divided into, sharing knowledge and teaching & guiding	Sharing knowledge - Writing Articles and blogs. - Making presentations and delivering briefings. Teaching & Guides - Facilitating - Coaching - Instructing - Mentoring

Source (Kosnit et al, 2015)

2.9.2 Checking, reflecting & assessing progress.

This process involves contemplating one's learning and experiences, essentially asking, "What did I gain from this?" and "How have I progressed?" This process demands critical thinking and reflection. During these stages, teachers formally assess their progress toward their goals based on their activities. Reflection is an ongoing process.

It enables teachers to pinpoint areas needing improvement and make necessary adjustments to their teaching strategies. Additionally, reflection helps teachers recognize their strengths and weaknesses, facilitating continuous professional growth. By consistently evaluating and reflecting on their progress, teachers can ensure they provide the best possible education and

support for their students. This ongoing reflection helps teachers stay connected with their students, understanding their individual needs and learning styles.

Through reflection, teachers can identify gaps in their teaching methods and find ways to address them. It also serves as a tool to evaluate the effectiveness of various instructional techniques, allowing teachers to make informed decisions about what works best for their students. Furthermore, reflection keeps teachers up-to-date with the latest research and educational practices, enabling them to offer the most relevant and engaging learning experiences.

Ultimately, critical reflection is essential for effective teaching as it promotes growth, improvement, and better student outcomes. For instance, if a teacher observes that certain students struggle with a particular concept, through critical reflection, they can analyze their teaching methods and identify gaps. They might then decide to incorporate more hands-on activities or visual aids to accommodate different learning styles and help these students grasp the concept. By regularly reflecting on their teaching practices, the teacher can adapt and refine their techniques, leading to improved student understanding and achievement.

2.9.3. Acting

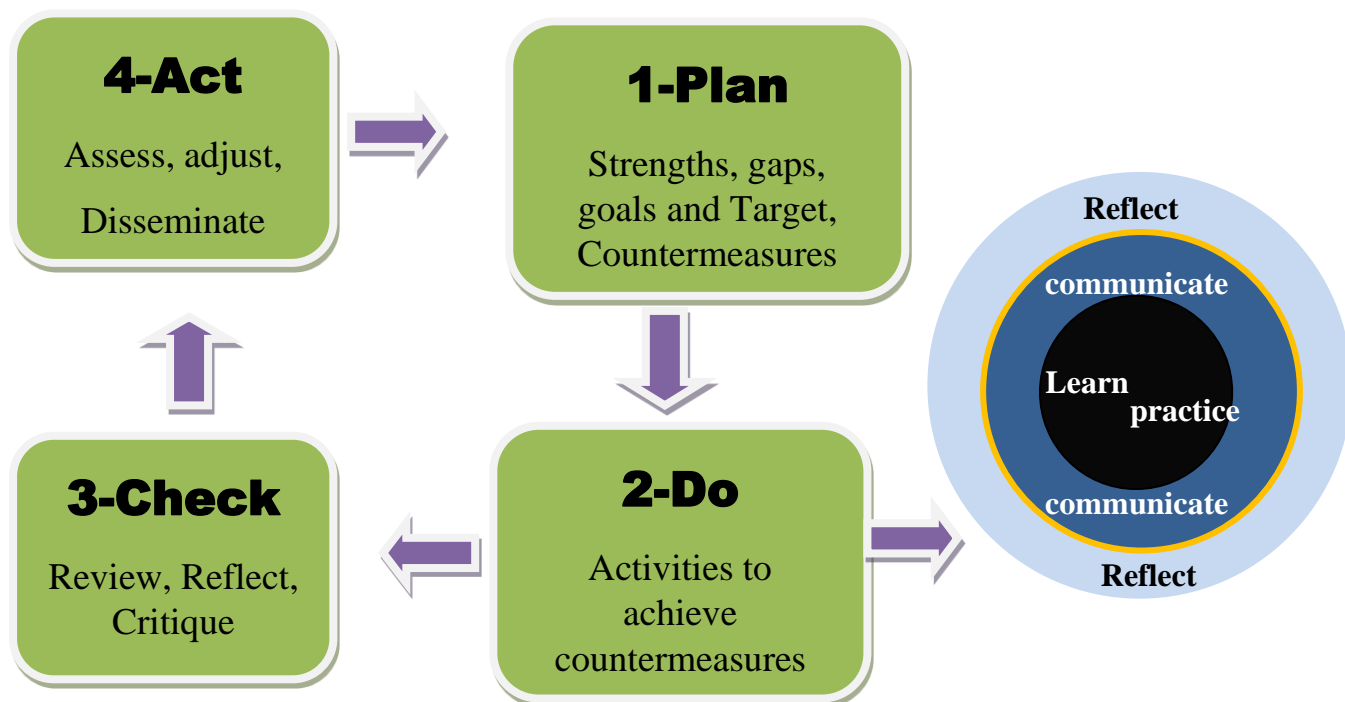
Acting involves modifying the plan based on the outcomes of the assessing, checking, and reflecting stages. Teachers may need to revise their plans due to new opportunities, shifting priorities, or the achievement of previous goals, necessitating a new CPD cycle and plan. This stage also requires flexibility to address unexpected challenges or obstacles during the plan's implementation. For example, teachers might need to adapt their teaching strategies to better meet individual students' learning needs or modify instructional materials to tackle emerging issues. Adjusting and modifying plans is crucial for teachers to effectively cater to their students' evolving needs and ensure successful teaching and learning experiences.

Teachers must maintain a reflective mindset to continuously evaluate the effectiveness of their practices. This involves analyzing student performance data, seeking feedback from colleagues and supervisors, and engaging in self-reflection to identify areas for improvement. By regularly assessing their teaching methods and making necessary adjustments, teachers can provide the best possible education for their students. Reflective practice is an essential component of the CPD cycle, allowing teachers to grow and develop professionally throughout their careers.

Moreover, reflective practice encourages teachers to stay current with the latest research and best practices in education. By keeping informed about new teaching strategies and educational theories, teachers can adapt their methods to meet their students' evolving needs. This continuous learning benefits both teachers and students by enhancing the learning experience. Reflective practice also promotes a culture of collaboration and professional growth within the education community. Teachers who engage in reflective practice are more likely to seek professional development opportunities, attend conferences and workshops, and participate in professional learning communities. This collaborative approach allows teachers to learn from each other, share ideas, and collectively work towards improving education quality for all students.

For example, a teacher may engage in reflective practice by analyzing the outcomes of a recently implemented teaching strategy. Through self-reflection, the teacher might realize the strategy was ineffective in engaging students or promoting deep understanding. Consequently, the teacher seeks out professional development opportunities focused on innovative instructional techniques and incorporates new strategies into their practice. This enhances their teaching skills and benefits their students by providing more engaging and effective learning experiences.

Figure 9: The continuous professional development cycle



Source: <https://www.leancompetency.org>.

2.10. Need and importance of continuous professional development of teachers.

In our country, the trend is that once a teacher has joined the service as a teacher, he continues to be so, through which he may or may not study. Ultimately, investing in continuous professional development for teachers is an investment in the quality of education in Cameroon. Continuous professional development is needed for all types of teachers in Cameroon. The following points indicate its need and importance.

➤ **Education: A lifelong process:**

A teacher who does not engage in continuous study cannot maintain their effectiveness. The training of a teacher is a lifelong endeavor, requiring ongoing efforts throughout their career. As the saying goes, "A lamp can never light another lamp unless it continues to burn its flame." The Secondary Education Commission states that no matter how excellent a teacher training program is, it alone does not create an outstanding teacher. Greater efficiency and effectiveness come from experience that is critically analyzed and from both individual and collaborative efforts.

Teachers should be encouraged and supported in their continuous professional development through attending workshops, conferences, and participating in collaborative projects with other educators. By continually learning and growing, teachers can keep abreast of the latest research and best practices, ensuring they provide the highest quality education to their students. Furthermore, ongoing professional development helps teachers adapt to the evolving needs of their students and the changing educational landscape.

By staying current with research and best practices, teachers can modify their teaching methods to meet the new demands and expectations of their students and the education system. This continuous adaptation and growth ensure that teachers are providing the best possible education and preparing their students for success in the 21st century.

➤ **Professional growth:**

Every teacher is expected to maintain a professional commitment, requiring ongoing guidance and support from others for their growth. Ensuring teachers' efficiency is essential, so they must be proficient in every aspect. Professional development is vital as it keeps teachers updated with the latest teaching methodologies and strategies. Continuous learning and development help teachers adapt to the ever-changing needs of students, providing them with a high-quality education. Moreover, professional growth allows teachers to expand their

knowledge and skills, better supporting and inspiring their students. This growth fosters accountability and professionalism among teachers, positively impacting the entire education system.

By investing in their professional growth, teachers show their dedication to their profession and student success. This commitment to continuous learning also sets a positive example for students, highlighting the importance of lifelong learning and personal development. Additionally, professional growth offers teachers opportunities to network and collaborate with other educators, sharing best practices and innovative ideas that enhance teaching effectiveness. This collaborative approach benefits individual teachers and contributes to a culture of continuous improvement within the education system.

Overall, professional growth is crucial for a teacher's journey, empowering them to make a lasting impact on their students and the education system. For instance, a teacher interested in integrating technology into their classroom might attend a professional development workshop on educational technology.

Through this workshop, the teacher learns about new tools and strategies for incorporating technology into lessons, creating more engaging and interactive learning experiences for students. They also connect with other teachers interested in educational technology, forming a supportive network for sharing ideas and resources. This example demonstrates how professional growth directly impacts classroom education quality.

By attending the workshop and acquiring new skills, the teacher can enhance their teaching methods and create a more stimulating learning environment. The network of teachers fosters a culture of continuous improvement, allowing them to brainstorm innovative approaches and share successful practices to further elevate student outcomes.

➤ **Education is dynamic:**

Education is inherently dynamic, evolving alongside the rapidly changing society. With advancements in science and technology leading to an explosion of knowledge, the curriculum and syllabus must also adapt at a swift pace. Continuous professional development (CPD) for teachers is essential to navigate these changes effectively.

CPD ensures that teachers remain updated on the latest teaching techniques and technologies, enabling them to meet the evolving needs of their students. Without ongoing development, teachers risk falling behind, relying on outdated methods, and struggling to

engage students. Therefore, investing in the professional growth of educators is crucial for maintaining high-quality and effective education in a constantly changing society.

In today's digital age, technology is continually advancing and reshaping education. As students become more adept at using digital tools, teachers must incorporate these technologies into their teaching practices. Professional development equips teachers with the necessary skills and knowledge to effectively integrate technology into the classroom, enhancing the learning experience and preparing students for the digital world they will encounter in their education and careers. For instance, a teacher might attend a workshop on using virtual reality (VR) in the classroom, learning how to create immersive VR experiences that allow students to explore historical landmarks or ocean depths without leaving their seats.

By integrating VR into lessons, the teacher can spark excitement and engagement among students, helping them interact with virtual environments and gain a deeper understanding of complex concepts. This use of technology not only enriches the learning experience but also prepares students with valuable skills for the future. They learn to navigate and adapt to new technologies, becoming more confident in their abilities to problem-solve, collaborate, and think critically. This preparation sets them up for success in an increasingly digital world.

➤ **Makes democratic teachers**

Continuous professional development (CPD) plays a crucial role in helping teachers become more democratic. By participating in ongoing education programs, teachers interact with a diverse array of individuals and share their experiences, which broadens their understanding of various perspectives and cultures. This enhanced understanding allows teachers to foster a more inclusive and diverse learning environment. Furthermore, CPD equips teachers with the skills and knowledge necessary to engage students in critical thinking, active participation, and democratic decision-making processes. This approach empowers students, encouraging them to voice their opinions and contribute actively to the learning process.

One-way CPD promotes democratic teaching is by encouraging collaboration and shared decision-making. Through continuous training and workshops, teachers are encouraged to work together, share ideas, and make collective decisions that enhance the learning environment. This collaborative approach not only empowers teachers but also demonstrates democratic principles to their students, illustrating the importance of working together and respecting diverse viewpoints. Additionally, CPD helps teachers develop a thorough

understanding of democratic values and principles, enabling them to effectively teach these concepts to their students.

By incorporating democratic practices into their classrooms, teachers create an environment where students feel heard, valued, and empowered to participate in decision-making processes. This inclusive classroom setting fosters a sense of ownership and responsibility among students as they actively shape their own learning experiences. Through open discussions, debates, and collaborative projects, students learn to communicate, listen, and negotiate with their peers—skills essential for active citizenship in a democratic society. Engaging in democratic practices helps students develop critical thinking skills and analyze different perspectives, leading to a deeper understanding of complex social and political issues. This preparation is vital for becoming informed and engaged citizens who contribute positively to their communities and society.

For example, in teacher education, a program might include a workshop on integrating student voices into classroom management. Teachers would learn strategies for involving students in setting classroom rules and procedures. By implementing these strategies, teachers can create a classroom culture where students feel their opinions matter, leading to increased engagement and responsibility. This approach not only empowers students but also provides them with practical experience in democratic processes, preparing them for active participation in their communities.

2.11. Factors Contributing to effective continuous professional development for teachers in School.

Role of administrator

Continuous professional development (CPD) should be proactive rather than reactive, and its effectiveness hinges on its personalization and foundation on positive constructs. In schools, effective in-service training requires strong leadership, typically provided by the principal, though sometimes delegated to an assistant principal. Administrators as leaders create an environment of support and trust, offering incentives and recognition for participation, and providing sustained moral and material backing. They should exemplify engagement by actively participating in training activities.

School administrators face the demanding task of overseeing the professional development of teachers. This responsibility stems from their access to data that reveal the

strengths and weaknesses of staff, student needs, curriculum gaps, community values, and alignment with educational goals (Alice, 1993).

Administrators must involve teachers in identifying necessary skill improvements and designing relevant activities and programs. Despite not always being directly involved, principals wield significant influence in implementing in-service training. Their leadership style, level of engagement, authority, and relationship with teachers significantly impact school improvement efforts.

Administrators should act as teachers, counselors, and supporters, offering comprehensive encouragement to teachers during training. Creating a positive climate conducive to collaboration is crucial for staff development and change initiatives. Principals must proactively foster psychological conditions that facilitate in-service training within their schools. The success of such training hinges on attitudes and interpersonal dynamics within the school, and principals are best positioned to establish conditions that promote collegiality.

According to Steyn (2011), effective leadership correlates with the active involvement of administrators in school learning and development processes. Lee (2005) assert that principals should be committed to identifying teachers' training needs and designing suitable programs.

Administrators must raise awareness among staff about the necessity and benefits of in-service training, ensuring that teachers accept responsibility for attending. An effective training program requires administrators who stimulate and support staff members, and teachers value evaluations conducted by administrators post-training, which provide specific data and constructive feedback to enhance classroom practices.

Principals or headmasters play a pivotal role in evaluating program objectives and assessing teacher skills, critical for achieving the goals of in-service training. Their effective management ensures that teachers' needs are met and training programs are successful and impactful. Teachers perceive the principal's role as crucial for the success and effectiveness of training programs, underscoring the importance of ongoing support and assistance from school administrators.

Attitudes towards continuous professional development

The effectiveness of continuous professional development (CPD) in schools is closely linked to teachers' attitudes. Teachers need to maintain a positive outlook toward CPD initiatives organized by their schools. Their attitudes towards teaching philosophy, CPD, and

educational reform significantly influence their engagement with training programs. Attitudes reflect teachers' beliefs and opinions, either supporting or hindering their behaviors. According to Blanchard & Thacker (1999), in a training context, attitudes that impact job performance are of particular concern.

Teachers with a strongly positive attitude towards their profession are more inclined to experiment with new techniques and strategies, especially those learned through school-organized training. Beyond this, the objectives of CPD in schools aim to shift teachers' attitudes and work habits away from strict adherence to instructions or directives, fostering a culture that emphasizes teamwork and a sense of ownership during CPD sessions. This shift is crucial for enhancing the effectiveness of training programs.

Attitudes are critical in training contexts because they directly influence motivation. Motivation, in turn, influences goal-setting and the effort individuals invest in achieving those goals. Blanchard (1999) notes that attitudes significantly shape goals and effort levels related to these goals. Given the strong link between attitudes and behaviors, training programs must address attitudes that motivate teachers to perform and learn more effectively.

Teachers' active participation in planning and delivering CPD naturally leads them to perceive these programs as valuable. Teachers need to embrace CPD as integral to their professional growth and teaching improvement. They should view CPD as a continual process embedded in the school culture, something they are committed to maintaining.

This perspective is crucial for shifting teachers' attitudes and boosting their confidence in teaching and learning. Self-development is a cornerstone of CPD, requiring teachers to approach in-service training with a positive attitude and active participation. Personal growth through CPD hinges on teachers taking ownership of their development with enthusiasm. This approach fosters success and effectiveness in the training programs they attend, ultimately benefiting both teachers and their students.

Need analysis for continuous professional development

The primary purpose of CPD training is to increase the knowledge and skills of teachers and thereby increase the potential of the school to attain its goals and objectives. The process of assessing teacher's needs is essentially the process of determining the discrepancy between the existing and the needed competencies of the staff. This analysis also must consider projected human resource needs.

An effective continuous professional development training must be able to identify systematically the needs of teachers because it's the base for developing the objectives and the activities for the training program. In identifying the training needs, many aspects have to be taken into consideration. It's important to understand that training needs analysis is a process to identify teachers that need training and what kind of training they need. A need analysis should precede the planning and execution of a training program. In a need analysis, the school administrator determines exactly what the staff training needs are, before designing a program to meet them.

There are several methods of determining which needs to focus on in the in-service training. The first method is to evaluate the school output variables such as performance levels and growth levels of employees, school community relations, employee-management relations, and employee job satisfaction. Another method is direct feedback from the school regarding what they feel about the organization's development needs.

The final method of determining training needs involves projecting. If the new programs, procedures or equipment are predicted, some type of corresponding training will be needed. As seen from the above explanations, training needs analysis is important to determine the objective and the content of training and to identify the teachers who need training for their professional development and to improve their knowledge in many aspects of teaching and learning which will benefit the students. With this, the training will run well and will be very effective with the aim of improving the quality of the teacher.

Strategies for continuous professional development

This point asserts that continuous training should be implemented according to a comprehensive and well-organized plan that includes goals, objectives, strategies, activities, materials, assessment plan, and program evaluation procedures that are well-defined and coordinated with each other. In making sure that the process of channelling knowledge becomes reality, the approaches used in presenting CPD should be appropriate to the needs of the participants. Through the process of andragogy, an adult can obtain knowledge more effectively. This is based on the theory that adults have a higher level of self-development effort and learning through experience. Each method and approach used in in-service training in schools has its strong and weak points.

Therefore, the right methods or approaches should be suitable to the objectives, contents, ability of the participants, and facilities available in the training program. The effectiveness of

such method and approach used will depend on the knowledge, skills, and discretion of the coaches or facilitators concerning the concept, planning, implementation, and evaluation of the approaches used. The contents that are delivered should be suitable and be able to increase and develop the level of skills, knowledge, and positive attitudes of teachers. In schools, the contents are more emphasized on the subject syllabus, the pedagogy of learning, teaching and learning strategies of certain subjects or skills, and classroom management.

According to Matnoh (1995), suitable course content will only be developed through observation, listening, and feedback from potential participants by the facilitator or coaches. A crucially important aspect of conducting CPD is what kind of materials and media are suitable and effective in delivering the course content. The choice of equipment and materials must be suitable for the contents and training objectives that will be presented. The materials and equipment must be evaluated from time to time to ensure its effectiveness and suitability.

According to Hacer (2012), the effectiveness of CPD also very much depends on the materials and resources used and whether new materials are created during the course. In conducting in-service training in schools, the time factor will affect the effectiveness of training. Too long the training session will interfere with the teacher's concentration. While session held just after schooling time will not be suitable because teachers are tired after teaching. If it is conducted during the weekend, some teachers would think that it is a holiday for them.

Therefore, it is important to identify the most suitable time and session for training, teacher's recommendation should be taken into account. This will make sure that teachers will be more ready and prepared to attend the training program.

2.12. Programs and activities for the continuous professional development of teachers

The Following are some diverse programs and activities suggested for teacher educators to pursue their CPD in the advent of complexities continually arising in the field of teacher education in the 21st century.

Learning at the Institution:

Teacher-educators at their institution can observe theory class demonstrations, laboratory learning at the Institution work, micro-teaching, etc. conducted by senior colleagues and experts. They can take an active part in organizing the curricular, co-curricular, and extension activities undertaken by the institution. They can seek advice and help from experienced teacher educators and subject experts to improve their teaching. They can even take up responsibilities such as coordinator and program opportunity, either to chair or act as a

rappporteur for technical sessions during seminars and conferences, wherein the paper presentations by various teacher educators can provide new knowledge to them.

Also, teacher educators can avail themselves of the opportunity as resource persons to speak on topics of contemporary importance. This not only enhances their knowledge and understanding but also allows them to contribute to the professional development of their peers. In addition, teacher educators can actively engage in research and publication activities, sharing their findings and insights with the wider educational community. By actively participating in these various activities, teacher educators can continuously update their skills and knowledge, ensuring that they are well-equipped to provide quality education and guidance to future teachers. Overall, these opportunities provide teacher educators with a platform to grow both personally and professionally while also making a positive impact on the education system as a whole.

Furthermore, engaging in research and publication activities allows teacher educators to contribute to the body of knowledge in the field of education. Through their research, they can identify and address current challenges and trends in teaching and learning, ultimately improving educational practices. By sharing their findings and insights with the wider educational community, teacher educators can foster collaboration and dialogue among professionals, leading to innovative approaches and solutions.

This exchange of ideas not only benefits teacher educators themselves but also has the potential to positively impact the education system as a whole. Moreover, actively participating in these activities demonstrates a commitment to lifelong learning and professional development, setting a positive example for future teachers. Cite an example in the context of the continuous professional development of teachers.

Workshops:

Teachers and educators can attend workshops that provide a reliable and practical dimension to the discussion on the various aspects of a particular topic and the problems of the group of participants. They adopt a practical approach to formulating solutions for multiple issues. Some of the issues for workshops in education can include electronic or online evaluation, computer-aided instruction (CAI), action research, etc.

These workshops offer a valuable opportunity for teachers to exchange ideas and learn from one another's experiences. By focusing on practical solutions, participants can gain new strategies and techniques to implement in their classrooms. The workshops also serve as a

platform for discussing emerging trends and technologies in education, ensuring that teachers stay up-to-date with the latest advancements in the field.

However, these workshops provide a space for educators to address common challenges they face in their classrooms. Whether it's managing student behavior, integrating technology effectively, or promoting inclusive learning environments, these workshops offer a collaborative environment where teachers can brainstorm and problem-solve together.

Additionally, workshops often feature guest speakers or experts in the field who can provide valuable insights and expertise. This exposure to different perspectives and approaches can inspire teachers to think outside the box and explore innovative teaching methods. Overall, workshops in education play a crucial role in professional development, fostering a community of lifelong learners who are dedicated to continuously improving their practice.

One example of a workshop in education could be a STEM (science, technology, engineering, and mathematics) workshop where teachers come together to share and develop new teaching strategies for these subjects. During the workshop, teachers can collaborate on designing hands-on experiments or projects that integrate STEM concepts into their curriculum. They can also learn from guest speakers who are experts in the field of STEM education, gaining insight into new technologies or pedagogical approaches that can enhance their teaching.

By attending this workshop, teachers can expand their knowledge and skills in STEM education, ultimately improving the quality of instruction they provide to their students. They can also build a network of like-minded educators, creating a community of support where they can continue to exchange ideas and resources even after the workshop is over.

Symposium:

Teachers and educators can attend a seminar where they can get exposure to the presentation of papers by experts, discuss issues and trends, and make recommendations for a particular course of action. At the symposium, teachers and educators have the opportunity to enhance their knowledge and skills by attending workshops and interactive sessions conducted by renowned experts in their field.

They can engage in thought-provoking discussions, exchange ideas and experiences with their peers, and gain valuable insights into the latest educational techniques and methodologies. By the end of the symposium, attendees can collaboratively develop concrete recommendations

and strategies to implement in their classrooms or educational institutions, ultimately improving the quality of education provided.

Furthermore, these professional development opportunities allow teachers and educators to stay updated with the latest research and advancements in their respective fields. They can learn about innovative teaching methods, technology integration, and strategies to effectively cater to diverse learning styles.

By participating in these workshops and interactive sessions, educators can also expand their professional network and establish connections with like-minded individuals who share their passion for education. This networking aspect not only provides a platform for ongoing support and collaboration but also opens doors for future partnerships and collaborations on educational projects.

Overall, attending such symposiums and workshops can have a profound impact on the growth and development of teachers and educators, ultimately benefiting their students and the education system as a whole. provide an example based on the learning of teachers during continuous professional development.

For example, during a continuous professional development workshop, teachers may learn about innovative teaching strategies for students with learning disabilities. They can then connect with other educators who have successfully implemented these strategies in their classrooms. This networking opportunity allows them to collaborate and exchange ideas, ultimately improving their teaching practices and positively impacting the academic performance of their students with learning disabilities.

Brainstorming Sessions:

Teachers and educators can attend brainstorming sessions regarding educational issues organized either by government bodies or NGOs. They can attempt to generate new ideas or solutions around a specific area of interest without inhibitions and then build on the ideas raised by others. In the end, the designs can be evaluated, and the relevant one is considered. This collaborative approach allows for a diverse range of perspectives and expertise to be shared, leading to more innovative and effective solutions.

Additionally, brainstorming sessions create a sense of community and camaraderie among educators, fostering a supportive network for future collaboration and professional development. Overall, these sessions play a crucial role in shaping the future of education by

encouraging creativity, problem-solving, and continuous improvement in teaching and learning practices.

By involving multiple stakeholders in the design process, brainstorming sessions ensure that a variety of perspectives are taken into account. This helps to avoid bias and narrow-mindedness, leading to more well-rounded and inclusive solutions. Furthermore, these sessions provide a platform for educators to exchange ideas and learn from one another's experiences. This collaborative environment fosters a sense of trust and openness, where participants feel comfortable sharing their thoughts and challenging existing practices. As a result, innovative and out-of-the-box ideas can emerge, pushing the boundaries of traditional education and paving the way for new and exciting approaches to teaching and learning.

For example, during a professional development session, educators from different schools come together to discuss their experiences with inclusive classroom practices. They share strategies that have worked for them in creating an inclusive learning environment for students with diverse needs. By listening to each other's perspectives and learning from their successes and challenges, educators gain new insights and ideas to implement in their classrooms. This exchange of knowledge and experiences ultimately benefits all students, as teachers are better equipped to meet the individual needs of each student and create an inclusive learning environment.

Training programs

Various educational agencies provide training to teachers and educators concerning the acquisition and practice of digital skills, apart from sophisticated techniques and skills in teaching. It can include the integration of technology in classroom teaching, laboratory skills, etc. These training programs aim to equip teachers with the necessary knowledge and skills to effectively incorporate digital tools and resources into their teaching methods. They also focus on enhancing educators' abilities to adapt to new technologies and stay updated with the latest advancements in the field.

By participating in these programs, teachers can create a more engaging and interactive learning environment for their students, fostering digital literacy and preparing them for the demands of the modern world. Moreover, these training programs also emphasize the importance of teaching students' essential digital skills such as coding, data analysis, and online research. By equipping teachers with the knowledge and skills to teach these subjects, students can develop a strong foundation in technology and be better prepared for future careers in fields

such as programming, data science, and cybersecurity. Additionally, these programs also encourage collaboration among educators, providing a platform for them to share best practices and innovative teaching methods.

This collaboration not only enhances the overall quality of education but also fosters a supportive and dynamic community of teachers who can continuously learn and grow together. For example, in a school district that implements a comprehensive professional development program for teachers in technology and computer science, educators undergo intensive training in coding languages and software applications. They learn how to integrate technology into their lesson plans and engage students in hands-on activities such as building robots or creating websites. This not only enhances students' understanding of technology but also develops their problem-solving and critical-thinking skills. As a result, students are better equipped to pursue careers in the tech industry and contribute to the digital economy.

Resource person:

Teachers and educators can utilize the opportunities to give talks, demonstrations, etc. on topics that are important to education at other institutions. It can improve their subject knowledge and communication skills and remove stage fright. This also allows them to network with other professionals in the field and exchange ideas and best practices. Additionally, engaging with a different audience can help teachers refine their teaching techniques and adapt their content to better suit the needs of diverse learners. Overall, taking advantage of these opportunities can greatly contribute to their personal and professional growth as educators.

Attending conferences and workshops can also provide teachers with access to the latest research and innovations in education. They can learn about new teaching methods, technologies, and strategies that have been proven effective in the classroom. This knowledge can then be applied to their teaching practices, enhancing the learning experience for their students. Furthermore, these events often feature keynote speakers who are experts in the field, providing valuable insights and inspiration for educators. By staying up-to-date with the latest trends and advancements in education, teachers can continue to evolve and improve their instructional techniques.

Membership in professional organizations and associations.

Professional organizations and associations play a significant role in the exchange of ideas, the sharing of experiences, and the trying out of innovations and experiments among teacher educators, cutting across barriers across regions. Teachers and educators can become

members of associations and organizations that, from time to time, take up academic activities and organize seminars, conferences, workshops, conventions, and meetings to discuss professionally essential developments.

These events provide valuable opportunities for networking and professional growth, allowing educators to learn from their peers and stay updated on the latest research and best practices in their field. Additionally, being a member of a professional organization can enhance one's professional credibility and provide access to resources and support that can help improve teaching effectiveness. Overall, membership in these organizations can greatly contribute to the professional development and success of teacher educators.

This cross-pollination of knowledge and perspectives can lead to innovative teaching methods and approaches that can benefit both educators and their students. Moreover, these events often feature keynote speakers who are experts in the field, offering valuable insights and inspiring educators to think critically and creatively about their practice. By staying connected to the wider educational community, teacher educators can stay informed about emerging trends and research, enabling them to continuously improve their teaching and stay at the forefront of their profession.

2.13. Models of Continuous Professional Development.

However, it should be noted that the models are not proposed as necessarily exhaustive or exclusive; rather they are an attempt at identifying key characteristics of different types of CPD training to enable deeper analysis of, and dialogue about, fundamental issues of purpose.

2.13.1. The training models.

The training model for continuous professional development is universally recognizable (Little, 1994; Kelly & McDiarmid, 2002) and has, in recent years, arguably been the dominant form of continuous professional development for teachers. This model supports a skills-based, technocratic view of teaching whereby continuous professional development provides teachers with the opportunity to update their skills to be able to demonstrate their competence in the classroom. This approach emphasizes the importance of staying current with best practices and utilizing new technologies to enhance student learning. By focusing on skill development, teachers are better equipped to meet the ever-evolving needs of their students and adapt to changes in the education landscape.

Overall, the training model serves as a framework for ensuring that educators are equipped with the tools and knowledge necessary to excel in their roles and provide high-quality

instruction. This ongoing professional development also encourages collaboration among teachers, allowing them to share ideas and strategies to improve their teaching methods. By fostering a supportive and innovative environment, educators can continue to grow and evolve in their practice. Ultimately, the goal of this training model is to empower teachers to be effective and successful in their mission to educate and inspire students. With the right skills and knowledge, educators can make a lasting impact on the lives of their students and contribute to a brighter future for the next generation.

Through this collaborative approach to professional development, teachers can learn from each other's experiences and expertise, leading to a more enriched and dynamic learning environment for both educators and students. By continuously refining their teaching techniques and staying informed about the latest educational research and trends, teachers can adapt to the ever-changing needs of their students and provide them with the best possible education. This investment in professional growth not only benefits the individual teachers but also has a ripple effect on the entire school community, creating a culture of continuous improvement and excellence in education.

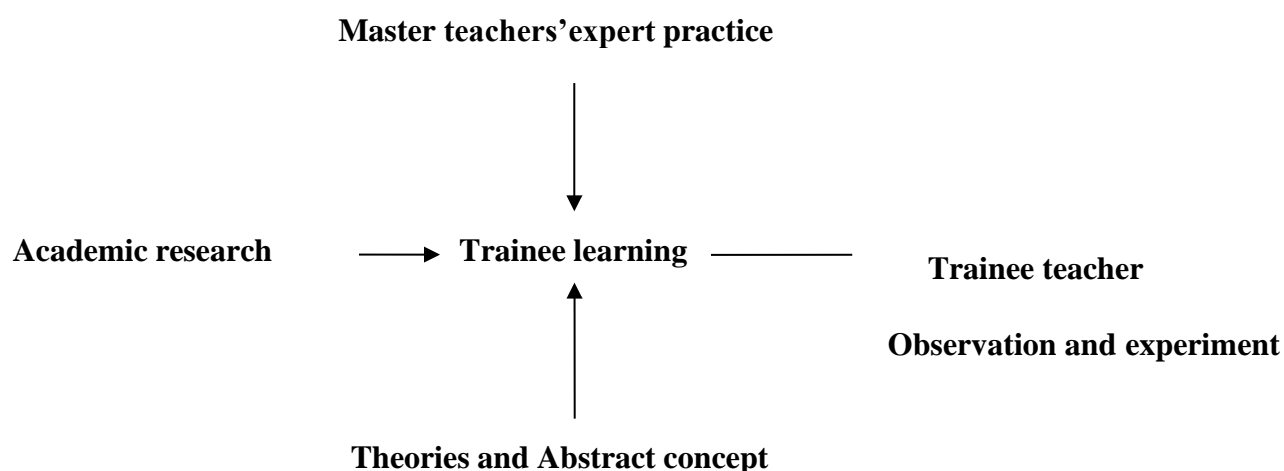
Furthermore, when teachers prioritize their professional development, they set a positive example for their students, demonstrating the importance of lifelong learning and growth. This can inspire students to take ownership of their education and strive for excellence in their academic pursuits.

Additionally, when teachers are constantly seeking to improve their skills and knowledge, they are better equipped to support and mentor their students, helping them reach their full potential. This cycle of growth and support fosters a strong sense of community within the school and empowers both teachers and students to succeed together. For example, a teacher who regularly attends workshops and conferences to learn new teaching strategies can then implement these innovative techniques in the classroom, engaging students and enhancing their learning experience.

This dedication to professional development not only benefits the teacher's growth but also creates a dynamic and enriching environment for students to thrive academically. These models are generally delivered to the teacher by an expert, with the agenda determined by the deliverer. The training model is an effective means of introducing new knowledge (Hoban, 2002) in a decontextualized setting.

The model supports a high degree of central control, often veiled as quality assurance, where the focus is firmly on coherence and standardization. It is powerful in maintaining a narrow view of teaching and education, whereby the standardization of training opportunities overshadows the need for teachers to be proactive in identifying and meeting their own development needs. The dominant discourse in Cameroon, as in many other countries, supports this notion that the standardization of training equates to improvements in teaching, learning, and pupil attainment.

Figure 10: The training model



Source: Aileen Kennedy (2005)

Relating this model to our study, Teachers who receive regular and effective training are more likely to positively embrace and implement new curriculum changes in their classrooms. This highlights the importance of ongoing professional development in ensuring that teachers are equipped with the necessary skills and knowledge to adapt to the ever-changing educational landscape. As technology continues to advance and new teaching methods are introduced, it is essential for teachers to stay current and continually improve their practices. Professional development not only benefits teachers in their ability to effectively implement new curriculum changes, but it also enhances student learning outcomes.

By investing in ongoing training and development opportunities, schools can create a culture of continuous improvement and innovation that ultimately benefits both teachers and students. Additionally, professional development can help teachers feel more confident and empowered in their roles, leading to increased job satisfaction and retention rates. Overall, the importance of ongoing professional development cannot be overstated in the field of education.

This model emphasizes the importance of ongoing learning and growth for educators, allowing them to stay current with the latest research and best practices in education. With its focus on continuous improvement, this training model has been shown to have a positive impact on teacher effectiveness and student outcomes. As educational standards and practices continue to evolve, this form of professional development will likely remain a key component in supporting teacher success in the classroom.

Lastly, this model of professional development encourages collaboration and reflection among teachers, fostering a culture of learning and innovation within schools. By engaging in ongoing training and development, educators are able to adapt to changing student needs and instructional strategies, ultimately leading to improved academic performance. Overall, the emphasis on continuous learning in this model ensures that teachers are able to provide high-quality instruction and support to their students, ultimately leading to better outcomes for all.

2.13.2. The coach mentoring model

The coaching/mentoring model covers a variety of continuous professional development practices that are based on a range of philosophical premises. However, the defining characteristic of this model is the importance of the one-to-one relationship, generally between two teachers, which is designed to support continuous professional development. This relationship allows for personalized guidance, feedback, and support tailored to the individual teacher's needs and goals. By fostering a strong bond between the mentor and mentee, the coaching/mentoring model creates a safe and trusting environment for professional growth and reflection. This personalized approach ultimately leads to more effective teaching practices and overall job satisfaction for educators involved in the program.

Additionally, the one-to-one relationship helps to build a sense of community within the school, as teachers feel supported and valued by their peers. This support system can also lead to increased collaboration and exchange of ideas among teachers, ultimately benefiting the entire school community.

Furthermore, the mentorship model allows for ongoing evaluation and adjustment of professional goals, ensuring that teachers are continuously growing and improving in their practice. Overall, the one-to-one relationship in coaching and mentoring plays a crucial role in the professional development and success of educators. It provides personalized guidance and encouragement, helping teachers navigate challenges and build upon their strengths. Through regular check-ins and feedback sessions, mentors can help teachers set achievable goals and

track their progress. This level of individualized support fosters a culture of continuous learning and improvement, leading to enhanced job satisfaction and, ultimately, improved student outcomes. In this way, coaching and mentoring not only benefit the teachers themselves but also contribute to the overall excellence of the school as a whole. For example, a new teacher may be struggling with classroom management techniques and feeling overwhelmed.

A mentor could observe their classroom, provide specific strategies for improvement, and offer ongoing support to help the teacher implement these changes effectively. By fostering a supportive environment for educators to grow and develop, coaching and mentoring programs can have a ripple effect throughout the entire school community. As teachers become more confident in their abilities and more engaged in their professional development, they are better equipped to meet the diverse needs of their students. This, in turn, can lead to improved academic performance, higher levels of student engagement, and a more positive school climate. Additionally, when teachers feel supported and valued, they are more likely to stay in the profession for the long term, reducing turnover rates and creating a more stable and experienced teaching staff.

Ultimately, investing in coaching and mentoring for educators is an investment in the future success of both teachers and students. Both coaching and mentoring share this characteristic, although most attempts to distinguish between the two suggest that coaching is more skills-based and mentoring involves an element of ‘counselling and professional friendship’ (Rhodes & Beneicke, 2002).

Indeed, mentoring also often implies a relationship where one partner is a novice and the other is more experienced (Clutter Buck, 1991). The mentoring or coaching relationship can be collegiate, for example, ‘peer coaching’, but is probably more likely to be hierarchical, as in, for example, the new induction procedures, where every new teacher is guaranteed a ‘supporter’ who supports the continuous professional process and is involved in the assessment of the new teacher’s competence.

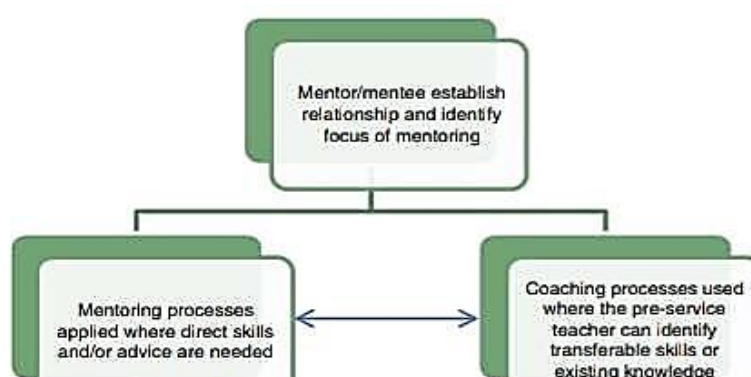
Key to the coaching/mentoring model, is the notion that professional learning can take place within the school context and can be enhanced by sharing dialogue with colleagues. The novice or experienced teacher model is similar to apprenticeship, where the experienced teacher initiates the novice teacher into the profession. This initiation, while including support for the novice in gaining and using appropriate skills and knowledge, also conveys messages to the new teacher about the social and cultural norms within the institution. In direct contrast, where

the coaching/mentoring model involves a more equitable relationship, it allows for the two teachers involved to discuss possibilities, beliefs, and hopes in a less hierarchically threatening manner. Interestingly, depending on the matching of those involved in the coaching/mentoring relationship, this model can support either a transmission view of professional development, where teachers are initiated into the status by their more experienced colleagues, or a transformative view, where the relationship provides a supportive but challenging forum for both intellectual and affective interrogation of practice.

Furthermore, Robinsons (2002) defines peer coaching as a confidential process through which two or more colleagues work together to reflect upon current practices, expand, refine, and build new skills, share ideas, conduct action research, teach one another, or problem solve within the workplace. So, while Robbins acknowledges the key characteristic of the one-to-one relationship, his particular definition of the relationship focuses on confidentiality as opposed to accountability.

Regardless of whether the coaching/mentoring model is mutually supportive and challenging or hierarchical and assessment-driven, the quality of interpersonal relationships is crucial. In order for the coaching/mentoring model of continuous professional development to be successful, participants must have well-developed interpersonal communication skills (Rhodes & Beinecke, 2002). It is interesting to note that the new pedagogic approach (CBA) in Cameroon secondary schools requires that teaching be learner-centred, which requires teachers to engage in various continuous professional development opportunities enabling them to gain interpersonal communication or to be trained in the role of supporter.

Figure 11: Diagram of the Coach\Mentoring model



Source: Aileen Kennedy (2005)

This model is significant in our study in several aspects. Firstly, coach/mentoring model is essential in helping teachers navigate through the challenges of curriculum change. By providing personalized guidance and support, coaches can help teachers develop a positive attitude toward implementing new curricula.

Secondly, the model also helps teachers feel more confident in their abilities and fosters a sense of collaboration and continuous improvement within the school community. Ultimately, the coach/mentoring model plays a crucial role in ensuring successful and sustainable curriculum change in educational settings.

Additionally, the coach/mentoring model allows for ongoing feedback and reflection, which are crucial components in the process of curriculum change. Through regular check-ins and discussions, coaches can help teachers identify areas for growth and improvement, as well as celebrate successes along the way. This continuous feedback loop not only supports individual teachers in their professional development but also contributes to the overall success of the curriculum change initiative.

Lastly, the coach/mentoring model promotes a culture of shared learning and collaboration, where teachers can learn from one another and work together towards a common goal of enhancing student learning outcomes. In this way, the coach/mentoring model serves as a cornerstone for building a strong and resilient educational community that is capable of adapting to the ever-evolving needs of students and society.

2.13.3. Action research model

The action research model, according to Day (1999), defines action research as ‘the study of a social situation, involving the participants themselves as researchers, with a view to

improving the quality of action within it'. The 'quality of action' can be perceived as the participants' understanding of the situation as well as the practice within the situation. Action research is a collaborative process that empowers teachers to identify areas for improvement in their practice and work together to make meaningful changes.

By engaging in action research, teachers can gain a deeper understanding of their student's needs and adapt their teaching methods accordingly. This participatory approach not only enhances professional growth but also fosters a culture of reflective practice within the school community.

Through ongoing reflection and data collection, teachers can continually assess the effectiveness of their instructional strategies and make adjustments as needed. This cycle of inquiry allows educators to stay responsive to the evolving needs of their students and create a more dynamic and engaging learning environment. By engaging in reflective practice, educators can identify areas for improvement and implement targeted interventions to support student learning. This continuous cycle of reflection and adjustment not only benefits individual teachers but also contributes to the overall success of the school community. Ultimately, a culture of reflective practice can lead to increased student achievement, improved teacher satisfaction, and a more supportive and dynamic learning environment for all.

As educators engage in reflective practice, they can critically evaluate their teaching methods, curriculum design, and classroom management strategies. This process allows them to assess what is working well and what areas may need improvement.

By seeking feedback from students, colleagues, and administrators, educators can gain valuable insights into their teaching practices and make informed decisions about how to best support student learning. Additionally, reflective practice encourages educators to stay current with research and best practices in education, ensuring that they are constantly growing and evolving as professionals. For example, a teacher may notice that their students are struggling with a particular concept during class discussions.

Through reflection, they may realize that incorporating more hands-on activities or visual aids could help reinforce the material and improve student understanding. By adjusting their teaching methods and curriculum design in response to this feedback, the teacher can create a more effective and engaging learning environment for their students.

Advocates of the action research model (Weiner, 2002; Burbank & Kauchack, 2003) tend to suggest that it has a greater impact on practice when it is shared in communities of practice

or inquiry, and indeed, many communities of practice will engage in action research. By sharing their findings and strategies with other educators, teachers can collaborate and learn from each other's experiences, further enhancing their teaching methods. This collaboration can lead to a more enriched and diverse educational experience for students as teachers continue to adapt and improve their practices based on feedback and reflection. In this way, the action research model not only benefits individual teachers but also contributes to a culture of continuous improvement in education.

Indeed, Weiner (2002, p. 5) explains that action research has practitioner development and transformation as its main aim. However, this particular move should be seen against the background of increasing decentralization in the educational system, where local authorities and schools are responsible for their teachers training with no overall national strategy to adhere to. Also, Burbank & Kauchack (2003) argue that collaborative action research provides an alternative to the passive role imposed on teachers in traditional models of professional development. By engaging in collaborative action research, teachers can take ownership of their professional growth and contribute to the advancement of their field.

This shift towards a more active and participatory approach to professional development empowers educators to address the specific needs of their students and schools. As a result, teachers are better equipped to implement evidence-based practices and drive continuous improvement in education. Furthermore, action research allows teachers to tailor their professional development to the unique challenges and opportunities present in their classrooms.

By systematically collecting data, analyzing results, and reflecting on their practice, educators can make informed decisions about instructional strategies, classroom management techniques, and student interventions. They advocate for teachers being encouraged to view research as a process as opposed to merely a product of someone else's endeavours. It is also, arguably, a means of limiting dependency on externally produced research, instead shifting the balance of power towards teachers themselves through their identification and implementation of relevant research activities.

Action research as a model of continuous professional development has been acknowledged as being successful in allowing teachers to ask critical questions about their practice. Nevertheless, an action research model has a significant capacity for transformative practice and professional autonomy.

The model is based on four main stages as elaborated below

✚ Developing a question, problem, or research focus.

Based on pedagogical issues related to matters such as CBA, the challenge of dealing with diversity, and curriculum change in the classroom, teachers are faced with dilemmas that must be solved. These possible problems require that educators use both possible knowledge and rational decision-making skills (knowledge in action) after discussion and careful reflection to be able to take action in response to problems. At this stage, the educator (as an action researcher) can develop a researchable question or problem from which a survey will be carried out to get to the solution of the problem.

One example of a dilemma teachers may face when implementing a competency-based approach to teaching is how to effectively assess student learning without relying solely on traditional exams. To address this, educators could develop project-based assessments that allow students to demonstrate their understanding of concepts through real-world applications, providing a more holistic view of their competency level. By utilizing action research methods, teachers can gather feedback from students, colleagues, and experts in the field to continuously refine and improve their assessment strategies in line with the competency-based approach.

✚ Survey, literature review, and planning.

At this stage, educators could begin their research by discussing the problems with colleagues from different schools to obtain their viewpoints and recommendations. This could be done through interviews, questionnaires, and focus group interviews. By gathering input from a diverse group of colleagues, educators can gain valuable insights and perspectives on the issue at hand. This collaborative approach can help identify potential solutions and strategies for addressing the problem. Additionally, engaging in discussions with others can lead to the development of a well-rounded research question that will guide the survey and literature review processes. Ultimately, this collaborative effort will enable educators to take informed and effective action in response to the identified problem.

✚ Implementation (action) and monitoring of implementation.

At this stage, the educator should decide precisely which of the actions outlined in the general plan are going to be implemented and how both the implementation procedure and its outcomes will be monitored (Eliot, 1991). By carefully monitoring the implementation of the chosen actions, educators can assess their effectiveness in addressing the identified problem and make any necessary adjustments. Monitoring implementation also allows for ongoing data

collection, which can provide valuable insights into the progress being made and inform future decision-making. Overall, this systematic approach to problem-solving ensures that educators are equipped to make informed choices and continuously improve their practices for the benefit of their students.

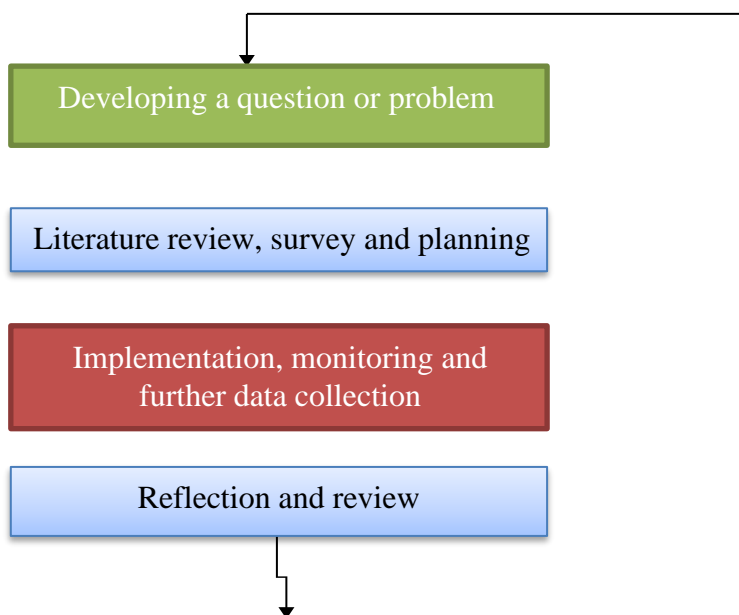
Reflection and Review

If the method works for the teachers but is time-consuming, or if the outcome is not satisfactory, the educator should start rethinking and refining the problem area and reframing the questions until more clarity is found on the more appropriate use of the identified strategy to ensure positive impact learning. By reflecting on the process and reviewing the results, educators can pinpoint areas for improvement and make necessary adjustments to enhance student learning outcomes.

This iterative approach allows teachers to fine-tune their practices and identify the most effective strategies for their specific classroom needs. Through ongoing reflection and review, educators can ensure that they are continuously evolving and adapting to meet the ever-changing needs of their students. This continuous cycle of reflection and adjustment is essential for creating a dynamic and responsive learning environment. It allows educators to stay attuned to the individual needs of their students and tailor their instruction accordingly. By regularly assessing and reassessing their teaching practices, educators can ensure that they are providing the best possible learning experience for all students.

Additionally, this ongoing process of reflection and adaptation helps educators to remain flexible and open-minded in their approach to teaching, ultimately leading to improved student outcomes and overall success in the classroom. For example, a teacher may notice that a certain group of students is struggling with a particular concept during a lesson. Through formative assessment techniques such as quick quizzes or class discussions, the teacher can quickly identify the problem areas and adjust their instruction to provide additional support and clarification for those students. This targeted approach helps to address individual learning needs and ensures that all students have the opportunity to succeed in mastering the material.

Figure 12: Diagram of Action Reaction Model.



Source: Aileen Kennedy (2005)

The significance of the action research model for teachers' attitudes toward curriculum change lies in its ability to actively involve teachers in the research process. Teachers are more likely to feel ownership over the changes being implemented, leading to a greater sense of buy-in and commitment. This participatory approach fosters a sense of empowerment and collaboration among educators, ultimately resulting in a more successful implementation of curriculum changes. By engaging teachers in the research process, the action research model allows for their input and feedback to be taken into account, making the changes more meaningful and tailored to the specific needs of the school community. In essence, the action research model not only facilitates curriculum change but also enhances the overall professional development and satisfaction of teachers.

Teachers who are involved in the action research process are more likely to feel invested in the changes being made and motivated to see them through. This sense of ownership can lead to increased enthusiasm and dedication to implementing new strategies, ultimately benefiting both educators and their students. Overall, the action research model proves to be a valuable tool for fostering a culture of continuous improvement and growth within a school setting. This can ultimately result in a more positive attitude towards curriculum change and a willingness to embrace new ideas and practices in the classroom. Additionally, the action research model allows teachers to see the direct impact of their efforts, providing a sense of empowerment and motivation to continue striving for improvement.

By engaging teachers in the research process, they can provide valuable insights and feedback based on their own experiences and observations. This can lead to a more tailored and effective approach to curriculum change that takes into account the specific needs and challenges faced by teachers in their day-to-day practice. Involving teachers in the research process also fosters a culture of collaboration and professional growth, as educators can learn from one another and share best practices for implementing change. Ultimately, a research model that actively involves teachers can lead to more sustainable and successful curriculum changes that benefit both educators and students alike.

2.14. Theoretical Framework

In this section, theories related to this study will be treated. Amin (2005) defines a theory as a related assumption or conception tied in some way to the real world of unknown properties or behaviors that can be subjected to experimentation and revision, as well as the search for more truth hitherto unknown. Theories are based on assumptions and specify relationships among variables. Theories guide research hypotheses that can be tested. The following theories like Adult learning theory (Knowls 1984), Theory of change (Weiss 1995), Transformative learning, and Social Learning Theory (Bandura 1997) will be elaborated on in the preceding paragraphs. These theories will provide a framework for understanding the relationships between variables in the study and will help guide the research process.

By exploring these theories, the researcher can gain insights into the underlying mechanisms at play and make informed predictions about the outcomes of the study. Overall, an in-depth examination of these theories will enhance the validity and reliability of the research findings. Understanding these theories will allow the researcher to make more informed decisions about the design of the study, including the selection of variables to measure and the methods of data collection and analysis.

By grounding the study in established theories, the researcher can ensure that the study is built on a solid foundation and is more likely to produce meaningful and reliable results. Furthermore, by building on existing theories, the researcher can contribute to the broader body of knowledge in the field and potentially advance the understanding of the topic being studied. In the following sections, each theory will be discussed in detail, highlighting its key concepts and implications for our research study.

2.14.1. Adult Learning Theory (Knowles, 1984)

Knowles (1984) created a model of andragogy as opposed to pedagogy, which emphasizes the qualities of an adult, as a trainee, important elements to shape later the portrait of an employee-oriented to learning. Andragogy (Adult learning) is a theory that provides a set of assumptions about how adults learn and emphasizing the value of learning. In this way, the approach to learning shows a different perspective, not a teaching point of view, but rather focused on problem-solving and a collaborative approach, and there is a greater "equality" between teacher, trainer, and trainee (Kearsley G 2008).

Andragogy, according to Narishkin, A. S. (2008), is a philosophy that emphasizes adult learning by providing learners with a high degree of autonomy and room for reflective learning. By placing the adult learner at the center of the class, andragogy enables the adult to build knowledge through experiences and personal objectives.

This method acknowledges that individuals bring a wealth of existing knowledge and experiences to the learning environment that can be drawn upon. Andragogy stimulates adult learners' active participation and motivation by offering possibilities for self-directed learning. A deeper comprehension and application of knowledge are also fostered by the emphasis on reflective learning, which challenges adult learners to critically evaluate their own experiences and draw links to fresh knowledge. Andragogy stresses the value of relevance and practicality in adult education, in addition to self-directed learning and reflective activities.

A common driving force behind adult learners is the desire to gain knowledge and abilities that they can use right away in their personal and professional lives. Because of this, andragogy encourages teachers to create lessons that are specifically relevant to the needs and aspirations of their students. Andragogy stresses the value of relevance and practicality in adult education in addition to self-directed learning and reflective activities.

A common driving force behind adult learners is the desire to gain knowledge and abilities that they can use right away in their personal and professional lives. Because of this, andragogy encourages teachers to create lessons that are specifically relevant to the needs and aspirations of their students' Learning outcomes that are relevant and useful are encouraged by andragogy, which connects new information to learners' prior knowledge and experiences. By building upon previous knowledge and experiences, adult learners can better understand and apply new concepts.

Additionally, andragogy recognizes that adults have a wealth of life experiences to draw from, and incorporating these experiences into the learning process can enhance retention and engagement. By learning, adults assimilate and permanently restructure their entire cognitive, emotional, volitional, motive, attitudinal, and behavioral experience. Furthermore, by focusing on practical applications of the material, adult learners are more motivated to actively participate in their own education. This approach to learning is particularly beneficial for adult learners, who often have specific goals and objectives in mind.

By tailoring the learning experience to meet their individual needs, andragogy fosters a sense of autonomy and self-direction. Adult learners are more likely to be motivated and engaged when they feel that the material is directly applicable to their personal and professional lives. This sense of relevance not only enhances the learning experience but also increases the likelihood of long-term retention and practical application of the knowledge acquired. In addition, andragogy recognizes the importance of creating a supportive and collaborative learning environment for adult learners.

By fostering a sense of community and encouraging peer interaction, learners can share their experiences, perspectives, and insights, further enriching the learning process. The ideas of adult education are applicable since teachers are learners in training. Therefore, to help staff members at schools, colleges, training organizations, and universities become effective lifelong learners, variations on the principles of adult learning have become common talking points in the development of training and curricula in recent years.

These guidelines place a strong emphasis on the autonomy and self-direction of learners, acknowledging that adults are more likely to learn when they perceive the relevance and value of the material. The tenets also support the application of experiential learning techniques, which allow adult learners to apply their acquired information and abilities to actual circumstances. Traditional teaching techniques have changed as a result of the shift toward adult education principles, creating more dynamic and interesting learning opportunities for students of all ages.

Five characteristics of adult learners (Andragogy) by (Knowles 1984).

Self-concept

As a person matures, his or her self-concept moves from being a dependent personality to being a self-directed human being. Having a strong self-concept allows teachers to have

confidence in their abilities and decisions, making them more effective in their roles. It also enables them to be open to feedback and willing to engage in self-reflection, leading to continuous growth and improvement. Ultimately, a positive self-concept can enhance a teacher's overall job satisfaction and motivation to further develop their skills and knowledge. Furthermore, a strong self-concept can also positively impact the relationships teachers have with their students, colleagues, and administrators.

When teachers have a clear understanding of their strengths and weaknesses, they are better equipped to communicate effectively, collaborate with others, and advocate for their needs. This can lead to a more supportive and harmonious work environment, ultimately benefiting the entire school community. In addition, a positive self-concept can also help teachers navigate challenges and setbacks with resilience and determination, allowing them to persevere in the face of adversity. Overall, cultivating a strong self-concept is essential for teachers to thrive in their profession and make a lasting impact on the lives of their students.

Adult learner experience

As a person matures, he or she accumulates a growing reservoir of experience that becomes an increasing resource for learning. The adult learner experience is beneficial to teachers during continuous professional development as it allows them to draw on their own experiences to enhance their teaching practices. Teachers can use their accumulated knowledge and skills to adapt to new teaching methods, technologies, and student needs. Additionally, by reflecting on their past experiences and learning from them, teachers can continue to grow and improve in their profession. Ultimately, the adult learner experience enables teachers to stay current, relevant, and effective in their roles as educators.

Readiness to learn

As a person matures, his or her readiness to learn becomes increasingly oriented toward the developmental tasks of his or her social roles. How is readiness to learn beneficial to teachers during continuous professional development? Readiness to learn is beneficial to teachers during continuous professional development because it allows them to be open to new ideas and approaches. Teachers who are ready to learn are more likely to embrace change and seek out growth opportunities. This mindset enables them to stay motivated and engaged in their learning, which in turn benefits their students. When teachers are ready to learn, they are more likely to actively participate in workshops, conferences, and online courses that can enhance their skills and knowledge. Additionally, a readiness-to-learn mindset encourages collaboration

with colleagues and a willingness to share ideas and resources. This ultimately creates a supportive and dynamic learning environment within the school community.

✚ Orientation to learning

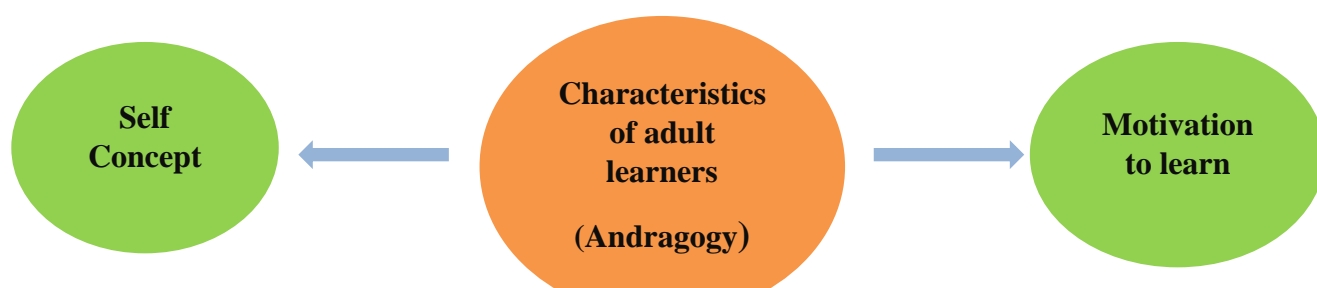
As a person matures, his or her perspective changes from one of postponed application of knowledge to one of immediate application. As a result, his or her orientation toward learning shifts from one of subject-centeredness to one of problem-centeredness. An orientation to learning is beneficial to teachers as it allows them to adapt and evolve in their teaching practices, staying current with new methods and technologies. This mindset also fosters a continuous improvement mentality, leading to ongoing professional development and growth. By being problem-centred in their approach to learning, teachers are better equipped to address the changing needs and challenges of their students, ultimately enhancing the overall quality of education provided.

✚ Motivation to learn

As a person matures, the motivation to learn is internal. The motivation to learn is beneficial to teachers as it helps them stay engaged and passionate about their work. When teachers are motivated to learn, they are more likely to seek out new information and resources to enhance their teaching skills. This can lead to improved student outcomes and a more positive learning environment. Additionally, a motivated teacher is more likely to inspire and engage their students, creating a ripple effect of enthusiasm for learning throughout the classroom. Ultimately, motivation to learn not only benefits teachers personally but also has a positive impact on the overall educational experience for students.

For example, a teacher who is motivated to learn may attend professional development workshops or conferences to learn new teaching strategies. Implementing these new techniques in the classroom can result in increased student engagement and improved academic performance. This dedication to continuous learning ultimately benefits both the teacher and their students, creating a more dynamic and effective learning environment.

Figure 13: Characteristics of adult learners (Andragogy)



Source: (Copyright Knowles 1984, 2010 by Kearsley)

This theory is pertinent to our study in various ways and by understanding the principles of adult learning theory, teachers can tailor their professional development opportunities to better meet the needs of their teachers. This can lead to a more positive attitude towards curriculum change, as teachers feel supported and equipped to adapt to new teaching methods and strategies.

Ultimately, adult learning theory can play a crucial role in promoting a culture of lifelong learning and growth within educational institutions. Educators who incorporate adult learning theory into their professional development programs can create a more dynamic and engaging learning environment for teachers. This approach fosters a sense of empowerment and autonomy among educators, which can lead to increased motivation and enthusiasm for implementing curriculum changes.

Also, teachers become more confident in their ability to adapt and innovate, they are more likely to embrace new ideas and approaches, ultimately benefiting both their own professional growth and the overall success of their students.

By encouraging teachers to take ownership of their learning and professional development, adult learning theory helps to create a culture of continuous improvement within educational institutions. This can result in a more collaborative and supportive environment where educators feel valued and encouraged to share their knowledge and expertise with their peers.

As teachers engage in ongoing professional development opportunities, they are better equipped to meet the diverse needs of their students and implement effective teaching strategies. This leads to improved student outcomes and a more positive school climate.

When educators feel empowered to take risks and try new things, they are more likely to inspire their students to do the same, fostering a culture of creativity and innovation in the classroom. Ultimately, adult learning theory plays a crucial role in shaping the professional growth and success of teachers, which in turn has a direct impact on academic achievement.

2.1.4.2. Theory of change (Weiss, 1995)

The Theory of Change (ToC), developed by Carol H. Weiss (1995), is a comprehensive framework used to describe how and why a desired change is expected to happen within a particular context. It is widely used in program planning, implementation, and evaluation. The key strength of the ToC is its emphasis on making explicit the causal pathways through which interventions are expected to produce outcomes. Weiss (1995) argued that change does not happen simply because programs are implemented. Instead, change occurs through a sequence of logically connected steps, which must be carefully mapped, monitored, and supported by clearly stated assumptions.

The Theory of Change requires stakeholders to articulate what must happen for the desired change to occur, identifying all intermediate steps and the conditions necessary for success. One of the most defining features of ToC is that it requires stakeholders such as program designers, implementers, beneficiaries, and funders to co-create a shared understanding of how change is envisioned to occur. This inclusive process builds ownership, aligns efforts, and helps identify potential obstacles early in the planning stage (Connell & Kubisch, 1998).

Components of Theory of Change

➤ Long-Term Outcomes

Long-term outcomes refer to the ultimate impact or changes that a program or intervention aims to achieve. The long-term impact represents the ultimate goal of the change process. Examples: Improved student learning outcomes, effective curriculum implementation, and a culture of innovation in education.

These are often broad goals that align with policy objectives, institutional visions, or societal improvements. In the ToC framework, they serve as the endpoint toward which all other components contribute.

In CPD Context, the long-term outcome is to produce highly skilled, motivated, and adaptable teachers, which ultimately leads to improved student learning outcomes and better curriculum implementation. Guskey (2002) emphasized that the ultimate goal of professional development is to improve student achievement through enhanced teacher effectiveness.

➤ **Intermediate Outcomes**

Intermediate outcomes are the short-to medium-term results that precede and contribute to achieving the long-term outcomes. These may include shifts in behavior, skills, attitudes, or relationships among stakeholders. They are measurable changes in behavior, practice, or understanding.

In CPD Context examples include: Increased teacher engagement in collaborative learning, Improved classroom instructional practices, Greater confidence in delivering new curricula. Desimone & Garet (2015) noted that sustained improvements in teacher knowledge and instructional quality are intermediate outcomes that mediate the path to improved student outcomes.

➤ **Outputs and Activities**

Outputs are the immediate, tangible products of program activities, while activities refer to the specific interventions or processes designed to bring about change. Examples: Number of teachers trained, new lesson plans developed, or updated teaching guides distributed.

In CPD Context, These may include: In-service teacher training, Mentorship and peer observations, Online CPD modules, Curriculum-aligned workshops. Avalos (2011) points out that CPD activities are most effective when they are practical, continuous, and connected to teachers' classroom experiences.

Relation to teacher attitudes, Clear, measurable outputs can build trust in the reform process. Teachers who see concrete outcomes of the training they receive are more likely to perceive the reform as effective and valuable (Weiss, 1995).

➤ **Assumptions**

These are the beliefs or expectations about how and why change will occur.

Assumptions are the underlying beliefs and conditions that must hold true for the program to work as intended. These may not be directly controlled but must be acknowledged and monitored the foundation of any ToC, as they are the most visible and directly controlled elements. Assumptions are often informed by theory, research, or past experience.

In CPD Context, Key assumptions might include: Teachers will apply what they learn in training, School leadership will support CPD efforts, CPD will be aligned with curriculum changes and needs. Kennedy (2014) highlights that many CPD programs fail because their assumptions about teacher motivation and school support are not clearly articulated or tested.

➤ **Contextual Factors**

These are the external factors that can influence the success or failure of a program, such as political will, school culture, infrastructure, and societal values. In CPD Context: Government education policies, School culture and leadership, Societal respect for teaching, Access to resources and technology. Fullan (2020) stresses that context is key CPD initiatives will only succeed if they are embedded in supportive environments. Relation to teacher attitudes: A supportive school environment and strong leadership can nurture positive attitudes, while a lack of administrative support or high workload can result in negative or resistant attitudes (Fullan, 2020).

2.14.3. Transformative Learning Theory Mezirow (2000)

The transformative learning theory, proposed by Jack Mezirow, suggests that learning is a process of challenging and changing one's beliefs and perspectives. According to Mezirow, transformative learning occurs through critical reflection, discourse, and action, leading to a shift in one's understanding of themselves and the world around them. This theory emphasizes the importance of self-awareness, open-mindedness, and willingness to engage in uncomfortable discussions in order to achieve personal growth and development.

The transformative learning theory highlights the significance of experiencing cognitive dissonance and discomfort as catalysts for deep and lasting change in an individual's beliefs and behaviors (Mezirow, 2000). This process of transformation requires individuals to challenge their existing perspectives, question societal norms, and actively seek out new ways of thinking and being. Through this journey of self-discovery and re-evaluation, individuals can break free from limiting beliefs and behaviors, ultimately leading to a more authentic and fulfilling life. In essence, transformative learning is a powerful tool for personal evolution and societal

change, as it encourages individuals to continuously reflect, adapt, and grow in order to create a more just and equitable world.

Transformative learning theory emphasizes the importance of critical reflection and self-examination in the process of personal growth and societal transformation (Mezirow, 1991). By challenging ingrained beliefs and assumptions, individuals are able to expand their perspectives and open themselves up to new possibilities for personal development and social change. This process of transformative learning not only benefits the individual but also has the potential to create a ripple effect within society, as individuals who have undergone this transformation are more likely to engage in critical thinking and advocate for social justice (Cranton, 2016).

Moreover, transformative learning fosters a sense of empowerment and agency, as individuals become more aware of their own capabilities and potential to effect change in their own lives and communities (Taylor, 2007). By encouraging individuals to question the status quo and envision a more equitable and inclusive society, transformative learning serves as a catalyst for personal and collective growth. In this way, transformative learning theory offers a powerful framework for understanding how individuals can break free from limiting beliefs and behaviors and work towards creating a more just and sustainable world for all (Mezirow, 2000). Transformative learning theory emphasizes the importance of critical reflection and dialogue in challenging and transforming individuals' perspectives and assumptions.

By engaging in this process of reflection and dialogue, individuals are able to develop a deeper understanding of themselves, their beliefs, and the world around them. This self-awareness and critical consciousness are essential for individuals to recognize and challenge the social structures and systems that perpetuate inequality and injustice (Taylor, 2007). Through transformative learning, individuals are empowered to take action and work towards creating a more just and sustainable society for all members of the community (Mezirow, 2000). This process of personal and collective growth not only benefits individuals on a personal level but also contributes to the larger goal of social transformation and positive social change (Taylor, 2007).

Transformative learning theory, as outlined by Mezirow (2000) and Taylor (2007), emphasizes the importance of personal and collective growth in creating a more just and sustainable society. This theory posits that through challenging their existing beliefs and

perspectives, individuals can develop new ways of thinking and acting, ultimately leading to positive social change.

Furthermore, Mezirow's theory distinguishes between instrumental learning, focused on problem-solving and causal relationships, and communicative learning, which emphasizes interpersonal skills like effective communication and collaboration. Both types of learning are crucial for personal and professional development, fostering intellectual growth and enhancing social and emotional intelligence.

Through ongoing education that integrates both instrumental and communicative learning, individuals can cultivate a lifelong passion for knowledge and self-improvement. This continual pursuit of learning not only enriches personal lives but also enhances professional success by keeping individuals adaptable and intellectually engaged. By staying current with best practices and being willing to step outside of their comfort zones, teachers can inspire their colleagues and students to embrace change and growth (Smith, 2020).

Additionally, the combination of instrumental and communicative learning equips teachers with the necessary skills to navigate an increasingly interconnected and globalized society. Additionally, this theory has important implications for education, as it emphasizes the need for adult learners to engage in self-reflection and critical thinking.

It suggests that traditional teaching methods that focus solely on the transmission of information may not be sufficient to promote true transformation and growth. Instead, educators should create opportunities for adult learners to question their assumptions, challenge existing beliefs, and explore alternative perspectives. By doing so, they can foster a learning environment that encourages personal development and the acquisition of new knowledge and skills.

Furthermore, Mezirow's theory underscores the importance of lifelong learning, as it recognizes that growth and change are ongoing processes that continue throughout adulthood. This highlights the need for individuals to continually seek out new experiences, engage in self-reflection, and be open to learning from others. In this way, they can continue to develop a more flexible and open-minded perspective, adapt to new challenges, and navigate the complexities of an ever-changing world. Overall, Mezirow's theory serves as a powerful reminder of the transformative potential of education and the profound impact it can have on individuals' personal and intellectual growth.

When applied to teachers undertaking continuous professional development, transformative learning can play a crucial role in fostering a positive attitude towards curriculum change. By fostering a culture of transformative learning and continuous professional development, teachers can truly make a difference in the lives of their students and the future of education as a whole (Johnson et al., 2018). Also, by engaging in reflective practices and actively seeking out new knowledge and skills, teachers can expand their understanding of educational practices and adapt to evolving curriculum requirements.

This process of transformative learning can empower teachers to embrace change, improve their teaching practices, and ultimately contribute to creating a more equitable and inclusive learning environment for all students. Furthermore, transformative learning can also help teachers develop a growth mindset, allowing them to view challenges as opportunities for growth and development. By approaching curriculum change with a positive and open mindset, teachers can cultivate a sense of resilience and adaptability that is essential in today's rapidly changing educational landscape.

Additionally, transformative learning can enable teachers to become more innovative and creative in their teaching methods, ultimately enhancing the overall learning experience for their students. As teachers continue to engage in continuous professional development and embrace transformative learning, they can become catalysts for positive change within their schools and communities.

By staying current with best practices and being willing to step outside of their comfort zones, teachers can inspire their colleagues and students to embrace change and growth. This ripple effect of positivity and adaptability can lead to a more dynamic and effective educational environment that prepares students for success in an ever-evolving world. By fostering a culture of transformative learning and continuous professional development, teachers can truly make a difference in the lives of their students and the future of education as a whole.

The phases of transformative learning according to Mezirow (2000, p. 22):

Disorienting dilemma.

A disorienting dilemma is a situation where a learner finds that what they thought or believed in the past may not be accurate. This is the first part of transformational learning. This can be a moment where a teacher hears or considers something they may not have understood before. This disorienting dilemma can be uncomfortable or challenging for teachers, but it is the key spark that starts the fire of transformational learning. It forces teachers to question their

assumptions and beliefs, pushing them out of their comfort zone and into a place of uncertainty. This discomfort can lead to a deeper reflection on their teaching practices and beliefs, ultimately leading to growth and change.

By embracing this disorienting dilemma, teachers can open themselves up to new perspectives and ways of thinking, ultimately becoming more effective educators in the process. For example, a teacher who has always relied on traditional lecture-based teaching methods may be faced with a disorienting dilemma when a student challenges them to incorporate more interactive and hands-on activities in the classroom. This discomfort may initially cause the teacher to resist change, but by embracing the challenge and experimenting with new teaching strategies, they may discover that their students are more engaged and learning at a deeper level. This transformative experience can lead the teacher to continue exploring innovative teaching approaches and ultimately improve their effectiveness in the classroom.

Self-examination.

After a disorienting dilemma, teachers will do a self-examination of their beliefs and understanding. They will think about their past experiences and how they connect to this disorienting dilemma. This can create a perspective transformation where teachers understand that their perspective may not be the only one.

This self-examination can lead to a greater sense of empathy and understanding for their students, allowing teachers to tailor their lessons to better meet the needs of diverse learners. By embracing new perspectives and innovative teaching methods, educators can create a dynamic and engaging learning environment that fosters growth and development for both themselves and their students. Ultimately, this journey of self-discovery and growth can lead to improved student outcomes and a more fulfilling teaching experience.

Critical assessment of assumptions.

Teachers in this phase of transformational learning can take a more comprehensive look at their past assumptions and review them critically. They can accept that perhaps some of their past assumptions were wrong and are thereby more open to new information and thoughts. This creates perspective transformation as they can look with more unbiased eyes at their past.

This new perspective allows teachers to adapt their teaching methods to better meet the needs of their students, leading to improved student outcomes. By challenging their assumptions and embracing new ideas, teachers can create a more dynamic and engaging

learning environment. This process of self-reflection and growth ultimately results in a more fulfilling and impactful teaching experience for both teachers and their students.

Acquisition of knowledge or skills to carry out a new plan.

Now is the time for teachers to carry out their plans and get further in their transformational learning. Ultimately, the goal of this process is for teachers to become more effective in their roles and better equipped to meet the diverse needs of their students. By being open to change and continuously learning and growing, teachers can create a more positive and impactful learning environment for their students. This ongoing process of reflection, learning, and action is essential for teachers to stay relevant and make a meaningful difference in the lives of their students.

For example, a teacher may decide to implement project-based learning in their classroom to engage students in real-world problem-solving and critical thinking. By collaborating with colleagues, attending professional development workshops, and seeking feedback from students, the teacher can continuously refine and improve their approach to teaching, ultimately leading to better outcomes for their students. Through this process of reflection and action, the teacher can become a more effective educator and positively impact the lives of their students.

Exploration.

As part of transformational learning, teachers need to act. This can involve taking on leadership roles within the school, participating in curriculum development, or even conducting research to stay current in their field. By actively seeking out new opportunities for growth and development, teachers can continue to evolve and adapt their teaching practices to better meet the needs of their students. Ultimately, by embracing change and pushing themselves outside of their comfort zones, teachers can truly make a difference in the lives of their students and inspire a love of learning that will last a lifetime. In transformative learning, exploring and trying to understand changes is the key to success. It goes beyond just learning about something; it involves actively working to understand and experience new things for yourself.

Planning a course for action

While following a transformative learning path, teachers should also build confidence in their beliefs and understanding. It enables them to make their own decisions. By developing an action plan, teachers can outline specific steps they will take to implement their newfound knowledge and skills in the classroom. This plan can include setting goals, seeking support

from colleagues or mentors, and evaluating progress along the way. By taking ownership of their professional growth and development, teachers can become more effective in their roles and create positive change within their educational communities.

Additionally, by seeking support from colleagues or mentors, teachers can collaborate and work together to navigate curriculum changes effectively. Ultimately, fostering a positive attitude towards curriculum change can lead to a more dynamic and impactful educational experience for both teachers and students. For example, a group of teachers at a school facing a major curriculum change could meet regularly to set goals for implementing the new curriculum, seek advice and feedback from more experienced colleagues, and track their progress through regular check-ins. By taking ownership of their professional development in this way, they can adapt more smoothly to the changes and ensure that students receive a high-quality education despite the challenges presented by the new curriculum. Collaboration and support from colleagues can also help teachers feel more confident and motivated to navigate the changes.

Acquisition of knowledge and skills for implementing the plan

After understanding how past beliefs may have been wrong or misguided, teachers undergo a perspective transformation and plan a course of action. This plan demands the types of learning required to understand the situation entirely. Teachers must acquire new knowledge and skills to effectively implement their plans. This may involve attending workshops, doing research, or seeking guidance from experts in the field. By being open to learning and adapting, teachers can ensure that their actions are informed and impactful.

Ultimately, the acquisition of knowledge and skills is essential for teachers to successfully navigate and address complex issues in the education system. Teachers who continually seek to expand their knowledge and skills are more likely to embrace curriculum change with a positive attitude. They understand that change is necessary for growth and improvement in the education system. By being open to learning and adapting, teachers can more effectively implement new curricula and adjust their teaching methods to meet the needs of their students. Ultimately, a willingness to acquire new knowledge and skills can lead to a more successful and fulfilling teaching career.

Trying out the plan

It is where the real learning happens as teachers carry out their plans further in their transformational learning. It takes work and a lot of effort to learn new things and consider new

perspectives. Teachers must be willing to adapt and make changes to their original plan based on the results they see in the classroom. This process of trial and error helps them grow and evolve as educators. Through this continuous cycle of trying, reflecting, and adjusting, teachers are able to truly transform their teaching practices and make a lasting impact on their students.

As they implement their plan in the classroom, teachers may encounter challenges and obstacles that they did not anticipate. This is where their resilience and problem-solving skills come into play, as they must find creative solutions to address any issues that arise. It is also a time for teachers to seek feedback from their colleagues and students, using their input to make informed decisions about how to improve their teaching practices.

By being open to feedback and willing to make changes, teachers can create a more dynamic and effective learning environment for their students. Fostering a culture of openness to feedback and willingness to make changes can significantly impact teachers' attitudes towards curriculum change. When teachers are encouraged to seek feedback and make adjustments based on that feedback, they are more likely to see the value in adapting their curriculum to better meet the needs of their students. This can lead to a more positive and proactive approach to curriculum changes as teachers become more invested in continuously improving their teaching practices. Ultimately, this fosters a growth mindset among teachers, encouraging them to embrace change as an opportunity for growth and improvement in their classrooms.

Development of competence and self-confidence in new roles

The key to success in transformational learning is exploration and trying to understand all the changes. It is beyond regular learning; it is actively working on getting new experiences.

Through this process, teachers can develop competence in their new roles by pushing themselves outside of their comfort zones and taking on new challenges. As they gain more experience and knowledge, their self-confidence grows, allowing them to take on even more ambitious goals. Ultimately, transformational learning is about personal growth and development, leading to a more fulfilling and successful life.

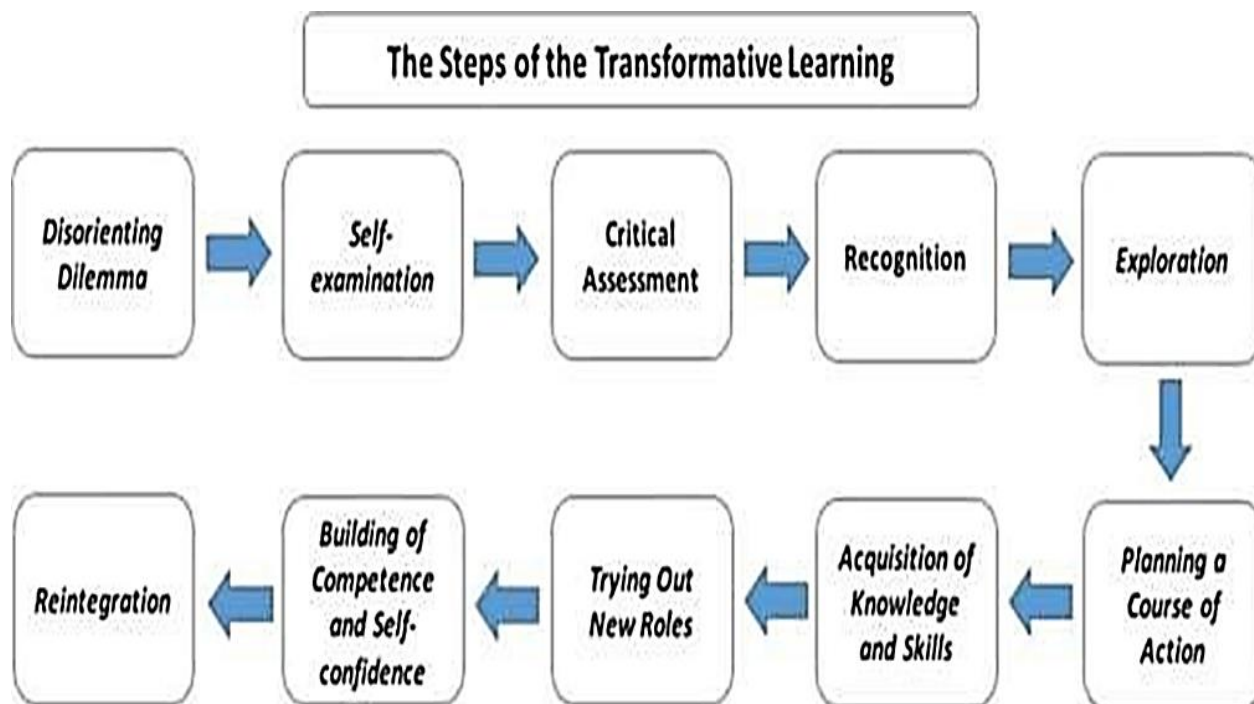
Transformational learning fosters continuous professional development by encouraging teachers to constantly seek out new experiences and challenges. By pushing themselves outside of their comfort zones, teachers are able to develop new skills and gain a deeper understanding of their roles. This process not only leads to personal growth but also helps teachers adapt to curriculum change with a more positive attitude, as they become more confident in their abilities

to overcome challenges and achieve their goals. Ultimately, transformational learning empowers teachers to embrace change and continuously improve their practice, leading to a more dynamic and effective educational environment. These phases allow teachers to successfully integrate into life on the basis of new perspectives because people develop an implementation plan.

Reintegration

They gain the knowledge and skills needed for this plan. Through these phases, teachers can adapt to new ways of thinking and problem-solving, ultimately leading to a more successful integration into their daily lives. By developing an implementation plan, they can set clear goals and take the necessary steps to achieve them. With the acquired knowledge and skills, teachers are better equipped to navigate challenges and overcome obstacles that may arise during the reintegration process. Developing an implementation plan fosters teachers' attitudes towards curriculum change by empowering them with the tools and resources needed to embrace and implement new ideas. It allows them to feel more confident and prepared to navigate the complexities of change, leading to a more positive and proactive approach to adapting to new curriculum initiatives. Ultimately, having a clear plan in place helps teachers see the value and benefits of curriculum change, encouraging them to fully engage in the process and work towards successful implementation.

Figure 14: The transformative learning theory.



Source: Mezirow (2000)

Transformative learning theory is significant for continuous professional development and teachers' attitudes towards curriculum change because it emphasizes the importance of critical reflection and challenging existing beliefs and assumptions. This theory encourages educators to engage in self-reflection and consider alternative perspectives, leading to a deeper understanding of their own teaching practices. By allowing teachers to examine their beliefs and assumptions, transformative learning theory enables them to adapt to new ideas and approaches in education. Through this process of reflection and growth, educators can become more open-minded and innovative in their teaching methods, ultimately benefiting their students' learning experiences.

Embracing transformative learning theory can help teachers navigate the complexities of curriculum change and improve their effectiveness in the classroom. As teachers engage in transformative learning, they may also find themselves questioning traditional pedagogical methods and exploring new ways to engage with their students. This willingness to challenge the status quo can lead to a more dynamic and responsive teaching style that better meets the diverse needs of today's learners. Also, this theory fosters a sense of empowerment and agency among educators, encouraging them to take risks and experiment with innovative instructional strategies. Ultimately, by integrating transformative learning into their practice, teachers can

create a more inclusive and engaging learning environment that promotes student success and growth.

Transformative learning theory emphasizes the importance of critical reflection and self-awareness in the learning process. This approach encourages educators to continuously evaluate and adapt their teaching methods in order to better support student learning and development. By encouraging teachers to think critically about their own beliefs and assumptions, transformative learning theory can help them recognize and address any biases or limitations that may be hindering their ability to effectively engage with their students. In doing so, educators can create a more inclusive and supportive learning environment that values diversity and promotes a sense of belonging for all students.

By promoting a culture of inquiry and exploration, transformative learning theory can empower teachers to embrace new ideas and approaches, ultimately enhancing their effectiveness in the classroom and facilitating successful curriculum implementation. This theory encourages educators to continually reassess their perspectives and practices, leading to growth and innovation in teaching methods and curriculum design. By embracing transformative learning, teachers can adapt more easily to changes in educational standards and best practices, ultimately enhancing the quality of education for their students.

2.14.4. Social learning theory (Bandura, 1977)

The Social Learning Theory (SLT) serves as a conceptual link between behaviorism and cognitive theories, focusing on how cognitive factors influence learning (McLeod, 2011). This theory highlights observational learning, where individuals acquire knowledge, skills, attitudes, and beliefs by observing others and noting the consequences of their actions, leading to the modeling and adoption of observed behaviors. Bandura (1977) emphasized that behaviors are learned through observational learning processes influenced by the environment (McLeod, 2011). He posited that behaviorism alone could not fully explain learning and proposed that behaviors and the environment interact reciprocally.

Bandura's development of social learning theory was inspired by observing changes in children's behaviors after witnessing aggression, prompting him to underscore the role of self-regulation in behavior control. Self-regulation involves self-observation, judgment of the environment and oneself, and subsequent response. Social learning theory, synonymous with observational learning, asserts that individuals can acquire new behaviors by observing others

and emphasizes the reciprocal relationship between social cues, individual perception, and the motivation and capability to replicate observed behaviors (Newman & Newman, 2007).

However, Models, individuals whose behaviors are observed, play a pivotal role in this learning process, which Bandura termed modeling. Bandura outlined stages of social learning, including imitation and behavior modeling, contingent upon observing favorable outcomes initially. For instance, a teacher who observes effective teaching methods in action may be motivated to emulate and model those techniques in their teaching (Bandura, 1986). Previous research supports the theory that many behaviors can be learned through modeling, such as reading habits from parents or bravery in challenging situations (Bandura, 2006a).

According to Nabavi (2014), social learning theory posits that individuals learn through social interactions by observing others' behaviors and subsequently assimilating and imitating those behaviors, especially when the observed experiences are positive or associated with rewards. This theory proposes that individuals tend to adopt behaviors that are positively reinforced within their social environment. It underscores the significance of social learning and the role of observation in shaping behavior. Overall, the social learning theory emphasizes how social interactions influence individual behavior and stresses the importance of modeling positive behaviors for others to follow.

Applying this theory to our research context, teachers engaged in continuous professional development through pedagogical seminars and training sessions on teaching techniques learn by observing and emulating the behaviors of trainers and coaches. Through this process of observational learning, teachers acquire new skills, expand their knowledge, and adapt to their social environment. This learning process is particularly effective when observed behaviors are rewarded or reinforced, increasing the likelihood of behavior repetition. Thus, the social learning theory suggests that behavior is influenced not only by individual factors but also by the social context in which it occurs. This underscores the interconnected relationship between behavior and social interactions, highlighting the importance of positive role models and supportive social environments in shaping individual behavior.

For instance, in the context of a teacher undergoing continuous professional development, attending workshops and training sessions on positive behavior management strategies may lead to the teacher implementing these techniques in the classroom. Consequently, students may observe and emulate the teacher's use of positive reinforcement and respectful communication, fostering improved behavior and enhanced social interactions within the classroom.

Albert Bandura pointed out some conditions for effective modeling which include:

- **Attention:** The individual needs to pay attention to the behavior and its consequences and form a mental representation of the behavior. For a behavior to be imitated, it has to grab our attention. We observe many behaviors daily, and many of these are not worthy. Attention is therefore extremely important in whether a behavior influences others to imitate it. Also, are more likely to model our behaviors after individuals who are similar to us. This is because we are more likely to identify with these individuals, making their behaviors seem more relevant and attainable. This can include similarity in terms of age, gender, ethnicity, or even shared interests and values (Marx & Ko, 2012).
- **Retention:** How well the behavior is remembered. The behavior may be noticed but is it not always remembered which prevents imitation. It is important therefore that a memory of the behavior is formed to be performed later by the observer.

Much of social learning is not immediate, so this process is especially vital in those cases. Even if the behavior is reproduced shortly after seeing it, there needs to be a memory to refer to.

- **Reproduction:** This is the ability to perform the behavior that the model has just demonstrated. We see much behavior daily that we would like to be able to imitate but that this is not always possible. We are limited by our physical ability and for that reason, even if we wish to reproduce the behavior, we cannot. This influences our decisions whether to try and imitate it or not. Imagine the scenario of a 90-year-old lady who struggles to walk while watching Dancing on Ice. She may appreciate that the skill is a desirable one, but she will not attempt to imitate it because she physically cannot do it.
- **Motivation:** The will to perform the behaviors. The rewards and punishments that follow a behavior will be considered by the observer. If the perceived rewards outweigh the perceived costs (if there are any), then the behavior will be more likely to be imitated by the observer. If the vicarious reinforcement is not seen to be important enough to the observer, then they will not imitate the behavior.

Social learning theory helps us understand how our environment and the people around us shape our behavior. It helps explain how individuals develop new skills and behaviors by paying attention to the behavior of others and then trying to reproduce that behavior themselves. Social learning theory greatly impacts continuous professional development by

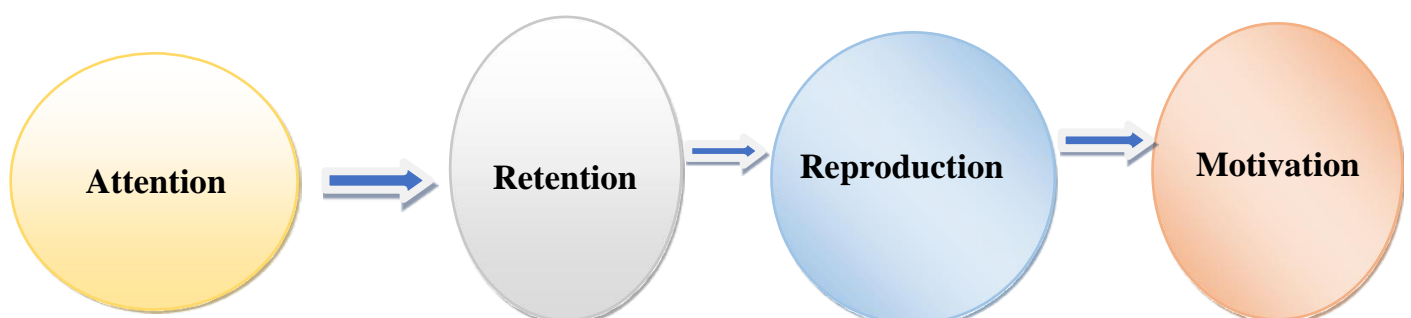
encouraging teachers to observe and learn from their colleagues. By witnessing successful teaching strategies and incorporating them into their own practices, teachers can improve their effectiveness in the classroom.

Additionally, this theory can also influence teachers' attitudes towards curriculum change by showing them the benefits of adapting and evolving their teaching methods to better meet the needs of their students. Ultimately, embracing social learning theory in education can lead to more innovative and engaging teaching practices that benefit both educators and students alike. One way in which teachers can actively engage in social learning theory is by participating in professional learning communities.

These communities provide a platform for educators to collaborate, share ideas, and receive feedback from their peers. By working together towards common goals and objectives, teachers can collectively enhance their teaching skills and knowledge. This collaborative approach to professional development fosters a sense of community and support among educators, ultimately leading to improved student outcomes.

Additionally, professional learning communities can serve as a source of motivation and inspiration for teachers, encouraging them to continually strive for excellence in their practice. For example, a group of high school history teachers may form a professional learning community to share lesson plans, discuss effective teaching strategies, and provide constructive feedback on student work. By collaborating in this way, teachers can identify best practices, address common challenges, and ultimately improve student engagement and achievement in their classrooms. This collaborative approach can also help teachers stay motivated and inspired to continuously improve their teaching skills and stay current with educational trends.

Figure 15: Conditions needed in the modeling process



Source :(*Bandura 1977, adapted from Mc Leod 2011*).

Relating this theory to our study, the social learning theory suggests that individuals learn by observing others and modeling their behavior. In the context of continuous professional development, teachers can learn new teaching strategies and approaches by observing their colleagues and attending workshops or training.

By observing how their colleagues engage with students and manage their classrooms, teachers can gain valuable insights into effective teaching methods. Additionally, attending workshops or trainings allows educators to stay up-to-date on the latest research and best practices in the field of education. By incorporating these new strategies into their teaching practice, teachers can continue to grow and improve as professionals. This can influence their attitudes towards curriculum change, as they may be more open to trying new methods if they see their peers successfully implementing them. Overall, social learning theory can play a significant role in shaping teachers' attitudes toward curriculum change and their ongoing professional development.

Additionally, collaboration with colleagues can also be a valuable source of support and encouragement when implementing new curriculum changes. By sharing ideas and experiences with one another, teachers can gain new perspectives and insights that can enhance their own teaching practices. Furthermore, engaging in reflective practices, such as journaling or participating in professional learning communities, can help educators critically evaluate their own teaching methods and make necessary adjustments to better meet the needs of their students. Ultimately, a combination of ongoing professional development, collaboration with peers, and reflective practices can contribute to a positive attitude towards curriculum change and continuous growth as an educator.

2.15. Operationalization of research hypothesis variables

2.15.1. General hypothesis

There is a significant relationship between continuous professional development and teachers' attitudes towards curriculum change in secondary schools in the Mfoundi Division.

2.15.2. Specific Research Hypothesis

H1: There is a relationship between pedagogical seminars and teachers' attitudes towards curriculum change in secondary schools in the Mfoundi Division.

H2: There is a correlation between pedagogical animation and teachers' attitudes towards curriculum change in secondary schools in Mfoundi Division.

H3: There is an interconnection between training in teaching techniques and teachers' attitudes towards curriculum change in secondary schools in Mfoundi Division.

H4: There is a link between training in remediation techniques and teachers' attitudes towards curriculum change in secondary schools in Mfoundi Division.

H5: There is a relationship between the availability of support, resources, and teachers' attitudes toward curriculum change in secondary schools in the Mfoundi-Division

Restatement of research hypothesis

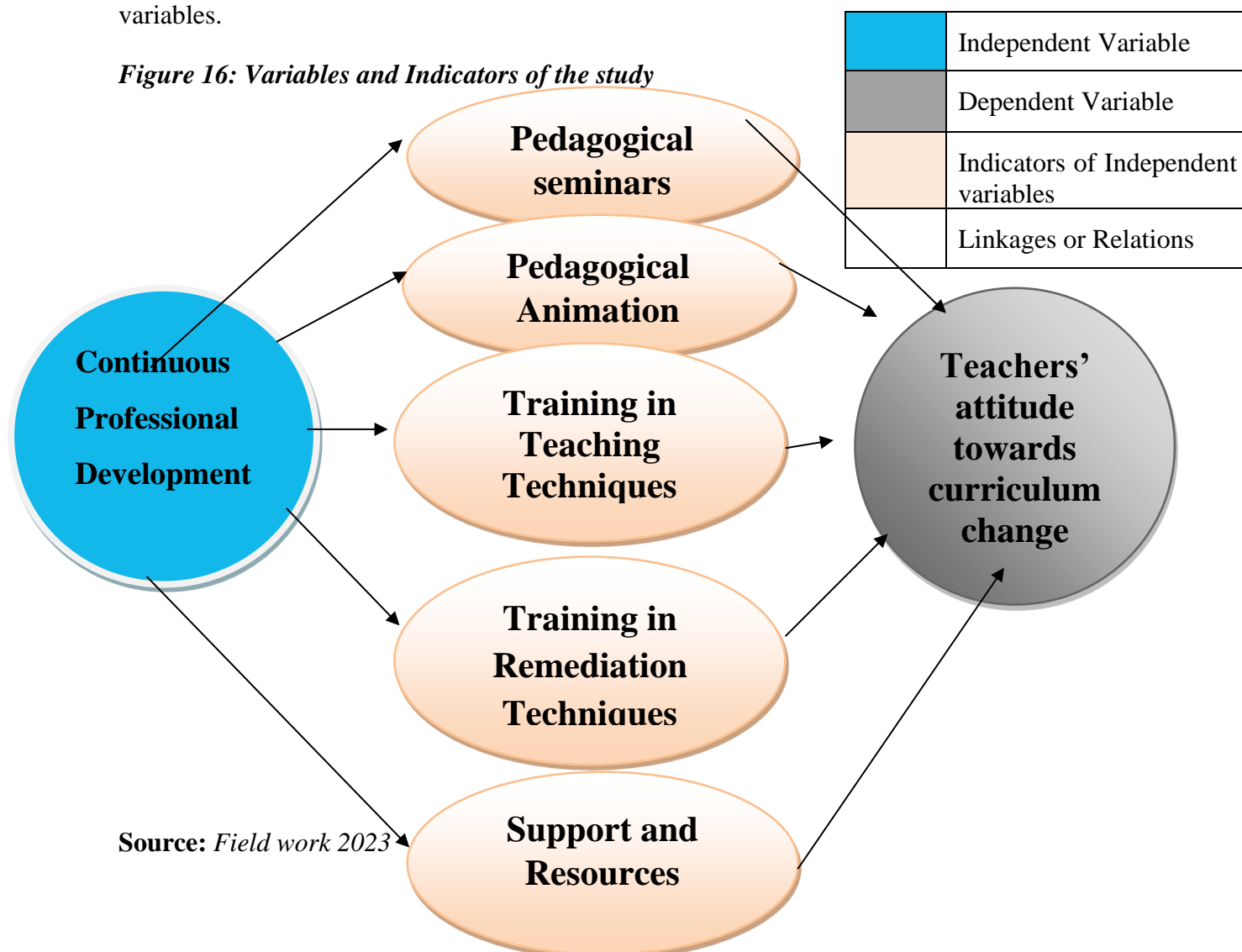
It is important to restate the research questions and hypotheses before presenting the data (Tanah & Encho, 2017). This will relieve the reader of the stress of opening pages forward and backward to different chapters and pages of the work. Our study centered on continuous professional development and teachers' attitudes towards curriculum change in selected secondary schools in the Mfoundi Division. This study is an effort to identify, examine, and describe the probable factors that cause most teachers to react negatively to curriculum change. This study focuses more on the continuous training of teachers to equip themselves with current knowledge to fit the required learning styles of learners.

It examines pedagogic seminars, pedagogic animation, training in teaching techniques, training in remediation techniques, and the availability of resources and support carried out in secondary schools in Mfoundi Division. A hypothesis is the most specific statement of a research problem. It is a statement of quality. According to Amin (2005), a hypothesis is defined as a presumptive statement of a reasonable guess based on available evidence that the researcher intends to check. The hypothesis states the researcher's expectations concerning the relationship between the variables in the study and the research problem.

2.16 Definition of variables

Amin (2005) defines a variable as anything that can take an offering or varying value. Variables are characteristics that can take on more than one value and show variation. In this study, we distinguish two major variables: the independent variable (IDV) and the dependent variable (DV). We also made use of extraneous variables. These variables are exploited in the many-to-many scenarios. This implies five independent variables and five dependent variables. The independent variables are manipulated by the researcher and are hypothesized to affect the dependent variables. They serve as the inputs or causes of the research study. On the other hand, the dependent variables are measured or observed in response to the independent variables and are considered the outputs or effects of the study. The extraneous variables, also known as control variables, are factors that are not of primary interest but are controlled or accounted for to ensure that they do not influence the relationship between the independent and dependent variables.

Figure 16: Variables and Indicators of the study



2.16.1 Independent Variables

An independent variable is also known as the predictor variable or explanatory variable. It is a variable that influences the dependent variables and it is the presumed or suspected cause of the variation in the dependent variable (Kumar, 2011). It thus explains or accounts for variation(s) in the dependent variables. It is the presumed cause in a cause-effect relationship and a variable that is presumed to influence another variable (Laura et al., 2014). The purpose of manipulation is to confirm and determine the relationship between the indicators in the research. The independent variable in this study is continuous professional development.

2.16.2 Dependent variables

According to Kumar (2011) dependent variable is a variable that receives the effects of the course. Also, Kan (2008) adds that it is a criterion variable and the variable of primary interest of the researcher; as a result, the researcher sets out to understand and describe the variable. The dependent variable in this study is teachers' attitudes towards curriculum change.

2.17 Modalities of continuous Professional development

- Pedagogical Seminar
- Pedagogical Animation
- Training in teaching techniques
- Training in remediation techniques
- Availability of resource and support

Indicators of Pedagogical Seminar

- Identification of difficulties/needs
- Elaboration of lesson model plan
- Decide on the seminar themes
- Teaching and presentation on PowerPoint
- Workshops sections

Indicators of Pedagogical Animation

- Participation in collective lesson
- Presentation of model lesson

- Keeping notes of important points
- Production of didactic materials

Indicators of training in teaching techniques

- Identification of problem situation
- Mastery of subject content
- Pedagogic techniques
- Organization and animation of learning situation
- Facilitation of learning

Indicators of training in remediation techniques

- New vision of evaluation (Re-evaluation)
- Analysis of results and problems
- Elaboration of remedial teaching plan
- Adjustment steps for improvement

- Indicators of support/resources

- Textbooks
- Teaching materials
- Incentives
- Guidance

Teachers' Attitude Towards Curriculum Change

A dependent variable is that which changes as a result of changes in the independent variable. The dependent variable is the variable of interest. The dependent variable of this study is teachers' attitude towards curriculum change

2.18 Indicators of Teachers' Attitude Towards Curriculum Change

- Increased workload
- Assiduity
- Teacher learner relationship
- Attitude towards the subject matter

- Knowledge towards course content
- Attitude towards innovation.

Table 3: Synoptic table of hypothesis, variables, indicators, modalities and statistical instrument

GENERAL HYPOTHESES	SPECIFIC HPOTHESIS	VARIABLES	INDICATORS	MODALITIES TOOLS	STATISTICAL TOOLS	ITEMS
There is a significant relationship between continuous professional development and teachers' attitude towards curriculum change in secondary schools in Mfoundi-Division	H1: There is a significant relationship between Pedagogical seminars and teachers' attitude towards curriculum change in secondary schools in Mfoundi-Division.	<u>Independent variable:</u> pedagogical seminars	-Identification of difficulties/needs. -Identification of activities. - Elaboration of lesson model plan. - Decide on the seminar themes -Teaching and presentation on power point. -Workshops sections	-strongly agree -Agree -Neutral -Strongly Disagree -Disagree	-Pearson's correlation coefficient -one way Annova -T-Test -Regression	1-6
		<u>Dependent Variable (DV).</u> Teachers' Attitude toward curriculum change.	-Increased workload -Assiduity teacher-learner relationship -Attitude toward subject matter -knowledge of course content -Attitude toward innovation.	-Strongly Agree -Agree -Neutral -Strongly Disagree -Disagree	-Pearson's correlation coefficient -On away Annova -T-Test -Regression	
	H2: There is a correlation between pedagogical		-Participation in collective lessons. -Presentation of model lessons.	-Strongly agree -Neutral -Strongly Disagree Disagree	-Pearson correlation coefficient -one-way Annova -T-Test	7-12

	animation and teachers' attitudes toward curriculum change in secondary schools in Mfoundi Division.	<u>Independent Variable (IV)</u> Pedagogical animation	<ul style="list-style-type: none"> -Keeping notes of important points. -Production of didactic materials. -Teachers collaborative spirit 		-Regression	
		<u>Dependent Variable (DV)</u> Teachers' Attitude towards curriculum Change	<ul style="list-style-type: none"> -Increased workload -Assiduity teacher-learner relationship -Attitude toward subject matter -knowledge of course content -Attitude toward innovation. 	<ul style="list-style-type: none"> -strongly agree -Neutral -Strongly Disagree -Disagree 	<ul style="list-style-type: none"> -Pearson correlation coefficient -one way Annova -T-Test -Regression 	
	H3: There is an interconnection between training in remediation technique and teachers attitude toward curriculum change in secondary schools inMfoundi- Division..	<u>Independent Variable(IV)</u> Training in remediation techniques	<ul style="list-style-type: none"> -New vision of evaluation (Re-evaluation). -Analysis of results and problems. -Elaboration of remedial teaching plan. -Adjustment steps for improvement. 	<ul style="list-style-type: none"> -strongly agree -Agree -Neutral -Strongly Disagree -Disagree 	<ul style="list-style-type: none"> -Pearson correlation coefficient -one way Annova -T-Test Regression 	13-18

		<u>Dependent Variable (DV)</u> Teachers' Attitude towards curriculum change	-Increased workload -Assiduity teacher-learner relationship -Attitude toward subject matter -knowledge of course content -Attitude toward innovation.	-strongly agree -Agree -Neutral -Strongly Disagree -Disagree	-Pearson's correlation coefficient -one way Anova -T-Test -Regression	
	H4: There is a link between training in teaching techniques and teachers' attitude toward curriculum change in secondary schools Mfoundi-Division.	<u>Independent Variable(IV)</u> Training in teaching techniques	-Identification of problematic situation. -Mastery of subject content. -Pedagogic technique -Organization and animation of learning situation. -Facilitation of learning.	-strongly agree -Agree -Neutral -Strongly Disagree -Disagree	-Pearson correlation coefficient -one way Anova -T-Test Regression	19-24
		<u>Dependent Variable (DV)</u> Teachers' Attitude towards curriculum change	-Increased workload -Assiduity teacher-learner relationship -Attitude toward subject matter -knowledge of course content -Attitude toward innovation.	-strongly agree -Agree -Neutral -Strongly Disagree -Disagree	-Pearson's correlation coefficient -one way Anova -T-Test -Regression	
	H5: There is a relationship between support/resource and teachers' attitude toward curriculum change in secondary schools in Mfoundi Division.	<u>Independent Variable(IV)</u> Support/ Resource	<ul style="list-style-type: none"> - Textbooks - Teaching materials - Incentives - Guidance 	-strongly agree -Agree -Neutral -Strongly Disagree -Disagree	-Pearson correlation coefficient -one way Anova -T-Test Regression	25-29

		<u>Dependent Variable (DV)</u> Teachers' Attitude towards curriculum change	Increased workload -Assiduity teacher-learner relationship -Attitude toward subject matter -knowledge of course content -Attitude toward innovation.	-strongly agree -Agree -Neutral -Strongly Disagree -Disagree	-Pearson's correlation coefficient -one way Anova -T-Test -Regression	
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2.19 Reference style

A referencing style is a standardized way of referencing your sources in the text and the reference list. One example is to use parentheses in the text with information about the author and the year of publication (APA) 7th edition, another is to number the references in the text (IEEE) Kildekompasset. It is also a set of rules on how to acknowledge the thoughts, ideas, and works of others in a particular way (guides.library.uq.edu.au). The style used in this work is the American Psychological Association's (APA) 7th edition. The Faculty of Education at the University of Yaoundé 1, Department of Curriculum and Evaluation, recommends the APA 7th edition. It's mostly used in psychology, but it is widely used in other disciplines, especially in the social sciences. In-text referencing consists of the author's surname and year of publication. When citing multiple works in the same parenthesis, citations are presented in alphabetical order, separated by semicolons.

2.20 Synthesis

This chapter is devoted to the analysis of issues and prospects of continuous professional development for teachers. To achieve this objective, a brief conceptual, historical and models of CPD were undertaken as explained to aid the understanding of the concept of CPD. Any active school should constantly be receiving and reassessing its effectiveness. It should be ready to consider new methods, new forms of organization, and new ways of dealing with problems. The second part of the research work is focused on research methodology specifically chapter three.

CHAPTER THREE
RESEARCH METHODOLOGY

Research methodology is a theory of how inquiry should proceed and this involves analysis of the assumptions, principles, and procedures in an approach to inquiry (Schwardt, 2007). This section of the research work describes the procedure and steps applied in carrying out the study. It involved the research design, area of the study, population, sampling method, data collection instruments and procedures, issues of validity, data analysis procedures, and presentation as well. It is necessary to generate information that will determine the success of this research in reaching its projected conclusion.

3.1. Research design

A research design is a plan, structure, or strategy for answering your research questions using empirical data (Bhandari, 2022). This plan shows the basic strategies that researchers adopt to develop evidence that is accurate and interpretive. Creating a research design means making decisions about your aims and approach, the type of research design you will use, your sampling methods, your data collection methods, the procedures of data collection, and the data analysis methods. This plan, structure, or strategy specifying the methods and procedures for collecting and analyzing data is conceived to provide a dependable solution to the research problem. According to Amin (2005), a research design encompasses all methods selected by a researcher to investigate specific questions or hypotheses.

This study will employ a correlational research design because the main objective of this study is to examine the relationship between continuous professional development and teachers attitude towards curriculum change, A correlational design allows the researcher to determine both the direction (positive or negative) and the strength (weak or strong) of this relationship. As Creswell and Creswell (2018) explain, correlational research is ideal when researchers seek to identify the extent to which two variables are related in real-world contexts.

The study is situated in real school environments, where CPD participation and attitudes toward curriculum reforms occur in authentic, complex settings. Correlational research is suitable in such contexts, as it provides insights into how these variables interact under natural conditions without artificial intervention. Also, in this study, it is not feasible or ethical to manipulate teachers' exposure to continuous professional development or force changes in their attitudes. Correlational design allows the researcher to observe and analyze variables as they occur naturally, making it ethically appropriate for examining human behavior in an educational setting. That is why Fraenkel, Wallen, and Hyun (2012) emphasize that correlational designs are particularly valuable when researchers cannot manipulate the independent variable due to ethical or practical reasons.

Correlational research is suitable in such contexts, as it provides insights into how these variables interact under natural conditions without artificial intervention. Correlational research typically involves the use of surveys or questionnaires, which are cost-effective and less time-consuming compared to experimental designs. Given the constraints often present in educational research such as limited time, funding, and access to schools this design supports a practical and efficient approach to data collection.

Findings from this correlational study can offer preliminary evidence for policymakers and educational planners. If a significant correlation is established between CPD and teacher attitudes, it may justify further intervention-based or longitudinal studies to explore causality or long-term impact. According to Lodico, Spaulding, and Voegtle (2010), correlational studies often serve as an important step in building the foundation for future research and policy evaluation.

Ultimately, research design serves as a vital tool for shaping educational policies, driving positive transformations, and enhancing the educational experience for both educators and students. The strength of the research design in this study is pivotal for ensuring the validity and reliability of the findings. A well-constructed research study employs appropriate methodologies to collect and analyze data, minimizing biases and errors. This approach enables researchers to draw accurate conclusions and increases confidence in the results. Moreover, a robust research design allows for the control of confounding variables and the establishment of causal relationships, providing valuable insights into the effectiveness of specific interventions or strategies. Overall, a strong research design is essential for informing evidence-based decision-making in education and driving meaningful improvements in teaching and learning practices.

3.1.1. Quantitative Research

Quantitative research was chosen for this study due to its ability to provide numerical data that can be easily analyzed and interpreted. This study will involve a quantitative methodological design. Quantitative research can be defined as a research approach that investigates how well, how much, to what extent, or how accurately different learning, attitudes, or ideas are being developed (Kibinkiri 2014). However, (Amin 2005) points out that quantitative research involves the collection of numerical data to test hypotheses or answer questions concerning the current status of the subject of the study. Quantitative research focuses on objective measurement, numerical data collection, and statistical analysis to test hypotheses and examine relationships between variables. In the context of this study, choosing a

quantitative design provides several key advantages as seen explained in the subsequent paragraphs.

The core objective of this study is to examine the relationship between CPD and their attitudes toward curriculum change. Quantitative research is best suited for this because it allows researchers to apply statistical tools such as correlation and regression analysis to determine the strength and direction of this relationship. According to Creswell and Creswell (2018), quantitative methods are effective in identifying patterns and testing relationships between measurable variables.

Mfoundi Division includes a wide range of secondary schools. A quantitative approach makes it possible to collect data from a large number of teachers, increasing the study's generalizability and representativeness of the target population. Kothari (2014) states that quantitative research enables broad data collection that is crucial for studies aiming to generalize findings to larger populations.

Quantitative research emphasizes objective measurement and uses standardized instruments such as questionnaires. This reduces researcher bias and ensures consistency across all respondents. As noted by Babbie (2020), the structured nature of quantitative research helps ensure reliability and objectivity, especially when studying behaviors and attitudes.

The study requires the use of statistical tools (e.g., Cronbach's alpha, Pearson correlation) to validate instruments and examine variables. Quantitative research provides a systematic framework for this analysis, offering precise and replicable results. Muijs (2011) emphasizes that statistical analysis in quantitative studies provides clarity, helping to identify significant relationships and trends.

Quantitative findings offer empirical evidence that can be used to make data-driven policy recommendations on improving CPD programs and facilitating positive teacher attitudes toward reforms. Punch (2014) highlights that quantitative research supports policy development by providing factual data upon which decisions can be based. A quantitative research design is appropriate for this study because it allows for the measurement and statistical analysis of the relationship between continuous professional development and teachers' attitudes towards curriculum change in Mfoundi Division. This approach enhances objectivity, generalizability, and precision, which are essential for understanding educational dynamics and informing policy reforms.

3.2. Area of the study.

According to Creswell and Creswell (2018), the area of the study is the geographical or organizational location selected for data collection, chosen based on relevance to the research problem and feasibility of access. It includes the population, institution, or setting under consideration. The paragraphs below explain the choice of the study area.

Teachers in Mfoundi are generally more likely to have access to CPD activities organized by national and international agencies due to infrastructure, resources, and communication networks available in the capital. This makes it possible to evaluate the effectiveness and challenges of CPD from a relatively well-resourced setting.

Mfoundi Division hosts the capital city of Yaoundé, which is the administrative and political hub of Cameroon. This division contains a large concentration of public and private secondary schools, including pilot institutions where curriculum changes are often first implemented. According to the Ministry of Secondary Education (MINSEC, 2020), Mfoundi has one of the highest densities of secondary school teachers in the country, making it an ideal environment to study variations in teacher development and responses to educational reforms.

Mfoundi Division has a diverse teaching workforce composed of teachers from both Anglophone and Francophone backgrounds, as well as varying levels of qualifications and teaching experience. This diversity allows for the exploration of differing attitudes and experiences toward curriculum reforms and CPD programs. As noted by Tambo (2012), educational regions like Mfoundi that reflect Cameroon's bilingual and multicultural structure are valuable microcosms for national-level educational research.

Also, because of its location in the capital, Mfoundi is close to policy-making institutions, such as the Ministry of Secondary Education and curriculum development centers. This proximity increases the likelihood of early exposure to reforms, making it relevant for studying how curriculum changes are received and operationalized by teachers. Fullan (2007) asserts that proximity to educational reform hubs influences how well teachers internalize and implement new policies, especially when professional development is involved.

Despite its advantages, Mfoundi still faces challenges common to many Cameroonian divisions, such as teacher workload, resource limitations, and resistance to change. Studying these issues in Mfoundi provides both depth and balance, allowing researchers to understand barriers to CPD and curriculum implementation even in seemingly favorable contexts. That is

why Hardman et al. (2011) highlight the importance of investigating real-world complexities in teacher development across different environments to improve future reform efforts

3.3. Population of the study

According to Sandeep et al, (2020), a research population is a set of all the units (people, events, things) that possess variable characteristics under study and for which the findings of the research can be generalized. A population determines the limit within which the research findings are applicable. The population includes all elements that meet certain criteria for inclusion in a study (Burns & Grove 2003).

According to Sekaran (2000), the population is the entire group of people, events, or things of interest that the researcher wishes to investigate. In the case of a study focused on CPD and teachers' attitudes towards curriculum change, selecting a specific population of secondary school teachers in a given division (like Mfoundi) is both strategic and methodologically justified. Below are the key reasons:

Teachers in the selected population are first-hand sources of information regarding both their professional development experiences and their perceptions and attitudes towards curriculum changes introduced by educational authorities. According to Cohen, Manion, and Morrison (2018), selecting an accessible population with experiential knowledge contributes to the reliability and richness of the data collected

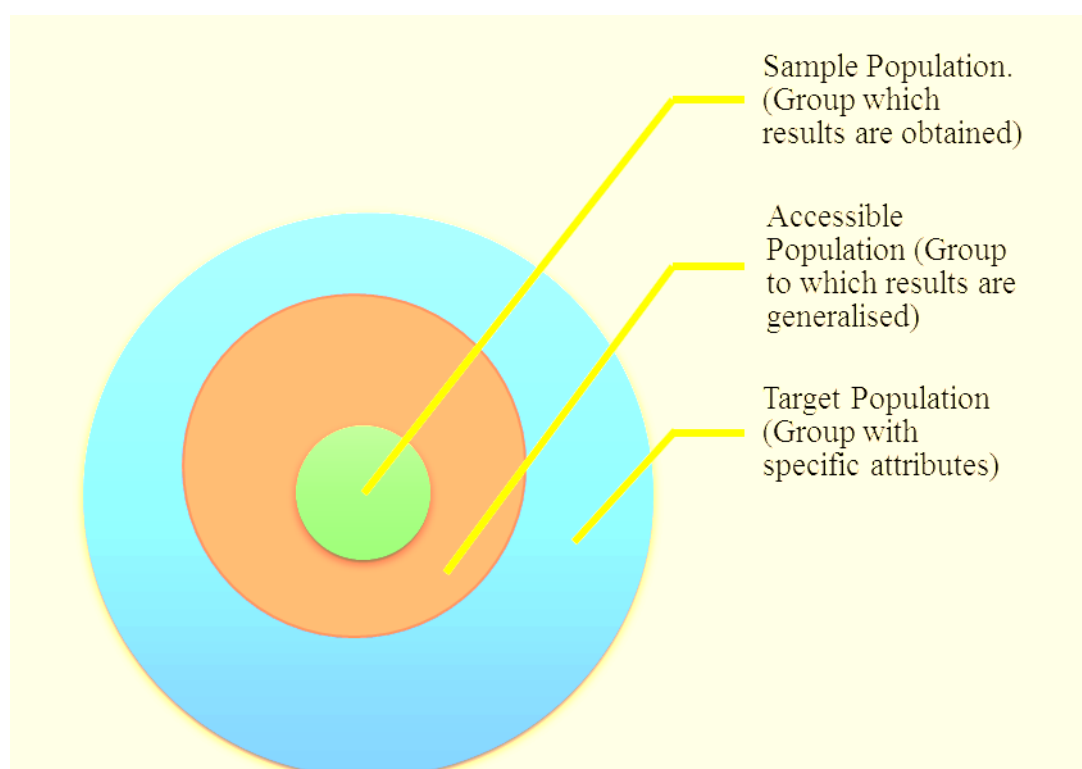
Focusing on a professionally homogenous group (e.g., secondary school teachers) ensures that comparisons and statistical analysis are meaningful. This also controls for external variation that might arise if unrelated professional roles were included. Kothari (2014) emphasizes that population selection should ensure internal consistency to enhance data comparability and reduce confounding factors.

By focusing on teachers, the research can offer evidence-based insights that inform local education authorities and policymakers on how to improve CPD programs and better facilitate curriculum reform adoption. Punch (2014) explains that selecting a population strategically tied to the policy issue under investigation increases the practical utility of the research findings.

Choosing a specific, well-defined population like secondary school teachers in Mfoundi makes it logistically feasible to administer questionnaires or conduct surveys within available resources and time constraints. According to Fraenkel, Wallen, and Hyun (2019), population choice should consider accessibility, time, and resource limitations, particularly in educational field studies.

These categories of people were chosen to provide representative ground for the research results to be implemented for the advancement of the educational system in Cameroon. The inclusion of public and private secondary teachers in the Mfoundi Division ensures a diverse representation of educators in the area. By studying both public and private teachers, the researcher can obtain a comprehensive understanding of the overall educational landscape in the region. This population selection allows for a more accurate and applicable implementation of the research findings, as the results will directly impact the educational system as a whole in Cameroon.

Figure 17: Relationship between sample, accessible and target population



Source: (Amin, 2005)

3.3.1. Target population

According to Creswell (2012), a target population is a group of individuals with some common defining characteristics that the researcher can identify and study. Fraenkel and Wallen (2009) opine that the target population is the actual population to which the researcher would like to generalize its findings (it is the researcher's ideal choice). Among these secondary schools, seven were selected for our target population, as seen above. We selected this subdivision because the area has many secondary schools. Also, this was the oldest secondary and bilingual school created, and it began with a government secondary school and later a

government high school with a good number of teachers. We targeted teachers because they have been trained and have undergone in-service training, and as a result, they can relate to the construct.

By selecting this specific sub-division of secondary schools, we ensure that our target population consists of experienced and qualified teachers who are well-versed in the subject matter. This will enhance the validity and reliability of our findings, as they will be based on a sample that closely represents the larger population. Additionally, the presence of both government secondary and high schools in this area provides a diverse range of perspectives and teaching methodologies, further enriching our study.

Furthermore, the inclusion of both government secondary and high schools in this area allows for a comparison between the two systems, offering valuable insights into the effectiveness of different teaching methodologies. This diversity in perspectives ensures that our study captures a comprehensive understanding of the construct being examined. Additionally, the fact that these schools have undergone training suggests a commitment to professional development and a willingness to adapt to new teaching approaches.

This further strengthens the reliability of our findings, as it indicates that the teachers in this sample are open to innovation and likely to provide valuable insights into the construct under investigation. Overall, the selection of this specific sub-division of secondary schools provides a robust foundation for our study and ensures that our findings will apply to a broader population of educators.

Table 4: Target population of the study

Sub-division	Sub System of Education	Total number of Schools	Total number of Teachers
Yaounde 1	Anglophone sub-system and Francophone Sub-system	105	632
Yaounde 2	Anglophone sub-system and Francophone Sub-system	29	127
Yaounde 3	Anglophone sub-system and Francophone Sub-system	74	607
Yaounde 4	Anglophone sub-system and Francophone Sub-system	117	1486
Yaounde 5	Anglophone sub-system and Francophone Sub-system	75	725
Yaounde 6	Anglophone sub-system and Francophone Sub-system	81	738
Yaounde 7	Anglophone sub-system and Francophone Sub-system	53	327
TOTAL		534	4642

Source: Ministry of Secondary Education 2023.

3.3.2. Accessible population

According to McLeod (2019), the accessible population is the total group of individuals from which the sample might be drawn. It could be that portion of the population to which the researcher has reasonable access, which may be a subset of the target population. The accessible

population of this study involved teachers of both public and private schools in Mfoundi Division who were available at the time the researcher was conducting her research. The researcher selected this accessible population because it provided a diverse representation of teachers in the area. Including both public and private school teachers ensured that the sample would capture a variety of teaching experiences and perspectives.

Additionally, choosing teachers from the Mfoundi Division allowed the researcher to focus on a specific geographical area, making data collection and analysis more manageable. Furthermore, including both public and private school teachers in the study helped to account for potential differences in resources and teaching methods between the two sectors. This allowed the researcher to gain a more comprehensive understanding of the overall educational landscape in the Mfoundi Division. By focusing on a specific geographical area, the researcher was also able to establish a sense of community among the participants, fostering a greater level of trust and openness during data collection.

Overall, the selection of teachers from both public and private schools in the Division was a strategic choice that enhanced the validity and applicability of the research findings. Additionally, by including teachers from both public and private schools, the researcher was able to capture a diverse range of perspectives and experiences within the educational system. Public schools in Mfoundi division are typically funded by the government and cater to a larger population of students, while private schools are often privately owned and offer a more specialized and sometimes more expensive education.

By including both types of schools, the researcher was able to compare and contrast the resources, teaching methods, and overall educational quality provided by each sector. This comparison provided valuable insights into the strengths and weaknesses of each system and allowed for a more nuanced understanding of the educational landscape in the Mfoundi Division.

Table 5: The accessible population of the study

Schools	Number of Teachers
Lycée Bilingue d'Etoug-Ebé	98
Lycée de Biyem-Assi	86
College Bilingue la Lumiere	74
College Jesus-Marie Simbock	53
Lycée de Minkan	72
American School-Nkolbisson	45
Franky Comprehensive High School	65
TOTAL	493

Source : *Field wok*

3.5. Sampling

According to Amin (2005), sampling is the process of selecting elements from the population in such a way that the sample element selected represents the population. Dudovskiy (2018) opines that sampling is a principle that specifies the conditions and guides the process of selecting the members of the population to participate in the study and to contribute as a source of primary data. It is the process of extracting a portion of the population from which generalizations about the population can be made. Sampling is an important tool for research studies because the population of interest usually consists of too many individuals for any research project to include as participants.

The main reason why the researcher used sampling in the study is because, it allows researchers to select a smaller, more manageable group of individuals that is representative of the larger population. This ensures that the findings and conclusions drawn from the study apply to the entire population. Additionally, sampling helps to reduce the time, cost, and logistical challenges that would arise from studying the entire population. Moreover, it enables the researchers to target specific sub-groups within the population, such as age groups, gender, or socioeconomic status, to explore variations and differences in their responses or behaviors. Overall, sampling is a crucial aspect of research methodology that enhances the validity and reliability of study results while optimizing resources.

By carefully selecting participants, the researcher can gather sufficient data to draw meaningful conclusions without overwhelming resources. Furthermore, sampling also enables researchers to control for potential confounding variables that may affect the results of the study. By selecting a representative sample, researchers can ensure that the characteristics and

demographics of the participants align with those of the larger population. This helps to minimize bias and increase the generalizability of the findings.

3.5.1. Sampling Technique.

Amin (2005), defines sampling as the process of selecting elements from the population in such a way that, the sample elements selected represent the population. This also concerns the extraction of a portion of the population from which generalization to the population can be made. The purpose of sampling in this study is to conclude a population from samples, which will use inferential statistics that enable the researcher to determine a population's characteristics by directly observing only a portion of the population.

Sampling methods or sampling techniques in research are statistical methods for selecting a sample representative of the whole population to study the population's characteristics. Sampling methods serve as invaluable tools for researchers, enabling the collection of meaningful data and facilitating analysis to identify distinctive features of the people. Different sampling strategies can be used based on the characteristics of the population, the study purpose, and the available resources. The researcher used three sampling techniques which include:

Simple random sampling: In simple random sampling, each individual has an equal probability of being chosen, and each selection is independent of the others. Because the choice is entirely based on chance, this is also known as the method of chance selection. In the simple random sampling method, the sample frame comprises the entire population. The reason why the researcher used this technique is because the sampling technique ensures a more representative and unbiased sample, enabling robust inferences about the entire population.

Stratified sampling: Stratified sampling divides the population into subgroups (strata), and random samples are drawn from each stratum in proportion to its size in the population. Stratified sampling provides improved representation because each subgroup that differs in significant ways is included in the final sample.

The researcher used the stratified sampling technique because it ensures each subgroup within the population receives proper representation within the sample and it also provides better coverage of the population since the researcher has control over the subgroups to ensure all of them are represented in the sampling.

3.5.2. Sample. (participants)

According to (Frankel & Wallen 2009) a sample in a research study is the group on which information is obtained. A sample is a group that takes part in the investigation. The people who take part are referred to as 'participants' (McLeod, 2019). According to (Frankel & Wallen 2009) a sample in a research study is the group on which information is obtained.

Also a sample is a portion of a population selected for analysis to represent the larger group from which it was drawn (American Psychological Association, 2020).

It is also a portion of the population whose results can be generalized to the entire population. (Amin, 2005). Since the study is a survey, the 493 participants that we had access to were appropriate so we used all the 493 as samples for the teachers. However, for confirmation and assurance purposes, Sample size was determined using the Krejcie & Morgan table (1970).

According to them, many researchers (and research text) suggest that the first column within the table should suffice (Confidence Level 95%, Margin of Error=5%). To use these values, the researcher simply determines the size of the population down the left column (use the next highest value if the exact population size is not listed).

The value in the next column is the sample size that is required to generate a margin of error of 5% for any population proportion. Therefore, we used this table to confirm our teacher sample size of 493, a number that can permit us to generalize the results to the entire teachers. The 493 participants selected from francophone, anglophone government and private schools in the Mfoundi division for this research study are presented in the tables and figures below.

Criteria for the selection of sample.

Criteria for the selection of a sample of secondary school teachers include factors such as years of experience, level of education, subject expertise, teaching methods, performance evaluations, and areas of improvement identified through needs assessments. Additionally, geographical location, school demographics, and availability for participation in research studies may also be considered.

The goal is to ensure that the sample is diverse and representative of the larger population of secondary school teachers to draw accurate conclusions from the data collected. By including teachers with varying years of experience and levels of education, as well as those with different subject expertise and teaching methods, researchers can gather a comprehensive range of

perspectives and insights. Furthermore, considering factors like geographical location and school demographics can help capture the unique challenges and opportunities faced by teachers in different contexts.

Ultimately, a diverse and representative sample will enable researchers to make informed recommendations and policies that apply to a broad spectrum of secondary school teachers. This sampling approach also allows researchers to explore the impact of intersectional identities and experiences on teaching practices and outcomes.

By including teachers from diverse backgrounds, researchers can better understand how factors such as race, gender, socioeconomic status, and language proficiency intersect with teaching effectiveness and student outcomes.

This nuanced understanding can inform targeted interventions and support systems to address disparities and promote equity in secondary education. Additionally, by including a diverse range of perspectives, researchers can identify innovative teaching strategies and best practices that can benefit all teachers, regardless of their background or context.

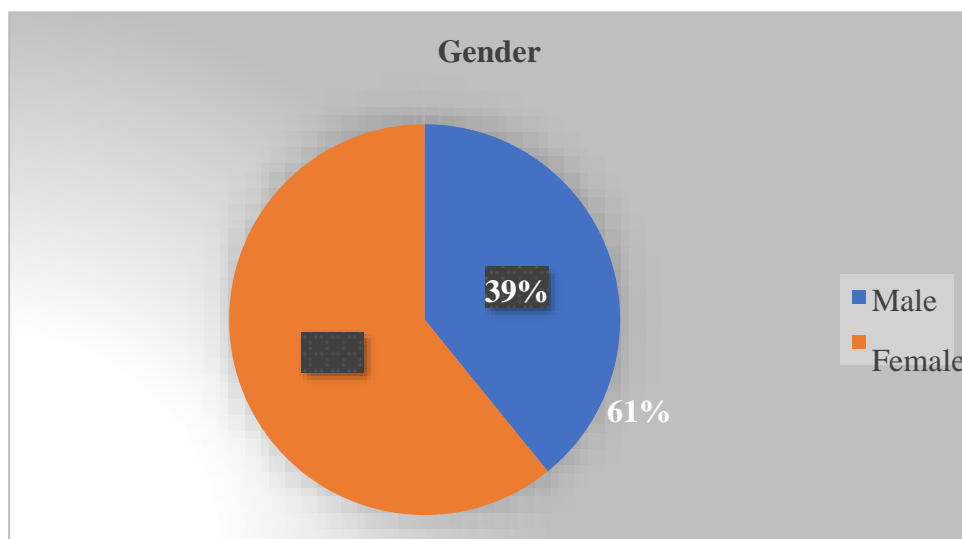
3.5.3. Presentation of socio-demographic variable.

Table 6: Distribution of respondents According to gender.

Gender	Frequency	Percentage (%)
Male	193	39
Female	300	61
Total	493	100.0

Source: *Field work 2023*

Figure 18: Distribution of respondents According to gender.



Source: *Field work 2023*

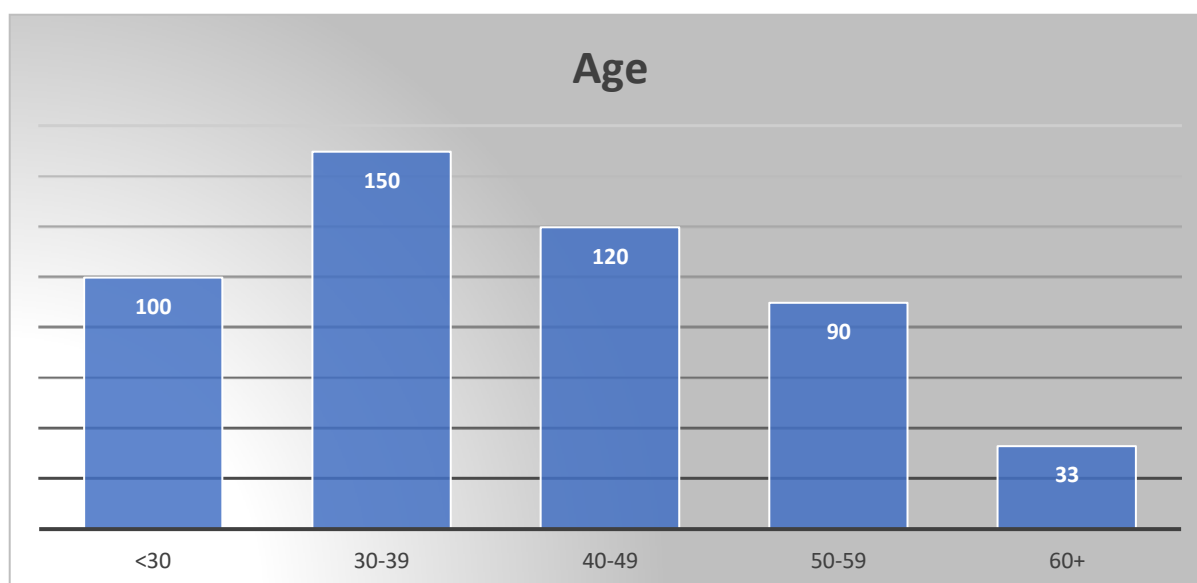
In Figure 18, the characteristics of the respondents by gender were presented. The study included a total of 493 respondents, comprising 193 males and 300 females. This distribution indicates that approximately 39.17% of the respondents were male, while 60.83% were female.

Distribution of Respondents according to Age

Table 7: Table 3.4 Age Distribution of respondents.

Age (in years)	Frequency	Percentage (%)
<30	100	20.29%
30-39	150	30.42%
40-49	120	24.34%
50-59	90	18.27%
60+	33	6.69%

Source: *Field work 2023*

Figure 19: Age distribution of respondents

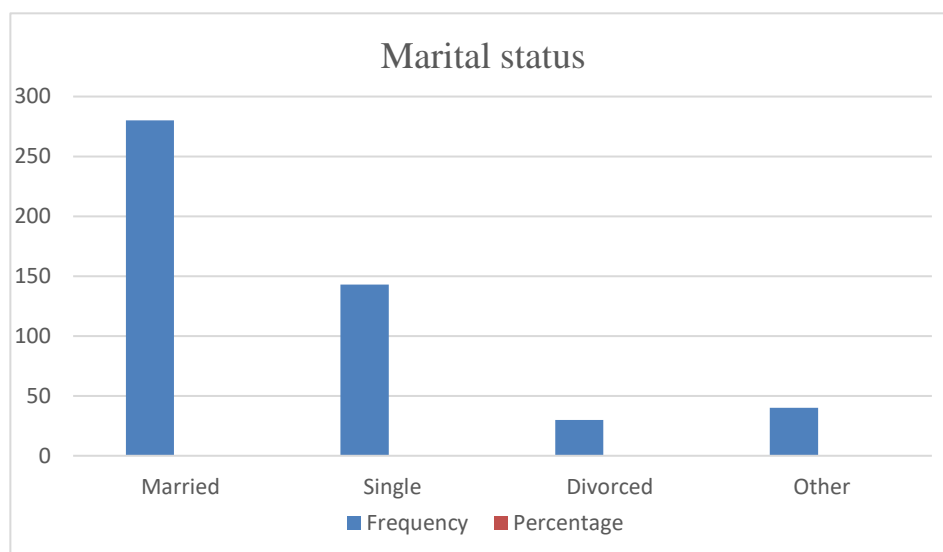
Source: *Field work*

The figure above, provides a glimpse into the age distribution of the respondents involved in the study. The data reveals a diverse age range among the participants. A substantial portion of respondents, representing 20.29%, falls into the age category below 30, indicating the inclusion of relatively younger educators. A significant proportion, accounting for 30.42%, falls within the age range of 30 to 39, suggesting a considerable presence of teachers in their early to mid-career stages. The age group of 40-49 encompasses 24.34% of the respondents, while those aged 50-59 constitute 18.27%. A smaller but noteworthy percentage, 6.69%, comprises respondents aged 60 and above, indicating the presence of experienced educators within the sample.

Table 8: Distribution of respondents according to marital status

Marital Status	Frequency	Percentage
Married	280	56.82 %
Single	143	28.98 %
Divorced	30	6.08 %
Other	40	8.12 %

Source: *Field work*

Figure 20: Distribution of respondents based on marital status

Source: *Field work*

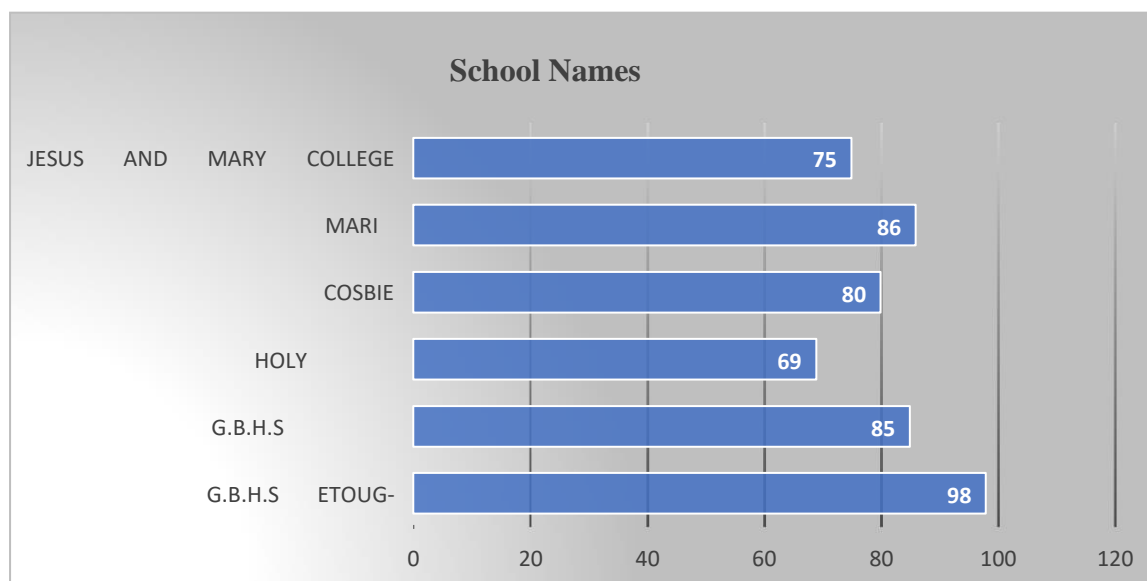
Figure 3.5 offers insights into the marital status of the respondents, shedding light on their relational statuses. The data reveals a diverse range of marital statuses within the sample. A significant majority, accounting for 56.82%, are married, reflecting a substantial proportion of educators in committed relationships. The category of single respondents constitutes 28.98%, indicating a sizable portion of unmarried individuals among the participants. Additionally, 6.08% of the respondents report being divorced, highlighting the presence of educators who have experienced divorce. The remaining 8.12% fall under the "Other" category, encompassing various marital statuses, showcasing the diversity within the sample.

Table 9: Table 3. 6 Distribution of respondents according to name School Names

School Name	Frequency	Percentage (%)
Lycée Bilingue d'Etoug-Ebé	80	18.89%
Lycée de Biyem-Assi	68	15.35%
College Bilingue la lumiere	74	13.92%
Lycée de Minkan	72	13.49%
American school -Nkolbisson	45	12.89%
Franky Comprehensive High School	60	14.25%
College Jesus-Marie Simbock	42	10.45%
Total	493	100.00%

Source: *Field work*

Figure 21: Distribution of respondents based on school Names



Source: Field work

Figure 22 provides valuable information about the distribution of respondents across different schools. The table portrays the representation of teachers from various educational institutions within the study. Among the schools mentioned, Lycée Bilingue d'Etoug-Ebé stands out with 18.86% of the respondents, followed by Lycée de Biyem-Assi at 15.35%. College Bilingue la lumiere 13.92% of the sample, while Lycée de Minkan and American school -Nkolbisson contribute 13.49% and 10.89%, respectively. Franky Comprehensive High School 14.25 and College Jesus-Marie Simbock 10.25% and of the respondents. This distribution reflects the diverse school affiliations of the teachers involved in the research.

Table 10: Teaching Discipline

Discipline	Frequency	Percentage(%)
Biology	34	6.89%
Chemistry	42	8.51%
Computer Science	28	5.68%
Economics	60	12.17%
French	36	7.30%
Geography	35	7.10%
Geology	18	3.65%
History	40	8.12%
Literature	25	5.07%
Mathematics	40	8.12%
Philosophy	10	2.03%
Physics	18	3.65%
English Language	32	6.49%
Accounting	22	4.46%
Math with Mechanic	11	2.23%
Religious Studies	8	1.62%
Information and Communication Tech.	9	1.83%
Food Science & Nutrition	6	1.22%
Total	493	100.00%

Source: *Field work*

The table above offers an overview of the distribution of teachers by their respective teaching disciplines. The table includes various disciplines and their corresponding frequencies and percentages. This data provides insights into the diverse academic backgrounds and subject expertise of the respondents, showcasing the range of teaching disciplines covered within the study.

Economics emerges as one of the prominent disciplines, with 60 teachers, constituting 12.17% of the total. This suggests a substantial presence of economics educators within the sample, indicating the significance of this subject in the study. Mathematics, with 40 teachers representing 8.12%, also stands out, underlining the substantial representation of mathematics

educators. The study includes teachers specializing in fields ranging from biology, chemistry, and physics to languages such as French and English.

While some disciplines, such as philosophy and religious studies, have a smaller presence, their inclusion demonstrates the diversity of subject expertise among the participants. Additionally, the table reflects the participation of educators in disciplines like computer science, geology, and information and communication technology, emphasizing the multifaceted nature of the teaching profession.

Table 11: Years of Teaching Experience

Years of Experience	Frequency	Percentage (%)
0-5	120	24.34%
6-10	90	18.27%
11-15	80	16.23%
16-20	70	14.19%
21+	133	27.01%
Total	493	100.00%

Source: *Field work*

Table 3.11 provides valuable information regarding the distribution of respondents based on their years of teaching experience. The data reflects the diversity in teaching experience among the participants. Within the sample, 24.34% of teachers have 0-5 years of experience, indicating the presence of relatively early-career educators. Teachers with 6-10 years of experience account for 18.27%, demonstrating a substantial representation of mid-career professionals. Additionally, 16.23% of respondents have 11-15 years of teaching experience, while 14.19% fall into the 16-20 years of experience category. Notably, 27.01% of the teachers in the study possess 21 or more years of teaching experience, highlighting the presence of experienced educators within the sample. This distribution offers insights into the diversity of experience levels among the respondents.

Table 12: Distribution of respondents according to highest academic diploma

Academic Diploma	Frequency	Percentage (%)
Degree	290	58.79%
Master 1	80	16.23%
Master/DEA	40	8.12%
PhD/Doctorate	10	2.03%
Other	73	14.83%
Total	493	100.00%

Source: Field work

The table above sheds light on the distribution of respondents based on their highest academic diplomas. The data provides insights into the academic qualifications of the teachers included in the study. The majority, representing 58.79%, hold a degree, showcasing a significant presence of educators with undergraduate qualifications. An additional 16.23% of the respondents have attained a Master 1 degree, indicating a substantial representation of educators with postgraduate qualifications. Teachers with a Master/DEA qualification account for 8.12% of the sample. Notably, 2.03% of respondents have achieved a PhD/Doctorate, reflecting the presence of educators with advanced academic credentials. The "Other" category encompasses 14.83% of the sample, including various academic qualifications, further highlighting the diversity within the educational backgrounds of the participants.

Table 13: Distribution of respondents According to professional qualification.

Professional Qualification	Frequency	Percentage (%)
DIPES 1	246	49.90%
DIPES II	150	30.42%
Other	97	19.68%
Total	493	100.00%

Source: Field work 2023

The data provides a glimpse into the diversity of professional qualifications among the teachers in the study. A substantial portion, accounting for 49.90%, holds a DIPES 1 qualification, indicating a significant presence of educators with this professional credential. DIPES II holders constitute 30.42% of the respondents, reflecting the presence of educators with another prominent qualification. The remaining 19.68% fall into the "Other" category, representing

various professional qualifications, underscoring the diversity of qualifications within the sample.

Table 14: Characteristics of respondents according to positions held.

Position	Frequency	Percentage (%)
Teacher	394	79.95%
Director	3	0.61%
Principal	6	1.22%
Vice-Principal	6	1.22%
Other	84	17.03%
Total	493	100.00

Source: *Field work 2023*

In the table above, the distribution of respondents by their positions within the school is presented. The data provides insights into the diversity of roles held by educators within educational institutions. The majority, accounting for 79.95%, hold the position of teacher, highlighting the primary role of educators in the teaching profession. Directors represent a smaller percentage, comprising 0.61%, indicating a limited presence of individuals in administrative leadership roles. Principals and vice-principals each make up 1.22% of the sample, signifying the presence of individuals in school leadership positions. The "Other" category encompasses 17.03% of the respondents, including various positions within the school hierarchy, showcasing the diversity of roles held by educators within the educational system.

Purposive sampling

According to Amin (2005), purposive sampling, also known as judgmental, selective, or subjective sampling, is a form of sampling procedure where the researcher uses his or her judgement or common sense regarding the research participants from whom the information will be collected. This involves identifying and selecting individuals or groups of individuals who are especially knowledgeable about or experienced with a phenomenon of interest (Cresswell & Plano Clark, 2011).

In addition to knowledge and experience, Bernard (2002) and Spradley (1979) note the importance of availability and willingness to participate, as well as the ability to communicate experiences and opinions in an articulate, expressive, and reflective manner. This sampling method requires researchers to have prior knowledge about the purpose of their studies so that

they can properly choose and approach eligible participants. The researchers used purposive sampling she want to access a subset of people, as all participants in a study are selected because they fit a profile. This sampling procedure was also used because the researcher is an experienced secondary school teacher, she used her own experience in the field, and had good knowledge of research participants to sample the seven secondary schools. 493 respondents were selected from these schools through simple random sampling.

The researcher used purposive sampling to select the secondary schools because most of the secondary schools in the area had similar demographics and characteristics. By selecting a diverse range of schools, the researcher aimed to gather a comprehensive understanding of the topic being studied. This approach allowed for a more well-rounded perspective and improved the generalizability of the study's findings.

Additionally, using both purposive and random sampling techniques helped ensure the validity and reliability of the research results. Overall, the combination of purposive and random sampling techniques provided a balanced approach to selecting schools for the study. This method allowed for a mix of schools with different characteristics, ensuring that the research findings could be applied to a wider population. By incorporating both types of sampling, the researcher was able to gather a more representative sample that accurately reflected the diversity within the secondary school system.

This approach ultimately strengthened the study's credibility and contributed to the robustness of the research findings. Furthermore, the use of purposive sampling helped to ensure that schools with specific characteristics or attributes of interest were included in the study. This allowed for a more targeted analysis of certain factors that may have a significant impact on the outcomes of the research. By intentionally selecting schools with these specific criteria, the researcher was able to focus on key variables that could potentially influence the attitudes and perceptions of teachers concerning curriculum changes. This strategic approach to sampling ultimately enhanced the depth and richness of the data collected, leading to a more comprehensive understanding of the research topic.

3.6. Sources of data

In research, data sources are classified into two categories: primary and secondary data, based on their sources. Data is classified into two categories in research to distinguish between the sources of information and those that are derived from existing sources. This classification

helps researchers understand the reliability and validity of the data they are using and allows them to make informed decisions about its applicability to their research objectives.

3.6.1 Primary Data

Primary data is a type of data that has never existed before; hence, it was never previously published. Primary data is collected for a specific purpose, which implies that it is critically analyzed to find answers to research questions (Saunders et al. 2012). Primary data is mainly derived from observation of the events, processes, manipulation of variables, and contrivance of the research situation, including the performance of the experiment and responses to the questionnaires. In this research, the primary data was collected using the questionnaires. The questionnaires were distributed to a sample group of participants who were selected based on specific criteria. The participants were asked to provide their responses to a series of predetermined questions, which were designed to gather information relevant to the research objectives. The collected primary data was then carefully analyzed and interpreted to draw meaningful conclusions and make informed recommendations based on the research findings.

3.6.2 Secondary sources

Secondary sources are generated by primary sources. The data collected from secondary sources is secondary data, but secondary data emanates from the processing of data from primary sources that was carried out and published by previous researchers. According to Sanders et al. (2012), secondary data is the type of data that has been previously published in journals, magazines, newspapers, books, online portals, YouTube videos, blog pages, and other sources. In this study, we derived our secondary sources from data gathered from the various departments, reports from the Ministry of Secondary Education, and regional delegations of secondary education.

We also exploited books, the internet, dissertations, and YouTube videos as secondary sources to collect data for this study. These secondary sources provided us with a wide range of information and perspectives on the topic. Additionally, using secondary data allowed us to save time and resources, as the data was already available and did not require primary data collection. However, it is important to note that using secondary data also comes with limitations, such as potential biases or inaccuracies in the data, as well as the inability to customize the data collection process to specifically address our research questions. Despite these limitations, the use of secondary data in this study allowed us to gain valuable insights and support our research findings.

Furthermore, by utilizing secondary data, we were able to compare our findings with previous studies and validate our results. This helped to strengthen the credibility of our research and provide a broader context for our conclusions. Additionally, the use of secondary data allowed us to conduct a more comprehensive analysis by including a larger sample size, increasing the statistical power of our study. Overall, while there are limitations to using secondary data, the benefits outweigh the drawbacks in our research, enabling us to make informed conclusions and contribute to the existing body of knowledge.

Moreover, the use of secondary data provided us with a cost-effective and time-efficient approach to conducting our research. Instead of collecting primary data ourselves, which can be expensive and time-consuming, we were able to access existing datasets that were already available. This saved us valuable resources and allowed us to focus our efforts on analyzing and interpreting the data. Additionally, using secondary data allowed us to study phenomena that may be difficult or unethical to observe directly. For example, we were able to examine long-term trends and patterns in human behaviour without directly observing individuals over extended periods. This expanded our scope of research and provided valuable insights into complex social phenomena.

3.7 Instruments for data collection.

In research, an instrument is any device that enables the researcher to systematically collect the data, such as questionnaires. Other examples of research instruments include interviews, surveys, observation tools, and physiological measures. These instruments are carefully designed to gather reliable and valid data to answer research questions. The use of research instruments is crucial to ensuring the accuracy and integrity of the data collected. Overall, research instruments play a vital role in the research process by providing researchers with the means to gather data that can be analyzed and interpreted to address research objectives. Without the use of research instruments, researchers would have no structured method for collecting data and would be unable to draw meaningful conclusions. For example, questionnaires allow researchers to gather data from a large sample size quickly and efficiently.

Surveys enable researchers to collect data from a diverse range of individuals and compare responses. Physiological measures provide objective data on participants' physiological responses. In conclusion, research instruments are essential tools that enable researchers to gather accurate and reliable data, ultimately advancing knowledge and understanding in their respective fields. Depending on the nature of the study, researchers may choose different instruments or a combination of them to ensure comprehensive data collection.

In this study, the researcher used questionnaires as the primary research instrument to gather data from the participants. Moreover, the questions and items were carefully stated in clear, simple and unambiguous language so as to facilitate the respondents' understanding and responses. The purpose of the study was taken into consideration before constructing the instrument. The various competencies expected to be developed by teachers, especially in this era of curriculum change were considered to be very important for this research.

In this light, the cognitive, affective, and psychomotor domains of learning were equally taken care of in the instrument. Finally, the questionnaire had a short letter addressed to the respondent. The letter had the name of the researcher, his level, University, and research domain, an appeal for honest responses, and an assurance of confidentiality. The instrument ends with a statement of appreciation to the respondent for participation and the researcher's email address and telephone number for any concerns.

Questionnaires were chosen because they allow for standardized data collection and provide an efficient way to collect large amounts of information from a large number of participants. The researcher carefully designed the questions to align with the research objectives and hypotheses, ensuring that the collected data would be relevant and useful for analysis. The use of questionnaires also allowed for anonymity and confidentiality, which encouraged participants to provide honest and accurate responses.

Overall, the choice of questionnaires as the research instrument in this study was crucial in gathering reliable and valid data to address the research questions effectively. This allowed for a broader range of perspectives and increased the generalizability of the findings. Moreover, the researcher could easily analyze and interpret the collected data, as questionnaires provided structured responses that could be easily quantified and analyzed using statistical techniques. This facilitated the process of data analysis and ensured that the results obtained were accurate and reliable.

3.7.1. The Questionnaire

According to Amin (2005), a questionnaire is a carefully designed instrument for collecting data following the specifications of the research questions and hypotheses. This consists of a set of questions to which the research participants respond in writing. A questionnaire is the main means of collecting quantitative primary data, and it permits quantitative data to be collected in a standardized way so that the data are internally consistent and coherent for analysis (Roopa & Rani, 2012). The questionnaire was used in this study

because it is less expensive and offers greater assurance of anonymity. A questionnaire is also a research instrument consisting of a series of questions to gather information from respondents. In this study, we employ the questionnaire because it enables the researcher to acquire adequate, precise, and objective information from a greater number of respondents in a relatively short period.

The questionnaire used was presented in three main sections: personal or demographic information (gender, age, occupation, school, teaching experience, position held), and the second part was questions on independent variables (pedagogic seminars, pedagogic animation, training in teaching technique and training in remediation technique) and questions on teacher's attitude towards curriculum change presented according to the hypothesis.

The final section of the questionnaire focused on gathering information about the dependent variables, which included the perceived effectiveness of the current curriculum, willingness to implement changes, and overall satisfaction with the teaching process. By organizing the questionnaire in this way, the researcher was able to efficiently collect data on a wide range of factors that could potentially impact teachers' attitudes toward curriculum change. This structured approach ensured that the responses were detailed and insightful, providing valuable insights for the research study.

Moving forward, the next section of the questionnaire delved into gathering information about the independent variables that may influence teachers' attitudes towards curriculum change. These variables included years of teaching experience, level of education, and previous training in curriculum development. By examining these factors, the researcher aimed to identify any potential patterns or correlations that could shed light on why some teachers may be more open to change than others. This comprehensive approach allowed for a thorough analysis of the various factors at play in shaping teachers' perceptions and attitudes towards curriculum change. Followed by questions on extraneous variables, as summarized in the table below.

Table 15: Description of Questionnaire

Hypotheses	Indicators	Number of items	measuring scale
RH1	Pedagogical seminars	Q 1-Q6	5-point Likertscale
RH2	Pedagogial Animation	Q7-12	5-point Likertscale
RH3	Training in teaching Techniques	13-18	5-point Likertscale

RH4	Training in Remediation Technique	19-24	5 point Likert
RH5	Availability of Resources and Support	25-29	5-point Likert scale

Source: *Field work 2023*

Weighting the Scale

The measurement scale was a five-point Likert scale presented in orderly order: Strongly Disagree SD = 1, 2-Disagree D, 3-Neutral N, 4-Agree A, and 5-Strongly Agree SA. According to the objective of the study, all the items were affirmative, so all negative responses had high points. A five-point Likert scale was chosen because it is more reliable for recording opinions and ideas, and it equally eases data analysis through the Statistical Package of Social Science (SPSS, version 25.0). The respondents were expected to tick (>) the opinions most suitable to them. The Likert scale allowed for a more nuanced understanding of the respondents' opinions, as it provided a range of choices for them to express their agreement or disagreement with the statements. This scale also allowed for a quantitative analysis of the data, as each response was assigned a numerical value that could be easily inputted into the statistical software for analysis. Overall, the Likert scale proved to be a valuable tool in gathering and analyzing the data for this study.

Additionally, the use of the Likert scale helped to uncover any trends or patterns in the responses, which could then be further explored and interpreted in the data analysis process. By utilizing this scale, the researcher was able to gain a more comprehensive understanding of the opinions and attitudes of the respondents, ultimately leading to more insightful findings and conclusions. The data collected through the Likert scale also provided a solid foundation for the statistical analysis that was conducted, allowing for a more rigorous and accurate interpretation of the results. In conclusion, the incorporation of the Likert scale in this study was essential in ensuring a thorough and detailed examination of the research questions at hand.

The decision rule according to Tanah and Encho (2017), refers to a regulation or guide which enables a researcher to make a decision on whether to accept or reject an issue as seen below.

$$Mean = \frac{4 + 3 + 2 + 1}{4} = \frac{10}{4} = 2.5$$

This means that any factor with a mean of 2.5 and above was accepted (positive) while those less than 2.5 were rejected (negative). Each question was made up of closed-ended questions and was to be answered anonymously and not obligatory. (see appendix). Given that we are

carrying out quantitative research, and closed-ended questionnaires can only provide quantitative data, thus we introduced the interview guide.

3.8. Validation and reliability of the research instruments

Validity

According to Burns & Grove (2001), validity can be regarded as the extent to which the instrument reflects the abstract construct being examined. To Roopa & Rani (2012), validity is the degree to which a questionnaire measures what it was intended to measure. In this study, the questionnaire was subjected to face-to-face and content validity. The researcher collected content-related evidence to check the validity of the instrument. The first draft of the instrument (questionnaire) was prepared by the researcher and sent to the supervisor. The questionnaire was given along with the objectives and research questions. A concept mapping, which clearly defines the variables to be measured and a description of the sample, was attached to the instrument. This was to ensure that the content of the instrument was appropriate, comprehensive, and capable of measuring the variables.

After reviewing the instrument, the supervisor made some corrections and suggestions. The researcher effected the corrections and incorporated suggestions for improvement into the final instrument. To check whether the questions and items were to be understood by the participants, a pilot study was conducted. This was done by administering the questionnaires to 30 student-teachers who were not part of the sample but constituted part of the population. After analyzing the responses for the pilot study, the researcher identified no difficulties with the participants in understanding the questions and items. This gave him the confidence and courage to administer the instrument to the actual sample of the study.

However, by conducting these validity checks, the researcher was able to ensure that the questionnaire accurately measured the intended variables and provided reliable data for their study. This is the most important measure to make sure the research instrument serves its intended purpose as every instrument is designed for a particular purpose. Once it is designed appropriately, it measures rightly and if it is faulty, it misses the target. Validity is an important requirement for both qualitative and quantitative studies (Cohen et al.2007). To verify the extent to which the research instruments conceived for this study measures accurately what they were intended to measure, the two instruments are subjected to content validity.

Face validity:

This is an estimate of whether the item of a questionnaire seems appropriate, i.e., at face value, are they getting the response in the way the researcher aims to measure it (Roopa & Rani, 2012). To ensure face validity, the questionnaire for this study was constructed with the help of classmates and secondary school teachers in the field. It was then submitted to the supervisor, who scrutinized the items, checking the appropriateness of language and clarity. After making the necessary corrections from this expert, the questionnaire was considered to have attained face validity. They examined the items by checking the language, clarity of the questions, relevance of the items to the objectives of the study, and their ability to accurately represent a common theory and practice. After a succinct study of these instruments together with the researcher, the former brought in more corrections and modifications that were made by the researcher.

After a third examination, the items on the questionnaires were confirmed to be valid and relevant to the study thereby confirming the validity of the instrument. The researcher then proceeded to pilot test the questionnaires with a small sample of participants to ensure that they were easily understandable and produced reliable results. The pilot test revealed that the participants had no difficulty understanding the questions, and the responses obtained were consistent. This further supported the validity of the instrument and provided confidence in its ability to accurately measure the variables of interest.

Overall, the thorough examination and pilot testing process ensured the reliability and validity of the questionnaires, strengthening the study's research findings. The researchers were able to conclude that the questionnaires were indeed reliable and valid tools for data collection. This allowed for a greater level of confidence in the study's results and supported the overall credibility of the research. The pilot testing process also highlighted any potential issues or areas for improvement, which were addressed before distributing the questionnaires to a larger sample size. This attention to detail and rigorous testing enhanced the study's methodology and increased the trustworthiness of the findings.

Lastly, the pilot testing process provided valuable insights into the clarity and comprehensibility of the questionnaire items. Participants' feedback and suggestions were carefully considered, leading to refinements in the wording and structure of the questions. This ensured that the survey instruments accurately captured the intended constructs and minimized any potential for misinterpretation or ambiguity. By refining the questionnaires through pilot testing, the researcher was able to maximize the validity and reliability of the data collected, further bolstering the study's robustness and credibility.

Content Validity

According to Amin (2005), “content validity is the extent to which the content of an instrument corresponds to the theoretical concept it is designed to measure.” In other words, content validity refers to the degree to which a test actually measures or is specifically related to the threats for which it was designed. Content validity refers to the extent to which a test represents the universe of items from which it is drawn, and it is particularly useful when evaluating the usefulness of the achievement test (Salkind, 2000)

Content validity is the extent to which the content of an instrument corresponds to the content of the theoretical concept it is designed to measure (Amin, 2005). Ensuring content validity is crucial in research, as it ensures that the instrument accurately measures the intended variable or construct. Without content validity, the researcher may run the risk of drawing inaccurate conclusions based on faulty data. By assessing content validity, researchers can have confidence that their instrument is truly capturing all aspects of the concept they are studying, leading to more reliable and valid results.

The questionnaire was constructed using the various indicators. These instruments were given to some experts or judges who examined the validity of the contents. This validity is called content validity. It also refers to the degree to which the test measures or is specifically related to the threats for which it was designed. Experts scrutinized the questionnaire and test items by checking the relevance of the items to the objectives of the study. From the results of the experts, the coefficient of validity, i.e., the Content Validity Index (CVI), was calculated first, after which the inter-judged coefficient of validity was calculated as seen below.

$$CVI = \frac{\textit{Agreed items by both judges as suitable}}{\textit{Total items by both items being judged}}$$

$$CVI = 79 \div 88 = 0.897$$

This figure is then divided by the total number of items to obtain the content validity index. Concerning our instrument, the CVI stood at 0.897. A content validity index’s value of 0.8 is considered acceptable (Amin, 2005). This is an indicator that the questionnaire is valid, thus measuring what it purports to measure (Amin, 2005).

3.8.1. Reliability of the Instrument

Reliability, according to Polit & Hungler (1999), is the degree of consistency with which the instrument measures an attribute. Reliability is also the extent to which results are consistent over time, and an accurate representation of the total population under study is referred to as

reliability, if the results of a study can be reproduced under a similar methodology, then the research instrument is reliable (Joppe, 2000).

Reliability of a research instrument is the ability of the instrument to yield similar results when administered to the same group of respondents under similar conditions (Mugenda & Mugenda, 2003). To Amin (2005) says an instrument is reliable if it produces the same results whenever it is repeatedly used to measure traits or concepts from the same respondents even by other researchers.

A good research instrument should have a great, reasonable reliability coefficient or it should be scientifically fit for use in data collection. Polit & Hungler (1999) point out that the less variation the instrument produces in repeated measurements of an attribute, the higher the reliability, and an instrument that is not valid cannot possibly be reliable.

A reliable research instrument allows for the replication of the study, enabling other researchers to obtain similar results. This consistency adds credibility to the study and increases confidence in the validity of the findings. Therefore, researchers should prioritize the development and use of reliable instruments to ensure the robustness of their research. The reliability of the instruments used in this study was determined using test-retest reliability.

3.8.2 Test-retest Reliability.

This is the systematic examination of consistency, reproducibility, and agreement among two or more measurements of the same individual using the same tools, under the same conditions (Aldridge, Dovey, & Wade, 2017). Test-retest reliability refers to the degree to which scores on the same test by the same individuals are consistent over time and provides evidence that scores obtained on a test at one time are the same or close to the same when the test is re-administered some other time (Amin, 2005). To establish the reliability of the instrument, the researcher employed the test-retest approach.

According to Amin (2005), test-retest reliability refers to the degree to which the scores on the same test by the same individual are consistent over time. In this approach, the instrument was administered to a group of participants on two separate occasions, with a time interval in between. The scores obtained from the first administration were then compared to the scores obtained from the second administration. If the scores were highly consistent and showed minimal variation, it indicated a high test-retest reliability of the instrument.

This approach allowed the researcher to assess the stability and consistency of the instrument's measurements over time. Additionally, test-retest reliability provides valuable

information about the reliability of the instrument itself as well as the stability of the construct being measured. By comparing the scores obtained from the first and second administrations, researchers can determine whether the instrument is capable of producing consistent results over time. Furthermore, test-retest reliability can also help identify any potential sources of error or variability in the measurement process, such as environmental factors or participant characteristics.

Overall, this approach is a crucial step in establishing the trustworthiness and validity of the instrument, ensuring that the results obtained are accurate and reliable. This is an indication that the results obtained at a given point will be the same or closer to the former scores if the test is administered again after some time. In this study, we administered the questionnaires to selected secondary school teachers in Yaounde VI Sub-Division and after two weeks, we administered again the same tool to the same population the results were analyzed with the help of Chronbach's alpha and presented below. The researcher used the Cronbach's alpha statistical tool. We used Cronbach's alpha in this study to assess the reliability, or better still the internal consistency of a set of scale or test items used in this study.

According to Salkind (2000), internal consistency examines the reliability within a particular set of items. Internal consistency is evaluated by correlating performance on each of the items in a test or scale with total performance on the test or scale that takes the form of a correlation coefficient. Correlations are expressed as a numerical value, represented by lowercase for instance; the correlation test between test A and test B would be represented as $r_{\text{test A. t test B}}$. In which case, the scores in test A and the score in test B are correlated. The reliability coefficient or correlation coefficient ranges from -1.00 to + 1.00. A value of 1.00 would be the most appropriate reliability, where there is no error in the measurement process.

3.8.3 Cronbach's Coefficient Alpha

Cronbach's Coefficient Alpha (α) is a statistical measure used to assess the internal consistency or reliability of a set of questionnaire items or scale-based measurements. In the context of the present study on Continuous Professional Development (CPD) and Teachers' Attitudes Towards Curriculum Change, the use of Cronbach's alpha is critical for several reasons as explained in the paragraphs below.

In this study, instruments such as Likert-scale questionnaires are used to measure teachers' participation in CPD and their attitudes towards curriculum change. Cronbach's alpha helps determine whether the items within each section of the questionnaire consistently measure

the same underlying construct. According to Tavakol and Dennick (2011), Cronbach's alpha assesses how closely related a set of items are as a group, which is crucial for ensuring measurement reliability.

Before drawing any conclusions from the data, it is essential to verify that the measurement tools are reliable. A Cronbach's alpha value of 0.70 or above is generally considered acceptable for research purposes (George & Mallery, 2019). This ensures that conclusions drawn about teachers' attitudes and CPD engagement are based on dependable data. Also, By confirming internal consistency, the study increases its reliability and reproducibility. Future researchers working in similar educational contexts like other divisions of Cameroon can confidently replicate the instruments if Cronbach's alpha demonstrates high reliability. As noted by Creswell and Creswell (2018), a reliable instrument contributes to the replicability and generalizability of research findings

$$a = \frac{k}{k-1} \left(1 - \frac{\sum \sigma^2}{\sigma^2} \right)$$

Where;

$\sum \sigma^2$ is the sum of the variances of the k parts which are items of the test or instrument

σ is the Standard Deviation or the instrument

Table 16: Reliability statistics

Questionnaire Section	Number of Items	Cronbach's Alpha
Pedagogical seminars	06	0.85
Pedagogical Animation	06	0.86
Training in Teaching Techniques	06	0.89
Training in Remediation Technique	06	0.86
Availability of Resources and Support	09	0.80
	34	0.85

Source: *Field work 2023*

The reliability for the instrument gave a Cronbach's Alpha of 0.85, indicating high internal consistency among its items. These values suggest that the items within each section are reliably measuring the intended constructs.

3.8.4 Pilot testing:

In this research study, before administering the questionnaire instruments, they were first tested on a group of 30 teachers, and after two weeks, the same questionnaire was still conducted by the same group of teachers. Their responses were correlated, and the results were evaluated, indicating a high degree of consistency. This approach enabled the researcher to modify the questions to better suit the study and for accurate data to be collected as the questionnaires and a test.

This pilot testing process helped ensure the reliability of the questionnaire instruments used in the study. By re-administering the same questionnaire to the group of teachers after two weeks, the researcher was able to confirm that the responses were consistent and reliable over time. This allowed for any necessary modifications to be made to the questions to improve the accuracy of the data collected.

Overall, this pilot testing phase was crucial in ensuring the validity and reliability of the research study. The researcher then proceeded to administer the questionnaire to the respondents. Cronbach's alpha and confirmatory factor analysis techniques were used to determine the reliability of the instruments.

A reliable research instrument allows for the replication of the study, enabling other researchers to obtain similar results. This consistency adds credibility to the study and increases confidence in the validity of the findings. Therefore, researchers should prioritize the development and use of reliable instruments to ensure the robustness of their research.

3.8.5 Ethical Consideration

In contemporary education studies, all researchers are expected to apply and respect ethical principles and guidelines when research involves human subjects (International Commission for World Health Organization, CIOMS, 2002). This is because other researchers and those reviewing or supervising research would also find such helpful to themselves.

Ethical research concerns what researchers ought and ought not to do in their research and research behavior (Cohen et al., 2018). Li et al. (2018) view ethics in research as a code of conduct or expected social norms of behavior while conducting research.

An ethical piece of research must demonstrate rigor and quality in the design, conduct, analysis, and reporting of the research. Ethical principles are not absolute, generally speaking (though some may maintain otherwise), but must be interpreted in the light of the research context and of other values at stake (Cohen et al., 2018).

According to Gustafsson, Herman, and Peterson (2005), areas of ethical concerns are lack of informed consent, plague with inversion of privacy, deception, and harm to participants. Ethical issues have to do with respect for lives, persons, human dignity, beneficence, and justice.

According to Amin (2005), Ethics refers to well-based standards of right and wrong that prescribe what humans ought to do usually in terms of rights, obligations, benefits to society, fairness, or specific virtue, ethical standards support the virtues of honesty, compassion and loyalty and include standards relating to rights such as the right to life, the right to freedom from injury and the right to privacy. This takes place in four different stages of the research process; the choice of the topic, data collection, analysis, interpretation, and thesis writing.

In this study, we ensure ethics in these four parts; in the research topic, all cautionary motives were taken into consideration, to avoid stumbling on a topic that could harm or put both the secondary school community and research participants in any inconveniencies. To achieve this, an explorative study was conducted to test the suitability of the topic and to find out if it is sensitive to the scientific world or not.

To ensure a smooth process of data collection, the researcher first receives an authorization letter from the dean of the faculty of education at the University of Yaounde I. The researcher then presents this authorization letter alongside written permission to the principals of the institutions requesting access to the research sites for data collection. Before the data collection, the researcher explains the purpose of the study and the data collection methods to the participants. She also assured them of the confidentiality and anonymity of the collected data. That is the data will be used only for this.

At the level of data collection, the methodology, techniques, and tools used were chosen with reasons, and further pre-tested during the explorative study before they are finally employed in the study. This was purposeful to avoid straying into the research participant's

privacy in one way or the other. While in the field, the main instrument that was used to give every informant their rights in the informed concerned form. This form was presented in two parts, part A presented information about the research work and B presented information on participants' engagement in the whole exercise. The document was handed to participants and some verbal explanations were made after which they fixed the day and place for the interview according to their convenience. On data analysis, our tools did not give any gap for the participants to put their names, so all responses were unanimous.

3.9. Administration of the instruments

The researcher began the data collection process by visiting the regional delegation of secondary education for the central region. The researcher then proceeded to the respective institution in the sub-division. In each institution visited, the researcher reported to the principal of the institution, who guided her on how to meet the teachers' respondents. The research respondents were informed before the research, and they responded to the questionnaires in the classroom environment.

The sampled respondents were then met personally by the researcher to fill out the questionnaire either in the class or out of the class. Throughout the data collection procedure, respondents' privacy was protected as their anonymity was assured. They were not required to provide sensitive and detailed personal information, like their full name. Instead, they only needed to indicate their sex, age, professional qualification, class teaching, educational system, highest academic diploma, and years of teaching experience.

To further protect respondents' anonymity, they were not required to hand in the questionnaire to the researcher directly but to put the completed questionnaires in a collection box. Through these measures, there was no way for the researcher to identify which set of questionnaires was completed by a respondent, and their anonymity was guaranteed. It took the respondents 10 to 15 minutes to complete a paper-based questionnaire format. Before the teachers started to fill out the questionnaire, the researchers guided them on how to go about it and could ask questions in the process in case they did not understand something. This briefing was part of data quality assurance measures that ensured that accurate and reliable data was gathered.

The researchers also emphasized the importance of honesty and transparency in their responses, encouraging the teachers to provide their genuine feedback. This helped to ensure that the data collected was reflective of the teachers' true opinions and experiences. By

following these data quality assurance measures, the researchers were able to gather valuable and trustworthy information that could be used to inform future decision-making and improvements in the educational system.

Finally, in all the schools visited, the questionnaires were completed immediately and handed to the researcher.

3.9.1 Questionnaire return rate

Schools	Number distributed	Number returned	Return rate (%)
Lycée Bilingue d'Etoug-Ebé	100	98	98
Lycée de Biyem-Assi	95	86	98
College Bilingue la Lumiere	80	74	98
College Jesus-Marie Simbock	55	53	98
Lycée de Minkan	80	72	98
American School-Nkolbisson	50	45	98
Franky Comprehensive High School	70	65	98
Total	530	493	98

Source : field work 2023)

3.10. Method of data analysis and presentation.

Data analysis involved a combined statistical tool used to analyze data obtained from the survey. This study applies the correlation research design, which describes the extent to which the variables are interrelated. In correlation studies, the data collected is used to verify if there is a relationship between two or more variables.

According to Amin (2005), correlational research attempts to determine whether, and to what degree, a relationship exists between two or more quantifiable variables. The relationship can now be used to make predictions. For qualitative data, responses will be coded, summarized, and reported concerning the specific research questions and items in the test as provided by the different groups of teachers' respondents and pupils' performances.

Data will be analyzed using tables, percentages, charts, and mean and standard deviations. Also, the Statistical Package for Social Sciences (SPSS) Version 25.0 for Windows will be used for data analysis. Data analysis in this study consisted of a combined statistical tool to analyze the data obtained from the experiment and the survey. To organize and give meaning

to our data, we used various statistical tools: descriptive statistics, mean, standard deviation, univariate analysis of variances (ANOVA), Pearson Product Moment Correlation Coefficient, and stepwise multiple regression analysis. To describe our data analysis techniques, we will follow the steps by explaining what we did and the statistical tools involved. The quantitative data analysis of this study involved two major steps:

- Data preparation in which data was logged, checked for accuracy, and entered into the computer using SPSS, which is designed to analyze, display, and transform data (Trochim & Donnelly, 2007).
- Data organization was developed and documented into a database structure that integrates the various measures present in the data (Trochim & Donnelly, 2007).

Frequencies of distribution, such as frequency tables, were used to describe multiple variables such as standardized test scores and demographic data. The central tendency of a distribution “is an estimate of the center of a distribution of value” (Trochim & Donnelly, 2007) used to determine and describe the median of sets of values of the data that require this approach. Ranges, which are measures of dispersion in a frequency distribution, were also used to describe the variability of data values. To do this, we summarize the data so that readers can construct a mental picture of the relationship between the data and the phenomena under study.

3.10.1 Representing the Data

The researcher also used tables to report results related to the research questions. Creswell and Plano Clark (2007) note: “These visual forms depict the trends and distributions of the data” and allow readers to better understand the quantitative results of the study in a summarized form. Tufte (2006) adds that most of the methods used for displaying evidence are inherently multimodal, bringing verbal, visual, and quantitative variables together.

A variety of charts, graphs, and figures were used to represent quantitative data analysis in this study, and the researcher also used tables to present findings related to the research questions. The use of visual forms such as charts and graphs can greatly enhance the presentation of quantitative data analysis in a study.

By utilizing these tools, the researcher can effectively communicate trends and distributions in a summarized and easily understandable format. In addition, the integration of verbal, visual, and quantitative variables in the presentation of evidence can provide a comprehensive and nuanced perspective on the research questions being addressed. The

combination of tables and visual representations in this study allowed for a thorough and cohesive presentation of the findings related to the research questions.

Furthermore, the use of graphs and charts helped to highlight key patterns and relationships within the data, making it easier for readers to interpret and draw conclusions. The visual aids also served to support the arguments and claims made in the study, adding a layer of credibility and clarity to the research findings.

Overall, the strategic integration of tables and visual representations proved to be an effective method for conveying complex data clearly and concisely. This approach not only enhanced the overall presentation of the study but also contributed to a more engaging and impactful analysis of the research results.

3.11 Bivariate Descriptive Statistics

According to Amin (2005), a frequent goal in data analysis is to efficiently describe and measure the strength of relationships between variables. In line with this, bivariate descriptive statistics describe the relationship between dependent and independent variables in this research study.

By examining the correlation coefficients and scatter plots generated from the bivariate descriptive statistics, important patterns and trends within the data were easily identified. This enabled a deeper understanding of how the variables interacted with each other and how they influenced the outcomes of the study. Overall, the use of bivariate descriptive statistics added a valuable layer of insight to the research findings and reinforced the importance of visual representations in data analysis.

Furthermore, the bivariate descriptive statistics also allowed for a more nuanced interpretation of the data, revealing potential outliers and anomalies that may have otherwise gone unnoticed. This in-depth analysis helped to uncover underlying relationships that were not immediately apparent, shedding light on potential confounding variables that could impact the results of the study. Additionally, the use of scatter plots provided a visual representation of the data distribution, making it easier to identify any patterns or trends that may exist. By combining both quantitative and visual analyses, a more comprehensive understanding of the data was achieved, ultimately enhancing the overall quality and validity of the research findings.

3.12 Pearson Correlation

The correlation coefficient was used to test our research hypotheses. The purpose was to measure the degree of relationship between the independent variables (continuous professional development) in our research hypotheses and teachers' attitudes towards curriculum change symbolized by the correlation coefficient.

The correlation coefficient according to Amin (2005), this is a simple descriptive statistic that measures the strength of the linear relationship between two variables. It is also a measure of the strength of the association between two variables. The value of the correlation coefficient ranges from -1 for a perfect negative correlation, to +1 for a perfect positive correlation. The degree of relationship between two variables is described by the coefficient of correlation, which indicates the strength of this association.

In this study, to determine existing relationships between two variables (continuous professional development and teachers' attitude towards curriculum change), the researcher used Pearson's r correlation coefficient because the purpose of this study is to predict the dependent variable from the independent variable (Muijs, 2004). By so doing, the Pearson Product Moment Correlation coefficient was used because the data in this study are parametric; that is, its interpretation does depend on the population fitting a parameterized distribution. This means that the quantitative data in this study is interpreted numerically. The researcher also preferred to use parametric statistics because the results of this study can be generalized to a larger population.

$$r_{\mathbf{XY}} = \frac{n(\Sigma XY) - (\Sigma X)(\Sigma Y)}{\sqrt{[n(\Sigma X^2) - (\Sigma X)^2][n(\Sigma Y^2) - (\Sigma Y)^2]}}$$

n = number of paired observations

ΣXY = sum of cross products of X and Y and

ΣX and ΣY = sums of the X and Y scores respectively

ΣX^2 = sum of all the square values of the X scores

ΣY^2 = sum of all the square Y scores.

$(\Sigma X)^2$ = sum of all X scores, this sum squared.

$(\Sigma Y)^2$ = sum of all Y scores, this sum squared.

3.13 Interpreting Pearson's Product Moment Correlation Coefficient

The usefulness of the correlation depends on its size and significance (Muijs, 2004). If reliably differs from 0.00, the P-value is statistically significant, that is, does not result from a chance occurrence, implying that if the same variables were measured on another set of similar subjects, a similar P-value would result. If r achieves significance, it is possible to conclude that the relationship between the two variables was not due to chance. According to Muijs (2004), the size of any correlation is generally evaluated as follows:

Table 17: Description of Correlation Value

Correlation Value	Interpretation
0.00 to 0.10 weak	Weak
0.11 to 0.29 low	Low
0.30 to 0.59 Modest	Modest
0.60 to 0.79 Moderate	Moderate
0.80 to 0.89 strong	Strong
0.90 to 1.00 Very strong	Very Strong

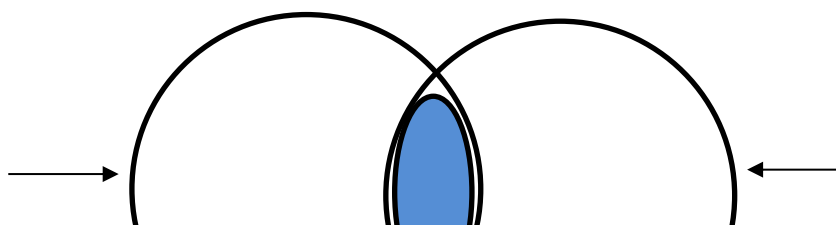
Source: *Field work 2023*

On the other hand, it is important to state that correlation does not imply causation. In this regard, just because one variable relates to another does not mean that changes in one cause change in the other. In other words, other variables may be acting on one or both. related variables and affect them in the same direction. Cause-and-effect may be present, but a correlation does not prove a cause. In this study, the researcher was not interested in verifying if the occurrence of one variable caused or increased the occurrence of the other variable. The researcher was only interested in determining the strength of the correlation between the variables.

3.13.1 Coefficient of Determination (r^2):

The relationship between two variables can be represented by the overlap of two circles representing each variable. If the circles do not overlap, no relationship exists. The area of overlap represents the amount of variance in the dependent (y-variable) that can be explained by the independent (x-variable). The area of overlap called the percent common variance, calculated as $r^2 \cdot 100$

Figure 22: The relationship between the X and Y



(independent Variable) X

Y (Dependent Variable)

Source: (*Amin 2005*)

$$r^2_{xy}$$

3.14 Multiple regression analysis

To gain a full understanding of the nature of continuous professional development, it was important to proceed with a more refined statistical tool (stepwise multiple regression analysis) to see which of our variables emerged as the best predictors of continuous professional development. According to Amin (2005), multiple regression is concerned with the use of many predictor variables to predict a criterion variable.

Correlation and regression analysis are related in the sense that both deal with relationships among variables. Neither regression nor correlation analyses can be interpreted as establishing cause-and-effect relationships. They can only indicate how or to what extent variables are related to each other. The correlation coefficient measures only the degree of linear association between two variables. Any conclusions about a cause-and-effect relationship must be based on the judgment of the analyst.

3.15 Synthesis

This chapter on research methodology dealt with the introduction, research design, area of study, population of study, samples, validity and reliability, instruments, variables, and indicators. The critical examination of this chapter, as shown above, served as a stepping stone for the presentation of results and analysis of data collected from the field.

CHAPTER FOUR
DATA PRESENTATION AND ANALYSIS

This chapter presents the findings of the study. Data collected from the field was analyzed using both descriptive and inferential statistics as already mentioned in the previous chapter. A combined statistical tool was used to analyze data obtained from the survey. For descriptive statistics, percentages, tables, charts, and graphs amongst others were used while for inferential statistics; the student t-test, ANOVA, Pearson Product Moment Correlation Coefficient, and Stepwise Multiple Regression Analysis were applied. The first part begins with an analysis of the different variables with much emphasis and attention on the relationship that exists between the variables. This is followed by the analysis of the background characteristics of teachers' respondents and the results.

4.1 Descriptive Analysis

4.1.1 Responses on the Relationship between Pedagogical Animations and Teachers' attitude Towards Curriculum Change

Table 18: Pedagogic seminars

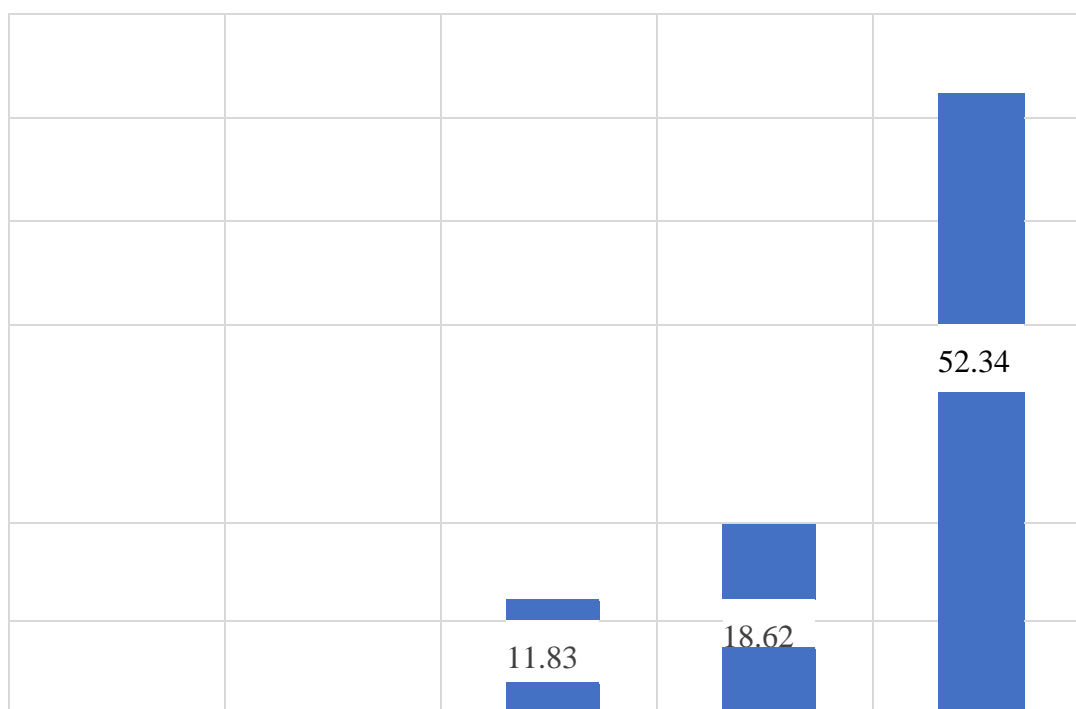
Measure	SD(f/%)	D(f/%)	N(f/%)	A(f/%)	SA(f/%)	Mean	Std.
The school administrators organize seminars for teachers to adapt to curriculum change.	50 (3.79%)	65 (4.91%)	75 (5.66%)	110 (8.31%)	193 (14.57%)	3.64	1.10
The delegation organizes training workshop to introduce ways of Teaching.	30 (2.26%)	45 (3.39%)	60 (4.52%)	100 (7.54%)	258 (19.47%)	3.89	1.03
Interacting and sharing ideas with colleagues helps in assessing our teaching practice.	40 (3.02%)	55 (4.15%)	70 (5.28%)	105 (7.92%)	223 (16.82%)	3.74	1.06
Sharing our teaching experience contribute to our development.	25 (1.89%)	40 (3.02%)	55 (4.15%)	95 (7.16%)	278 (21.00%)	3.98	0.97
The primary focus of the training program is based on the subject matter,	30 (2.26%)	45 (3.39%)	60 (4.52%)	100 (7.54%)	258 (19.47%)	3.89	1.03

technology, curricular update theory and counselling.

Pedagogic seminars are organized regularly in my school	50 (3.79%)	65 (4.91%)	75 (5.66%)	110 (8.31%)	193 (14.57%)	3.64	1.10
MRA	225 6.7%	315 9.4%	395 11.83%	620 18.62%	1403 52.3%	3.79	0.042
						75.8%	

Source: Field survey 2023

Table 18: MRA of participant view on relationship between pedagogical animations and teachers' attitude towards curriculum change



Source: Field survey 2023

In the analysis of the table pertaining to Pedagogic Seminars, which explores teachers' perceptions and attitudes towards this specific aspect of continuous professional development, several key findings emerge. In the first measure, it is evident that a substantial number of teachers are receptive to the idea of school administrators organizing seminars to help them adapt to curriculum changes. A combined 22.88% either agreed or strongly agreed with this

statement, with 14.57% strongly agreeing. The mean score of 3.64 indicates moderate agreement, and the standard deviation of 1.10 suggests some variation in responses. This result suggests that a significant portion of teachers value the role of seminars in facilitating their adjustment to evolving curricular demands.

The second measure reveals a noteworthy level of enthusiasm among teachers for training workshops organized by delegations to introduce innovative teaching methods. An impressive 26.01% either agreed or strongly agreed with this statement, with a remarkable 19.47% strongly agreeing. The mean score of 3.89 indicates a relatively high level of agreement, while the standard deviation of 1.03 suggests that the responses were fairly consistent. This result underscores the positive impact of training workshops in equipping teachers with effective teaching strategies.

For the third measure, a considerable 24.74% of teachers either agreed or strongly agreed that interacting and sharing ideas with colleagues aids in the evaluation of their teaching practices. Among them, 16.82% strongly agreed. The mean score of 3.74 suggests a moderate level of agreement, while the standard deviation of 1.06 indicates some variability in responses. These findings highlight the value of collaborative discussions among teachers in promoting self-assessment and professional growth.

The fourth measure indicates that a substantial 28.16% of respondents either agreed or strongly agreed with the idea that sharing teaching experiences contributes to their development, with a remarkable 21.00% strongly agreeing. The mean score of 3.98 reflects a relatively high level of agreement, and the low standard deviation of 0.97 indicates that responses were quite consistent. This result emphasizes the significance of peer-to-peer knowledge sharing as a catalyst for professional growth.

Regarding the primary focus of the training program, which includes subject matter, technology, curricular updates, theory, and counselling, a considerable 27.01% of respondents agree or strongly agree with this statement. This suggests that the training programs encompass a well-rounded approach that addresses various aspects of teaching. Conversely, only 3.39% express disagreement (1) or strong disagreement (2). The mean score for this statement is 3.89, signifying a moderately positive perception of the comprehensiveness of the training programs.

Finally, in the last measure, 22.88% of teachers either agreed or strongly agreed that pedagogic seminars are regularly organized in their school, with 14.57% strongly agreeing. The mean score of 3.64 indicates moderate agreement, and the standard deviation of 1.10 suggests some variability in responses. This finding implies that a significant portion of teachers

perceives the regular organization of pedagogic seminars in their school positively. In summary, the results demonstrate that teachers generally exhibit a favorable attitude towards pedagogical animations and training activities related to curriculum change. A substantial proportion of respondents express agreement or strong agreement with various aspects of professional development. These findings underscore the importance of ongoing professional development opportunities and collaborative exchanges among educators in promoting effective teaching and adaptation to evolving curricular requirements.

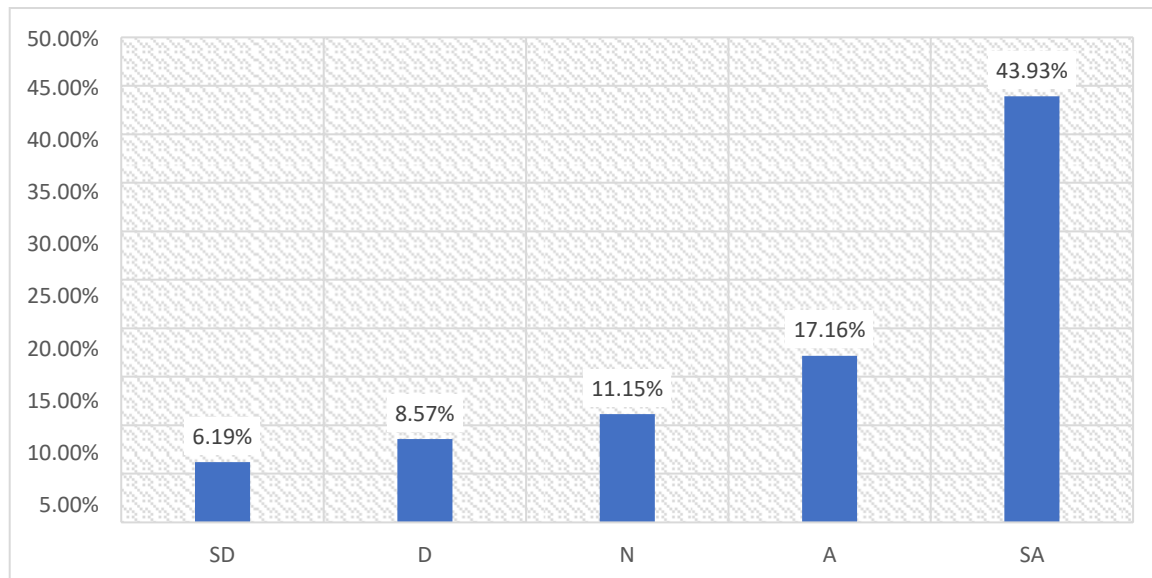
4.1.2 Relationship between pedagogical animation and teacher's attitude towards curriculum change

Table 20: Relationship between pedagogical animation and teacher's attitude towards curriculum change

Measure	SD(f%)	D(f%)	N(f%)	A(f%)	SA(f%)	Mean	Std.
I really enjoy presentation during model lessons	25 (1.89%)	35 (2.61%)	50 (3.72%)	85 (6.30%)	298 (22.17%)	4.07	0.91
Adequate demonstration during model lessons are helpful to teachers	40 (2.98%)	50 (3.72%)	65 (4.81%)	95 (7.03%)	243 (18.01%)	3.81	1.03
I am given opportunities to share my difficulties	40 (2.98%)	55 (4.08%)	70 (5.18%)	105 (7.77%)	223 (16.56%)	3.75	1.05
I am provided with guidance on the subject I teach	30 (2.23%)	45 (3.34%)	60 (4.45%)	100 (7.40%)	258 (19.12%)	3.89	1.03
I feel confident talking to my Colleagues about my difficulties, work's need and support.	35 (2.61%)	50 (3.72%)	65 (4.81%)	95 (7.03%)	238 (17.66%)	3.79	1.04
I feel confident asking help from my colleagues about difficulties	40 (2.98%)	55 (4.08%)	70 (5.18%)	105 (7.77%)	223 (16.56%)	3.75	1.05
MRA	210	290	380	585	1483	3.84	0.049
	6.19%	8.57%	11.15%	17.16%	43.93%	76.8%	

Source: Field survey 2023

Figure 23: MRA showing participants' views on the Relationship between pedagogical animation and teachers' attitudes towards curriculum change



Source: Field survey 2023

The analysis of the Pedagogic animation table sheds light on teachers' perceptions and attitudes toward pedagogic animation, a crucial aspect of their professional development.

In this measure, a significant 22.17% of teachers strongly agree that they really enjoy presentations during model lessons, while an additional 6.30% agree, resulting in a combined agreement rate of 28.47%. The mean score of 4.07 indicates a relatively high level of agreement, suggesting that teachers generally find value in model lessons as a means of professional development. The low standard deviation of 0.91 indicates a relatively consistent agreement among respondents.

For the second measure, 25.04% of teachers either agreed or strongly agreed that adequate demonstrations during model lessons are helpful to teachers. This includes 7.03% who agreed and 18.01% who strongly agreed. The mean score of 3.81 suggests a moderate level of agreement, while the standard deviation of 1.03 indicates that responses were relatively consistent. This result emphasizes the importance of practical demonstrations in aiding teachers in their instructional practices.

In the third measure, a considerable 24.33% of teachers either agreed or strongly agreed that they are given opportunities to share their difficulties, with 16.56% strongly agreeing. The mean score of 3.75 reflects a moderate level of agreement, and the standard deviation of 1.05 suggests some variation in responses. These findings highlight the significance of creating a

supportive environment where teachers feel comfortable discussing their challenges and seeking help.

Furthermore, respondents' confidence in discussing difficulties and seeking help from colleagues is notable. Approximately 24.69% either agree or strongly agree that they feel confident in these aspects, underscoring the importance of peer support. Only 6.33% express disagreement or strong disagreement. The mean score for this statement is 3.79, indicating a moderately positive level of confidence among respondents in seeking help and discussing challenges with colleagues.

Finally, in the last measure, 24.33% of teachers either agreed or strongly agreed that they feel confident asking for help from their colleagues about difficulties, with 16.56% strongly agreeing. The mean score of 3.75 indicates a moderate level of agreement, and the standard deviation of 1.05 suggests some variability in responses. This finding implies that many teachers value the support and expertise of their colleagues when facing challenges in their teaching practices.

In summary, the analysis of the Pedagogic Animation table reveals a generally positive outlook among respondents regarding various aspects of pedagogic animation in their professional development. The mean scores consistently fall within the range of moderate agreement, indicating that teachers appreciate the benefits of model lessons, demonstrations, and collaborative learning experiences. These findings emphasize the role of pedagogic animation in enhancing teaching practices and fostering a supportive educational environment.

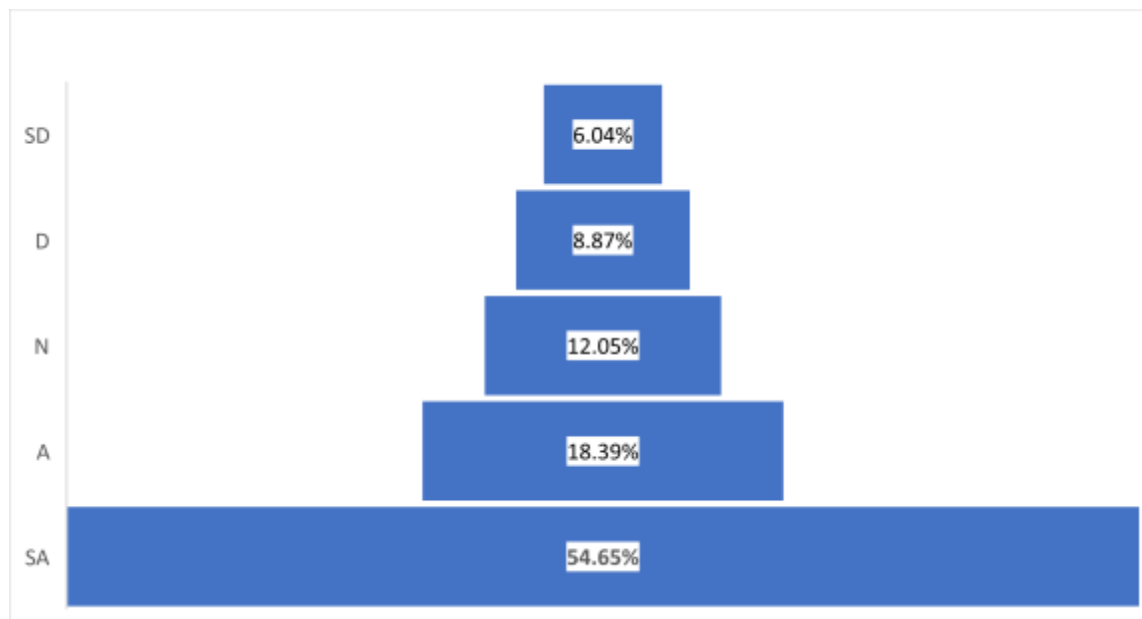
4.1.3 Showing the relationship between training in teaching techniques and teacher's attitudes towards curriculum change.

Table 21: Showing the relationship between training in teaching techniques and teacher's attitudes towards curriculum change.

Measure	SD(f/%)	D(f/%)	N(f/%)	A(f/%)	SA(f/%)	Mean	Std.	
I have been trained to make students have a mastery of the subject I teach	40 (3.02%)	55 (4.15%)	75 (5.66%)	110 (8.31%)	213 (15.95%)	3.78	1.09	
I have learned to engage student's attention in learning during classes	30 (2.26%)	45 (3.39%)	65 (4.91%)	100 (7.54%)	253 (18.93%)	3.87	1.01	
I have been trained to make students participate in the construction of knowledge during lessons	40 (3.02%)	55 (4.15%)	70 (5.28%)	105 (7.92%)	223 (16.66%)	3.75	1.04	
I have been trained to use various teaching strategies to make learning easy for students	30 (2.26%)	45 (3.39%)	60 (4.52%)	100 (7.54%)	258 (19.27%)	3.89	1.03	
I participate in In-service training meeting to improve on my teaching skills	40 (3.02%)	55 (4.15%)	75 (5.66%)	110 (8.31%)	213 (15.95%)	3.78	1.09	
I usually give my students take home assignment to facilitate their learning skills	20 (1.50%)	35 (2.63%)	55 (4.15%)	85 (6.40%)	298 (22.29%)	4.07	0.91	
	MRA	200	295	400	610	1460	3.85	0.060
		6.04%	8.87%	12.05%	18.39%	54.65%	77%	

Source: Field work 2023

Figure 24: MRA of participants view on the relationship between training in teaching techniques and teacher's attitude towards curriculum change.



Source: Field work 2023

Beginning with the statement "I have been trained to make students have a mastery of the subject I teach," the results indicate a positive trend. A significant proportion of respondents, approximately 24.26%, agreed and strongly agreed that they have received training to enhance students' mastery of the subject. Conversely, only 7.17% expressed disagreement or strong disagreement. The mean score for this statement is 3.78, indicating a moderately positive perception among respondents regarding their training in this aspect.

Regarding the ability to engage students' attention in learning during classes, the responses highlight a noteworthy positive sentiment. A substantial 26.47% of respondents agree or strongly agree that they have received training to effectively engage students in the learning process, emphasizing the importance of student engagement. A smaller proportion, 5.65%, express disagreement or strong disagreement. The mean score for this statement is 3.8, indicating a relatively strong consensus among respondents regarding the effectiveness of their training in this area.

The statement "I have been trained to make students participate in the construction of knowledge during lessons" also garners positive responses. Approximately 24.58% of respondents agree or strongly agree that they have received training in this aspect, highlighting the significance of involving students in knowledge creation. Conversely, 7.17% express disagreement or strong disagreement. The mean score for this statement is 3.75, indicating a

moderately positive perception of the training's impact on student participation in the learning process.

The analysis also reveals that teachers believe they have been trained to use various teaching strategies to make learning easy for students. A notable 26.81% agree or strongly agree with this statement, emphasizing the importance of versatile teaching approaches. A smaller proportion, 5.65%, express disagreement or strong disagreement. The mean score for this statement is 3.89, indicating a moderately positive perception of the training's effectiveness in enhancing teaching strategies.

Furthermore, respondents' participation in in-service training meetings to improve their teaching skills is positively perceived. Approximately 24.26% agree or strongly agree that they participate in such meetings, indicating a commitment to professional development. Only 7.17% express disagreement or strong disagreement. The mean score for this statement is 3.78, signifying a moderately positive attitude toward engaging in in-service training.

Lastly, the practice of giving students take-home assignments to facilitate their learning skills is recognized positively by respondents. A significant 28.69% agree or strongly agree that they incorporate take-home assignments, underscoring their commitment to enhancing students' learning experiences. Conversely, 4.13% express disagreement or strong disagreement. The mean score for this statement is 4.07, indicating a moderately positive perception of the practice's effectiveness.

In summary, the findings from the Training on Teaching Techniques table above demonstrate that teachers generally hold positive views regarding the training they receive to enhance their teaching methods. The mean scores consistently fall within the range of moderate agreement, indicating that teachers value the training's impact on student mastery, engagement, participation, and the use of diverse teaching strategies. These findings highlight the importance of ongoing professional development in improving teaching practices and ultimately benefiting students' learning experiences.

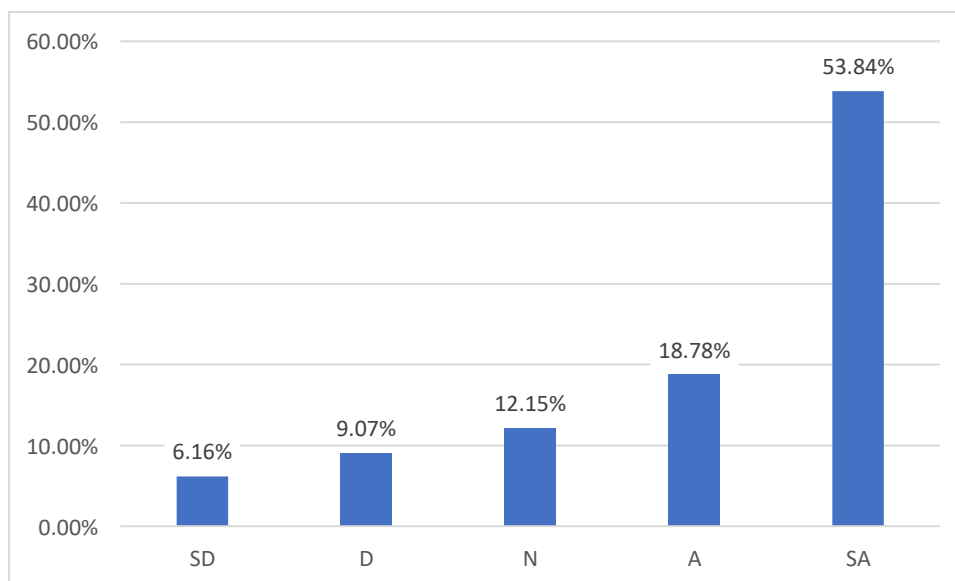
4.1.4 Responses on the relationship between training in remediation techniques and teacher's attitude towards curriculum change.

Table 22. Responses on the relationship between training her's attitude towards curriculum change.

Measure	SD(f/%)	D(f/%)	N(f/%)	A(f/%)	SA(f/%)	Mean	Std.
I have been trained to carryout remedial classes for students	40 (3.02%)	55 (4.25%)	75 (5.68%)	110 (8.43%)	213 (16.29%)	3.78	1.09
After every assessment I give remedial lessons to students in need for them to improve	30 (2.29%)	45 (3.45%)	60 (4.58%)	100 (7.63%)	258 (19.70%)	3.89	1.03
I have been trained to analyze learner's Need	40 (3.02%)	55 (4.25%)	70 (5.35%)	105 (8.02%)	223 (17.06%)	3.75	1.04
Remedial classes are important for both students who have passed the sequence lessons and for those who have not passed	20 (1.53%)	35 (2.68%)	55 (4.20%)	85 (6.49%)	298 (22.80%)	4.07	0.91
I have been trained on how to re-evaluate Students	40 (3.02%)	55 (4.25%)	75 (5.68%)	110 (8.43%)	213 (16.29%)	3.78	1.09
Remedial classes help to improve students understanding	30 (2.29%)	45 (3.45%)	60 (4.58%)	100 (7.63%)	258 (19.70%)	3.89	1.03
MRA	200	295	395	610	1423	3.86	0.060
	6.16%	9.07%	12.15%	18.78%	53.84%	77.2%	

Source: Field work 2023

Figure 25: MRA on Participants' view on the relationship between training in remediation techniques



Source: *Field work 2023*

However, perspectives regarding their training in implementing remediation strategies for students. Starting with the statement "I have been trained to carry out remedial classes for students," the results indicate a positive trend. A considerable proportion of respondents, approximately 24.72%, agree (4) or strongly agree (5) that they have received training to conduct remedial classes effectively, emphasizing the importance of additional support for struggling students. Conversely, only 7.27% express disagreement (1) or strong disagreement (2). The mean score for this statement is 3.78, indicating a moderately positive perception among respondents regarding their training in this area.

Concerning the practice of providing remedial lessons to students after every assessment, the responses reveal a strong positive sentiment. A significant 27.33% of respondents agree (4) or strongly agree (5) that they offer remedial lessons to students, aiming to help them improve their understanding. A smaller proportion, 5.74%, express disagreement (1) or strong disagreement (2). The mean score for this statement is 3.89, indicating a relatively robust consensus among respondents regarding the implementation of post-assessment remediation.

The statement "I have been trained to analyze learners' needs" garners positive responses. Approximately 25.2% of respondents agree (4) or strongly agree (5) that they have received training to analyze the needs of their students, emphasizing the importance of individualized

support. Conversely, 7.27% express disagreement (1) or strong disagreement (2). The mean score for this statement is 3.75, indicating a moderately positive perception of the training's impact on the analysis of learners' needs.

Moreover, the practice of conducting remedial classes for both students who have passed the sequence lessons and those who have not is positively perceived by teachers. A substantial 29.29% agree (4) or strongly agree (5) that they implement remedial classes for both categories of students, highlighting an inclusive approach to academic support. Only 4.21% express disagreement (1) or strong disagreement (2). The mean score for this statement is 4.07, signifying a moderately positive attitude toward providing remediation for all students.

Teachers also believe they have been trained on how to re-evaluate students. Approximately 24.72% agree (4) or strongly agree (5) that they have received training in this aspect, underlining the importance of ongoing assessment to track student progress. Conversely, 7.2% express disagreement (1) or strong disagreement (2). The mean score for this statement is 3.78, indicating a moderately positive perception of the training's effectiveness in re-evaluating students.

Lastly, the findings reveal that teachers recognize the positive impact of remedial classes on improving students' understanding. A substantial 27.33% agree (4) or strongly agree (5) that remedial classes are effective in enhancing students' comprehension, highlighting their value as an educational intervention. Conversely, 5.7% express disagreement (1) or strong disagreement (2). The mean score for this statement is 3.89, indicating a relatively strong consensus among respondents regarding the effectiveness of remedial classes.

In summary, the results from the Training on Remediation Techniques table demonstrate that teachers generally hold positive views regarding their training and practices related to providing remediation for students. The mean scores consistently fall within the range of moderate agreement, indicating that teachers value the training's impact on their ability to conduct remedial classes, offer post-assessment support, analyze student needs, and re-evaluate student progress. These findings underscore the importance of personalized support and continuous assessment in promoting student learning and academic success.

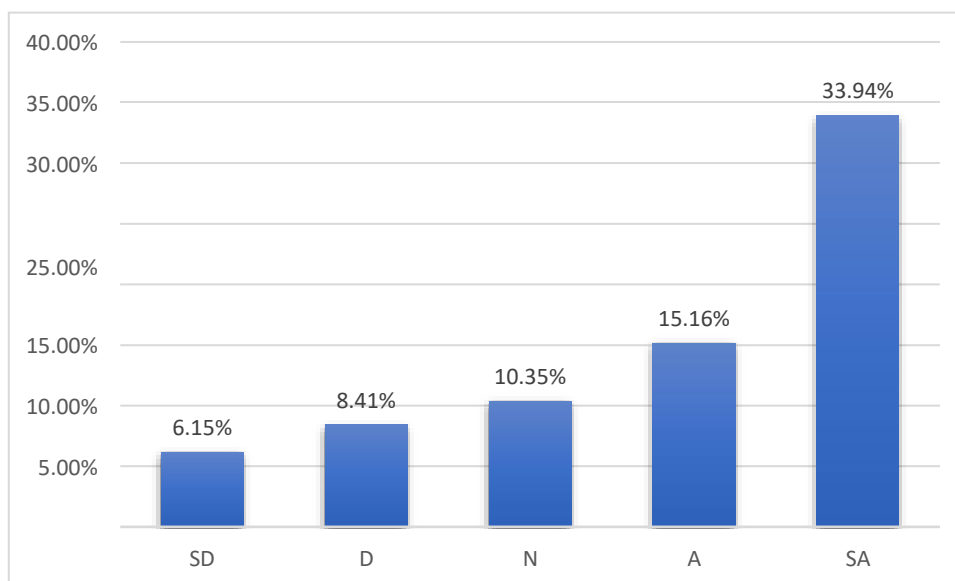
4.1.5 Responses on the relationship between Support and Resources and Teachers' Attitudes toward Curriculum change.

Table 23: Responses on the relationship between Support and Resources and Teachers' Attitudes toward Curriculum change

Measure	SD(f/%)	D(f/%)	N(f/%)	A(f/%)	SA(f/%)	Mean	Std.
The school provides adequate resources(e.g.,textbooks, teaching materials, technology) to support curriculum changes.	45 (3.41%)	60 (4.54%)	75 (5.68%)	105 (7.94%)	208 (15.77%)	3.71	1.06
I have access to necessary teaching materials and resources to effectively implement the new curriculum.	35 (2.65%)	50 (3.78%)	65 (4.92%)	95 (7.20%)	248 (18.80%)	3.85	1.02
The school offers financial support or incentives for teachers to attend external training or workshops related to curriculum change.	30 (2.27%)	45 (3.41%)	60 (4.54%)	100 (7.57%)	258 (19.59%)	3.89	1.03
I receive ongoing support and guidance from school administrators or mentors to implement curriculum changes effectively.	45 (3.41%)	60 (4.54%)	75 (5.68%)	105 (7.94%)	208 (15.77%)	3.71	1.06
The school allocates dedicated time for collaborative planning and sharing best practices among teachers to support curriculum change initiatives.	50 (3.78%)	65 (4.92%)	75 (5.68%)	110 (8.33%)	193 (14.65%)	3.64	1.10
MRA	205 6.15%	280 8.41%	345 10.35%	505 15.16%	1115 33.94%	3.76 75.2%	0.028

Source:Field work 2023

Figure 26: MRA on participants view of the Relationship between Support and resources and teachers' attitudes toward curriculum change.



Source:Field work 2023

The analysis of the Support and resources table provides insights into how teachers perceive the availability of support and resources to facilitate curriculum changes. Beginning with the statement "The school provides adequate resources (e.g., textbooks, teaching materials) to support curriculum changes," the results indicate a relatively positive perception among teachers. A substantial 23.7% agree (4) or strongly agree (5) that their schools provide sufficient resources to support curriculum changes, emphasizing the importance of material support in the implementation of new curricula. Conversely, only 7.9% express disagreement (1) or strong disagreement (2). The mean score for this statement is 3.7, suggesting a moderately favourable perception among respondents regarding resource provision by their schools.

Regarding the statement "I have access to necessary teaching materials and resources to effectively implement the new curriculum," the responses reveal a somewhat less optimistic view. Approximately 26% agree (4) or strongly agree (5) that they have access to the required teaching materials and resources, indicating room for improvement in resource accessibility. On the contrary, 6.4% express disagreement (1) or strong disagreement (2). The mean score for this statement is 3.8, suggesting a relatively neutral stance among respondents concerning the availability of essential teaching materials.

In terms of financial support or incentives for attending external training or workshops related to curriculum change, the findings highlight mixed opinions. About 27.2% agree (4) or strongly agree (5) that their schools offer financial support or incentives for such training,

underscoring the potential benefits of investing in professional development. Conversely, 5.6% express disagreement (1) or strong disagreement (2). The mean score for this statement is 3.8, indicating a relatively neutral perception among teachers regarding financial support for external training.

Furthermore, the statement "I receive ongoing support and guidance from school administrators or mentors to implement curriculum changes effectively" reveals varying perspectives. A moderate 23.7% agree (4) or strongly agree (5) that they receive ongoing support and guidance, emphasizing the importance of leadership and mentorship in curriculum implementation. Conversely, 7.9% express disagreement (1) or strong disagreement (2). The mean score for this statement is 3.7, indicating a moderately positive perception of the support and guidance provided by school administrators or mentors.

Lastly, the results for the statement "The school allocates dedicated time for collaborative planning and sharing best practices among teachers to support curriculum change initiatives" indicate a somewhat positive view. Approximately 22.9% agree (4) or strongly agree (5) that dedicated time for collaborative planning is allocated, emphasizing the value of collaborative efforts in curriculum improvement. Conversely, 8.7% express disagreement (1) or strong disagreement (2). The mean score for this statement is 3.6, indicating a moderately favorable perception of the school's efforts to promote collaboration among teachers for curriculum change initiatives.

In summary, the findings from the Support and resources survey suggest that teachers generally hold moderately positive views regarding the support and resources available to them for curriculum changes. While there is agreement regarding the adequacy of resources provided by schools and the importance of ongoing support and collaborative planning, there is room for improvement in terms of resource accessibility and financial incentives for external training. These results highlight the significance of continuous support, resource allocation, and collaboration in facilitating successful curriculum changes in schools.

4.1.6 Teachers' attitude towards curriculum change.

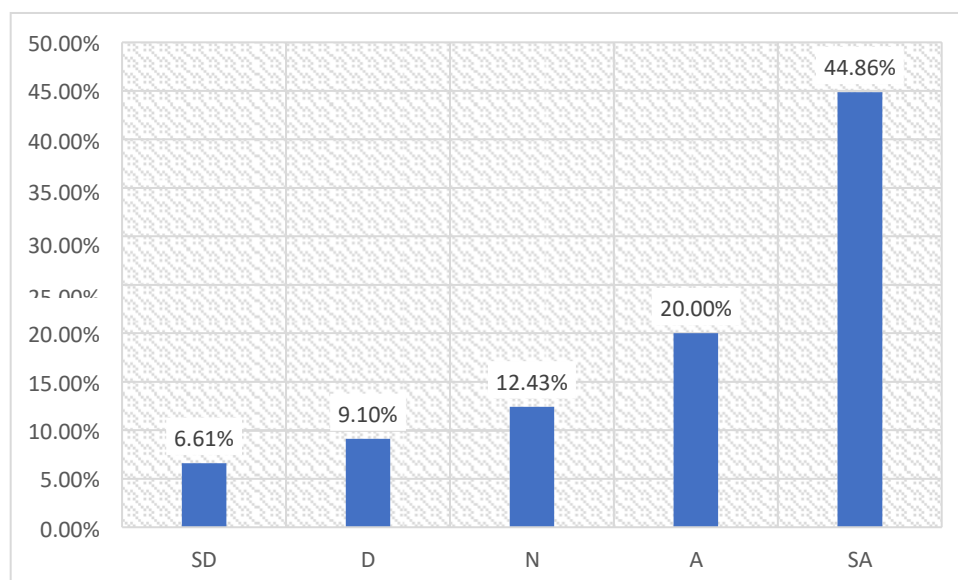
Table 19: Teachers' attitude towards curriculum change.

Measure	SD(f/D(f/%))	N(f/%)	A(f/%)	SA(f/%)	Mean	Std.
Implementing new teaching method come with much workloads	15 25 (1.11 (1.85%))	40 (2.96%)	80 (5.92%)	333 (24.65%)	4.15	0.94
CPD training is usually too bulky to facilitate adaptation to Change	40 55 (2.96 (4.07%))	80 (5.92%)	110 (8.15%)	208 (15.40%)	3.78	1.08
Change usually helps to improve unsatisfactory situation at my school	25 35 (1.85 (2.59%))	50 (3.70%)	85 (6.30%)	298 (22.05%)	4.07	0.91
Most schools staff see change like something difficult to implement	40 55 (2.96 (4.07%))	70 (5.18%)	105 (7.75%)	223 (16.53%)	3.75	1.05
I usually hesitate to try new ideas	40 55 (2.96 (4.07%))	75 (5.55%)	110 (8.15%)	213 (15.77%)	3.78	1.09
I am encouraged to do research on my lessons	35 50 (2.59 (3.70%))	65 (4.81%)	95 (7.03%)	248 (18.35%)	3.85	1.02
I find myself avoiding changes that would benefit me	40 55 (2.96 (4.07%))	70 (5.18%)	105 (7.75%)	223 (16.53%)	3.75	1.05
Most changes are somehow irritating	25 35 (1.85%)	50 (3.70%)	85 (6.30%)	298 (22.05%)	4.07	0.91
I am monitored and guided to make sure I properly cover the syllabus no matter the work load	30 45 (2.22%)	60 (4.44%)	100 (7.41%)	258 (19.07%)	3.89	1.03
Resource materials to handle changes in the curriculum are not always easy to understand	45 60 (3.33%)	75 (5.55%)	105 (7.75%)	208 (15.40%)	3.71	1.06

Curriculum change comes with much research and new ideas that frustrate me	35	50	65	95	248	3.85	1.02
	(2.59%)	(3.70%)	(4.81%)	(7.03%)	(18.35%)		
I usually resist change	40	55	75	110	213	3.78	1.09
	(2.96%)	(4.07%)	(5.55%)	(8.15%)	(15.77%)		
MRA	400	550	750	1210	2663	3.86	0.062
	6.61%	9.10%	12.43%	20.00%	44.86%	77.2%	

Source: *Field work 2023*

Figure 27: MRA of participants' view on teachers' attitudes towards curriculum change



Source: *Field work 2023*

The analysis of teachers' attitudes towards curriculum change, as reflected in the "Teachers' Attitude Towards Curriculum Change" table above, provides insights into how educators perceive and respond to changes in the educational framework. Starting with the statement "Implementing new teaching methods comes with much workload," the results reveal a significant concern among teachers. A notable 24.6% strongly agree that adopting new teaching methods increases their workload, while an additional 5.9% agree. This collective agreement underscores the apprehension that educators associate with adjusting to new instructional techniques. The mean score for this statement is 4.1, indicating a strong consensus among respondents regarding the substantial workload accompanying curriculum changes.

The statement "continuous professional" is usually too bulky to facilitate adaptation to change" also elicits a noteworthy response. A substantial 15.4% strongly agree with this statement, while 8.1% agree. These figures reflect the perception that the format and content of in-service training may not effectively aid educators in adapting to curricular changes. The mean score for this statement is 3.7, suggesting a relatively high level of agreement among respondents concerning the challenges posed by the bulkiness of training.

On a more positive note, the statement "Change usually helps to improve unsatisfactory situations at my school" garners a moderately favorable response. Approximately 22.5% strongly agree (5) with this statement, and 6.3% agree (4). These findings indicate that a considerable portion of teachers acknowledge the potential benefits of change in addressing unsatisfactory situations within the school environment. The mean score for this statement is 4.1, suggesting a relatively positive attitude among respondents towards the constructive role of change.

However, the statement "Most school staff see change as something difficult to implement" highlights a less optimistic perspective. A substantial 16.5% strongly agree that many colleagues perceive change as challenging, while 7.7% agree. These responses underscore the prevailing perception of resistance or apprehension among school staff towards implementing change. The mean score for this statement is 4.0, indicating a relatively high level of agreement regarding the perceived difficulty of change implementation.

The statement "I usually hesitate to try new ideas" reflects a cautious stance among teachers. Approximately 8.1% agree, while 15.7% strongly agree that they tend to hesitate when it comes to adopting new ideas. These findings suggest that a significant proportion of educators may be inclined to maintain familiar teaching practices rather than embracing innovative approaches. The mean score for this statement is 3.7, indicating a moderate level of agreement regarding hesitancy towards new ideas.

Shifting to the statement "I am encouraged to do research on my lessons," the results emphasize the role of encouragement in fostering a research-oriented mindset among teachers. A notable 7.3% agree, and 18.3% strongly agree that they receive encouragement for lesson research. These findings highlight the importance of creating an environment that promotes educational research. The mean score for this statement is 3.8, indicating a relatively positive perception of the encouragement provided for lesson research.

The statement "I find myself avoiding changes that would benefit me" reveals a somewhat mixed response. While 7.7% agree and 16.3% strongly agree that they avoid beneficial changes,

a substantial 31.4% disagree or strongly disagree. These findings suggest a degree of ambivalence regarding the willingness to embrace changes that could be personally advantageous. The mean score for this statement is 3.7, indicating a moderately neutral stance among respondents.

Addressing the statement "Most changes are somehow irritating," the results suggest a prevalent perception among teachers. A notable 22.5% strongly agree with this statement, while 6.3% agree. These findings reflect the prevailing view that many changes are perceived as irritating within the educational context. The mean score for this statement is 4.0, indicating a relatively high level of agreement regarding the irritations associated with changes.

Turning to the statement "I am monitored and guided to make sure I properly cover the syllabus no matter the workload," the findings highlight the importance of monitoring and guidance in managing curriculum-related workloads. A significant 7.4% agree, and 19.0% strongly agree that they receive monitoring and guidance for syllabus coverage. These responses underscore the value of structured support in maintaining curriculum fidelity. The mean score for this statement is 3.8, indicating a moderately positive perception of monitoring and guidance.

In summary, the analysis of teachers' attitudes towards curriculum change suggests a complex landscape of perceptions and opinions. Educators express substantial concerns regarding increased workloads and the bulkiness of continuous professional development while acknowledging the potential benefits of change. Additionally, there is a notable perception of resistance among some school staff towards change. Encouragement for research, monitoring, and guidance are seen as positive factors, but there is also hesitancy towards new ideas, avoidance of beneficial changes, and irritation associated with many changes. Clear and understandable resource materials are identified as crucial for effective curriculum implementation. These findings underscore the multifaceted nature of teachers' attitudes towards curriculum change, emphasizing the need for tailored strategies to address their concerns and promote a positive outlook on educational innovation.

4.1.7 Variability of teachers' attitude towards curriculum change by gender distribution.

Table 20: Variability of teachers' attitude towards curriculum change by gender distribution.

Measure	SD/D (Male)	N (Male)	A/SA (Male)	SD/D (Female)	N (Female)	A/SA (Female)
Implementing new teaching methods comes with much workload.	8 (4.15%)	20 (10.36%)	165 (85.49%)	32 (10.66%)	20 (6.66%)	248 (82.67%)
CPD is usually too bulky to facilitate adaptation to change.	50 (24.04%)	47 (22.60%)	88 (42.31%)	45 (13.84%)	33 (10.18%)	157 (48.98%)
Change usually helps to improve unsatisfactory situations at my school.	23 (9.08%)	19 (7.49%)	147 (57.92%)	23 (7.72%)	31 (10.41%)	244 (81.86%)
Most school staff see change as something difficult to implement.	48 (21.51%)	33 (14.81%)	119 (53.35%)	34 (14.25%)	37 (16.59%)	152 (68.16%)
I usually hesitate to try new ideas.	45 (21.12%)	33 (15.51%)	183 (85.37%)	50 (19.11%)	37 (14.12%)	163 (62.23%)
I am encouraged to research my lessons.	31 (12.50%)	25 (10.10%)	163 (65.68%)	54 (17.75%)	40 (13.16%)	154 (50.58%)
I find myself avoiding changes that would benefit me.	45 (21.12%)	33 (15.51%)	183 (85.37%)	50 (19.11%)	37 (14.12%)	163 (62.23%)
Most changes are somehow irritating.	23 (9.20%)	19 (7.49%)	147 (58.52%)	23 (7.72%)	31 (10.41%)	244 (81.86%)
I am monitored and guided to make sure i properly cover the syllabus no matter the workload.	20 (9.64%)	21 (9.55%)	156 (70.81%)	56 (20.65%)	39 (14.39%)	140 (51.50%)

Resource materials to handle changes in the curriculum are not always easy to understand	43 (20.67%)	26 (12.50%)	97 (46.82%)	62 (23.85%)	49 (18.85%)	97 (37.17%)
curriculum change comes with much research and new ideas that frustrate me	31 (12.50%)	25 (10.10%)	163 (65.68%)	54 (17.75%)	40 (13.16%)	154 (50.58%)
I usually resist change	45 (21.12%)	33 (15.51%)	183 (85.37%)	50 (19.11%)	37 (14.12%)	163 (62.23%)

Source: *Field work 2023*

When considering the statement "Implementing new teaching methods come with much workload," the majority of both male and female teachers express agreement, with a higher percentage of female teachers (82.67%) in agreement compared to their male counterparts (85.49%). This suggests that both genders generally acknowledge the increased workload associated with new teaching methods, but females tend to agree slightly more strongly.

Regarding the statement "continuous professional development is usually too bulky to facilitate adaptation to change," female teachers (48.98%) express a higher level of agreement compared to male teachers (42.31%). This indicates that female teachers are more likely to find in-service training as cumbersome in facilitating their adaptation to curriculum changes.

In terms of the statement "Change usually helps to improve unsatisfactory situations at my school," female teachers (81.86%) strongly agree to a greater extent than male teachers (57.92%). This suggests that female teachers have a more positive outlook on the potential benefits of curriculum changes in addressing unsatisfactory situations at their schools.

The statement "Most school staff see change as something difficult to implement" shows that both genders express varying degrees of agreement, with a slightly higher percentage of female teachers (68.16%) agreeing compared to male teachers (53.35%). This implies that female teachers may perceive a higher degree of difficulty in implementing changes at their schools.

Concerning the statement "I usually hesitate to try new ideas," female teachers (62.23%) agree to a greater extent than male teachers (85.37%). This indicates that female teachers tend to exhibit a higher degree of hesitation in embracing new ideas.

The table provides insights into the variability of teachers' attitudes towards curriculum change by gender. It suggests that female teachers may have a stronger belief in the potential benefits of curriculum changes and are more likely to find Cpd training as challenging. On the other hand, male teachers may exhibit a slightly higher acknowledgment of the workload associated with new teaching methods. These findings can help in tailoring support and training programs to address the specific concerns and needs of teachers based on their gender, ultimately promoting more effective curriculum change initiatives.

4.1.8 Variability of teachers' attitude towards curriculum change by age group.

Table 21: Variability of teachers' attitude towards curriculum change by age group

Measure	<30 (N=100)	30-39 (N=150)	40-49 (N=120)	50-59 (N=90)	60+ (N=33)
Implementing new teaching methods come with much workload.	5 (5.00%)	18 (12.00%)	16 (13.33%)	9 (10.00%)	8 (24.24%)
Cpd training is usually too bulky to facilitate adaptation to Change.	13 (13.00%)	35 (23.33%)	29 (24.17%)	15 (16.67%)	5 (15.15%)
Change usually helps to improve Unsatisfactory situations at my School.	9 (9.00%)	28 (18.67%)	22 (18.33%)	16 (17.78%)	4 (12.12%)
Most school staff see change as something difficult to implement.	14 (14.00%)	28 (18.67%)	25 (20.83%)	14 (15.56%)	6 (18.18%)
I usually hesitate to try new ideas.	10 (10.00%)	30 (20.00%)	26 (21.67%)	20 (22.22%)	7 (21.21%)

Source: *Field work 2023*

I am encouraged to do research on my Lessons.	10 (10.00%)	23 (15.33%)	21 (17.50%)	23 (25.56%)	7 (21.21%)
I find myself avoiding changes that would benefit me.	11 (11.00%)	25 (16.67%)	22 (18.33%)	19 (21.11%)	6 (18.18%)
Most changes are somehow Irritating.	9 (9.00%)	28 (18.67%)	22 (18.33%)	16 (17.78%)	5 (15.15%)
I am monitored and guided to make sure I properly cover the syllabus no matter the workload.	9 (9.00%)	29 (19.33%)	29 (24.17%)	18 (20.00%)	6 (18.18%)
Resource materials to handle changes in the curriculum are not always easy to understand.	6 (6.00%)	29 (19.33%)	31 (25.83%)	19 (21.11%)	5 (15.15%)
Curriculum change comes with much research and new ideas that frustrate me.	10 (10.00%)	23 (15.33%)	21 (17.50%)	23 (25.56%)	6 (18.18%)
I usually resist change.	11 (11.00%)	25 (16.67%)	22 (18.33%)	19 (21.11%)	6 (18.18%)

Source: *Field work 2023*

The table above illustrates the variability in teachers' attitudes towards curriculum change across different age groups. The data is segmented into five age groups: <30, 30-39, 40-49, 50-59, and 60+. The numbers represent the count of teachers within each age group who express agreement with the statements related to curriculum change. These findings allow us to observe how attitudes towards curriculum change may differ based on the age of the teachers.

In general, younger teachers (<30) and the oldest group (60+) show higher agreement that implementing new teaching methods results in increased workload. This may suggest that younger teachers, who are often less experienced, are more aware of the challenges associated with adopting new teaching methods, while older teachers may perceive the workload due to their accumulated experience.

Teachers in the 30-39 age group exhibit the highest agreement that Cpd training can be overwhelming, with 23.33% agreeing. This suggests that teachers in their thirties might find adapting to change through training to be more challenging compared to their younger or older counterparts.

Younger teachers (<30) and those in their fifties (50-59) express a higher degree of agreement that curriculum changes lead to improvements at their schools. This suggests that both early-career teachers and more experienced educators perceive the potential benefits of change, possibly due to their optimism or accumulated experience.

Teachers in the 40-49 age group exhibit the highest level of agreement that implementing change is challenging. This suggests that teachers in their forties may perceive a higher level of difficulty compared to other age groups.

Younger teachers (<30) express a higher degree of hesitation in trying new ideas compared to other age groups, indicating that early-career educators might be more cautious about embracing innovation.

Teachers in their fifties (50-59) and those aged 60+ express the highest levels of agreement that they are encouraged to conduct research on their lessons. This indicates that more experienced educators might feel greater motivation to engage in research activities.

Younger teachers (<30) and those in their fifties (50-59) show a higher tendency to resist change. This suggests that early-career teachers and those with more extensive experience may be more resistant to curriculum changes.

4.1.9 Teachers attitude towards curriculum change by Academic Diploma.

Table 22: Teachers' Attitude Towards Curriculum Change by Academic Diploma

Measure	SD (%)	D (%)	N (%)	A (%)	SA (%)
Degree (N=290)					
Implementing new teaching methods come with much workload.	1.04	3.11	10.36	28.50	56.99
Cpd training is usually too bulky to facilitate adaptation to change.	2.96	4.07	5.92	8.15	15.40
Change usually helps to improve unsatisfactory situations at my school.	1.85	2.59	3.70	6.30	22.05
Most school staff see change as something difficult to implement.	2.96	4.07	5.18	7.75	16.53
I usually hesitate to try new ideas.	2.96	4.07	5.55	8.15	15.77
I am encouraged to do research on my lessons.	2.59	3.70	4.81	7.03	18.35
I find myself avoiding changes that would benefit me.	2.96	4.07	5.18	7.75	16.53
Most changes are somehow irritating.	1.85	2.59	3.70	6.30	22.05
I am monitored and guided to make sure I properly cover the syllabus no matter the workload.	2.22	3.33	4.44	7.41	19.07
Resource materials to handle changes in the curriculum are not always easy to understand.	3.33	4.44	5.55	7.75	15.40
Curriculum change comes with much research and new ideas that frustrate me.	2.59	3.70	4.81	7.03	18.35
I usually resist change.	2.96	4.07	5.55	8.15	15.77

Measure	SD(%)	D (%)	N (%)	A (%)	SA(%)
Master 1 (N=80)					
Implementing new teaching methods come with much workload.	3.75	7.50	6.25	15.00	67.50
CPD training is usually too bulky to facilitate adaptation to change.	6.25	5.00	6.25	12.50	70.00
Change usually helps to improve unsatisfactory situations at my school.	1.25	5.00	5.00	7.50	81.25
Most school staff see change as something difficult to implement.	8.75	5.00	6.25	5.00	75.00
I usually hesitate to try new ideas.	6.25	8.75	11.25	16.25	57.50
I am encouraged to do research on my lessons.	7.50	5.00	10.00	12.50	65.00
I find myself avoiding changes that would benefit me.	5.00	6.25	12.50	10.00	66.25
Most changes are somehow irritating.	2.50	3.75	7.50	10.00	76.25
I am monitored and guided to make sure I properly cover the syllabus no matter the workload.	5.00	6.25	6.25	12.50	65.00
Resource materials to handle changes in the curriculum are not always easy to understand.	8.75	6.25	10.00	8.75	66.25
Curriculum change comes with much research and new ideas that frustrate me.	6.25	5.00	10.00	12.50	66.25
I usually resist change.	5.00	6.25	12.50	10.00	66.25

Measure

SD D (%) N (%) A (%) SA (%)
(%)

Master/DEA (N=40)

Implementing new teaching methods come with much workload.	3.75	7.50	6.25	15.00	67.50
In-service training is usually too bulky to facilitate adaptation to change	6.25	5.00	6.25	12.50	70.00
Change usually helps to improve unsatisfactory situations at my school.	1.25	5.00	5.00	7.50	81.25

Most school staff see change as something difficult to implement.	8.75	5.00	6.25	5.00	75.00
I usually hesitate to try new ideas.	6.25	8.75	11.25	16.25	57.50
I am encouraged to do research on my lessons.	7.50	5.00	10.00	12.50	65.00
I find myself avoiding changes that would benefit me.	5.00	6.25	12.50	10.00	66.25
Most changes are somehow irritating.	2.50	3.75	7.50	10.00	76.25
I am monitored and guided to make sure I properly cover the syllabus no matter the workload.	5.00	6.25	6.25	12.50	65.00
Resource materials to handle changes in the curriculum are not always easy to understand.	8.75	6.25	10.00	8.75	66.25
Curriculum change comes with much research and new ideas that frustrate me.	6.25	5.00	10.00	12.50	66.25
I usually resist change.	5.00	6.25	12.50	10.00	66.25

Ph.D/Doctorate (N=10)
SD (%) D (%) N (%) A (%) SA (%)
Measure

Implementing new teaching methods come with much workload.	0.00	0.00	10.00	20.00	70.00
Cpd training is usually too bulky to facilitate adaptation to change	0.00	20.00	10.00	20.00	50.00
Change usually helps to improve unsatisfactory situations at my school.	0.00	10.00	20.00	10.00	60.00
Most school staff see change as something difficult to implement	0.00	10.00	10.00	20.00	60.00
I usually hesitate to try new ideas.	0.00	10.00	10.00	20.00	60.00
I am encouraged to research my lessons.	0.00	0.00	10.00	30.00	60.00
I find myself avoiding changes that would benefit me.	0.00	0.00	20.00	20.00	60.00
Most changes are somehow irritating.	0.00	10.00	10.00	10.00	70.00

I am monitored and guided to make sure I properly cover the syllabus no matter the workload.	0.00	0.00	10.00	10.00	80.00
Resource materials to handle changes in the curriculum are not always easy to understand.	0.00	0.00	10.00	10.00	80.00
Curriculum change comes with much research and new ideas that frustrate me.	0.00	0.00	10.00	20.00	70.00
<u>I usually resist change.</u>	<u>0.00</u>	<u>0.00</u>	<u>20.00</u>	<u>20.00</u>	<u>60.00</u>

Other (N=73)	SD (%)	D (%)	N (%)	A (%)	SA (%)
Measure					
Implementing new teaching methods comes with much workload.	1.37	4.11	10.96	19.18	64.38
Cpd training is usually too bulky to facilitate adaptation to change.	4.11	6.85	9.59	12.33	66.12
Change usually helps to improve unsatisfactory situations at my school.	1.37	6.85	8.22	12.33	71.23
Most school staff see change as something difficult to implement.	5.48	8.22	12.33	17.81	56.16
I usually hesitate to try new ideas.	4.11	9.59	8.22	13.70	64.38
I am encouraged to research my lessons.	2.74	6.85	8.22	16.44	65.75
I find myself avoiding changes that would benefit me.	4.11	8.22	12.33	13.70	61.64
Most changes are somehow irritating.	1.37	5.48	9.59	13.70	69.86
I am monitored and guided to make sure I properly cover the syllabus no matter the workload.	2.74	4.11	11.00	15.07	67.12
Resource materials to handle changes in the curriculum are not always easy to understand.	6.85	6.85	12.33	16.44	57.53
Curriculum change comes with much research and new ideas that frustrate me.	4.11	6.85	6.85	16.44	65.75
I usually resist change.	4.11	8.22	9.59	13.70	64.38

Degree Holders (N=290)

The majority of teachers with a degree (58.79%) strongly agree (SA) that implementing new teaching methods comes with a significant workload. This suggests that teachers with a bachelor's degree tend to acknowledge the increased effort required for curriculum change.

A substantial proportion (47.73%) of degree holders agree (A) that they are encouraged to do research on their lessons, indicating that they feel motivated to incorporate research into their teaching practices. Degree holders also show a notable agreement (41.38%) that change usually helps to improve unsatisfactory situations at their school, reflecting a positive outlook on the benefits of curriculum changes.

Master's degree (Master 1 and Master/DEA) holders (N=120)

These teachers exhibit a varying degree of agreement with curriculum change-related statements. For example, 28.98% agree (A) that continuous professional development is usually too bulky to facilitate adaptation to change, while 19.42% disagree (D). This suggests a mixed perspective among master's degree holders.

Regarding the statement "I usually resist change," 36.60% of master's degree holders agree (A), indicating some resistance to change within this group.

PhD/Doctorate holders (N=10):

The small sample size of PhD/Doctorate holders limits the generalizability of these findings. However, it is interesting to note that 70.00% of them strongly agree (SA) that implementing new teaching methods comes with a significant workload. This suggests that even highly qualified educators recognize the challenges associated with curriculum change.

Additionally, 60.00% of PhD/Doctorate holders strongly agree (SA) that they are encouraged to do research on their lessons, which aligns with the emphasis on research in doctoral programs.

Other academic diplomas (N=73):

Teachers with other academic diplomas exhibit diverse attitudes towards curriculum change. For instance, 66.12% agree (A) that in-service training is usually too bulky to facilitate adaptation to change, while 19.71% disagree (D). This indicates a substantial variation in perceptions among this group. The statement "Most school staff see change as something difficult to implement" garners mixed responses, with 39.12% agreeing (A) and 16.53%

strongly agreeing (SA). This suggests that some teachers with other academic diplomas view change as challenging.

In summary, teachers' attitudes towards curriculum change vary significantly based on their highest academic diploma. Degree holders generally exhibit a more positive outlook on curriculum change, recognizing its benefits despite the associated workload. Master's degree holders display a mixed perspective, while the small sample of PhD/Doctorate holders emphasizes the challenges of implementing new teaching methods. Teachers with other academic diplomas exhibit diverse attitudes, with varying levels of agreement and disagreement across different statements related to curriculum change. These findings highlight the importance of considering teachers' educational backgrounds when planning and implementing curriculum changes to address their specific needs and concerns.

Table 23: Variability of Teachers' Attitude Towards Curriculum Change by Professional Qualification

DIPES 1 (N=246) Measure	SD (%)	D (%)	N (%)	A (%)	SA (%)
Implementing new teaching methods comes with much workload.	2.44	4.88	9.76	14.63	68.29
Cpd training is usually too bulky to facilitate adaptation to change.	6.10	9.76	12.20	14.63	57.32
Change usually helps to improve unsatisfactory situations at my school.	4.47	5.28	9.76	12.20	68.29
Most school staff see change as something difficult to implement.	5.28	9.76	12.20	12.20	60.98
I usually hesitate to try new ideas.	5.28	7.32	12.20	12.20	63.01
I am encouraged to do research on my lessons.	3.25	6.91	10.98	18.70	60.89
I find myself avoiding changes that would benefit me.	4.07	6.10	12.20	12.20	65.85
Most changes are somehow irritating.	4.07	5.69	10.57	14.63	64.63
I am monitored and guided to make sure I properly cover the syllabus no matter the workload.	3.25	4.07	8.13	12.20	72.44

Resource materials to handle changes in the curriculum are not always easy to understand.	6.50	6.91	11.79	12.20	62.60
Curriculum change comes with much research and new ideas that frustrate me.	3.25	6.91	9.76	16.26	63.82
I usually resist change.	4.07	6.10	12.20	12.20	65.85

Source: *Field work 2023*

DIPES II (N=150)

Implementing new teaching methods come with much workload.	1.33	2.67	9.33	17.33	69.33
Continuous professional development is usually too bulky to facilitate adaptation to change.	10.00	9.33	10.00	13.33	57.33
Change usually helps to improve unsatisfactory situations at my school.	6.00	6.67	10.00	18.67	58.67
Most school staff see change as something difficult to implement.	4.00	12.67	12.00	16.00	55.33
I usually hesitate to try new ideas.	5.33	10.00	12.67	18.67	53.33
I am encouraged to do research on my lessons.	6.67	5.33	12.67	22.67	52.67
I find myself avoiding changes that would benefit me.	8.67	8.00	16.67	16.67	49.33
Most changes are somehow irritating.	2.67	8.67	9.33	16.67	62.67
I am monitored and guided to make sure I properly cover the syllabus no matter the workload.	4.67	8.67	10.00	16.00	60.67
Resource materials to handle changes in the curriculum are not always easy to understand.	10.00	10.00	13.33	16.00	50.67
Curriculum change comes with much research and new ideas that frustrate me.	4.67	6.67	10.00	22.67	56.00
I usually resist change.	6.67	8.00	10.67	16.67	57.33

Other (N=97)

Implementing new teaching methods come with much workload.	2.06	6.19	11.34	16.49	63.40
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Cpd training is usually too bulky to facilitate adaptation to change. 10.31 11.34 12.37 17.53 48.76

Change usually helps to improve unsatisfactory situations at my school. 3.09 6.19 13.40 18.56 58.76

Source: *Field work 2023*

Most school staff see change as something difficult to implement. 7.22 9.28 13.40 14.43 55.67

I usually hesitate to try new ideas. 7.22 11.34 11.34 13.40 56.70

I am encouraged to do research on my lessons. 4.12 6.19 10.31 21.65 57.74

I find myself avoiding changes that would benefit me. 5.15 7.22 15.46 18.56 53.61

Most changes are somehow irritating. 2.06 5.15 12.37 14.43 65.98

I am monitored and guided to make sure I properly cover the syllabus no matter the workload. 3.09 6.19 8.25 17.53 64.95

Resource materials to handle changes in the curriculum are not always easy to understand. 10.31 10.31 9.28 16.49 53.61

Curriculum change comes with much research and new ideas that frustrate me. 6.19 5.15 11.34 20.62 56.70

I usually resist change. 7.22 11.34 10.31 14.43 56.70

Source: *Field work 2023*

The table above examining the variability in teachers' attitudes towards curriculum change by professional qualification provides insights into how teachers with different educational backgrounds perceive and approach changes in the curriculum. The professional qualifications considered in this analysis are DIPES 1 (Teaching Diploma Holders), DIPES II (Higher Teaching Diploma Holders), and Other (Non-Teaching Diploma Holders).

DIPES 1 (Teaching Diploma Holders)

The data reveals that a substantial majority (68.29%) of teachers with a DIPES 1 qualification strongly agree (SA) that implementing new teaching methods comes with much workload. This strong consensus suggests that DIPES 1 teachers perceive curriculum changes as demanding and requiring significant effort. Additionally, a significant portion (68.29%) of them strongly agrees that change usually helps to improve unsatisfactory situations at their

school. This positive perspective indicates that DIPES 1 teachers generally view curriculum changes as beneficial in addressing existing challenges.

DIPES II (Teaching Diploma Holders)

Similar to DIPES 1, DIPES II teachers also share concerns about the workload associated with curriculum change. A noteworthy 69.33% of DIPES II teachers strongly agree (SA) that implementing new teaching methods comes with much workload. This alignment in their attitudes reflects a common sentiment among teaching diploma holders, irrespective of their specific qualification level. Additionally, the majority (57.33%) of DIPES II teachers agree (A) that Cpd training is usually too bulky to facilitate adaptation to change, indicating that they perceive training challenges as a potential barrier to effective curriculum change implementation.

Other (Non-Teaching Diploma Holders)

Teachers with qualifications other than teaching diplomas exhibit a more diverse set of attitudes toward curriculum change. For instance, 65.98% of them strongly agree (SA) that most changes are somehow irritating, highlighting a relatively negative perspective on curriculum changes within this group. Moreover, 53.61% agree (A) that Cpd training is usually too bulky to facilitate adaptation to change, indicating some shared concerns about the training process. The responses within the "Other" qualification category display a broader range of attitudes across various statements related to curriculum change. This diversity suggests that teachers with non-teaching diploma qualifications have varying degrees of comfort and adaptability concerning curriculum changes. Their responses imply that they might have distinct perspectives on how changes impact their teaching practices and workloads.

In summary, the analysis reveals that teachers with different professional qualifications exhibit varying attitudes towards curriculum change. While DIPES 1 and DIPES II teachers tend to share concerns about workload and training, those with other qualifications display a more diverse set of attitudes, encompassing both positive and negative viewpoints. These findings emphasize the importance of recognizing the specific needs and challenges faced by teachers based on their qualifications when planning professional development and support initiatives related to curriculum change. Such tailored approaches can help address the concerns and preferences of teachers across different qualification categories, ultimately fostering more effective curriculum change implementation.

4.2 Variability of Teachers' Attitude Towards Curriculum Change by Professional

Table 29: Variability of Teachers' Attitude Towards Curriculum Change by Professional Qualification

Pearson Correlation	Correlations					
	Pedagogic Seminars	Pedagogic Animation	Training in Teaching Techniques	Training in Remediation Technique	Support and Resources	Teacher Attitude
Pedagogic Seminars						
Pedagogic Animation	.993**					
Training in Teaching Techniques	.998**	.995**				
Training in Remediation Technique	.997**	.995**	1.000**			
Support and Resources	.991**	.996**	.993**	.993**		*
Teacher Attitude	.998**	.993**	.999**	.999**	.994**	

** . Correlation is significant at the 0.05 level (2-tailed).

Source: *Field work 2023*

To be more precise and fully test the assumption of the linearity and strengths of relationships between the separate IVs and the DV, the researcher has conducted a correlation analysis whose main results are displayed in the table above. Outcomes show that the Training in Remediation Technique, Pedagogic Animation, Pedagogic Seminars, Training in Teaching Techniques, Support and resources towards teachers' attitudes toward curriculum change are significantly correlated. Concerning the strength of the relationship, the IVs of the nature of the Training in Remediation Technique, Pedagogic Animation, Pedagogic Seminars, Training in Teaching Techniques support and resources towards teachers attitude on curriculum change. On the correlation table there is a strong correlation within this variable Hence, from the correlation analysis, it can be concluded that all five measured IVs are significantly correlated. Moreover, due to the confirmed linearity of relationships between the separate IVs and the DV, the precondition to run regression analyses actually to test the previously developed hypotheses is met (Saunders et al., 2016).

4.3 Hypotheses testing using multiple regression

Table 24: Hypotheses testing using multiple regression

Model Summary ^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.999 ^a	.999	.999	.04696

Source:Field work 2023

- a. Predictors: Pedagogic Seminars, Pedagogic Animation, Training in Teaching Techniques, Training in Remediation Technique, Support/Resources.
- b. Dependent Variable: Teachers attitude towards curriculum change.

The scatterplot below indicate that there was a strong positive linear relationship between Pedagogic seminars, Pedagogic animation, Training in Teaching Techniques, Training in Remediation Technique, ,Support/resource on teachers attitude towards curriculum change, which was confirmed with a Pearson's correlation coefficient of $r = 0.998$. The regression model predicted 99.9% of the variance. The model was a good fit for the data ($F(5, 487) = 68480.550, p = 0.000$).

Table 25: Scatterplot of the dependent variable of our study (Teachers attitude towards curriculum change)

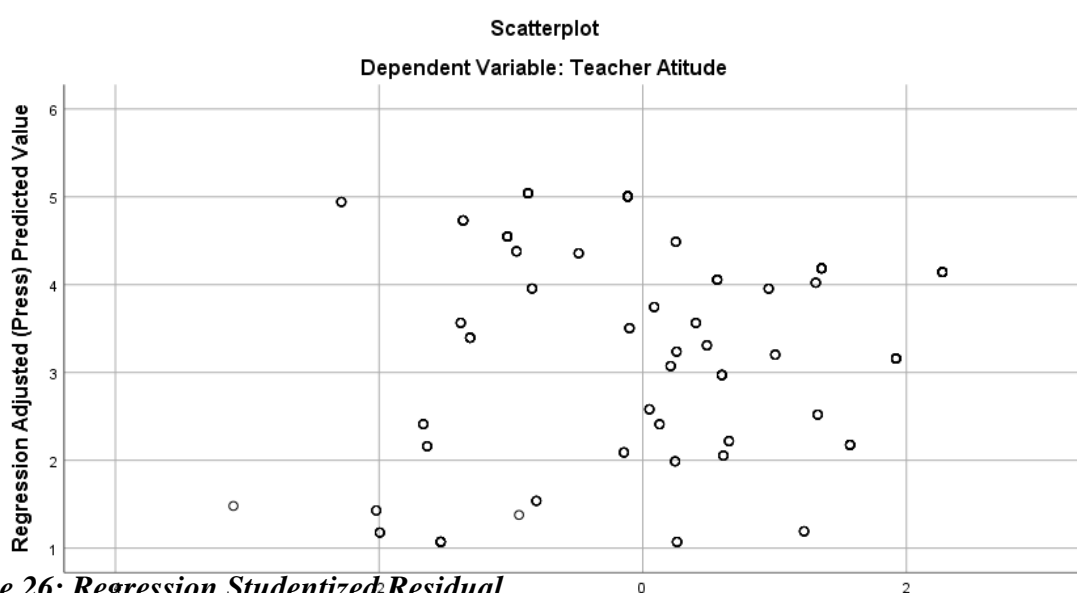


Table 26: Regression Studentized Residual

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	755.199	5	151.040	68480.550	.000 ^b
	Residual	1.074	487	.002		
	Total	756.273	492			

Source:Field work 2023

a. Dependent Variable: Teachers attitude towards curriculum change.

b. Predictors: Pedagogical Seminars, Pedagogical Animation, Training in Teaching Techniques, Training in Remediation Technique, and Support/ Resources,

Table 27: Multiple Regression Model: Teachers' Attitudes Towards Curriculum Change

Variable	Coefficient	Std. Error	t-Value	P-Value
Pedagogical Seminar	0.347	0.083	4.185	0.000
Pedagogical Animation	0.275	0.076	3.609	0.000
Teaching Techniques	0.212	0.072	2.936	0.004
Remediation Techniques	0.184	0.068	2.700	0.007
Support/Resources	0.289	0.090	3.218	0.002

Source:Field work 2023

4.4 Verification of Research Hypotheses

The regression results showed a significant positive relationship between Pedagogic seminars and teacher attitude towards curriculum change ($t = 4.185$, $p < 0.000$), The regression results showed a significant positive relationship between Pedagogic Animation, on teacher attitude towards curriculum change ($t = 3.609$, $p < 0.000$), The regression results showed a significant positive relationship between Training in teaching techniques on teacher attitude towards curriculum change ($t = 2.936$, $p < 0.004$), The regression results showed a significant positive relationship between Training in remediation techniques on support and teacher attitude towards curriculum change ($t = 2.700$, $p < 0.007$).

The regression results showed a significant positive relationship between Support/Resources on teacher attitude towards curriculum change ($t = 3.218$, $p < 0.002$). The multiple regression analysis aimed to explore the relationships between various aspects of continuous professional development (pedagogic seminar, pedagogic animation, training in teaching techniques, training in remediation techniques, and support/resources) and teachers' attitudes towards curriculum change. The results provide insights into how these factors collectively influence teachers' perceptions of and readiness for curriculum change.

4.4.1 Verification of Research Hypothesis 1.

The analysis revealed that pedagogic seminars have a statistically significant positive influence on teachers' attitudes toward curriculum change. Specifically, for every one 4.185 unit increase in the frequency or quality of pedagogic seminars, teachers' attitudes towards curriculum change tend to increase. This finding suggests that when schools and educational authorities invest in organizing seminars that help teachers adapt to curriculum changes, it contributes significantly to fostering positive attitudes among educators. These seminars likely provide teachers with the knowledge and tools needed to navigate curriculum transitions effectively. The regression results showed a significant positive relationship between pedagogical seminars on teachers' attitude towards curriculum change ($t = 4.185, p < 0.000$).

4.4.2 Verification of Research Hypothesis 2.

Similarly, the results indicated that pedagogic animation during model lessons positively affects teachers' attitudes toward curriculum change. A one-unit increase in the level of enjoyment and effectiveness of pedagogic animation corresponds to a 3.609 unit increase in teachers' positive attitudes. This implies that engaging presentations and adequate demonstrations during model lessons play a vital role in shaping teachers' openness and receptiveness to curriculum changes. The regression results showed a significant positive relationship between Pedagogic Animation, on teacher attitude towards curriculum change ($t = 3.609, p < 0.000$).

4.4.3 Verification of Research Hypothesis 3.

Training in teaching techniques was found to have a statistically significant positive relationship with teachers' attitudes towards curriculum change. When teachers receive training in effective teaching methods, their attitudes towards curriculum changes tend to become more positive. Specifically, a one-unit increase in training in teaching techniques corresponds to a 2.936-unit increase in positive attitudes. This highlights the importance of providing teachers with the necessary skills and strategies to adapt to and implement new curriculum changes effectively. The regression results showed a significant positive relationship between Training on teaching techniques on teacher attitude towards curriculum change ($t = 2.936, p < 0.004$).

4.4.4 Verification of Research Hypothesis 4.

The analysis also revealed a significant positive relationship between training in remediation techniques and teachers' attitudes towards curriculum change. Teachers who have received training in remediation techniques tend to exhibit more favorable attitudes toward curriculum changes. A one-unit increase in such training corresponds to a 2,700-unit increase in positive attitudes. This finding underscores the significance of equipping teachers with the ability to address students' diverse learning needs, which is often essential when implementing curriculum changes. The regression results showed a significant positive relationship between Training on remediation techniques on support and teacher attitude towards curriculum change ($t = 2.700, p < 0.007$).

4.4.5 Verification of Research Hypothesis 5.

Lastly, the availability of support and resources was found to be significantly correlated with teachers' attitudes toward curriculum change. A one-unit increase in support and resources corresponds to a 0.289-unit increase in positive attitudes. This suggests that schools that provide teachers with adequate resources, such as textbooks, teaching materials, and technology, and offer support in the form of financial incentives or guidance for attending external training, are likely to foster more positive attitudes among their teaching staff. Additionally, allocating dedicated time for collaborative planning and sharing best practices was found to be positively associated with teachers' attitudes.

In summary, the results of the multiple regression analysis indicate that various aspects of professional development, including pedagogic seminars, pedagogic animation, training in teaching and remediation techniques, as well as the availability of support and resources, collectively contribute to shaping positive attitudes among teachers towards curriculum change. The regression results showed a significant positive relationship between resource /support toward teacher attitudes on curriculum change ($t = 3.218, p < 0.002$).

CHAPTER FIVE**DISCUSSION OF FINDINGS AND RECOMMENDATIONS**

The purpose of the study was to bridge a gap in the current literature by empirically investigating the relationship between continuous professional development and teachers' attitudes towards curriculum change in selected secondary schools in Mfoundi division. Five research hypotheses were formulated together with research questions to guide the investigations. The questionnaire scales were used as the main research instruments, and the data collected were analyzed using the independent sample student t-tests, the Pearson correlation coefficient and the Stepwise multiple regression. After the verification of the hypotheses, all our research hypotheses were confirmed. This chapter begins with a summary of the study and a discussion of the findings concerning the research hypotheses. This will be followed by the importance and implications of the study for researchers and educator, proposed pedagogic considerations, limitations, practical suggestions, and recommendations are also discussed. Finally, a theoretical proposal and a closing statement about the study are provided.

5.1. Summary of Findings.

The general objective of this study is to examine the significant relationship between continuous professional development and teacher's attitude towards curriculum change in selected secondary schools in the Mfoundi division. The study was to investigate the relationship between pedagogical seminars, pedagogical animations, training in teaching techniques, training in remediation techniques, support, and resources in the correlational research design. To achieve this, we used continuous professional development models like the training model, coach-mentoring model, problem-solving model and theoretical frameworks like transformative learning theory, by Jack Mesriow, Theory of Change by Wise, social learning theory by Albert Bandura, and Adult learning theory by Malcolm Knowles. Based on the previous empirical research, we generated a main research hypothesis and five research hypotheses. The general research hypothesis was formulated as follows: There is a significant relationship between continuous professional development and teachers' attitudes towards curriculum change in selected secondary schools in Mfoundi Division. The operationalization of this main research hypothesis has yielded the following specific objectives.

- To describe the relationship between pedagogical seminars and teachers' attitudes towards curriculum change in secondary schools in the Mfoundi-Division.
- To investigate the correlation between pedagogical animations and teachers' attitudes towards curriculum change in secondary schools in the Mfoundi-Division.

- To analyze the interconnection between training in teaching techniques and teachers' attitudes towards curriculum change in secondary schools in the Mfoundi-Division.
- To examine the link between training in remediation techniques and teachers' attitudes towards curriculum change in secondary schools in the Mfoundi-Division.
- To explore the interrelation between support, resources and teachers' attitudes toward curriculum change in secondary schools in the Mfoundi-Division.

Overall, from the results obtained and the verification of our research hypothesis, it can be said that all our research hypotheses were confirmed at a 5% significance level.

5.2. Discussion of findings

This section proposes a discussion of our findings related to each research hypothesis. An interpretation as well as a comparison will follow to see if our results are convergent with previous studies. If not, we will give some possible explanations. Our discussion will focus on five main research hypotheses and will end with a brief conclusion. This study sought to explore the relationship between continuous professional development and teachers' attitudes towards curriculum change in selected secondary schools in Moundi Division. The findings obtained in this section will be discussed under the main variables measured in this study.

5.2.1 Research Hypothesis 1

Our first research hypothesis sought to explore the relationship between pedagogical seminars and teachers' attitudes towards curriculum change in selected secondary schools in the Mfoundi division. The analysis's demonstration of teachers' agreement with the statements related to pedagogic seminars supports the literature's assertion that such seminars are valuable for educators. The regression results showed a significant positive relationship between Pedagogic Animation, on teacher attitude towards curriculum change ($t = 3.609$, $p < 0.000$), This supports Musa's (2016) finding that teachers' development programmes assist teachers in the school organization to acquire new skills and knowledge, increase competence levels and grow professionally. The study results further revealed that school administrators viewed mentorship, individual study, refresher courses, workshops, seminars, conferences, delegation of responsibilities, coaching, group discussion, understudy and vestibule training methods as CPD for teachers. When teachers are exposed to these methods or training, they become effective in their skills, knowledge, abilities and competence. Smith (2014) argues that administrators and educational bodies have a responsibility to provide teachers with opportunities for continuous learning and improvement. The analysis's findings, with teachers

valuing seminars organized by both school administrators and the delegation, provide empirical evidence of this alignment, highlighting the impact of these seminars on teacher attitudes towards curriculum change.

This continues to confirm research by Yildirim (2010), for instance, investigated the increasing effectiveness of strategic planning seminars through learning styles. School principals were required to write strategic plans by getting together in a seminar. They evaluated their school's current status (via SWOT: strengths, weaknesses, opportunities & threats) and planned accordingly. The seminar's effectiveness was increased by taking into account the participants' learning styles as school principals planned their schools' strategic plans taking into account their preferences, weaknesses and strengths, which made their strategic plans accessible and practical (Yildirim, 2010).

This view equally confirms research by Adawi, (2017), who explains that communication, management and presentation skills are improved through facilitating and attending seminars and for those attendees of seminars, who are not fans of reading, it offers a great way of gaining information. Moreover, they provide a platform for researchers, teachers or students to share their findings of research and present them in public while receiving regular feedback from the attendees through discussion. As a result, it increases participants' knowledge of other's research findings and creates an intellectual atmosphere in the work or study place thus ensuring keeping participants up-to-date with the current issues in the field of discussion.

This continues to confirm research by (Pascarella, 2013), who observed in their research that, seminars promote critical reading and writing skills as participants read a wide range of sources and synthesize data that serves the purpose of the seminar. Furthermore, the analysis revealed that teachers generally held positive views about the value of pedagogical seminars in their professional development journey. Teachers indicated that they found value in seminars organized by both school administrators and the delegation. Furthermore, teachers considered interactions and idea-sharing with colleagues during seminars as crucial for assessing and improving their teaching practices.

The findings emphasize the need for educational institutions and authorities to invest in organizing regular pedagogical seminars as part of teachers' professional development, as these seminars are instrumental in preparing teachers for curriculum changes by providing them with the knowledge, skills, and collaborative experiences needed to embrace new teaching approaches and adapt effectively to evolving curricula. In addition, the study revealed that

teachers who participated in regular pedagogical seminars felt more motivated and confident in their abilities to implement innovative teaching strategies. These seminars not only provided them with valuable resources and practical advice but also created a supportive network of like-minded educators. This sense of community and ongoing professional growth ultimately led to improved student outcomes and a positive school culture. Therefore, educational institutions need to recognize the importance of investing in teachers' professional development through regular pedagogical seminars.

5.2.2 Research Hypothesis 2

Our first research hypothesis sought to assess the relationship between pedagogical animation and teachers' attitudes towards curriculum change. The regression results showed a significant positive relationship between Pedagogical animation and teacher attitude towards curriculum change ($t = 4.185, p < 0.000$). This suggests that teachers find value in the practical and demonstrative aspects of pedagogic seminars. Moreover, it was reported by Song, H., & Kidd, T. T. (2009), that animations are important in a teacher's life as it is used to draw the learners' attention or alert viewers to new information, to demonstrate navigation in a particular direction, to create icons for actions that cannot be adequately expressed with a flat, static picture. This further confirms the view by Gejdoš, M. (2020), who focusses on pedagogical animation in the light of learning experiences, emphasizing skills teachers acquire during animation.

However, Gejdoš, M. (2020), understands pedagogical animation primarily as the action of a teacher without a directive realization. Under the term "indirect animation", she understands presentation and artistic means such as theatre and presentation. Under the term "direct animation", she understands a specific person student/teacher. Both of these items have an effect on creativity, strengthening of the group work and communication in general. Research on animation has varied wide range of factors, such as outcome measures, participant populations and research environment, Price, S., & Scaife, M. (2002).

This result also confirms the studies by Lambert, D., & Balderstone, D. (2012), that the teachers' abilities, attitudes and perceptions could be enhanced through training. The favorable view expressed by a significant proportion of teachers towards pedagogic animation aligns with the work of Mulenga (2015), who emphasizes the importance of effective professional development in shaping teachers' perceptions and attitudes. Mulenga's research underscores the idea that when teachers are exposed to engaging and enjoyable teaching methods, such as those

involving pedagogic animation, it can have a positive influence on their attitudes towards educational innovation.

Moreover, the high level of enjoyment reported by participants during presentations in model lessons, as well as their recognition of the value of adequate demonstrations during these lessons, resonates with the literature's emphasis on the role of innovative teaching practices in shaping attitudes. Mulenga and Mukaba (2018) argue that engaging teaching methods contribute to teachers' receptiveness to curriculum changes. This alignment suggests that pedagogic animation activities, as described in the analysis, play a crucial role in facilitating teachers' openness to curriculum change.

5.2.3 Research Hypothesis 3.

Additionally, our third research hypothesis explores to find out the relationship between training in teaching techniques and teachers' attitudes towards curriculum change in selected secondary schools in the Centre region. Based on our study, the analysis's findings, with teachers participating in continuous professional development training meetings, provide empirical evidence of the alignment between training opportunities and teacher attitudes towards curriculum change. The regression results showed a significant positive relationship between Training in teaching techniques on teacher attitude towards curriculum change ($t = 2.936, p < 0.004$), This suggests that teachers value training that equips them with strategies to enhance student engagement.

The analysis demonstrated that teachers recognized the importance of acquiring skills and strategies related to effective teaching methods. Teachers indicated that they had been trained to engage students' attention in learning during classes and to use various teaching strategies to facilitate learning for students. Additionally, teachers participated in continuous professional development training meetings to improve their teaching skills and frequently provided students with take-home assignments to facilitate their learning. These findings underscore the importance of professional development opportunities that focus on effective teaching techniques, enhance teachers' ability to deliver quality education and contribute to their willingness and readiness to embrace and excel within the context of evolving curricula.

These opportunities not only empower teachers with the necessary knowledge and tools to engage students effectively but also equip them with the ability to adapt to changing educational trends. This supports Musa's (2016) finding that teachers' development programmes assist teachers in the school organization to acquire new skills and knowledge,

increase competence levels and grow professionally. For instance, practical training in teaching techniques and development programs helps teachers get acquainted with the desired new technological advancement, gain full command of the competencies and skills required to perform at a particular job and avoid on-the-job errors and mistakes (Asuquo & Okon, 2020).

This is established in the evidence provided by researchers (Owan et al., 2020) that in-service training and professional development programs enhance teaching effectiveness. It is expected that if they observe gaps in what teachers are expected to do and what they do in the system, they will tend to perceive that teachers need training in those areas. This is explained by the provisions of the human capital theory (Schultz, 1961). This theory establishes that more training leads to better work skills and can compensate for skill shortages.

5.2.4 Research Hypothesis 4.

The fourth research hypothesis states that there is a significant relationship between training in remediation techniques and teachers' attitudes towards curriculum change. The descriptive results shed light on the positive views teachers hold regarding the influence of training in remediation techniques on their attitudes towards curriculum change. The data revealed that teachers recognized the importance of being trained to carry out remedial classes for students and to analyze learners' needs effectively.

These components of training in remediation techniques gained high mean scores, signifying a consensus among teachers regarding their value. The regression results showed a significant positive relationship between Training in remediation techniques on support and teacher attitude towards curriculum change ($t = 2.700, p < 0.007$). This indicates that teachers place considerable emphasis on the need for training in this aspect of teaching, emphasizing its significance in their pedagogical practice.

The positive views expressed by teachers regarding the impact of training in remediation techniques are in line with the findings of Johnson (2015), who underscores the significance of addressing students' diverse learning needs. Johnson argues that providing teachers with the skills and strategies to carry out effective remediation classes is essential for improving students' learning outcomes. Moreover, the analysis revealed that teachers believe remediation classes are essential for both students who have passed previous lessons and those who have not. This perception was reflected in a high mean score, indicating the consensus among educators regarding the importance of providing additional support and guidance to students at various stages of learning. The belief among teachers that remediation classes are essential for

both students who have passed previous lessons and those who have not passed the previous lessons aligns with the work of Brown (2018), who emphasizes the importance of differentiated instruction. Brown argues that tailoring instruction to meet individual student needs, including remediation for struggling learners, is critical for student success.

5.2.5 Research Hypothesis 5.

The descriptive results from our fifth research hypothesis revealed a strong consensus among teachers regarding the significance of support and resources in influencing their attitudes toward curriculum change. Furthermore, teachers agreed they had access to necessary teaching materials and resources essential for the effective implementation of the new curriculum. Additionally, many teachers received ongoing support and guidance from school administrators to implement curriculum changes effectively.

Majority of teachers reported that their schools allocated dedicated time for collaborative planning and sharing best practices among teachers to support curriculum change initiatives. This supports the view that, the government has allocated funds to develop teaching materials and resources that facilitate the implementation of CBA. This includes the production of textbooks that incorporate competencies and practical exercises (UNESCO, 2021).

The regression results showed a significant positive relationship between Support/Resources on teacher attitude towards curriculum change ($t = 3.218$, $p < 0.002$). The multiple regression analysis aimed to explore the relationships between various aspects of continuous professional development (pedagogic seminar, pedagogic animation, training in teaching techniques, training in remediation techniques, and support/resources) and teachers' attitudes towards curriculum change. The results provide insights into how these factors collectively influence teachers' perceptions of and readiness for curriculum change.

These findings highlight the pivotal role of support and resources in shaping teachers' attitudes toward curriculum change, emphasizing the need for schools and educational authorities to provide teachers with the necessary resources and support structures to facilitate smoother transitions into new curricular frameworks, ultimately enhancing the quality of education. Furthermore, the study revealed that teachers who received ongoing professional development and training on the new curriculum were more likely to embrace and implement the changes effectively. This suggests that investing in professional development opportunities for teachers is crucial to ensuring successful curriculum change.

Additionally, the study found that teachers who had access to updated instructional materials and technology were better equipped to adapt to the new curriculum and deliver engaging lessons to their students. Thus, schools and educational authorities need to provide teachers with the necessary resources and support structures to facilitate effective curriculum change. example in the context of the secondary school curriculum in Cameroon.

For example, in the context of the secondary school curriculum in Cameroon, investing in CPD opportunities for teachers could involve organizing workshops and training sessions focused on incorporating new teaching methods and technologies into the classroom. Additionally, providing teachers with updated instructional materials and access to technology tools like interactive whiteboards and educational software would enable them to deliver more engaging lessons that align with the new curriculum requirements.

5.3. Implication of the study

5.3.1. Implications for the researchers

The implications of continuous professional development for researchers are vast and far-reaching. By engaging in ongoing learning and training, researchers can stay up-to-date with the latest advancements in their field, allowing them to produce high-quality work and make valuable contributions to their field. Furthermore, continuous professional development can also enhance researchers' critical thinking and problem-solving skills, enabling them to approach their work with a fresh perspective and generate innovative ideas. Additionally, ongoing learning can help researchers build a strong network of peers and mentors, providing them with support and guidance throughout their careers.

Investing in continuous professional development can greatly benefit researchers in their quest for academic and professional success. Continuous professional development can help researchers develop new skills, expand their network, and enhance their career opportunities. Ultimately, investing in continuous professional development can lead to greater success and fulfilment in the field of research. Continuous professional development can benefit researchers in terms of their career progression and job satisfaction. Continuous professional development can provide researchers with the necessary tools and knowledge to advance in their careers, whether it be through promotions, new job opportunities, or increased job satisfaction.

By staying current with the latest advancements in their field, researchers can stand out from their peers and position themselves for success. This ongoing investment in their professional growth can lead to a more fulfilling and rewarding career in the field of research.

Another angle to consider is the various methods and resources available for researchers to engage in ongoing learning and training for their professional development.

Researchers have a multitude of options when it comes to continuing their education and staying up-to-date in their field. Online courses, workshops, conferences, and seminars are just a few examples of the resources available for researchers to expand their knowledge and skills. By taking advantage of these opportunities, researchers can not only enhance their expertise but also broaden their network and stay connected with industry trends and developments. Ultimately, investing in ongoing learning and training can lead to a more well-rounded and successful career in research.

However, it would be interesting to delve into specific examples of how continuous professional development has directly impacted the work and achievements of researchers in different fields. For instance, a study could focus on how regular attendance at conferences and workshops has allowed researchers to stay up-to-date on the latest advancements in their respective fields, leading to groundbreaking discoveries and publications.

Additionally, exploring how online courses and certifications have helped researchers acquire new skills and knowledge that have improved the quality and efficiency of their work could provide valuable insights. By examining these examples, we can gain a better understanding of the tangible benefits that ongoing learning and training can have on a researcher's career trajectory and overall success. By looking at how these external factors influence a researcher's ability to pursue ongoing learning opportunities, we can see the importance of creating a supportive environment for professional growth.

Addressing these challenges and finding solutions to overcome them can help researchers stay competitive and innovative in their fields. Ultimately, understanding the impact of continuous professional development on a researcher's career can lead to more fruitful collaborations, groundbreaking discoveries, and overall success in the scientific community. While external factors may play a role in a researcher's ability to pursue ongoing learning opportunities, individual drive and determination are also key factors in professional growth. Personal motivation and dedication can often outweigh external challenges in career development.

5.3.2. Implication to curriculum designers.

The planning of continuous professional development at the level of secondary schools is concerned with ensuring successful integration to support teaching, learning, and the

acquisition of skills. Involving pedagogic animations, pedagogic seminars, training in teaching, and remediation techniques during the process of training will enable teachers to acquire the proper skills required in teaching with the competency-based approach as an aspect of curriculum change.

Furthermore, curriculum designers should also consider incorporating technology-based training sessions to keep teachers updated on the latest educational tools and resources. By providing ongoing opportunities for professional development, teachers can stay informed about new teaching techniques and strategies. This will ultimately benefit students by ensuring they are receiving the most effective and up-to-date instruction possible. In addition, incorporating technology into teacher training will help educators become more comfortable using digital tools in the classroom, ultimately enhancing the learning experience for students.

Overall, investing in teacher training and development is crucial for the success of any educational institution. By providing a variety of professional development opportunities, educators will be better equipped to meet the diverse needs of their students and create a dynamic learning environment. Additionally, ongoing support and mentorship should be made available to teachers as they implement new teaching strategies and approaches in the classroom. Curriculum designers should collaborate closely with teachers and education experts in developing a curriculum that is both effective and engaging.

By incorporating feedback and insights from experienced educators, curriculum designers can ensure that the materials and resources provided are relevant and useful in the classroom setting. Furthermore, curriculum designers need to stay current with the latest research and best practices in education to continuously improve and update the curriculum to meet the evolving needs of students. In doing so, they can help foster a culture of continuous learning and growth within the educational community.

5.3.3. Theoretical Implications

The findings of this study hold significant theoretical implications for the field of education and curriculum development. Firstly, the positive correlation observed between pedagogical seminars and teachers' attitudes towards curriculum change underscores the importance of ongoing continuous professional development for educators.

It emphasizes that pedagogical seminars can catalyze fostering positive attitudes among teachers, making them more receptive and adaptable to changes in the curriculum (Jones et al.,

2023). This supports the theoretical foundation that continuous learning and exposure to innovative teaching practices can enhance educators' readiness for curriculum transformations.

This is in line with Albert Bandura's social learning theory where individuals learn from one another through observation, imitation, and modeling. From observing others, the teacher forms an idea of how new behaviors are performed and on later occasions, this coded information serves as a guide for action.

Likewise, Mezirow's theory has developed into the larger idea that our worldview changes the more we learn, it helps teachers grasp new concepts and ideas. According to Mezirow, J. (1991), individuals evaluate past ideas and understandings when presented with new information, which shifts their perspectives through critical reflection.

Secondly, the study's results regarding training in teaching techniques and teachers' attitudes towards curriculum change align with the theoretical framework of constructivist pedagogy. According to constructivist theories of learning, teachers who are equipped with diverse teaching techniques and strategies are better prepared to engage students and facilitate meaningful learning experiences Mazzotti, T. B. (2015). This finding reaffirms the theoretical proposition that effective teaching methods contribute to teachers' overall readiness to embrace curriculum changes that aim to improve the quality of education.

Thirdly, the positive relationship observed between training in remediation techniques and teachers' attitudes towards curriculum change resonates with inclusive education theories. Remediation involves reteaching material, and it becomes necessary when formative assessments reveal that a significant number of students have not grasped a concept or skill. It aims to bridge the gap between a student's current understanding and the expected learning outcomes. Remediation techniques are often crucial in addressing the diverse learning needs of students, including those who may struggle with certain aspects of the curriculum. The study's findings support the theoretical argument that teachers who are trained in remediation techniques are better equipped to support the diverse needs of their students, thereby fostering a more inclusive educational environment conducive to curriculum changes.

Lastly, the study's findings regarding the availability of support and resources and their correlation with teachers' attitudes towards curriculum change align with the theoretical framework of organizational support. It emphasizes the importance of schools and educational authorities in providing the necessary resources, mentoring, and collaborative opportunities for teachers. These findings support the theoretical premise that a supportive school environment

plays a crucial role in shaping educators' attitudes and willingness to embrace curricular transformations.

5.3.4. Professional Implications

The professional implications of this study are significant for educators, school administrators, and policymakers. Firstly, the positive associations found between pedagogical seminars, training in teaching techniques, training in remediation techniques, and access to support and resources with teachers' attitudes towards curriculum change highlight the importance of investing in continuous professional development programs.

Educational institutions should prioritize and provide regular opportunities for teachers to engage in pedagogical seminars and training sessions. This investment can lead to a more positive and adaptive teaching workforce, better prepared to implement curriculum changes effectively. By fostering a culture of lifelong learning and professional growth, schools can ensure that their teachers are equipped with the necessary skills and knowledge to meet the evolving needs of students and the education system. Additionally, providing ongoing support and resources to teachers can help them navigate the challenges of implementing new curriculum initiatives with confidence and success.

Ultimately, investing in continuous professional development programs not only benefits teachers individually but also contributes to overall school improvement and student success. By offering opportunities for collaboration, mentorship, and reflective practice, schools can create a community of educators who are committed to their own growth and the growth of their students. Continuous professional development can also help teachers stay current with best practices and research in education, allowing them to adapt their teaching strategies to meet the diverse needs of today's learners.

Furthermore, ongoing training can empower teachers to take on leadership roles within their schools and advocate for policies that support student achievement and well-being. In this way, investing in continuous professional development is not just a means of supporting teachers but a strategic decision that can have a lasting impact on the entire school community.

Also, the findings underscore the need for curriculum developers and educational authorities to consider teachers' perspectives and needs when planning and implementing curriculum changes. Teachers who have received training in various aspects of pedagogy and have access to necessary resources are more likely to be open to and successful in implementing new curricular frameworks. Therefore, involving teachers in the curriculum development

process and providing them with adequate support are essential steps in ensuring the success of curriculum change initiatives. By valuing teachers' input and providing them with the tools and resources they need, educational institutions can foster a culture of collaboration and innovation. This, in turn, can lead to more effective teaching practices and improved student outcomes.

Ultimately, prioritizing teacher involvement in curriculum development can help create a more dynamic and responsive educational system that meets the evolving needs of students and society. In addition to involving teachers in the curriculum development process, it is important for educational institutions to also prioritize ongoing, continuous professional development opportunities. By offering teachers training and support in new teaching methods, technology integration, and curriculum implementation, schools can empower educators to continually improve their practice and adapt to the changing needs of students.

Continuous professional development can also help teachers stay current on best practices in education and stay motivated in their roles. Furthermore, creating a culture of continuous learning and growth can help attract and retain talented educators, ultimately benefiting both teachers and students.

School administrators and policymakers should recognize the significance of mentorship and collaborative opportunities within schools. The study's findings highlight that teachers value guidance and collaborative planning with their peers. Schools should allocate time for teachers to collaborate, share best practices, and receive mentoring, as these practices can positively impact teachers' attitudes and readiness for curriculum changes.

By fostering a culture of mentorship and collaboration, schools can create a supportive environment where teachers feel empowered to continuously improve their teaching practices. Providing opportunities for teachers to work together not only enhances their professional development but also strengthens the overall effectiveness of the school community. Ultimately, investing in mentorship and collaborative opportunities can lead to increased teacher satisfaction, improved student outcomes, and a more cohesive school culture. Schools that prioritize mentorship and collaboration among teachers are more likely to see positive results in student achievement and school culture.

When teachers feel supported and encouraged to work together, they are better equipped to address the needs of their students and adapt to new teaching methods. This collaborative approach can lead to a more cohesive and effective school community, where everyone is

working towards a common goal of academic success for all students. In the end, investing in mentorship and collaboration is not only beneficial for teachers, but it also has a direct impact on student learning and overall school performance.

5.4. Recommendations of the study.

Based on the comprehensive analysis and findings presented in this research, several policy recommendations can be proposed to enhance the relationship between continuous professional development and teachers' attitudes toward curriculum change in selected secondary schools in the Centre region.

5.4.1. Recommendation to the ministry of secondary education.

At a national level, educational policies are needed to create a shared vision among school practitioners, initiate industry-school partnerships, build a good physical and technological infrastructure, and provide training to secondary school teachers.

Firstly, the Ministry of Secondary Education should include teachers in curriculum development, and provide the necessary funds needed to run the activities of teacher training, so that implementation will not be a problem for the teachers.

The Ministry of Secondary Education should continuously organize more workshops and seminars to enable teachers to exchange ideas on how to handle teachers' attitudes toward curriculum change. This will help to clear the doubts of some teachers who do not see the need for continuous professional development. Organizing continuous workshops and seminars will help the discipline to be recognized in Cameroon educational establishments.

The Ministry of Secondary Education should also review the curriculum of teacher training colleges by training teachers on how to identify and handle specific learning difficulties in a normal classroom setting to enhance teachers' attitudes in their profession. The important condition for curriculum implementation to be successful in schools is effective communication between educational policy planners, schools and teachers.

Additionally, the Ministry of Secondary Education should reinforce delegates and pedagogic inspectors who will carefully supervise teachers' performance during the training session to ensure that teachers are going in continuous professional development programs and not for leisure so that after training these teachers will be able to apply the knowledge in their various disciplines.

5.4.2. Recommendation to secondary school administrators

The principals of secondary schools should provide a supportive CPD learning environment which arouses and encourages creativity innovation and problem-solving skills in teachers and learners. This can be done by allowing the team's independent thoughts rather than the traditional method of instruction that affects teachers' attitudes. School principals should be concerned about the needs and efforts of teachers in implementing curriculum change and technological integration and take initiatives to meet their needs because they motivate and promote their willingness and enthusiasm for diverse teaching aids, methods and use in classrooms. The secondary schools through the Parent Teachers' Association (PTA) and school councils should provide physical and technological infrastructure for the training of teachers and effective technology integration in secondary schools to boost teachers' attitudes toward curriculum change.

5.4.3. Recommendations to secondary schools' teachers.

Teachers should understand that certification is not enough in the teaching profession because with the advancement of technology and global trends, more and new ideas are brought in and implemented every day in the field. Continuous professional development are essential for teachers to stay current with best practices and innovative teaching methods. By continuously expanding their knowledge and skills, teachers can better meet the diverse needs of their students and create a dynamic learning environment. Additionally, ongoing learning opportunities can help teachers stay motivated and inspired in their careers.

Continuous learning also allows teachers to adapt to changes in curriculum, technology, and student demographics. It enables them to reflect on their teaching practices, identify areas for improvement, and seek out new strategies to enhance student engagement and achievement. different methods or techniques in teaching.

5.5. Policy Recommendation

5.5.1. Investment in Pedagogical Seminars

One of the key recommendations emanating from this study pertains to the allocation of resources by educational authorities and school administrators to organize regular pedagogic seminars and training workshops. These events should go beyond the traditional focus on the subject matter and delve into innovative teaching techniques, technology integration, and counselling. By doing so, teachers can be equipped with the necessary skills and knowledge to not only keep pace with but also effectively adapt to curriculum changes.

The findings of this study indicate a positive correlation between teachers' participation in pedagogic seminars and their attitudes towards curriculum change. Therefore, prioritizing these professional development opportunities is essential for preparing educators for the evolving landscape of education. Additionally, investing in ongoing professional development can ensure that teachers can provide the most up-to-date and effective instruction to their students.

5.5.2. Promoting Pedagogical Animation

Pedagogic animation, as highlighted in this study, plays a significant role in shaping teachers' attitudes towards curriculum change. To further strengthen this aspect, educational institutions and authorities should actively encourage and integrate pedagogic animation into teaching practices. Teachers must be provided with the requisite tools, training, and support needed to create engaging presentations and conduct effective model lessons. Recognizing and rewarding innovative teaching methods can serve as a powerful incentive for educators to embrace and implement pedagogic animation in their classrooms.

This hands-on approach allows students to engage with the material in a more meaningful way, leading to deeper comprehension and retention of information. Additionally, incorporating animation can help teachers personalize instruction and provide targeted support to students who may struggle with traditional teaching methods. This individualized approach to learning can help bridge the gap for students with diverse learning needs and ensure that all students have the opportunity to succeed.

5.5.3. Monitoring and Evaluation

Educational authorities should establish mechanisms for monitoring and evaluating the impact of professional development programs on teachers' attitudes toward curriculum change. Regular assessments and feedback loops can help identify areas for improvement and refine professional development strategies over time. By tracking the effectiveness of these programs, educators can make informed decisions on how to better support teachers in implementing new teaching techniques.

Additionally, ongoing monitoring can help ensure that educators are equipped with the necessary tools and resources to meet the diverse needs of their students. Ultimately, a commitment to monitoring and evaluation will lead to a more inclusive and effective educational system for all learners. Implementing regular assessments and feedback loops in continuous professional development programs is crucial for ensuring continuous improvement

and growth. By analyzing data and feedback, educators can tailor their support and resources to meet the specific needs of teachers. This personalized approach ultimately leads to more successful implementation of new teaching techniques and better outcomes for students.

5.5.4. Resource Allocation and Support

Schools should prioritize the allocation of necessary resources, including textbooks, teaching materials, and technology, to support curriculum changes. Additionally, schools should offer financial incentives or support for teachers to attend external training or workshops related to curriculum change. Mentoring programs are ongoing. Guidance from school administrators can also facilitate the effective implementation of curriculum changes. By ensuring that teachers have the resources they need and are supported in their professional development, schools can create an environment where curriculum changes are more likely to be successful. Providing financial incentives for teachers to attend training or workshops related to curriculum change shows a commitment to their growth and development.

5.5.5 Fostering a Collaborative Culture.

Schools should create a collaborative culture that encourages teachers to interact, share ideas, and discuss teaching practices. Collaborative planning sessions and opportunities for teachers to collaborate on curriculum design and implementation can lead to a more positive attitude toward change. Teachers who work together and support each other are more likely to stay engaged and enthusiastic about their profession. This collaborative culture can also benefit students, as teachers can share best practices and innovative teaching methods. By fostering a sense of community and teamwork among educators, schools can create a more dynamic and effective learning environment for all.

Teachers who feel supported and valued by their colleagues are more likely to feel motivated to try new approaches and techniques in the classroom. This collaborative spirit can lead to a culture of continuous improvement where educators are constantly learning from each other and growing professionally. Ultimately, this can result in higher student achievement and a more vibrant school community where everyone feels invested in each other's success. In conclusion, fostering collaboration among teachers is essential for creating a positive and effective learning environment for both educators and students.

5.5.6. Research and Innovation

Encourage teachers to engage in research on their lessons and teaching practices. Schools and educational authorities should provide platforms and support for teachers to conduct

research, experiment with new ideas, and share their findings. This can lead to a culture of innovation and continuous improvement. By encouraging teachers to engage in research and innovation, schools can foster a culture of continuous learning and improvement. This not only benefits individual teachers by helping them stay current with the latest teaching practices but also benefits the entire school community by promoting a collaborative and forward-thinking approach to education. By investing in research and innovation, schools can stay ahead of the curve and better prepare students for the ever-changing demands of the future. Ultimately, this focus on research and innovation can help schools adapt to the evolving needs of students and society as a whole. It can help shape the future of education and ensure that students are equipped with the skills and knowledge they need to succeed in an increasingly complex and competitive world. Through research and innovation, schools can stay ahead of the curve and anticipate changes in technology and society, preparing students for the challenges of tomorrow.

5.5.7 Targeted Training Programs

In light of the findings concerning the relationship between training programs and teachers' attitudes towards curriculum change, educational authorities and institutions must invest in targeted training initiatives. These programs should be meticulously designed to cater to the specific needs of teachers, taking into account the diverse challenges they face in adapting to curriculum changes. By customizing training programs, educators can receive the support and guidance they require to navigate the evolving educational landscape effectively. One crucial aspect of these targeted training programs should revolve around providing teachers with practical strategies to engage students and foster critical thinking. These strategies are essential for creating dynamic and effective learning environments. By imparting educators with innovative methods to captivate students' attention and stimulate their critical thinking skills, training programs can empower teachers to be more effective facilitators of learning.

5.5.8 Long-Term Commitment

Recognize that the relationship between continuous professional development and teachers' attitudes toward curriculum change is a long-term commitment. Policy initiatives and investments should be sustained over time to yield meaningful results. This means that support for ongoing training and resources should not be short-term solutions but rather a consistent and integral part of the education system. By maintaining a long-term commitment to professional development, teachers will be better equipped to embrace and implement curriculum changes effectively, ultimately benefiting both students and the overall quality of

education. Policymakers and stakeholders need to understand the importance of sustained investment in continuous professional development for long-lasting and positive outcomes in the education sector. This investment should include funding for workshops, conferences, mentorship programs, and other opportunities for teachers to enhance their skills and stay current with best practices in education.

5.5.9 Holistic Approach

Policy recommendations should consider the holistic development of teachers, encompassing not only pedagogical skills but also their overall well-being and job satisfaction. A satisfied and motivated teaching workforce is more likely to embrace and excel at curriculum changes. By addressing the needs of teachers on a holistic level, policies can help create a positive work environment that fosters creativity, innovation, and collaboration. This, in turn, will lead to better student engagement, higher academic achievement, and overall school success. By prioritizing the well-being and job satisfaction of teachers, education systems can ensure long-term sustainability and effectiveness in meeting the needs of all students. Ultimately, investing in the well-being and job satisfaction of teachers is an investment in the success of students. When teachers feel supported and valued, they are more likely to be engaged and dedicated to their profession, leading to a positive impact on the overall learning environment.

5.5.10 Collaboration with Stakeholders

Collaboration between educational authorities, schools, teachers, parents, and communities is essential in implementing and sustaining policy recommendations. Involving all stakeholders in the decision-making process ensures that policies are relevant, effective, and widely supported. This collaborative approach fosters a sense of ownership and accountability among all parties, creating a more cohesive and supportive environment for all involved, ultimately leading to greater success and fulfilment for everyone. In essence, investing in teachers is not just an investment in the present but also the future of our society as a whole. By working together, stakeholders can ensure that policies are implemented effectively and have a positive impact on the education system as a whole. Additionally, by involving teachers in the decision-making process, their expertise and insights can be utilized to address challenges and improve outcomes in the education system. This inclusivity also helps to build trust and strengthen relationships among stakeholders, leading to a more collaborative and harmonious working environment.

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Contributions of the study to knowledge, social science and discipline

Contributions to Knowledge

This study contributes to educational literature by providing empirical data on the relationship between CPD and teachers' attitudes toward curriculum adaptation. Previous research has often focused on either CPD or curriculum change in isolation. By integrating these components, the study enhances understanding of how professional development shapes educators' perceptions and readiness to embrace new curricula (Smith, 2021). The findings demonstrate that effective CPD enhances teachers' understanding of curriculum frameworks and pedagogical strategies. This enriched knowledge base fosters a positive attitude towards curriculum changes, leading to more innovative teaching practices. By emphasizing reflective practice, the study contributes to educational theories that underscore the importance of ongoing learning among educators

Contributions to Social Science

From a social science perspective, the study sheds light on the socio-cultural factors that influence teachers' attitudes. Understanding these factors is crucial, as teachers are not only implementers of educational policies but also agents of change within their communities. The findings have implications for social equity in education, as they highlight the necessity of culturally relevant CPD programs that resonate with the diverse perspectives of teachers (Johnson & Lee, 2020). By illustrating how CPD can shift teachers' attitudes and beliefs about curriculum, the research emphasizes the role of social constructs in education. This knowledge is crucial for policy makers aiming to implement effective curriculum change that acknowledge the social contexts in which teachers operate.

Contributions to Discipline

In the context of educational discipline, the study underscores the importance of supportive CPD frameworks in facilitating successful curriculum implementation. It shows that teachers who engage in CPD are more likely to feel confident and competent in delivering a revised curriculum, resulting in improved student outcomes. This contribution is vital for policymakers and educational leaders who aim to foster a disciplined approach to professional development that aligns with contemporary educational needs (Adams & Wright, 2019). The study reinforces the importance of discipline-specific training in CPD programs. It shows that when educators receive training relevant to their subject areas, their enthusiasm and commitment to curricular innovations increase. This connection between discipline and attitude towards curriculum change can lead to improved educational outcomes for students.

Overall, the study on continuous professional development and teachers' attitudes toward curriculum change offers valuable insights into knowledge formation, social science relevance, and educational discipline. By addressing the interconnectedness of these areas, it lays a foundation for future research and practical applications in educational settings

5.6 Recommendation for further research.

This study examined the relationship between continuous professional development and teachers' attitude towards curriculum change in selected secondary schools in Mfoundi Division. The study might not have exhausted everything in this field of study, however the results of this study may not have recorded all the opinion of the different teachers as far as this study is concerned. Therefor the researcher recommends the following:

- ❖ For this study, the researcher identified the most suitable approach as descriptive research, which quantitatively describes the relationships between variables. The data collected relied on self-reported responses from teachers, which may be subject to social desirability bias. Teachers might have provided answers they believed were expected, rather than reflecting their true attitudes. To address this limitation, future research could consider using more objective measures or incorporating multiple sources of data to validate the findings.
- ❖ The study utilized a survey and correlational research design, which provides a snapshot of attitudes and relationships at a specific point in time. While survey research designs are useful for gathering data efficiently, they do not allow for capturing changes or developments over time. Future studies could benefit from incorporating longitudinal designs to track how attitudes and relationships evolve. Additionally, combining survey data with qualitative methods such as interviews or observations could provide a more comprehensive understanding of the factors influencing teachers' attitudes in educational contexts. This multi-method approach could offer a more nuanced and in-depth analysis of the complex dynamics at play.
- ❖ While the Likert scale is a common measurement tool, it has limitations in capturing the complexity of attitudes. Combining quantitative data with qualitative methods might offer a more comprehensive understanding of teacher attitudes. By using a combination of survey data and qualitative methods, researchers can gather a more holistic view of the factors shaping teachers' attitudes. This approach allows for a deeper exploration of the nuances and complexities involved in understanding how teachers perceive and

respond to various educational contexts. By utilizing multiple measurement tools, researchers can gain a more nuanced understanding of the attitudes and motivations driving teachers' behaviors in the classroom.

- ❖ The research may have been limited by resource constraints, such as time and funding, which could impact the breadth and depth of data collection and analysis. Additionally, resource constraints may have also affected the ability to recruit a diverse sample of teachers, potentially limiting the generalizability of the findings. Future studies should consider ways to mitigate these constraints, such as securing additional funding or collaborating with other research teams to expand the scope of the study. Despite these limitations, the holistic approach taken in this research provides valuable insights into the multifaceted nature of teachers' attitudes and behaviors. The study is limited to secondary schools in Mfoundi Division, other research can be carried out in other secondary schools in different divisions of the country, in order to verify if the findings of this study could be generalized to all the divisions in Cameroon.
- ❖ The school's administration in charge of planification of subjects on the timetable should always promote teachers to carry out remediation to students. They should review teacher workload by reducing their hours of teaching and other core curricular workload to all secondary schools so that these teachers can have enough time to conduct remediation effectively.
- ❖ Teachers should be more dynamic in their teaching and techniques during program delivery. They should explore a variety of different methods from their training that will captivate student's interest. For example, they can make use of animation method in order to get students involved in learning activities.

5.7 Synthesis

This chapter has examined the summary of the research findings, discussion of findings, implication of the study, limitations, recommendations, and suggestions for further research. The next stage will focus on the general conclusion of the thesis and references.

This study has five specific objectives to examine continuous professional development and teachers' attitudes towards curriculum change in selected secondary schools in Mfoundi-Division. The works of authors and researchers related to the study, models, and theoretical framework were highlighted and discussed in the study. The survey research design is used with a sample population of 493 secondary school teachers from both anglophone and francophone

subsystems of education, with the questionnaire scales as the main instruments of data collection. The data was analyzed concerning the research hypotheses using the ANOVA test, T-test, Pearson correlation test, and multiple regression.

Also, a random sample was used and data was collected through a questionnaire on a five-point Likert scale. The regression results showed a significant positive relationship between Pedagogic seminars on teacher attitude towards curriculum change ($t = 4.185, p < 0.000$), The regression results showed a significant positive relationship between Pedagogical animation on teacher attitude towards curriculum change ($t = 3.609, p < 0.000$), The regression results showed a significant positive relationship between training on teaching techniques on teacher attitude towards curriculum change ($t = 2.936, p < 0.004$), The regression results showed a significant positive relationship between training on remediation techniques on teacher attitude towards curriculum change ($t = 2.700, p < 0.007$) and ($t = 3.218, p < 0.002$) resource on teachers attitude towards curriculum change. By recognizing the impact of pedagogic animation, offering targeted training programs, and ensuring the availability of support and resources, educational stakeholders can foster a positive and constructive environment that empowers educators to adapt effectively to evolving curricular frameworks.

One of the key takeaways from this study is the pivotal role played by pedagogic seminars in shaping teachers' attitudes. The regular organization of seminars, at the school level facilitated by educational authorities, has emerged as a beacon of enlightenment. These gatherings not only disseminate knowledge but also serve as platforms for teachers to engage, share experiences, and collectively grapple with the challenges and opportunities presented by curriculum changes. Pedagogic animation has emerged as a potent catalyst for fostering favorable attitudes among teachers. The enjoyment derived from engaging presentations and the value of adequate demonstrations during model lessons cannot be understated. These animated teaching methods not only enhance the effectiveness of instruction but also inspire teachers to embrace change with enthusiasm. Furthermore, training in teaching techniques and remediation methods has been revealed as a stepping stone to nurturing positive attitudes. Equipping teachers with the skills and strategies necessary to excel in their roles is akin to providing them with the tools to navigate the ever-evolving landscape of curriculum changes. Such training not only enhances their confidence but also bolsters their ability to adapt and thrive in dynamic educational environments.

In tandem with training and seminars, the availability of resources and support has emerged as a fundamental factor. Schools that allocate dedicated time for collaborative

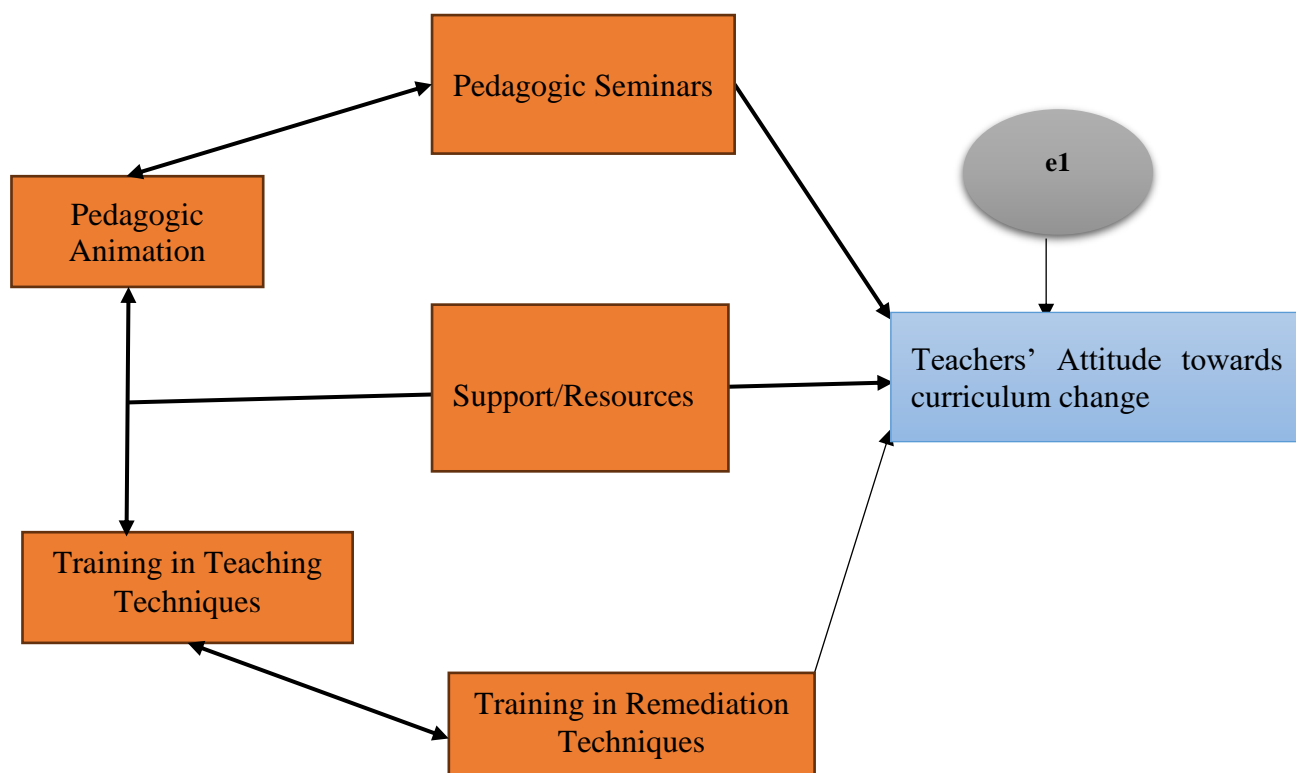
planning and provide teachers with necessary teaching materials and guidance tend to cultivate more favorable attitudes among their educators. This underscores the need for educational institutions to prioritize resource allocation and the creation of supportive ecosystems that empower teachers to embrace curriculum changes. The implications of this research are far-reaching. Policymakers and educational institutions are now armed with empirical evidence that underscores the importance of specific facets of professional development in enhancing teachers' attitudes

Acknowledging these findings and translating them into action can significantly elevate the quality of education and the effectiveness of curriculum change initiatives. Education is an ever-evolving sphere, and curriculum changes are inevitable in response to evolving societal needs and global trends. Therefore, the lessons gleaned from this study are not static but part of an ongoing journey. As educational landscapes continue to transform, the findings of this research can serve as guideposts, ensuring that teachers remain at the heart of effective educational reforms. In sum, this study stands as a substantial and meaningful contribution to the discourse surrounding curriculum change. It illuminates the intricacies of the teacher's role in curriculum change, emphasizing the need for continuous professional development and a supportive educational ecosystem. The perpetual enhancement of teaching and learning practices within the ever-evolving sphere of education remains an ongoing endeavor, and this research provides valuable insights to propel this journey forward.

5.8 Proposed model of the study

Figure 28: Model of the study

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Source: *Field work 2023*

Proposed model: The PPTTS model on Continuous Professional Development and Teachers' Attitude toward curriculum change in selected secondary schools in Mfoundi Division.

Explanation of the PPTTS model

The PPTTS model depicts graphically the relationship that exists between the factors of Continuous Professional Development, CPD, and Teachers' attitudes toward Curriculum Change. The central point in the diagram is "**Teachers' Attitude Toward Curriculum Change,**" which is governed by five major factors of CPD. The branches which are connected to the core middle include the following:

1. Pedagogical Seminars
2. Pedagogical Animation
3. Training in Teaching Techniques
4. Training in Remediation Techniques
5. Support/Resources

The design of the diagram suggests a CFA model where CPD is an overarching construct to which these five observed indicators contribute to creating teachers' attitudes toward curriculum change.

Key Components of the Model in Relation to the Study

Pedagogic Seminars: Pedagogic seminars provide teachers with the necessary insights and updates about curriculum modifications. According to the study results, pedagogic seminars significantly influence teachers' attitudes toward curriculum change ($\beta = 0.347$, $p < 0.000$). The diagram positions this factor as a major contributor, reinforcing the role of teacher training workshops in helping educators embrace new curriculum policies (Guskey, 2002). Pedagogic seminars serve as a platform for teachers to engage in discussions and exchange ideas about innovative teaching methods and curriculum changes.

By participating in these seminars, teachers are exposed to new perspectives and approaches to education, which can influence their attitudes towards curriculum change. Through collaboration with colleagues and exposure to new research and best practices, teachers may become more open-minded and receptive to implementing changes in the curriculum.

Ultimately, pedagogic seminars can empower teachers to embrace change and adapt their teaching practices to better meet the needs of their students. This can lead to a more dynamic and engaging learning environment for students, as teachers are able to incorporate new techniques and strategies into their lessons. Additionally, attending pedagogic seminars can help teachers stay current with the latest trends and advancements in education, ensuring that they are providing the most effective instruction possible.

Overall, these seminars play a crucial role in professional development and can have a lasting impact on both teachers and their students. By continuously seeking out opportunities for professional development, teachers can enhance their skills and knowledge, ultimately benefiting the students they serve. In addition to seminars, teachers can also participate in workshops, conferences, and online courses to further expand their expertise. By staying informed and proactive in their own learning, educators can stay ahead of the curve and provide the best possible education for their students.

Ultimately, investing in professional development is an investment in the future success of both teachers and their students. For example, a teacher who attends a workshop on incorporating technology in the classroom may learn new strategies for engaging students and

promoting critical thinking skills. By implementing these new techniques, the teacher can create a more dynamic and interactive learning environment, leading to improved student outcomes and overall academic success. Additionally, staying informed about the latest advancements in educational technology can help educators adapt to the digital age and better prepare their students for future careers. As a result, students can acquire valuable skills that are essential for success in a constantly evolving job market.

Pedagogic Animation: This element involves interactive and engaging teaching practices that help teachers understand the changes in curriculum. The regression analysis shows a positive effect of pedagogic animation on teacher attitude, $\beta = 0.275$, $p < 0.000$. The diagram illustrates this element as one of the most important mechanisms of CPD that creates an adaptive learning environment for teachers (Desimone, 2009). . By incorporating animations, teachers can better grasp complex concepts and effectively communicate them to their students. Animations can make abstract ideas more concrete and engaging, helping students retain information more effectively. Additionally, visual aids like animations can cater to different learning styles, making the material more accessible to a wider range of students.

Overall, integrating animations into teaching can enhance the learning experience and improve student comprehension and retention. Pedagogic animations can help teachers feel more confident in adapting to curriculum changes by providing them with a valuable tool to make difficult concepts more digestible for students.

With animations, teachers can present information in a more dynamic and interactive way, keeping students engaged and motivated to learn. This can ultimately lead to a more positive attitude towards implementing new curriculum changes, as teachers see the benefits of using animations to enhance their teaching methods. By incorporating animations into their lessons, teachers can feel more equipped to meet the demands of a changing curriculum and help students succeed in their learning journey. Animations can also help students retain information more effectively, as visual aids have been shown to improve memory and comprehension. This can result in higher test scores and overall academic achievement for students. Additionally, animations can accommodate different learning styles, making it easier for teachers to reach all students in their classroom. Overall, the use of animations in education can be a transformative tool that benefits both teachers and students in the learning process.

Training in Teaching Techniques: Teachers who receive professional training in modern teaching methodologies exhibit higher adaptability to curriculum changes. The regression results confirm its significance ($\beta = 0.212$, $p < 0.004$). The diagram visually represents this as

a factor ensuring teachers gain practical knowledge, thereby improving their instructional competence (Opfer & Pedder, 2011). These teachers are better equipped to engage students in interactive learning activities that cater to different learning styles. Additionally, their knowledge of innovative technology tools allows them to create dynamic and engaging lesson plans that enhance student comprehension and retention of material.

By staying informed about the latest research and trends in education, teachers can ensure that they are providing the most effective instruction possible. This commitment to ongoing learning also sets a positive example for students, showing them the value of lifelong learning and personal growth. Ultimately, investing in continuous professional development not only benefits individual teachers but also has a ripple effect on the entire educational community, leading to enhanced student achievement and success.

Additionally, teachers who engage in continuous professional development are better equipped to meet the diverse needs of their students and adapt their teaching strategies as necessary. This adaptability fosters a more inclusive and supportive learning environment, where all students can thrive. Furthermore, by collaborating with colleagues and sharing their knowledge and expertise, teachers can collectively elevate the quality of education within their school or district. In this way, investing in ongoing professional development is not only a personal growth opportunity for teachers but also a means of improving the overall educational experience for students.

Continuing to engage in professional development allows teachers to stay current with the latest research and best practices in education. This continuous learning enables educators to implement innovative and effective teaching methods that cater to the individual learning styles and abilities of their students. As a result, students are more likely to be engaged, motivated, and successful in their academic pursuits. Ultimately, investing in professional development is a win-win situation for both teachers and students, as it leads to a more enriching and rewarding educational experience for all involved. For example, a teacher who attends a workshop on differentiated instruction learns how to create lesson plans that accommodate various learning styles in their classroom. By implementing these new strategies, the teacher is able to better meet the needs of all students and foster a more inclusive learning environment. This results in improved academic performance and higher levels of student engagement and satisfaction.

Training in Remediation Techniques: Effective curriculum implementation requires teachers to cater to diverse learning needs, including remediation techniques for struggling

students. The regression model supports this relationship ($\beta = 0.184$, $p < 0.007$). The diagram integrates this aspect to show its contribution to curriculum change adaptation, emphasizing the need for differentiated instruction strategies (Avalos, 2011). It is essential for educators to be knowledgeable about various remediation strategies such as differentiated instruction, small group interventions, and personalized learning plans. By identifying the specific needs of each student and implementing targeted remediation techniques, teachers can help struggling students make significant academic progress.

Additionally, ongoing continuous professional development and collaboration with colleagues can further enhance teachers' ability to effectively support and remediate students who are facing challenges in their learning. Collaborating with colleagues allows educators to share successful strategies and learn from each other's experiences. This collective knowledge can help teachers better meet the diverse needs of their students and adapt their instruction accordingly. By staying up-to-date on the latest research and best practices in remediation, educators can continue to refine their skills and provide the necessary support for all students to succeed. This commitment to professional growth and collaboration ultimately benefits not only the struggling students but the entire learning community as a whole. Through ongoing collaboration and professional development, educators can cultivate a supportive network that fosters innovation and continuous improvement in teaching practices.

By pooling resources and expertise, teachers can identify effective interventions and tailor their instruction to address specific learning challenges. This collective effort ensures that all students receive the individualized support they need to thrive academically and reach their full potential. Ultimately, the dedication to professional growth and collaboration creates a culture of excellence that elevates the overall quality of education within the school community. For example, in a collaborative network of teachers, educators can share best practices for differentiating instruction to meet the diverse needs of students. By working together to analyze data and student progress, teachers can identify trends and patterns that inform their teaching strategies and interventions, leading to improved academic outcomes for all students.

Resources/Support: The availability of educational resources and administrative support is a factor that significantly influences teachers' readiness for the change in the curriculum, with $\beta = 0.289$, $p < 0.002$. This model incorporates this element as a structural variable that contributes to professional development and helps adapt the curriculum (Fullan, 2007). In addition to providing teachers with the necessary tools and materials, administrative support plays a crucial role in fostering a positive environment for curriculum changes. When teachers

feel supported by their administrators, they are more likely to embrace new teaching methods and strategies. By recognizing the importance of resources and support in the implementation of curriculum changes, schools can better prepare their educators for success in the classroom.

Administrative support also includes creating opportunities for professional development and ongoing training for teachers to stay current with educational trends and best practices. When administrators invest in the growth and development of their teachers, it not only benefits the educators themselves but also enhances the overall quality of education provided to students. By fostering a culture of collaboration and continuous learning, schools can create a dynamic and innovative environment where teachers feel empowered to experiment with new ideas and approaches in their teaching. Ultimately, this leads to improved student outcomes and a more engaging and effective learning experience for all involved. When teachers are supported and encouraged to try new strategies and techniques, they are more likely to adapt to the ever-changing needs of their students and adapt their teaching methods accordingly.

As a result, students are more likely to be actively engaged in their learning and develop the necessary skills and knowledge to succeed in the future. Additionally, a school that prioritizes continuous professional growth and development among its staff is more likely to attract and retain talented educators who are dedicated to continuously improving their practice for the benefit of their students. For example, a teacher who regularly attends pedagogic seminars and pedagogic animations to learn about new instructional methods may incorporate project-based learning into their curriculum, leading to increased student collaboration and critical thinking skills. This can ultimately result in higher student achievement and positive outcomes for the school as a whole.

Interpretation of CFA (Confirmatory Factor Analysis) Results

This structure follows the CFA model, in which all five factors load onto the latent variable, namely Teachers' attitudes toward Curriculum Change. The high value of R^2 , 0.999, shows that CPD explains about 99.9% of the variance in teachers' attitudes in the study. The structure of the diagram is circular and interconnected, indicating that CPD is a multidimensional construct, with the factors interrelated and dependent on one another. This structure follows the CFA model, in which all five factors load onto the latent variable, namely teachers' attitudes toward curriculum change. This structure follows the CFA model, in which all five factors load onto the latent variable, namely teachers' attitudes toward curriculum change.

This model was developed based on extensive research and analysis of teachers' beliefs and behaviors related to curriculum change. By incorporating all five factors into the latent variable, researchers were able to more accurately measure and understand teachers' overall attitudes toward curriculum change. This comprehensive approach provides a more nuanced understanding of the complexities involved in implementing and sustaining curriculum changes in educational settings.

Furthermore, the inclusion of these factors allows for a more holistic view of teachers' perspectives on curriculum change, taking into account their motivations, concerns, and readiness for implementation. By capturing the multidimensional nature of teachers' attitudes, researchers can better tailor interventions and support systems to address the unique challenges faced by educators in adopting new curriculum initiatives. Overall, this model enhances our ability to support teachers in navigating the complexities of curriculum change and ultimately improve the effectiveness of educational reforms.

By incorporating teachers' perspectives on curriculum change, educators can identify areas of resistance or apprehension and provide targeted professional development opportunities to address these issues. Furthermore, understanding teachers' motivations can help school leaders create a more supportive and collaborative environment for implementing new curriculum initiatives. Ultimately, by considering the multifaceted nature of teachers' attitudes towards change, educators can enhance the success and sustainability of curriculum reform in schools. This approach can lead to increased buy-in from teachers, resulting in more effective implementation of new curriculum strategies. Additionally, involving teachers in the decision-making process can foster a sense of ownership and investment in the changes being made, ultimately leading to a more positive and productive school culture. By prioritizing teachers' perspectives and needs, schools can create a more cohesive and unified approach to curriculum reform that benefits both educators and students alike.

The **PPTTS model** highlights the effect of CPD on teachers' perceptions of curriculum change. It shows that structured training, pedagogic innovation, and institutional support are very helpful in bringing a positive mindset among teachers toward the curriculum modification process. This result indicates that the policymakers have to strengthen the CPD programs if they want successful curriculum reforms at secondary schools within the Mfoundi Division.

5.9 Synthesis

Chapter four of the research study delved into the empirical analysis of data related to continuous professional development and teachers' attitudes toward curriculum change in selected secondary schools in the Mfoundi Division. The chapter commenced with the presentation of descriptive statistics, which involved the analysis of teachers' responses to questions related to pedagogic seminars, pedagogic animation, training in teaching techniques, training in remediation techniques, and the availability of support and resources. Descriptive statistics included means, standard deviations, and frequency distributions, providing an initial overview of the data. Following the descriptive analysis, the chapter employed inferential statistics to delve deeper into the relationships between professional development factors and teachers' attitudes toward curriculum change. Various statistical techniques, including multiple regression, were utilized to uncover these relationships.

The next chapter will be devoted to a detail discussion of these findings in relation to the research hypotheses and research questions explored in this study.



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GLOSSARY

Continuous professional development

According to Melanie Allen (2009), CPD refers to “the process of tracking and documenting the skills, knowledge, and experience that teachers gain both formally and informally as they work, beyond any initial training. It’s a record of what they experience, learn, and then apply. Thus, CPD can be comprehensively defined as "one that involves on-going divergent activities (formal, non-formal, and informal) that aim at developing the teacher educator’s intellectual abilities (cognitive domain), self-confidence, attitude, values, and interest (affective domain), and skills and competencies (psychomotor domain) for improving personality and carrying out the responsibilities of the teaching profession properly in accordance with the changing times and needs of the prospective teachers and society. However, the common denominator is that CPD concerns practices aimed at teachers' development beyond that derived from their initial training (Collin et al., 2012).

According to Egert et al. (2018), CPD involves “different facilitated learning opportunities to support the acquisition of professional knowledge, skills, and disposition, aimed at the improvement of teaching and, related to this, to beneficial student outcomes” .

Teacher

A ‘teacher’ is a person who delivers an educational program, assesses student participation in an educational program, and administers or provides consistent and substantial leadership to an educational program. The teacher is the second parent who thinks good about our future. Furthermore, everyone can apply to be a teacher, meaning that teachers do not only serve as teachers (deliver material in front of the class); however, they are able to position themselves as educators who are responsible for the development of their students, both at school and outside of school (Suwarno, 2017). The teacher is an element of education that is very influential in the educational process. In the perspective of Islamic education, the existence, role, and function of the teacher are a necessity that cannot be denied. There is no education without the presence of a teacher. The teacher is the determinant of the direction and systematics of learning, starting from the curriculum, facilities, forms of patterns, and how students should learn properly and correctly in order to access themselves to knowledge and life values. (Harahap, 2022).

Attitude

Attitudes can be said to be an evaluative statement concerning situations, objects, people, or events that can either be favorable or unfavorable, and they are a reflection of how someone feels about something (Robbins et al 2004). Accordingly, it can also be defined as a mindset or a tendency to act in a particular way due to both an individual's experience and temperament; it is an expression of someone's behavior towards his or her work, which can be summarized as either positive or negative (Pickens 2005). Attitudes can significantly impact a person's motivation, productivity, and overall job satisfaction. Positive attitudes often lead to enthusiasm, dedication, and a strong work ethic, while negative attitudes can result in resistance, dissatisfaction, and a lack of effort. These attitudes can also influence how individuals interact with their colleagues and supervisors, as well as how they approach challenges and opportunities in the workplace.

Attitudes can be broadly classified into three types, namely, job satisfaction, job involvement, and organizational commitment (Robbins et al 2004). Job satisfaction refers to an individual's general attitude towards his or her job. Job involvement has to do with how a person is psychologically involved in his or her job; he does his duty based on such elements as attachment, conformity, and loyalty, as well as acknowledging the organization's goals and willingness to work hard in order to materialize those goals (Emami et al 2013). Organizational commitment, on the other hand, is the extent to which an individual identifies with the goals and values of the organization they work for. It is about feeling a sense of belonging and loyalty towards the organization, as well as being willing to put in extra effort to help the organization succeed. These three types of attitudes towards work are important for both the individual and the organization, as they can impact job performance, job satisfaction, and overall organizational success.

Teacher's attitude

The attitudes of the teachers can be defined in terms of the process by which they organize and interpret their sensory impression to give meaning to their environment, which may not be the objective reality (Okwara, V. U, 2016). This means that the teachers' attitudes towards their classroom practices may be influenced by their emotions, beliefs, learning and reasoning amongst other factors and teachers' attitudes towards their classroom practices can either be positive or negative depending on their beliefs and emotions towards the curriculum.

The teachers' attitudes can either enhance or impede the implementation of curriculum change. This suggests that positive teacher attitudes will positively influence classroom practices while negative teacher attitudes will negatively influence classroom practices which

may lead to failed implementation of the curriculum (Blackman, S., Conrad, D., & Brown, 2012). They also indicated that attitudes are affected and shaped by the quality of preparation and experiences of the teacher. Teachers' attitudes can also be classified in terms of job satisfaction, job involvement and organizational commitment (Robbins, S. P, 2009) Teachers with high job satisfaction will have positive attitudes toward their classroom practices.

Curriculum

Glathorn (1987) defines curriculum as plans made for guiding learning in schools, usually represented in retrievable documents of several levels of generality, and the implementation of those in the classroom, which takes place in a learning environment that also influences what is learned. According to Tyler (1969), curriculum is all the learning of students, which is planned and directed by the school to attain its educational goals. In the same light, Wheeler (1967) defines curriculum as planned experiences offered to the learners under the guidance of the school. Curriculum has also been defined as a policy statement about a piece of education as a way to indicate the way in which policy is to be realized through a program of action (Baba, 2015).

Yusuf (2012) viewed curriculum as the planned and unplanned experiences that children are exposed to within and outside the school environment for individual and collective growth. According to Pastory (2016), curriculum refers to the existing contract between society, the state, and educational professionals with regard to the educational experience that learners should undergo during a certain phase of their lives, including why they should learn something, what to learn, when to learn it, how to learn it, and with whom to learn it. It defines the educational foundations, contents, and sequencing in relation to the learning experiences, characteristics of the teaching institutions, methods to be used, the sources for learning and teaching (for example, textbooks), evaluation mode, and teacher's profiles.

Curriculum change

Hancock, Dyk, & Jones (2012) define curriculum change as the transformation of the curriculum schemes, for example, their design, goals, and content. That is, it refers to the linkages or close working relationship between developers of syllabi, assessors of the syllabi (examination bodies), implementers of the syllabi (teachers), consumers of the syllabi (students), evaluators of implementation of the syllabi (school inspectors), consumers of the graduates (employers), and supporting education stakeholders (parents and community members). It means making the curriculum different in some way to give it a new position or

direction. According to Dziwa (2013), curriculum change is not a matter of the supply of appropriate technical information; rather, it involves changing attitudes, values, skills, and relationships.

Secondary Schools

According to Endeley & Samkea (2017) secondary school in Cameroon is a stage to be attended by students after six years of primary education, a stage before tertiary education. That is, a stage for youth direction on subject specialization leading to issues of professionalism. The significance attached to this requires a productive school system with efficient resources for teaching and learning. Secondary education refers to the stage of formal education that follows primary education and precedes higher education. It is typically offered to students between the ages of 14 and 18, although the specific age range may vary depending on the educational system and country. The purpose of secondary education is to provide students with a well-rounded education that prepares them for higher education or the workforce. It aims to develop their intellectual, social, and emotional skills while also fostering critical thinking, creativity, and independence.

APPENDICES

Appendix 1: Questionnaire to teachers

Dear Respondents,

The researcher is a Ph.D. student in the Faculty of Education, University of Yaoundé I, Department of Curriculum and Evaluation. The researcher is currently undertaking research for a doctorate degree on the topic "Continuous professional development and teachers' attitude towards curriculum change in selected secondary schools in the Mfoundi division. Though the primary purpose of the research is to meet the requirements of the above degree, it is expected that its results will go a long way in enhancing motivation in our schools. Your participation in this study is greatly valued, used only for the purpose of the research, and will be treated with confidentiality. Your responses will provide valuable insights into the topic being researched. Your honest and thoughtful answers to the questionnaire will help contribute to the advancement of knowledge in the field of education. Your input will be kept confidential and used solely for academic purposes. Thank you in advance for taking the time to complete the questionnaire.

SECTION A: Questionnaire on Continuous Professional development.

Instructions: Please read each statement and tick the box which closely matches

your opinion on each scale: 1(SD) Strongly Disagree, 2(D) Disagree, 3(N)Neutral, 4(A) Agree and 5(SA) Strongly Agree. There is no right or wrong answer. We are looking for your overall expression on each statement.

I. Pedagogical seminars

		1	2	3	4	5
1.	The school administrators organize seminar for teachers to adapt to curriculum changes.					
2.	The delegation organizes training workshop to introduce ways of teaching.					
3.	Interacting and sharing ideas with colleagues helps in assessing our teaching practice					
4.	Sharing our teaching experience contribute to our development.					
5.	The primary focus of the training program is basedon subject matter, technology, curricular update theory and counselling.					
6.	Pedagogic seminars are organized regularly in myschool					

II. Pedagogical animation

		1	2	3	4	5
7.	I really enjoy presentation during model lessons					
8.	Adequate demonstration during model lessons is helpful to teachers.					
9.	I am given opportunities to share my difficulties					
10.	I am provided with guidance on the subject I teach					
11.	I feel confident talking to my colleagues about my difficult work's need and support					
12.	I feel confident asking help from my colleagues about difficulties					

III. Training on teaching techniques

		1	2	3	4	5
13.	I have been trained to make students have a mastery of the subject I teach					
14.	I have learned to engage student's attention in learning during classes					
15.	I have been trained to make students participate in the construction of knowledge during lessons					
16.	I have been trained to use various teaching strategies to make learning easy for students					
17.	I participate in In-service training meeting to improve on my teaching skills					
18.	I usually give my students take home assignment to facilitate their learning skills					

IV. Training on remediation techniques

		1	2	3	4	5
19	I have been trained to carryout remedial classes for students					
20	After every assessment I give remedial lessons to students in need for them to improve					
21	I have been trained to analyze learner's Need					
22	Remedial classes are important for both students who have passed the sequence lessons and for those who have not passed					
23	I have been trained on how to re-evaluate Students					
24	Remedial classes help to improve students understanding.					

V. Support and resources

		1	2	3	4	5
25	The school provides adequate resources (e.g., textbooks, teaching materials, technology) to support curriculum changes.					
26	I have access to necessary teaching materials and resources to effectively implement the new curriculum.					
27	The school offers financial support or incentives for teachers to attend external training or workshops related to curriculum changes					

28	I receive ongoing support and guidance from school administrators or mentors to implement curriculum changes effectively.					
29	The school allocates dedicated time for collaborative planning and sharing best practices among teachers to support curriculum change initiatives.					

Section B: Questionnaire on teachers' attitude towards curriculum change

Instructions: Please read each statement and tick the box which closely matches your opinion on each scale: 1=Strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree and 5=Strongly Agree

		1	2	3	4	5
30	Implementing new teaching method come with much workloads					
31	Continuous professional development is usually too bulky to facilitate adaptation to changes					
32	Change usually helps to improve unsatisfactory situation at my school					
33	Most schools staff see change like something difficult to implement					

34	I usually hesitate to try new ideas					
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35	I am encouraged to do research on my lessons					
36	I find myself avoiding changes that would benefit me					
37	Most changes are somehow irritating					
38	I am monitored and guided to make sure I properly cover the syllabus no matter the work load					
39	Resource materials to handle changes in the curriculum is not always easy to understand					
40	Curriculum change comes with much research and new ideas that frustrate me					
41	I usually resist change					

SECTION C : Questionnaire on socio- demographic determinants.

Instructions: Please Tick the box corresponding to your preferred response and fill in the blank spaces with short answers. Also, rest assured that the data collected will be used only as part of this research.

42. Gender: (1) Male (2) Female 37. Age

43. Marital Status: (1) Married (2) Single (3) Divorced (4) Other-----

44. Name of School? -----

45. What discipline do you teach? -----

46. Years of teaching experience? -----

47. Highest academic diploma (1) Degree (2) Maîtres/Master 1 (3) Master/DEA (4) PhD/Doctorate (5) Other (specify)-----

48. Professional qualification: (1) DIPES 1 (2) DIPES II (3) Other (specify)-----

49. Position held: (1) Teacher (2) Director (3) Principal (4) Vice-principal (5) Other (specify)-----

Thanks for your kind collaboration

Appendix 1: Questionnaire in french

Chers répondants

Le chercheur est doctorant à la Faculté des Sciences de l'Education de l'Université de Yaoundé I, Département du Curriculum et de l'Evaluation. Il entreprend actuellement des recherches en vue de l'obtention d'un diplôme de doctorat sur le thème suivant : Le développement professionnel continu et l'attitude des enseignants à l'égard du changement de programme dans certaines écoles secondaires du Mfoundi. Bien que l'objectif principal de la recherche soit de répondre aux exigences du diplôme susmentionné, on s'attend à ce que ses résultats contribuent grandement à renforcer la motivation dans nos écoles. Vos réponses sincères et honnêtes seront grandement appréciées et utilisées uniquement dans le cadre de la recherche et seront traitées de manière confidentielle. Nous vous remercions de votre sincère coopération.

SECTION A : Questionnaire sur le développement professionnel continu

Instructions : Veuillez lire chaque affirmation et cocher la case qui correspond le mieux à votre opinion sur chaque échelle.

vosre opinion sur chaque échelle : 1(SD) Pas du tout d'accord, 2(D) Pas d'accord, 3(N) Neutre, 4(A) D'accord et 5(SA) Tout à fait d'accord. Il n'y a pas de bonne ou de mauvaise réponse. Nous cherchons à connaître votre expression globale sur chaque affirmation.

I. Séminaires pédagogiques

		1	2	3	4	5
1	Les directeurs d'écoles organisent des séminaires pour les enseignants afin qu'ils s'adaptent aux changements de programme					
2	La délégation organise des ateliers de formation pour introduire des méthodes d'enseignement.					
3	L'interaction et le partage d'idées avec les collègues permettent d'évaluer notre pratique pédagogique.					
4	Le partage de notre expérience en matière d'enseignement contribue à notre développement.					

5	Le programme de formation est principalement axé sur la matière, la technologie, la théorie de la mise à jour des programmes d'études et le conseil.					
6	Des séminaires pédagogiques sont organisés régulièrement dans mon établissement					

II. Animation pédagogique

		1	2	3	4	5
7.	J'aime beaucoup les présentations pendant les leçons modèles					
8.	Les démonstrations adéquates pendant les leçons modèles sont utiles aux enseignants.					
9.	J'ai la possibilité de faire part de mes difficultés					
10.	Je reçois des conseils sur la matière que j'enseigne					
11.	Je me sens à l'aise pour parler à mes collègues des besoins et du soutien dont j'ai besoin pour mon travail difficile.					
12.	Je me sens à l'aise pour demander de l'aide à mes collègues en cas de difficultés					

III. Formation aux techniques d'enseignement

		1	2	3	4	5
13.	J'ai été formé pour que les apprenants maîtrisent la matière que j'enseigne					
14.	J'ai appris à mobiliser l'attention des apprenants dans l'apprentissage pendant les cours					

15.	J'ai appris à faire participer les apprenants à la construction des connaissances pendant les cours					
16.	J'ai été formé à utiliser diverses stratégies d'enseignement pour faciliter l'apprentissage des élèves.					
17.	Je participe à des réunions de formation continue pour améliorer mes compétences pédagogiques.					
18.	Je donne généralement à mes étudiants des devoirs à faire à la maison pour faciliter leur apprentissage.					

IV. Formation aux techniques de rattrapage

		1	2	3	4	5
19	J'ai été formé pour dispenser des cours de rattrapage					
20	Après chaque évaluation, je donne des leçons aux apprenants qui en ont besoin pour s'améliorer.					
21	J'ai été formé pour analyser les besoins de l'apprenant					
22	Les cours de rattrapage sont importants à la fois pour les élèves qui ont réussi la séquence que pour ceux qui n'ont pas réussi les cours de					
23	Je suis formé à la réévaluation des apprenants					
24	Les cours de rattrapage permettent d'améliorer la compréhension des apprenants.					

V. Soutien et ressources

		1	2	3	4	5
25	L'école fournit des ressources adéquates (par exemple, des manuels, du matériel pédagogique, de la technologie) pour soutenir les changements de programme.					
26	J'ai accès au matériel et aux ressources pédagogiques nécessaires pour mettre en œuvre efficacement le nouveau programme.					
27	L'école offre un soutien financier ou des incitations aux enseignants pour qu'ils assistent à des formations ou à des ateliers externes liés aux changements de programme.					
28	Je reçois un soutien et des conseils continus de la part des administrateurs ou des mentors de l'établissement pour mettre en œuvre efficacement les changements apportés au programme scolaire.					
29	L'établissement consacre du temps à la planification collaborative et au partage des meilleures pratiques entre les enseignants afin de soutenir les initiatives de changement de programme.					

SECTION B : Questionnaire sur l'attitude des enseignants face au changement de programme scolaire

Instructions : Veuillez lire chaque affirmation et cocher la case qui correspond le mieux à votre opinion sur chaque échelle : 1 = Pas du tout d'accord, 2 = Pas d'accord, 3 = Neutre, 4 = D'accord et 5 = Tout à fait d'accord.

		1	2	3	4	5
30	La mise en œuvre de nouvelles méthodes d'enseignement					
31	Le développement professionnel continu est généralement trop lourd pour faciliter l'adaptation aux changements					
32	Le changement permet généralement d'améliorer une situation insatisfaisante dans mon établissement					
33	La plupart des membres du personnel des écoles considèrent le changement comme quelque chose de difficile à mettre en œuvre					
34	En général, j'hésite à essayer de nouvelles idées					
35	Je suis encouragé à faire des recherches sur mes cours					
36	Je me surprends à éviter des changements qui me sont bénéfiques					
37	La plupart des changements sont quelque peu irritants					
38	Je suis suivi et guidé pour m'assurer que je couvre correctement le programme d'études, quelle que soit la charge					

39	Les ressources documentaires pour gérer les changements dans le programme d'études ne sont pas toujours faciles à comprendre					
40	Les changements de programme s'accompagnent de nombreuses recherches et de nouvelles idées qui me frustrant					

SECTION C : Questionnaire sur les déterminants socio-démographiques.

Instructions : Veuillez cocher la case correspondant à votre réponse préférée et compléter les espaces vides par des réponses courtes. Soyez également assuré que les données collectées ne seront utilisées que dans le cadre de cette recherche.

42. Sexe : (1) Masculin (2) Féminin 37. L'âge

43. État civil : (1) Marié (2) Célibataire (3) Divorcé(e) (4) autre-----

44. Nom de l'établissement ? -----

45. Quelle discipline enseignez-vous ? -----

46. Années d'expérience dans l'enseignement ? -----

47. Diplôme universitaire le plus élevé (1) Licence (2) Maîtres/Master 1 (3) Master/DEA (4) PhD/Doctorat (5) Autre (précisez)-----

48. Qualification professionnelle : (1) DIPES 1 (2) DIPES II (3) autre (préciser)-----
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49. Fonction occupée : (1) Enseignant (2) Directeur (3) Principal (4) Vice-principal (5) Autre (préciser)-----

Merci de votre aimable collaboration

Appendix 2: Determining Sample Size for research

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	346
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	354
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	191	1200	291	6000	361
45	40	170	118	400	196	1300	297	7000	364
50	44	180	123	420	201	1400	302	8000	367
55	48	190	127	440	205	1500	306	9000	368
60	52	200	132	460	210	1600	310	10000	370
65	56	210	136	480	214	1700	313	15000	375
70	58	220	140	500	217	1800	317	20000	377
75	63	230	144	550	226	1900	320	30000	379
80	66	240	148	600	234	2000	322	40000	380
85	70	250	152	650	242	2200	327	50000	381
90	73	260	155	700	248	2400	331	75000	382
95	76	270	159	750	254	2600	335	1000000	384

N = Population Size

S = Sample Size

Source: from R.V Krejcie and D.W. Morgan (1970). Determining Sample Size for research Activities, Educational and Psychological measurement 30,608, Sage Publications.

Appendix 3: Geographical location of Mfoundi Division



Source: download file/storage/emulated/o/download/yaounde-carte-administrative-et-presentation-des-quartiers.png.