BARRIERS TO TEACHER'S IMPLEMENTATION OF PROJECT BASED LEARNING AND LEARNER'S ACQUISITION OF PRACTICAL SKILLS. CASE OF SOME GOVERNMENT PRIMARY SCHOOLS IN MFOUNDI DIVISION

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To my beloved husband BILOA CREPIN and children.

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SUMMARY

LIST OF ABBREVIATIONS AND ACRONYMS

CBA: Competency Based Approach.

ETSSP: Education and Training Sector Strategy Paper.

CERSP: Cameroon Education Reform Support Program.

GESP: Growth and Employment Strategy Paper.

ILO: International Labour Organisation.

MINEDUB Ministry of Basic Education.

NAP: New Pedagogic Approach.

NDS 30:   National Development Strategy 2030

OBA: Objective Based Approach.

PAREC : Programme d'Appui à la Réforme de l'Education au Cameroun.

PBL: Project Based Learning.

PMI :   Project Management Institute.

PSE :   Project Support Environment.

SPSS: Statistical Package for Social Science

UNIDO: United Nation's Industrial Development Organisation.

UNO: United Nation's Organisation.

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ABSTRACT

Our study is titled "***Barriers to Teacher's Implementation of Project Based Learning and Learner's Acquisition of Practical Skills***". Since 2018, a new active and pragmatic teaching method, Project Based Learning was instituted in the New Curriculum for primary schools aimed at developing learner's aptitudes in practical work through projects realisations in classrooms for instance producing a broom, fabricating a chair, molding a pot , stitching, baking a cake, perfect use of a computer and so on. From an observation that in most government primary schools in Mfoundi Division Center region of Cameroon, this pedagogic reform is nearly inexistent. Being inquisitive to find an explanation on what could obstruct the implementation of Project Based Learning in schools, we conducted a field study in six (06) schools from three (03) different sub-divisions (Yaounde 2, 5 and 6 sub-divisions) selected randomly. A sample size of sixty (60) teachers and five (05) head teachers constituted the population of our study. We opted for a mixed study so used the questionnaires and interview guide as instruments of data collection. Data collected was analysed through the Chi-square independence test for the quantitative data and content analysis for qualitative data with the help of SPSS version 25. The following results were obtained from the data analyses: **RH1** revealed that the lack of resources: pedagogic, material and financial significantly influences learner's acquisition of practical skills with Chi-square value = 213,683 with degree of freedom= 99, associate P-value =,000 below threshold of 0,05. With this result the null Hypothesis (H0) is rejected and the alternative hypothesis (Ha) accepted. **RH2** revealed that the insufficient in-service training of teachers significantly influences learner's acquisition of practical skills with Chi-square value, = 136,281 with degree of freedom =81, associate P-value= ,000 below threshold of 0,05. When the p-value is below the significance level of 0,05 the alternative hypothesis (Ha) accepted and the null hypothesis (H0) rejected. **RH3** revealed that overcrowded classrooms significantly influence learner's acquisition of practical skills with Chi-square value= 155,740 with degree of freedom =81, associate P-value =,000 below threshold of 0,05. The result validated the alternative hypothesis (Ha) and the null hypothesis (H0) was rejected. The three research hypotheses accepted, validated the general hypothesis of the study which stipulate that barriers to teacher's implementation of Project-Based Learning significantly affect learner's acquisition of practical skills. The study calls for the attention of the competent bodies in the field of education precisely the Ministry of Basic Education to consider these barriers, provide solutions so as to ameliorate the implementation of Project Based Learning in particular and quality education in primary schools in general.

Keywords: Barriers, Implementation, Project, Learning, Practical Skills.

RESUME

Notre étude s'intitule "***Entraves à l'application de la pédagogie des projets et acquisition des aptitudes pratiques des élèves***". Depuis 2018, les curricula ont instauré une nouvelle méthode d'apprentissage qui vise à développer les aptitudes pratiques des apprenants. Par exemple : Produire un balai, fabriquer une chaise, mouler un pot, raccommoder un vêtement, faire un gâteau, maitriser l'outil informatique et autres à travers la réalisation des micro-projets dans les salles de classes. Partant sur une observation que dans la plupart d'écoles publiques dans le département du Mfoundi Région du Centre- Cameroun cette réforme pédagogique est presqu'inexistante. Face à cette situation, nous voulions dénicher les facteurs qui freinent l'application de la pédagogie des projets dans les écoles. Ainsi, nous nous sommes proposés de mener une enquête dans six (06) écoles publiques dans trois (03) différents arrondissements du département à partir d'une sélection aléatoire simple (arrondissements de Yaoundé 2, 5 et 6). Un échantillon de soixante (60) enseignants et cinq (05) Directeurs d'écoles constituait notre population d'étude. Nous avons opté pour une étude mixte et avons utilisé le questionnaire et le guide d'entretien comme instruments de collecte des données. L'analyse desdites données a été faite par le test d'indépendance du Khi carré en ce qui concerne les données quantitatives et, celle de contenu pour les données qualitatives réalisée par le logiciel SPSS version 25 pour aboutir aux résultats suivants : **HR1** indique que le manque de ressources pédagogiques, matérielles et financières influence significativement l'acquisition des aptitudes pratiques des élèves avec la valeur statistique du Khi-carré =213,683 degrés de liberté = 99, valeur p associée =,000 inférieure au seuil de signification de 0,05. Ce qui nous emmène à rejeter l'hypothèse nulle (H0) et accepter l'hypothèse alternative (Ha). **HR2** révèle que la formation limitée des enseignants influence significativement l'acquisition des aptitudes pratiques des élèves avec la valeur statistique du khi-carré =136,281, degrés de liberté= 81, valeur p associée =,000 inférieure au seuil de signification de 0,05. Conclusion, hypothèse alternative (Ha) validée et hypothèse nulle (H0) rejetée. **HR3** révèle que les effectifs pléthoriques des salles de classes influencent significativement l'acquisition des aptitudes pratiques des élèves avec la valeur statistique du khi-carré= 155,740, degrés de liberté =81, la valeur p associée= ,000 inférieure au seuil de signification de 0,05. Résultat qui accepte l'hypothèse alternative (Ha) et rejette l'hypothèse nulle (H0). Nos trois (03) hypothèses de recherche validées nous emmènent à confirmer l'hypothèse générale de l'étude qui stipule que les entraves à l'application de la pédagogie des projets affectent significativement l'acquisition des aptitudes pratiques des élèves. L'étude interpelle donc les pouvoirs compétents dans le domaine de l'éducation notamment Le Ministère de L'Education de Base à prendre ces difficultés en compte, trouver des solutions afin d'améliorer l'application de la pédagogie des projets en particulier et, la qualité de l'éducation dans les écoles primaires en général.

Mots clés : Entraves, Application, Projet, Apprentissages, Aptitudes pratiques.

GENERAL INTRODUCTION

Being in an educational era directed towards the promotion of skills and entrepreneurship, learning nowadays is moving towards more of practical work than lecturing. The vision of basic education today is to make primary school not only a provider of certificates but a builder of skills and aptitudes in learners. Learners should gain in creativity skills, autonomy, leadership, entrepreneurship, problem solving skills (New curriculum 2018). So that by the end of the primary cycle of education a learners will be able to do something concrete for instance produce a broom; weave a basket, bake a cake, stitch a dress, produce a fruit juice and so on. According to the Ministry of Basic Education, every child is endowed with learning potentials which need to be awakened and guided by appropriate instruction and instructional materials. It is at this juncture that Project Based learning instituted in the New Curriculum of 2018 was implemented in primary schools straight forward.

Project Based Learning is defined as a pragmatic approach to learning in which learners create their own knowledge through learning activities built around an inquiry and a high degree of engagement with meaningful task (New curriculum 2018).The curriculum proceeds by saying that projects are designed to allow learners with a variety of learning styles to demonstrate they acquired knowledge, skills and attitudes. Dewey (1938) terms Project Based Learning as 'learning by doing'

From an observation that Project Based Learning is sadly and shallowly applied in schools; little or no project realisation carried out, difficult to see learners doing a practical activity, and learning still remaining very theorical. This triggered the researcher to investigate on the factors that may obstruct teachers to implement Project Based Learning in schools an how this creates an impediment in learners acquisition of practical skills. Thus, the research topic "Barriers to Teacher's Implementation of Project Based learning and Learners Acquisition of Practical Skills". Our study is made up of five chapters partitioned as follows:

Chapter One- The Problem of the Study.

Chapter one is constituted of the context and justification of the study, the problem statement, the research questions, the hypotheses, the objectives, the significance of the study, delimitation of the study and finally, the operational definition of terms. The study leans on the context of quality education backing on the Sustainable Development Goal 4 (SDG4). In fact in quest of concretising educational plans according to prescriptions of the National Strategy Plan 2030, the ministry of basic education has laid solid foundation in primary education by implementing active methods of teaching directed towards the building of skills and entrepreneurship. This will prepare learners to career readiness. It is at this juncture that Project

Pedagogy was instituted in primary schools in 2018.Project Based Learning is therefore an active and pragmatic approach to learning in which learners create their own knowledge through learning activities built around an inquiry and a high degree of engagement with meaningful task (Primary curriculum 2018).

The problem of the study arise from the fact that since 2018, over six years of its implementation in primary schools, Project Based Learning is nearly inexistent in schools, it is shallowly applied by teachers. During our various internships in schools we observed that teachers we still centered in the classical classroom where learning remains very theorical instead of carrying out more practical work meanwhile the curriculum recommends eight projects in an academic year. Failing to carry out project pedagogy will jeopardize learners acquisition of practical. This research investigates on the factors that hinders teachers from successfully implementating Project Based Learning in schools and establish a link on how this affects learner's acquisition of practical skills.

To dig more into our investigation, we asked the following questions. As general research question we asked to what extent do barriers to teachers implementation of Project Based Learning affect learners acquisition of practical skills?

Three secondary questions were asked:

1-In what way do the lack of resources: pedagogic, material and financial influence learners acquisition of practical skills?

2- How do the insufficient in- service training of teachers influence learners acquisition of practical skills?

3-In what way do overcrowded classrooms influence learners acquisition of practical skill?

The researcher obviously provided provisional answers to the research question which are formulated as follow:

The general hypothesis: Barriers to teachers implementation of Project Based Learning significantly affect learner's acquisition of practical skills.

Secondary research questions.

1- The lack of resources: pedagogic, material and financial significantly influence learner's acquisition of practical skills.

2- The insufficient in-service training of teachers significantly influence learners acquisition of practical skills.

3- Overcrowded classrooms significantly influence learner's acquisition of practical skills.

The research questions and hypotheses aimed for a purpose thus the objective of the study are formulated as follow:

The general objective of the study is to examine the extent to which barriers to teacher's implementation of Project Based Learning affect learner's acquisition of practical skills.

The specific objective are:

1- To assess how the lack of resources: pedagogic, material and financial influence leaner's acquisition of practical skills.

2- To study the extent to which the insufficient in-service training of teachers influence learner's acquisition of practical skills.

3- To examine the extent to which overcrowded classrooms influence learner's acquisition of practical skills.

The study is significant as it is going to touch all the stakeholders in education that is teachers, learners, parents and policy makers in order to provide solutions which are going to be beneficial to ameliorate the implementation of project based learning in schools.

Chapter Two-The Literature Review.

In chapter two we have the literature review, the theorical framework and the conceptual framework. The researcher exploited the works of some authors for example John Dewey, Blumenfeld, Bell Stephanie, Lilian Wisysahnuy, Shabban Aldabus and others to have a better understanding of the concept of project based learning .Three theories were employed to support the hypotheses of the study. The first and main theory employed is the situational contingency theory of Fred Fieldler which is based upon the premises that all management is situational in nature and posits that planning and organizing must be tailored to the specific issues or circumstances an organization may face. An organization should adapt to changes.

The second theory employed is the Adult Learning Theory-Andragogy of Malcom Knowles. This theory posits on an individual's willingness to learn as a person matures which makes him,or her to accumulate a reservoir of experience that becomes an increasing resource of learning. The theory insists that adults should be implicated in the planning and evaluation of their training this will enable them to yield a better output. The third theory is the scaffolding

Theory of Jerome Brunner which posist that children need active help from their teachers and other adults when learning a new concept.

Chapter Three - The Research Methodology.

Chapter Three is constituted of the methodology of the study with the descriptions of the research design, the research approach, the area of the study, the population of the study (target accessible and sample), the sampling techniques, description of the data collection instruments, validity and reliability of data collection instruments, and the data analyses techniques.

As far as the methodology of the study is concerned, the research design is the descriptive design and the study opted for the mixed research approach that is using the quantitative and qualitative methods. The field work was done in six (06) schools in three (03) different sub divisions in Mfoundi division precisely in Yaounde 2, 5 and 6 sub-divisions after a pilot study in Yaounde 4 sub-division. The population of the study is made of 60 (sixty) teachers and 5 (five) head teachers. Two sample techniques were used; the simple random technique and the purposive samping. The instrument of data collection were the questionnaire for quantitative data and the interview guide for qualitative data. Data collected as analysed by the Pearson Chi square test of independence and content analysis for quantative and qualitative data respectively.

Chapter Four -Data Analyses and Interpretation.

Chapter four comprises of the analysis and interpretation of data (descriptive statistics, interview guide, hypotheses test). Data

Chapter Five - Discussion of the Findings, Limitations, Perspectives for further Studies, Recommendations, General Conclusion.

Chapter five will tackle the discussions of the findings, the Limitations of the study, suggestions for further studies will be made followed by recommendations and finally general conclusion of the study.

CHAPTER ONE: THE PROBLEM

In the first chapter of the study we shall start by presenting the context in which our study lies together with the justification of the study. We are then going to situate the problem of our study, after which the research questions will follow; the general research question and the specific research questions. The various hypotheses of the study shall be given starting with the general hypothesis then the specific or secondary hypotheses. We are going to proceed with the objectives of the study that is the general objective of the research and the specific objectives of the research. The significance of the study shall be given followed by the delimitation of the study. The chapter will end with the operational definitions of terms of the research topic.

1.1. Context and justification

One of the greatest challenges of developing countries is to aspire to economic development. The United Nations Organisation battles for global development and supports countries worldwide to be full participants of this global investment. The UNO across a series of programs and frameworks defines general development policies thus in 2015 formulated the Sustainable Development Goals (SDG). This is a universal call to end poverty, protect the planet and ensure that in 2030 all people enjoy peace and prosperity. Talking about poverty reduction, many African countries are still facing a lot of difficulties to ascend to economic growth especially with the problem of youth's unemployment.

The International Labour Organisation (ILO) estimated the African youth's unemployment rate to 10.6% in 2021. Although this unemployment rate seems low the majority of youths in Africa work informally, are underemployed or remain in poverty due to low wages (Donkor, 2021). This is also the situation in Cameroon. Some of the causes of youth's unemployment include inadequate skills, lack of experience, a mismatch between education and training and requisite job skills (Donkor,2021). With the Sustainable Development Goals, Cameroon is committed to make the state a modern and socially advanced country. More still, raise the country to the rank of Newly Industralised Countries (NIC's) in 2035 (NDS 2030). Challenges are needed to be overcome to drive the country to an emergent nation by 2035. Hence Cameroon has embarked on an ambitious program for economic emergence through the National Development Strategy 2020-2030 (NDS 2030) According to the Cameroon vision, the prominent development stake is human capital formation. Cameroon's population is growing and studies in Cameroons demography reveal that:

*"If current trends in population growth persist, Cameroon will have a population
of 40 million inhabitants in 2035 with a large number of youths. Youths are a great
asset to the country but if the population is not well trained, well fed and in good
health, the population will be a burden to the state. So, it is very necessary for the
population to be well fed, properly educated skilled and professionally qualified to
facilitate its insertion in the job market"* (NDS 30).

This clearly shows that education has a very important role to play in the human capital formation. Educational economics reveals that the level of development in every nation is an indicator of the educational standards, Atkins (2007) holds that education is a major contributor of economic growth.

The need of promoting education goes right back to the Declaration of Human Rights in 1948 in its article 26 which clearly spelt out the right to education for all (EFA). Several international conferences and frameworks were carried on this purpose for instance the Jomtien conference held in Thailand on education in 1990, the Salamanca statement of 1994, the Dakar Framework of 2000 and 2015 the Sustainable Development Goals (SDG). The fourth Sustainable Development Goal (SDG4) focuses on *"quality education"* and its fourth target stipulates that:

*"By 2030, substantially increase the number of youths and adults who have relevant
skills, including technical and vocational skills for employment, decent jobs and
entrepreneurship".*

A good educational system will obviously provide quality education to its citizens. In Cameroon the government focus on:

*"promoting an education system at the end of which any young graduate is socially
Intergrated, bilingual and competent in a field that is vital for the development of
the country and aware of what he must do to contribute to it"* (GESP).

According to the law n° 06 of 18th of January 1996 to amend the constitution of 1972, the state guarantees the child's right to education; primary education shall be compulsory and the organization and the supervision of education at all levels shall be the duty of the state.

By this clause, the government aims at ensuring quality in the management and functioning of the educational system to ensure efficiency thereby reducing wastage of resources. As the world evolves, education do same to be in line with the exigencies of globalization. Hence there is need to have an important human capital, skilled and competent. Meanwhile what empowers human capital is education. This is revealed in the human capital theory of Gary Becker (1930) and Rosen (2014), which stipulate that education increases

productivity. The theory rest on the assumption that formal education is highly instrumental and necessary to improve the productive capacity of a population. In short, the human capital theorists argue that an educated population is a productive population. Nji (2018) holds that:

"Education is one the tools that can determine development at all levels and for this to be effective, the type of education provided should not only be in quantitative terms but should be endowed with quality".

In Cameroon the implementation of quality education begins in primary schools. Primary education is a very sensitive cycle of education, it is the foundation of sustainable learning. It provides the first instructions to children, molds learners to become full citizens (New primary curriculum 2018). The government has undergone a number of actions to render primary education effective and efficient, accessible and equitable to all children fit to go to school. Since the year 2000, primary education is henceforth free by presidential declaration of February 10th 2000. To respond to educational needs the government has endeavored to build many schools nationwide. Moreover, the government has fulfilled massive recruitment of teachers through the launching of various phases of teacher's contractualisation. Furthermore, in 2018 the government harmonized didactic materials (textbooks, workbooks) and rendered them available at a unique cost. *"The challenges were firstly to ensure transparency in the selection of books and secondly, ensuring that the books arrive the classrooms at thesame prices be it in Yaounde or Mundemba"*.Just to paraphrase Professor Marcelin Vounda Etoa (permanent secretary of the National Commission in charge of Follow up and evaluation in the implementation of the National policy on Books and other Didactic Materials).

Learning in primary schools today is more pragmatic, centered on the building of skills and aptitudes in learners. The trend today in education is to make learners develop know-hows so that by the end of the primary school cycle learners must have acquired some competences (practical skills) to carry out real life activities and sustain this knowledge. Primary education in Cameroon has gone through a number of pedagogic approaches evolving one after the other, leaving dogmatic methods to more active methods. It is at this juncture that pedagogic reforms went from the Objective Based Approach (OBA) to New Pedagogic Approach (NAP) and today Competency Based Approach (CBA). According to the orientation law of April 4th 1998 that laid guidelines in education in Cameroon, article 25 of this law says that teaching in school establishments considers evolutions in sciences and technology and in their contents and methods is adapted to economic, scientific, technological, social and cultural evolutions of the state and international environment.

The Objective Based Approach was a teaching process based on outcomes. Melton (1997) defines outcomes as statements that clearly describe what learners are expected to achieve as a result of an instruction. Learning based only on the outcomes could not create critical thinking in learners. It was a teacher- centered method with little or no implication of learners. Learners were just to retrieve what was given to them by the teacher. Then came an approach that highly implicated learners and put them at the center of the teaching-learning process known as the New Pedagogic Approach (NAP).

The New Pedagogic Approach stressed on the use of teaching methods, principles strategies and techniques that place the learner at the center of the teaching and learning-process. They are full and active participants in the learning process not passive listeners. Sondzia (2000), affirms that the New Pedagodic Approach develops inferential thinking in learners. Learners could come up with their own ideas, formulate hypotheses, were given more room to manipulation, experimentation and could draw conclusions from experiences gotten in school. According to Isseini (2000) inferential thinking gives the learner socio affective, cognitive and intellectual training which will enable him to take upon responsibility towards his environment. Though the New Pedagogic Approach enriched the teaching learning process, it was not really obvious to identify the various competences and skills in learners and measure their progress and achievements to assess the teaching. Learners were not actually confronted with the solving of real-life situations.

In order to make learning more pragmatic the Competence Based Approach (CBA) was implemented in primary schools in 2007 to develop skills and competences in learners. Through this approach learners will not only acquire knowledge but will use it in meaningful way in various situations of life, work and family, social and even professional situations (Wisahyuy, 2021). This approach is a learning concept which identifies the various competences and skills in the learners, measures their progress and achievements to assess the teaching. The main focus here is placed on how competent each learner is in a subject. Meanwhile there is a need to make learners more productive, more creative, able to exploit all their intellectual and physical potentials, the initiation of Project Based Learning (PBL) as a new instructional method was introduced in the primary curriculum in 2018.The ministry of basic education stipulates that one of the challenges of basic education is that by the end of the primary school cycle, the learner is expected to have acquired competences and life skills such as autonomy, honesty, adaptability to technological changes, collaboration, teamwork, creativity, problem solving and critical thinking for effective lifelong learning(New curriculum2018). For this reason primary education witnessed some important changes in the methods of teaching through the

implementation of Integrated Learning Themes, collaborative learning, teamwork and Project Based Learning. The objective of Project Based Learning being that learners should carry out tangible projects in school, at least one monthly in relationship with the integrated learning theme starting from a problem situation detected by learners. The goal being learner's empowerment.

Project Based Learning is a pragmatic approach to learning in which learners create their own knowledge through learning activities built around inquiry and a high degree of engagement with meaningful tasks (Cameroon primary curriculum). Projects are designed to allow learners with a variety of different learning styles to demonstrate they have developed competences. In Project Based Learning the teacher acts as a facilitator whose role is to guide and follow up learners in the realisation of their projects. Practically, in schools Project Based Learning is implemented using the following steps:

- Identify a problem: This has to be done by the learners in order to give them ownership of their learning and of the final product which will be the project. Once a problem is identified, a project is designed to bring about a solution to the said problem.

- Identify all the parts of the project namely: beginning, progression and a culmunating event. That is, you should master how to start off with the project because as mentioned earlier, it should be a process that involves learning across the curriculum or better still across all subjects. There is a progression part in the project in Project Based Learning in order to show that the project is not an end to itself but a means to an end. This implies that the subjects are taught in order to enable the learner either to solve a problem or produce something concrete.

- Brainstorm with colleagues about the progression and set aside a 'Project Book' where ideas are jotted down. Points about the progress of the project should equally be jotted (monitoring progress). This enables the actors in the project to see what is working or not and reformulate questions and bring out more concrete solutions. This will also lead or aid in the culmination event where the entire process will be explained.

- Discuss with learners. Learners are skillfully guided both in class and in the project site towards the realisation of the project. The learners place should not be taken up by the teacher; they should be guided to complete or carry out tasks as individuals and as groups as the case maybe. The tasks should not be carried out for them leading questions and clues are vital in helping them carry out their tasks.

- Assign a role to every learner. No learner should feel isolated or abandoned nor left behind. Assigning them roles empowers them and builds the spirit of togetherness, initiative, creativity and responsibility in the learner.

- Discuss the progress of the project with learners individually, groups and with the whole class. Discussing the progress of the project entails participation, improving on the aspects that are lacking and making the project participants (learners) feel anxious to complete the task /solve the problem.

- Respect all the three parts of the project, that is introduction (identification of the problem and proposing a solution that is a project), progression (carrying out of the project) and the culmination event (presenting and evaluation).

(Primary curriculum 2018).

Still relying on the curriculum, Project Based Learning endows learners with the advantages that it promotes lifelong learning skills and enhances logical thinking. It equally promotes team spirit and hard work, promotes entrepreneurial skills, bonding and interaction. In addition to that project-based learning creates responsible attitudes in learners and help them to manage their resources. Learners are motivated, confident, inquisitive and develop problem solving skills. Learning is rendered very practical with Project Based learning and situates learning in a real-life situation. Makes the tasks of assessment and evaluation for the teacher easier and more enjoyable (New Primary Curriculum 2018).

Education is rendered operational through teachers. Nevertheless, teachers encounter some difficulties in the exercise of their work for example the constant adaptation of new pedagogic teaching methods, the over crowdedness of classrooms, the covering of programs, overloaded time tables and so on. The orientation law of April 4th 1998 that lays educational guidelines in Cameroon states that:

« The teacher shall be the principal guarantor of education. In this capacity, he shall be enabled within the limits of means available, to suitable living and working conditions as well as to appropriate initial and continuing training ».

The implementation of new pedagogies has not always been an easy task to teachers as the shift from one pedagogy to the other is always very abrupt. Teachers are often very pressurised to put the new pedagogy into practice regardless to the difficulties that they may encounter to render the project successful. This is the case with the implementation of Project Based Learning in primary schools today which is the subject matter or main purpose of our study, to investigate on the factors that may hinder or pose a difficulty to teachers to implement Project Based Learning in schools.

1.2. Problem statement

The trend in education today is making learning more practical. Project Based Learning the new instructional pedagogy instituted in primary schools in 2018 promotes learning by doing. From an observation that in most government primary schools in Mfoundi Division Center Region of Cameroon, learners do not carry out practical work and produce nothing as projects, meanwhile Project Based learning the new instructional technique that facilitates learner's acquisition of practical skills is believed to be going on in schools. The curriculum recommends that eight (08) projects should be carried out in a classroom over an academic year following the eight (08) Integrated Learning Themes. That is one (01) project according to each Integrated Learning Theme. Failing to apply Project Based Learning in schools hinders learners from developing practical skills and competences such as creativity, autonomy, entrepreneurship, leadership, problem solving skills and so on. Concretely, it is expected that by the end of the primary cycle of education a learner must have acquired practical skills and is productive enough to be able for instance to produce a broom, fabricate a stool, bake a cake, plant a crop, raise a chick, master a computer, just to name these few. Unfortunately, learners still remain in the old system of education where knowledge is only imparted on learners but the hands remain dormant. So, learners are not empowered because their aptitudes, capacities and potentials are not fully exploited, developed and optimized. The curriculum (2018) says that every child is endowed with learning potential which need to be awakened and guided by appropriate instruction and instructional materials. Teachers don't offer much time to carry out practical work and still remain in the classical classroom consequently Project Based learning is shallowly carried out in schools.

According to Achankeng (2014) *"teachers are the most important educational resources and a critical determinant of quality education"*. From this assertion of Achankeng, teachers are supposed to concretise educational policies in the classroom. Kothari (1992) holds that:

> *"A right kind of teacher is one who possesses a vivid awareness of two missions;*
> *he does not only love his subjects but also who he teaches .His success will not only*
> *be measured in terms of percentage of the result alone but also by the quality of life*
> *and character of men and women whom he taught".*

The teacher's role in the process of education is of great importance. The objective of education today is making learning and learners more active. The promotion of practical skills or "know-hows" is very primordial in education and can only be concretised through the

carrying out of practical activities in schools. It is only through this that at the long run a competent generation of learners, productive, gifted with skills, able to affirm themselves in the society can be gotten. If teachers fail to implement the new learning vision that is Project Based Learning designed for primary schools since 2018, the awaited objectives of project-based learning will obviously be jeopardized. The implementation of new pedagogic methods in general and Project Based Learning in particular in schools necessitates that teachers should be sufficiently knowledgeable of the concept and supported to handle it successfully. But what could be the reasons why teachers do not carry out project-based learning in schools?

According to Mukamenza (2017), the competence-based curriculum being implemented in the country is borrowed from developed countries and that underdeveloped and developing countries are facing a lot of difficulties adopting it. Cameroon being a developing country seems to term this assertion of Mukamenza true. So much true as we witnessed in some schools teachers facing difficulties in trying to carry out some projects but due to limited resources the projects were rendered unsuccessful. After investigation on the different resources allocated for Project based learning in schools, it was realised that the famous "minimum package" which is a support in terms of pedagogic and material resources to schools do not have appropriate materials for Project Based learning but instead for the classical teaching method. The over crowdedness of classrooms, overloaded timetables, and time management are also some elements we outlined teachers are confronted to in schools. In most government schools, classrooms are over populated bearing more than one hundred (100) learners per class. Conventionally a normal class size should not exceed fifty learners in a classroom (ETSSP 2023).

Nji (2018) holds that *"quality education varies from country to country depending on the availability and employability of resources"*. He adds that educational resources or inputs include material, financial, human or man power inputs.

Again, during our investigation, we noted the non-mastery of the concept of Project Based Learning by teachers that is, teachers had little or no knowledge on how to go about with Project Based Learning. In reference to the orientation Law of April 4th 1998 article 37, the state admits the teacher's right to "appropriate initial and continuous training". We questioned on the effectiveness of in-service training of teachers on Project Based Learning (seminars, workshops, pedagogic animations) so far as drilling them to master the new concept.

Considering the importance and significance of these difficulties the risk of learners not to acquire practical skills becomes enormous. In other words, learner's acquisition of practical skills is threatened. The awaited objectives and goals of Project Based Learning which is to

build a young generation of learners gifted with skills and know-hows may not be attained. This study seeks to investigate on the factors that obstructs teachers from implementing Project Based Learning in schools and how this affects learner's acquisition of practical skills.

1.3. Research questions

Creswell (2012) consider research questions as interrogative statements that brings the purpose statements to specific questions that researchers seek to answer in their studies. Scholl and Smith (1999) cited by Amin (2005), proposes that a research question asks about the relationship between two or more variables. To dig into our investigation a number of questions has been formulated from the general research question to specific research questions.

1.3.1. General Research Question.

The general research question is formulated as follows:
To what extend do barriers to teacher's implementation of Project Based Learning affects learner's acquisition of practical skills?

1.3.2. Specific Research Questions

SRQ1: In what way do lack of resources; pedagogic, material and financial influence learner's acquisition of practical skills?
SRQ2: How do insufficient in-service training of teachers influence learner's acquisition of practical skills?
SRQ3: In what way do overcrowded classrooms influence learner's acquisition of practical skills?

1.4. Hypotheses of the study

A hypothesis is commonly defined as a provisional answer to a question that still needs to undergo verification (Grawith, 1996). The hypotheses of our study go as follows.

1.4.1. General hypothesis

Barriers to teacher's implementation of Project Based Learning significantly affect learner's acquisition of practical skills.

1.4.2. Secondary Hypotheses

SH1: The lack of resources; pedagogic, material and financial, significantly influence learner's acquisition of practical skills.

SH2: The insufficient in-service training of teachers significantly influences learner's acquisition of practical skills.

SH3: Overcrowded classrooms significantly influence learner's acquisition of practical skills.

1.5. The objectives of the study

This study poses the problem of factors that act as barriers to teacher's implementation of Project Based Learning and learner's acquisition of practical skills thus have the following objectives.

1.5.1. General Objective of the Study

The general objective of this study is to examine the extent to which the barriers to teacher's implementation of Project Based Learning affect learner's acquisition of practical skills.

1.5.2. Specific Objectives

SO1: To assess how the lack of resources; pedagogic, material and financial, influence learner's acquisition of practical skills.

SO2: To study the extent to which the insufficient in-service training of teachers influences learner's acquisition of practical skills.

SO3: To examine the extent to which overcrowded classrooms influences learner's acquisition of practical skills.

1.6. Significance of the study

The interest of our study is of three types; pedagogic, scientific and academic

1.6.1. Pedagogic interest

This study centers on a new instructional method of teaching which is believed to quickly develop learner's acquisition of practical skills. The fact that learners carry out concrete projects in schools develop skills in them and foster their acquisition of practical skills and competences. On the other hand, the study tries to create awareness of the existence of some difficulties that teachers have in the implementation of project pedagogy in schools. Project

Based Learning is quite a good instructional teaching method but needs to be supported for its effective implementation in schools.

1.6.2. Scientific interest

This study is carried out to outline the difficulties faced by teachers to apply project pedagogy in schools due to a number of factors. The results of this study will surely trigger other researches or may be a source of inspiration to other studies and in one way or the other enriched the domain of literature in relation with our study. It can be thus exploited in the school library as a reference. The researcher wished to see how effective Project Based Learning is carried out in schools and came to realize that there is a problem of contingency that creates a barrier to the implementation of project pedagogy in schools. Hence aimed at studying the extent to which the barriers to teacher's implementation of Project Based Learning in schools affects learner's acquisition of practical skills.

1.6.3. Academic Interest

We are beginners in the research field, that is Masters II learners. This study is of great importance to our academic profile as it is an indispensable stage for the obtention of our Masters certificate. Also, this study is going to act as a foundation to our further studies.

1.7. Delimitation of the study

Some boundaries were set as far as our study is concerned in order not to go astray and keep us within our theme. Consequently, the delimitations of our study are spatial and thematic delimitations.

1.7.1. Spatial or geographical delimitation of the study.

This study is carried out in Yaounde, the capital of Cameroon found in the Center Region precisely in the Mfoundi Division. The Mfoundi Division has a total of seven (07) sub divisions. It was a little heavy for us to carry the study in the whole Division, for this reason we circumscribed our study in Government primary schools of Yaounde II, Yaounde V and Yaounde VI sub divisions where our field work was done.

1.7.2. Thematic delimitation

Our study touches pedagogy under the broad theme of education. It focusses on an investigation of factors that may disturb teacher's implementation or application of Project Based Learning in schools and how this affects learner's acquisition of practical skills.

1.8. Operational Definition of terms

Project

The word "project" derives its meaning from the latin word *projicere* which means to throw forward. The latin roots thus suggest movement, a trajectory, a certain relationship between time and space. Lake (1997) defines a project as "a temporary endeavor that is needed to produce a unique outcome or result at a prespecified time using predetermined resources". The Project Management Institute (PMI) refer the term project to "any temporary endeavor with definite beginning and end, a sequence of tasks that must be completed to attain a certain outcome". William (2023) sees a project as "a set of tasks that must be completed within a defined timeline to accomplish a specific set of goals". He adds that these tasks are to be completed by a group of people known as the project team, which is led by a project manager, who oversees the planning, scheduling, tracking and successful completion of projects. Besides the project team, projects require resources such as labour, materials and equipment. Wilson (2006), defines a project as a sequence of tasks, a realisation provided with given resources carried out within a time limit to satisfy a need, solve a problem or attain a specific objective. In general, is a temporary endeavour, having a defined beginning and an end (usually constrained by date, but can by funding or derivables), undertaken to meet the unique goals and objectives, usually to bring about beneficial change or added value.

The characteristics of projects do not depend on the size of the project. Projects could be small or large. However regardless of the size of the project, projects have common characteristics. Some of these characteristics are:

- A project has a unique purpose: Every project should have a well-defined objective. For example, many people hire firms to design and build a new house, but each house, like each person is unique.
- A project is temporary: A project has a definite beginning and a definite end. For instance, for a home construction project, owners usually have a date in mind when they would like to move to their new homes.

- A project is developed using progressive elaboration or in an iterative fashion. Projects are always defined broadly when they begin and as time passes the specific details of the projects become clearer.
- A project requires resources, often from various areas: Resources include human resource (people), material resources (hardware, software or other assets).
- A project should have a primary customer or sponsor: Most projects have many interested parties or stakeholders, but someone must take the primary role of the sponsorship. The project sponsor usually provides the direction and the funding for the project.
- A project involves uncertainty: Because every project is unique, it is sometimes difficult to define the project's objectives clearly, estimate exactly how long it will take to complete, or determine how much it will cost. External factors also cause uncertainty, such as a supplier going out of business or a project team needing unplanned time off. Projects have definite location and target group (beneficiaries).

1.8.1.1. Project success criteria (parameters)

During a project's life, management focuses attention on three basic parameters: quality, cost and time. A successful managed project is one that is completed at the specified level of quality; on or before the deadline; and within the budget. In addition, client satisfaction will indicate success and possibility for replication and sustainability.

Every project is constrained in different ways. Some managers focus on scope, time and cost constraints. Others focus on the quadruple constraint, which adds quality as a fourth constraint. The scope, time and cost limitations are sometimes referred to in project management as a triple constraint. However, to create a successful project, a project manager must consider scope, time, and cost and balance these three often competing goals;

As far as the scope of the project is concerned what has to be considered is the time the project would take to be completed and the project schedule. The cost of the project from conception to completion is very important to know, also the available budget and obviously the resources needed. The satisfaction of customers expresses the quality of the project. It is worthy to know how good does the quality of the products or services need to be. The risk factor should not be left out for unseen eventualities. Whatever its size, a project's success is based on the three main criteria. Therefore, a project will deem to be successful if it; delivers the outcome with an agreed upon quality, does not overrun its end date, remains within budget.

1.8.1.2. Plan, Project, Program

Wideman (2001) defines a plan as courses of action determined in order to be done in the future to achieve certain level of goals. It is the list of activities which are going to be done to reach the desired objectives. Plans can be divided into two major categories as strategic plan and operational plan. Operational plans are those which are designed to bring strategic plan into practice. They are plans designed to implement the day to day activities of an organization. They are functional plans that operationalise an organization. Operational plan could be classified as standing plan and the single use plans. Further single use plan is classified as projects, programs and budget. Therefore, projects and programs are types of plans.

It is necessary to distinguish between projects and programs because there is sometimes a tendency to use them interchangeably. While a project refers to an investment of activity where resources are used to create capital assets which produces benefits over time and has a beginning and an ending with specific objectives, a program is an on-going development efforts or plan. A program is therefore a wider concept than a project. It may include one or several projects at various times whose specific objectives are linked to the achievement of higher level of common objectives. For instance, a health program may include a water project as well as construction of a health center both aimed at improving the health of a given community that previously lacked access to these essential facilities. Projects which are not linked with others to form a program sometimes referred to as stand-alone projects.

1.8.1.3. Projects Life Cycle

Projects pass though series of activities called stages. Hence a project cycle refers to the various stages which project planning proceeds from the inception to implementation (PMI 2005). In other words, it is the life cycle through which a project advances from infancy to maturity. The main features of this cycle are information gathering, analysis, and decision- making. There are different approaches to describing the project cycle. For example, the project life cycle according to the BAUM (world bank) Approach and the United Nations Industrial Development Organisation (UNIDO) approach.

Project cycle-BAUM (World Bank) Approach: According to World Bank, projects cycles involve five stages namely; project identification, project preparation, project appraisal, project implementation, and project evaluation.

The project identification stage is also called pre-feasibility studies. In this stage, projects that can contribute towards achieving the specified objectives are identified or listed

.Projects ideas may come from, new experiments from previous projects failures, new experiments from expansion, eplications to successful projects tested elsewhere, new experiments from shortages or excess of resources, external threats, opportunities, internal strength and/ or weaknesses and other sources

Project identification is also concerned with elimination of inferior alternatives (projects) from the identified ones. The output of this stage is prima -facie (at first sight or based on first impression) promising and further work is justified.

Project preparation is the most important stage in project planning. Also called feasibility study, project preparation stage is concerned with the detailed study of all aspects of the project. It begins with the project appraisal. Appraisal is the comprehensive and systematic assessment of all aspect of the proposed project. The project is reviewed (appraised) to confirm that it accords with the broad objectives. It is to ensure that the project represents a high priority use of the firm's resources. What aspect of the project should we appraise. The project is appraised from different perspectives: technical, commercial, financial, economic and ecological.

At the project implementation stage conclusions are reached and decisions made are put into action. What activities are should be done during project implementation. Some of the major activities in during project implementation phase include, detailed designs and specifications are drawn, tender documents are prepared, bids are invited and evaluated, orders for imputes are place, contracts are signed; workers are hired, trained, and put to work, materials are moved to sites and so on.

Project Evaluation is the fourth phase. After the implementation phase of the project, automatically supervision and follow up begin. The execution of the project should be supervised closely and progress should be reported regulary to ensure that the implementation is progressing without deviating from the envisaged path and the objectives of the project have been reached. Project evaluation is therefore a monitoring (checking) activity in order to find out how things are going, encourage that project team, check that the promised resources are in fact working on projects tasks, rapidly learn about concerns and difficulties , show concern for the success of the project, take corrective actions if things go wrong.

Project Cycle- UNIDO Approach: Projects implemented during the BAUM's traditional project cycle approach were not successful mainly due to lack of popular participation in their formulation, selection, implementation and evaluation. The projects could not achieve their objectives, if ever at all, they were not sustainable. Recognising these limitations, during 1994 the World Bank changed its approach from top down planning to bottom up, which emphasizes

on the need of the beneficiary participation in the project planning. The essence is that the beneficiaries can better identify their problems; identify possible alternatives course of action; generate ideas for project planning addressing what resources needs for its implementations and how its helps them to overcome their problems.

There are different levels of participation and accordingly views as to its role in project planning and overall economic development .Some view participants as means for However, the reality is that as far as project is a policy instrument to achieve development and as far as popular participation is means and ends for development, it should be safely concluded that participation is both a means and ends for sustainable development. But, the decisions as to which level of participation is desirable depend on the level of democratization in a community, educational level of the community, level of awareness of the community and objectives of the project sponsoring entity. According to the new project cycle (World Bank, 1994), a project cycle has four phases.

Listening to stakeholders: As the issue of project is the issue of development, and since development is community issue, the community is supposed to be the agents of the project planning. In essence, the idea of the project should come first from the beneficiaries and the role of the project sponsoring entity is limited to facilitating issues related to its implementation.

Piloting the project: refers to from implementing the proposed project ideas from the community on a very small scale to be used as a testing ground. This is the experimentation phase.

Demonstrating: refers to showing the result of the experiments to the community so that they can judge its viability and decide whether to continue or to discontinue with the project idea.

Mainstreaming the project: This refers to expanding the project which receive sufficient community supports and decide to be viable to other areas.

A project is not a one-shot activity. Project life cycle is spread over a period of time. There is an unavoidable gestation period for the complex of activities involved to attain the objectives in view. This gestation period, however, varies from project to projects but it is possible to describe, in general terms, the time phasing of the project planning activities common to most projects (Wideman, 2001).

1.8.2. Learning

A continuous process starting from child birth that continues till death, the nature and processes involved in learning are studied in many established fields such as psychology,

philosophy, pedagogy and others. Studies reveal that the ability to learn is possessed in humans and maybe immediate induced by a single event, but much more of skills and knowledge accumulated from repeated experiences. According to Stephen (2002) learning is "any relatively permanent change in the behavior that occurs as a result of experience". He believes that new behavior portrays that learning has occurred.

Several sorts of learning have been identified for example through habituation, conditioning, play. Gates (1998) describes learning as "a modification of an individual's behavior through experiences and training". Comrod (1999) sees learning as "the process by which behavior originates or is altered through training or experience".

From the different or various definitions of learning, it is noted that there are many similarities through the repetition of some words such as training, behavior, experience. Brown (2008) outlined seven components in the definition of learning;

- Learning is acquiring
- Learning is retention of information or skill
- Learning involves active, conscious focus on and acting upon events outside and inside the organization
- Learning is relatively permanent but subject to forgetting
- Learning involves some forms of practice, perharps reinforce practice
- Learning is change in behavior

Learning is the process by which an individual acquires knowledge, attitudes and skills that are necessary to meet the demands of life. While touching a burning candle, a child gets burnt and he withdraws the finger; when he faces a similar situation again, he withdraws his fingers faster. Gradually he learns not only to avoid the burning candle but also the burning things. The behavior of an individual is thus changed through experiences. This change in behavior brought about by experiences is commonly known as learning. For example, a child learns how to clap hands by seeing someone else do it. Learning also takes place through direct experiences. For example, a child learns to write by practicing writing. A child normally learns from his parents, teachers and the environment. Crow & Crow (1998) say "learning is the acquisition of habits, knowledge and attitudes. It involves new ways of doing things and it operates in individuals attempts to overcome obstacles or to adjust to new situations. It represents progressive changes in behavior. It enables him to satisfy interest and to attain goals". The "relatively permanent" component of the definition of learning refers to the fact that when people learn anything, some part of their brain is changed to record what they have learned. This is actually a process of memory, for without the ability to remember what happens, people cannot learn anything.

Although there is no conclusive proof as yet, research suggest that once people learn something, it may be present somewhere in memory in physical form (Smolen et al., 2008).

Not all changes is accomplished through learning. Changes like an increase in height or the size of the brain are another kind of change controlled by a genetic blueprint. This kind of change is called *maturation*, and is due to biology not experience. For example, children learn to walk when they do is because of the nervous system, muscles strength, and sense of balance have reached the point where walking is possible for them. All factors controlled by maturation, not by how much practice those children have had in trying to walk. No amount of experience or practice will help that child walk before maturation makes it possible in spite of what some eager parents may wish.

18.2.1. Characteristics of learning

Learning involves change: It is a reconstruction, combined thinking, skills, information and appropriate in a single unity process. For example, when a child learns to read, they can retain this knowledge and behavior for the rest of their lives. It is not always reflected in performance. The change in the learning may not be clear until a situation arises in which the new behavior can occur.

All learning involves activities: These activities involve either physical or mental activity. They may be simple mental activities or complex, involving various muscles, bones, etc. So also, the mental activities may be very simple involving one or two activities of mind or complex which involve higher mental activities.

Learning requires interaction: During learning, the individual is constantly interacting with the environment and influenced by it. This experience makes him change or modify his behavior to deal effectively with it.

Learning is a lifelong process: Learning a lifelong process of gaining and using the information presented to a person. It is not static. A person never stops acquiring new information. It keeps a person's mind active and aware but also conscious of the world around them.

Also, learning involves problem solving and a process of acquiring information: Learning involves problem solving that is understanding and discovering relations between different contents in a situation. Besides that, learning is a process of acquiring information, knowledge, wisdom and skills. It occurs as a result of interaction with the person's environment.

Moreover, learning involves far more than thinking: Learning involves far more than thinking because it involves the whole personality, senses, feelings, intuition, beliefs, values, and will. If we do not have the will to learn, we cannot learn and if we have learned, we are changed in some way. If the learning makes no difference it can have very little significance.

Experience is necessary for learning: There is a necessity of experience for learning. Experience can be gotten from direct observation or from formal approaches to learning such as training, mentoring, coaching and teaching. Learning is more or less the acquisition of a new discourse, a new way of speaking, acting, interacting, looking at the world, and knowing it. It will be successful only the information gained is used and understood.

Furthermore, learning is purposive and goal oriented: Learning always has a purpose. It is goal-oriented in the sense that the teacher always has learning objectives in mind while teaching. If we don't have any aim and goal, then the process of learning will not show any effect. Through the process of learning, we can move towards pre-determined learning objectives. As the learner learns, he/she move towards a pre-determined goal.

More still, learning is the relationship between stimulus and response: Learning is generally, the relationship between a stimulus and a response. A person is considered as a learned-person if he reacts according to the tasks to be learned. Through learning, a person learns reactions according to the stimuli associated with the environment and other aspects of life.

Learning is transferable and a universal process: The learning acquired in one situation is capable of transfer to some other situation. The knowledge acquired in one situation proves helpful in acquiring knowledge in other situation. This is known as the transfer of learning. The learner should be careful not to let previously gained knowledge interfere in acquiring new knowledge and experiences.

Finally, it is considered that learning can happen everywhere hence a universal process. Learning is a process for all living creatures, human beings across all cultures learn as it is a lifelong process (smith, 1997).

1.8.2.2. Learning in the teaching/learning process

In the teaching and learning process learning will carry out a change to students. The change does not only relate to the knowledge improvement but also in aptitudes, skills, attitudes interest, pride and the character adapting. Jeff cobb (2006) defines learning as the lifelong process of transforming information and experiences into knowledge, skills, behavior and attitudes. Learning, though seeming easy to acquire is exposed to conditions that may favour or alter its acquisition. Hereby some factors that can influence learning.

The factors that influence learning according to Dani (2011) can be classified under internal and external factors.

As internal factors we have the physiological condition and the psychological condition. The physiological condition is very influential on learning activities for example a learner with good health is predisposed to achieve a higher degree of success than a wearied one. On the other hand the psychological condition include intelligence, talent, motivation, emotion.

As external factors we have those that are said to be instrumental for example the curriculum, programs, facilities and teachers. It is quite good to know the factors that influence learning but it will also be genius to know that people learn differently one from the other. This takes us to the learning styles.

Littlewood (1986) defines learning styles as an approach or way of learning. Many models of learning styles were being initiated by many authors. Fleming and Mills (1992) suggested the VARK model to explain the different ways that students learn. Fleming outlines four of them;

Visual: Visual learners are better able to retain information when it is presented to them in graphic depiction such as arrows, charts, diagrams, symbols and so on.

Auditory: Auditory learners also referred as "aural" learners prefer listening to information that is presents to them vocally. These learners work well in group settings where vocal collaboration is present and may enjoy reading aloud to themselves.

Reading and writing: Some learners succeed with written information on worksheets, presentations and others. These learners are note-takers and perform strongly when they can reference text.

Kinesthetic: Taking a physically active role, kinesthetic learners are hands-on and thrive when engaging all of their senses during course work. These learners like to manipulate and tend to work well in scientific studies due to the hands-on lab components of the course.

From all of the above one can retain the standard definition of learning as the process of acquiring new understandings, knowledge, behavior, skills values, attitudes and preferences.

Project Based Learning

John Dewey (1938) brought the idea of "learning by doing" and is considered as the founder of Project Based Learning. He started seeing teaching as that which should be child centered. He stated that "the teacher is not in the school to impose certain ideas or form certain habits in the child, but is there as a member of the community to select the influences which shall affect the child and assist him in properly responding to these influences", hereby believing

that learners have to be given more responsibilities, they should be involved actively in the learning process. Coco (2006) holds that Project Based Learning is a child centered form of education which is based on three constructivist principles: learning is context-specific, learners are involved actively in the learning process and they achieve their goals through social interaction and the sharing of knowledge and understanding.

Project Based learning is defined as a pragmatic approach to learning in which learners create their own knowledge through learning activities built around intellectual inquiry and a high degree of engagement with meaningful tasks. According to Bell (2010) it is an innovative approach to learning that teaches a multitude of strategies critical for educational success in the twenty first century. Students drive their own learning through inquiry as well as work collaboratively to research and create projects that reflect their knowledge. The genesis of a project is an inquiry. Students develop question and are guided through a research under the teacher's supervision. Discoveries are illustrated by creating a project to share with a selected audience. Student's choice is the key element of this approach.

Bell (2010) continues by saying that the main purpose behind developing this method is to create learning opportunities where learners can work collaboratively in groups to answer a driving question, solve a problem or tackle a challenge with the aim of creating an end product. He argues that Project Based Learning is not limited to providing students with content knowledge but further develops their psychomotor skills and social skills such as searching information from different resources, critical thinking, problem solving and giving presentations which are highly recommended for long life learning. Project Based Learning educates the child wholely rather than focusing in one aspect of learning (Phillips et al 1999).

Project Based Learning provides valuable opportunities for students to be engaged individually and in groups in formulating the inquiry questions, setting goals and planning for the process of conducting and designing the project (Markham, 2003). This shows the teachers who are seen as facilitators and advisers, provide students with adequate guidance and feedback. They give students more room to choose the way they approach the task which motivates students to be more independent. Beside that students have to work together in groups, distributing roles, helping and supporting each other, searching for information sharing experience, designing activities, reflect on knowledge and social skills which are essential for lifelong learning.

Bell (2010) summarises the remarkable advantages of Project Based Learning as it motivates students to be fully engaged in the process of learning and gives them a feeling of satisfaction. More still, it is observed that Project Based Learning encourages students to collaborate with each other in solving problems, it promotes self-learning as students become

more responsible in their learning; and as Project Based Learning involves a range of activities, it meets various learning needs and interest of learners. Gubacs (2004) adds that learners have the chance to assess their own end product, they can also evaluate their classmates and give constructive feedback to each other. This will help them to become aware of their own strength to be enhanced and weaknesses to be eradicated. Krajcik and Blumenfeld (2006) asserts that Project Based Learning improves students learning. Project Based Learning can therefore be considered as a sparkling method of teaching through which learners can discover the challenges and problems in the world around them.

Resources

Johnson (1994) defines a resource as *"a concept employed to denote sources of human satisfaction"*. According to him a resource is a supply or something that can be used to help achieve an aim. Resources consist of the concrete and tangible assets that support programs, practice, improvements and services. Organisational resources represent all resources available to the organization and necessary for the performance of its activities. In the school organization resources that are needed to facilitate the teaching learning process include pedagogical resources and material resources.

Pedagogic resources

Oboegbulem (2006) defines pedagogic resources as resources that are used to enhance teaching and learning activities. According to him pedagogic resources are facilitators of the teaching and learning process. They include all forms of instructional materials that can be used to promote and encourage effective teaching. These resources can be textbooks, workbooks, curriculum, charts, maps, magazines. It also include non-printed materials such as film strips, pictures, audio and video tapes. Atkinson (2000), holds that pedagogic resources are instructional materials used to facilitate learning. They include writing materials such as pens, exercise books, erasers, rulers, slates and instructional materials such as maps, newspapers video tapes very necessary in the teaching and learning process.

Material resources

Coombs (1970) asserts that the physical infrastructure of a school and the educational materials available to teachers and students are collectively referred as "material resources" and are very important components of quality education. They are any item the school currently owns. Physical infrastructure includes school buildings, grounds, lighting and acoustic systems, refectory. Fields and so on. Educational materials include ICT equipments such as computers, projectors, library, laboratory materials and so on. Momoh (2010) holds that the adequacy of

teaching and learning resources determines the educational system's efficiency.

Skills

Historically, the term 'skill' is used to refer to the manual craft worker and technologist (Ainely, 1993). According to the Further Education Unit (1982), the skill concept was widened to include "the ability to perform a specific manipulative occupational task" and which now embraces language (reading, writing, speaking and listening): number (calculation, measurement, graphs and tables):manipulative dexterity and co-ordination; problem solving; every day coping, interpersonal relationships; computer literacy and learning. Payne (1999) considered skills to cover everything from reading, writing, reliability, communication, reasoning, problem solving and motivation to assertiveness, judgment, leadership, team working, customer orientation, self-management and continuous learning. The oxford advanced learners dictionary defines skill as "the ability to use one's knowledge effectively and readily for excecution or performance". In order words, skill is the ability to use knowledge effectively and perform efficiently. Skills is used to denote expertise that has been developed through training and experience, and includes trade and craft acquired by apprenticeship, as well as the high level of performance found in many domains, such as professional practice, the arts, games and athletics (Breivik, 2016).

In addition to this, skills change with time; some vanish and new skills emerge and this will continue as businesses strive to seek innovations to be more competitive. Payne (1999) ascertain that people coming from different backgrounds perceive skills differently, for example, in economics the workforce is regarded as a human capital investment in skills in the same way as physical capital should yield positive result; whereas in sociology skills are more regarded in the social context as a status.

Notwithstanding the differing emphases in definition, the key question is not whether the quantity and variety of skills are acquired by the workforce, but whether they are relevant

or effective for a particular task or not. Skills are developed through life and work experience, and are acquired through education, training and experience.

Education: formal instruction from an educational or technical institute Often education is more theory-based.

Training: targeted instruction or practice that is focused on a specific skill or skill set Training is often more practical than education.

Experience: The practical application of both training and education. Experience involves hand-on participation in real world situations related to the skill or skill set.

Types of skills

Rick (2024), opines that skills are diverse and can be categorized into various skill types. The broad categories of skills are soft skills and hard skills.

Soft skills are those skills related to interpersonal and communication abilities. Typically, soft skills are not technical, instead focusing on effective communication, collaboration and relation-building. Examples of soft skills include communication which implies conveying information effectively through verbal, written, and nonverbal means to foster collaboration and understanding. Another example of soft skill is teamwork. Teamwork assures collaboration with others towards shared goals, valuing diverse perspectives, and contributing positively to group dynamic. More still another soft skill is problem-solving. This is the ability to analyse complex situations, identify challenges, and devise practical solutions through critical thinking and creativity. Furthermore, adaptability remains another type of soft skill. The ability to adjust to new situations, environments or change in priorities while maintaining performance and resilience. Finally, emotional intelligence as a soft skill is the ability to understand one's emotions and empathize with other feelings.

Hard skills are specific measurable abilities that are typically acquired through education, on-the- job experience. Hard skills are easier to assess than soft skills, as they are job-specific and focus on technical proficiencies. Some examples of hard skills include machine operation. Operating manufacturing equipment's efficiently and safely according to standard procedures and specifications. Quality control is another type of hard skill which deals with inspecting products to ensure they meet the quality standards and identifying defects for corrective actions. Welding, another example of a hard skill deals with the joining of metal components using heat and pressure techniques to create strong and durable connections. Lean manufacturing, a hard skill goes with implementing practices to minimize processes, and enhance efficiency throughout the production cycle. The last but not the least hard skill is

industrial automation which concerns programming and operating machinery and robotics systems to streamline production processes and increase productivity.

Payne (1999) distinguished forms of skills for instance transferable skills, personal skills and knowledge-based skills.

Transferable skills are skills that can be applied or adapted to other areas. They are not tied to specific roles or industries, and as such can be used in different roles, industries, situations. Depending on the role or industry, there may be some overlap between soft skills and transferable skills, or even hard skills and transferable skills. Examples of transferable skills include analytical thinking which is the application of logical and data analysis to assess production processes, identify inefficiencies, and propose improvements. Project management is another example of transferable skill dealing with planning, organising and overseeing manufacturing projects from conception to completion, ensuring they stay on schedule and within budget. Problem-solving as a transferable skill implies troubleshooting technical issues related to machinery, equipment, or processes to maintain smooth operations and minimize downtime. In addition to the aforementioned transferable skills, attention to details is also considered as a skill because thoroughly inspecting products materials, and processes to ensure quality standards are identified and addressed promptly. Finally, technical documentation as a transferable skill implies creating and maintaining detailed documentation such as operating procedures, manuals and specifications to facilitate training and ensure consistency in manufacturing processes.

Rick (2021) says that personal skills are also considered as personal qualities or traits related to an individual's character, behavior, personality. He holds that personal skills are enherent to an individual, and can influence their interactions, decision-making, and success (both professionally and personally). Examples of personal skills include resilience which is the ability to adapt to challenging situations and bounce back from setbacks, maintaining productivity and moral on production floor. Another personal skill is initiative that is taking proactive steps to identify opportunities for improvement, suggesting Innovative ideas, and driving positive change. Attention to safety, another important personal skill implies prioritizing safety protocols and procedures to ensure a secure working environment for oneself and colleagues, reducing the risk of accidents and injuries. Dependability as a personal skill is the act of consistently fulfilling responsibilities, meeting datelines, and delivering quality work, contributing to overall team reliability and effectiveness. The last but not the least personal skills according to Rick (2021) is the mechanical aptitude. It is a natural inclination and

understanding of mechanical systems and processes, enabling effective troubleshooting and the maintenance of machinery and equipment.

Knowledge-based like hard skills are also usually acquired through education, training or experience. Whereas hard skills focus on practical, measurable abilities, knowledge-based skills involve understanding a subject or profession's concept, theories, principles. There may be a bit of overlap between knowledge-based skills, depending on the role or industry. Some examples of knowledge-based skill are material sciences which is understanding the properties and characteristics of different materials used in manufacturing processes, including metals, plastics, and composites. Quality Management Systems another knowledge-based skill goes with familiarizing with quality standards such as ISO 9001 and the techniques like six sigmas for ensuring product quality and continuous improvement. Supply chain management a knowledge-based skill implies knowledge of logistics, inventory control, and procurement processes to optimize the flow of materials and components throughout the manufacturing supply chain. Another example of knowledge-based skill is regulatorycompliance which deals with awareness to industry regulations and standards related to safety, environmental sustainability, and product labeling to ensure legal compliance and mitigate risk. Furthermore, we have process engineering as a knowledge-based skill implies understanding manufacturing processes, such as casting, machining, molding and assembly, and their optimization (Rick, 2021).

This chapter dealt with the main idea of the research from the context and justification of the study to the operational definitions of terms, passing through the statement of the problem, the research questions, hypotheses, objectives, significance and scope of the study. It is therefore judicious for us to dig more on our study to explore the works of other researcher and authors as far as our study is concerned. This is what will be tackled in the next chapter.

CHAPTER TWO: LITERATURE REVIEW

This chapter will deal with an exploration of the works of some authors and researchers on project-based learning through an empirical literature review. A problem is always backed with a number of theories; thus, the theories of our study are going to be clearly spelt out in the theoretical framework and the chapter will end with the conceptual framework.

2.1. Empirical Review

In this section of the review, it is question for the researcher to explore the studies and works of authors and other researchers in relation to our theme.

2.1.1. Project Based Learning: implementation and challenges.

Shaban Aldabbus carried a study in 2017 to attempt to investigate the possibility of applying Project Based Learning in some Bahraini primary schools. The study also aimed to explore the challenges that might occur during the application of project-based learning in actual classroom situations. Teaching project work in schools (PBL) is one of the courses taught for Bachelor of Education program (BED) students at the Bahrain Teachers College (BTC), Bahrain university.

The study also aimed to help ameliorate teachers to acquire the necessary skills of using project-based learning with young learners in Bahraini primary schools. In this course students received comprehensive theoretical background information about project-based learning and that they start implementing it in micro teaching sessions in teaching different subjects as English, Mathematics, Science and Arabic for their classmates at the Bahrain Teachers College. It was noted that during their training session they displayed great abilities and confidence in the application of project-based learning but they were still uncertain whether or not they will be able to apply it in real classroom situation during their training and what challenges they might encounter.

During a supervision of the fourth-year students in their teaching practice (TP4) Shabban noticed that just a few of the student teachers were able to apply project-based learning in the classrooms. This was the motive of his study to investigate in order to find out the challenges that hinder the application of project-based learning. Hence aimed to examine the possibility of applying project-based learning in the Bahraini schools, explore the challenges if at all there are any and finally to provide some suggestions based on the findings of the study that may facilitate the implementation of Project Based Learning. He formulated three research

questions firstly, to know to what extend Project Based Learning can be implemented in the Bahraini primary schools, secondly to know what challenges do pre-service teachers encounter when implementing Project Based Learning and thirdly, what are the suggestions that could facilitate the implementation of Project Based Learning if any challenges occurred.

As the purpose of the study was to investigate the applicability of Project Based learning in some Bahraini primary schools and exploring the challenges that might exist during the application of this method, as far as the methodology was concerned, Shabban chose a case study design to carry out the research. Two data collection tools were applied in gathering the required data: a questionnaire and a semi structured interview. The questionnaire was administered along with the instructions to 24 pre-service in 8 primary schools in different parts of the kingdom of Bahrain at the beginning of their teaching practice four (TP4).The aim of the questionnaire was to see from the pre-service teacher's perception and teaching practice experience, whether or not the Project Based Learning method can be implemented in the Bahraini primary schools? Also, to see if they were any challenges that might be encountered during the process of implementation. Whereas the interview aimed to seek more information and clarifications based on the responses of the participants in the questionnaires.

Twenty-four (24) pre-service teachers studying in year four at Bahrain Teachers College during the academic year 2016/2017, final semester took part in the study. The participants were selected randomly from different majors (Arabic and Islamic studies, Maths, English and Science). They had almost the same background that is they received equal training program and took similar content and method courses. Pre-service teachers were distributed by the Ministry of Education in 8 different schools for teaching practice which lasted for one complete semester. During their teaching practice they had to teach full lessons based on a teaching schedule prepared by the schools. From the findings the numerous challenges were as follow:

Challenges related to teachers: The findings of the study indicated that only 7 out of 24 pre-service teachers were able to implement Project Based Learning during their TP4 which lasted for a whole semester because of the following reasons: first, they could not easily decide which topic or unit in the textbook to be taught by Project based Learning. This challenge could be due to the fact that the curriculum had not be designed to be taught by Project Based Learning therefore, this was left to teachers to decide. Another striking difficulty faced by the participants was implementing Project Based Learning within the school schedule, because they had to complete certain topics in certain time as planned by the Ministry of Education (MOE).Using Project Based Learning often takes more time than other methods of teaching which may delay the processes of presenting and covering the lessons scheduled by the Ministry of Education.

The results of the study again showed another major obstacle which was hat some pre-service teachers were reluctant and not confident enough to apply Project Based Learning because they had a preconceived belief that if they apply Project Based Learning students would create too much noise in the classroom, as a result they will not be able to make them calm and regain their attention easily. Besides that, giving support to 30-36 students and monitoring their progress during the process of the project was hard. Focusing on all elements, Project Based Learning was found to be problematic as well by some pre-service teachers. The findings also demonstrated that participants were not confident to apply Project Based Learning because they were not sure whether to assess the process of conducting the project or the end product. This could be due to lack of experience.

Challenges related to students: The results of the study revealed that some students dominated the work and did not allow their classmates in the group to take active role in the projects, whereas others wanted to direct the project according to their interest especially high achievers. As a result, those who did not get the opportunity to, participate became upset and unwilling to continue working in the same group. This issue maybe because of the little exposure and training students received on the skills of collaborative work before conducting the project, or the group working rules were not effective. However, according to Hmelo-silver & Barrows (2006) "teachers are able to set students up for success by helping them build a solid foundation for these skills through the use of scaffolds".

The use of technology is one of the essential components of Project Based Learning, but through the results of the findings, it was seen that some students do not have their own devices or did not have access to technology which obstructed them from searching information to be shared with their classmates in the group. Another issue revealed by the study was that some students worked very fast focusing on finishing the project rather than learning from the process of carrying out the project. This could be attributed to the common fact that students were still exams oriented and interested in the gaining of marks rather than acquiring skills.

Challenges related to the curriculum: The curriculum being more artificial rather than being based upon something authentic, the study revealed that pre-service teachers found difficulties to adjust it to be taught in meaningful projects. Some of them used it as a normal projector as a task-based learning neglecting the elements of Project Based Learning. As mentioned earlier the curriculum was not designed to be taught by project-based learning. Therefore, teachers should strive to find out how the content of the lesson can be modified and contextualized so that it can tie with Project Based Learning while preserving the objectives of the lesson. However, this is a common problem and often happens especially when the emphasis

is placed upon the end product rather than the process of conducting the Project "The true focus of Project Based Learning is encouraging students to engage in the inquiry, explore the real-world contexts, and share their learning with others" (Holland,2015).

Challenges related to schools: The findings illustrated that schools don't offer the necessary materials and facilities required for projects. This could be due to the lack of financial resources devoted for such projects. Different projects need different materials and the facilities to be conducted and if the schools do not have enough budget, it will be hard for teachers to apply Project Based Learning. Another striking finding related to schools was that some school administrations preferred simpler methods of teaching to avoid noise, spending money and adhering to the teaching plan provided by the Ministry of Education (MOE).Either they did not welcome any shift or they put obstacles in the path of teachers so that they should not use unfamiliar methods of teaching. However, school factors were the major barrier as reported by many researchers such as: Blumenfeld, et al. (1994) and Pereira et al (2017). These factors include insufficient resources, inflexible scheduled and the lack of technology. In addition, a number of students and district curricular policy are serious limitations that obstructs the implementation of Project Based Learning.

Challenges related to parents: School-Parents collaboration may help greatly in the success of the educational process. The study revealed that this relationship did not exist, and there was not effective communication between teachers and parents as it should be. Consequently, it has been observed that some parents underestimated the value of Project Based Learning, and were not keen to offer the necessary materials for their kids to do the project. On the other hand, some parents did the project for their children instead of just helping them to search for the information or provide them with the necessary materials and facilities that enabled them to conduct the project. This was maybe because parents were not aware of the importance of project-based learning.

What can be retained from this study of Shabban Aldabbus is that the study sought to investigate the possibility of applying project-based learning in some Bahraini primary schools and to see if there were any challenges existing during the implementation. Analysis of the data revealed that less than one third of the participants were able to apply Project Based Learning whereas the rest failed to do so because of the following reasons: some of them were reluctant and not confident enough to use project-based learning. Most pre-service teachers found it difficult to manage their classroom time appropriately because projects took more than the expected time. In addition to that, the context where Project Based Learning was implemented played a fundamental role in hindering the process of using project-based learning effectively.

Designing valid and reliable assessment tools that require students to demonstrate their understanding was another striking difficulty. This study demonstrated an evidence that project-based learning was challenging to students as well. It showed that students lacked the necessary skills of collaborative work. As a result, students dominated the work and imposed their ideas on their classmates. The study indicated that some schools did not offer the required facilities and were not ready to shift to project based learning because of various constraints such as time, noise and the lack of financial support. Lastly, the findings of this study offered good opportunity for the researcher to come up with some valuable suggestions that could help in facilitating the process of applying project-based learning.

The suggestions and recommendations were made to help teachers, schools and decision makers implement project-based learning as it has proven to be an effective method of teaching.

- The culture of using project-based learning should be spread among schools throughout workshops, seminars and the training session.

- Teachers should receive in-service training on how to apply Project based learning.

- Parents should be familiarized with the importance of project-based learning.

- Project Based Learning should be taught along with problem-based learning, inquiry-based learning and task-based learning.

- Curriculum should be authentic and originally designed to be taught by Project Based Learning.

- Special budget for projects should be offered by schools.

- Display area where distinctive projects can be displayed to motivate other students should be made available to the students.

- Rewards for best projects should be provided

- Collaboration among teachers within the same school should be encouraged.

- Project Based Learning should be used across the curriculum

- There should be an application of the effective assessment tools that assess the process and the end product.

- Taking account, the Bahraini school environment in the case of adopting a new method of teaching.

The recommendations made by the study was that the sample size that took part in the study was relatively small hence a bigger sample size is recommendation for further studies. Also, further research of the effectiveness of Project based learning could be explored.

2.1.2. Motivating Project Based Learning: Sustaining the Doing, Supporting the Learning.

. Blumenfeld et al (1991) presented an argument to know why projects have the potential to help people learn, indicate factors in project design that affect motivation and thought, examine difficulties that students and teachers may encounter with projects and describe how technology can support students and teachers as they work on projects, so that motivation and thought can be sustained.

Blumenfeld searched to know how a teacher can motivate learners, how a teacher can get children to think about what they are doing, not just focusing on getting it done, how a teacher can make children to really understand the material, not just the tests. These are old-age and important questions of educators and continue to be the central issue in psychological research. Motivational questions are often studied in isolation from questions of thinking and learning; however, the job of the teacher requires an integration of these two related but often disparate areas of study. If one of the important goals in schooling is to foster the development of student's mind by engaging them in sophisticated and substantial opportunities for deep understanding of the curricular content, then educators must concern themselves with motivational questions that examine how students engage in and persist in such activities. In the quest for organizational principles of instruction and curriculum that attend to critical relations between motivation and thinking, researchers recurrently turned to the idea of projects

Studies have shown the link between students motivational orientation and cognitive engagement in school work (Pintrich and De groot,1990,Arme &Archer 1988,Wine and Max,1989).It is argued that from some sets of goal orientation such as mastery versus ability, learning versus performance, and tasks versus ego involving, students who adapt goals characteristics of the first of each of the pairs are motivated to learn (Brophy,1983).Such students try to benefit from the school assignments and demonstrate great levels of cognitive engagement in school work and they report using more self-regulation, cognitive and metacognitive strategies. Uses of such strategies is related to development of deeper level understanding of subject content (Weinstein & Mayer 1986). Recent work on learning emphasizes the critical role played by task and environment. Drawing analogies from everyday learning, researchers hold that knowledge is contextualized; that is learners construct knowledge by solving complex problems in situations in which they use cognitive tools, multiple sources of information and other individual as resources (Brown, Collins & Dugid, 1989).

The master-apprentice relationship is used as an analogy for the teaching-learning situation. It is therefore argued that as masters, teachers should scaffold instruction by breaking down tasks, use modeling, prompting and coaching to teach strategies for thinking and problem solving; and gradually release responsibility to the learner. The result of such an approach to teaching is that learners are motivated to persist at authentic problems, mold prior knowledge and experience with new learning, and develop rich domain, specific knowledge and thinking strategies to apply to real -world problems

2..1.2.1. Project-Based Learning as motivational

Motivation and learning as an integrative perspective have led to a new interest in students projects. Project-based learning is a comprehensive perspective focused on teaching by engaging students in investigation. Within this framework, students pursue solutions to non- trival problems by asking and refining questions, debating ideas, making predictions, designing and experiments, collecting and analyzing data, drawing conclusions, communicating their ideas and findings to others, asking new questions and creating artifacts. Two components are very important to projects: the question or problem that serves to organize and drive activities; and the end product that is the project. Learners can be responsible for the creation of both the question and the activities, as well as the nature of the artifacts. Also, teachers or curriculum developers can create questions and activities. But learner's freedom to generate artifacts is critical, it is through this process of generation that learners construct their knowledge. Because artifacts are concrete and explicit (e.g. a model, report, videotape, computer program etc), they can be appreciated or critiqued. This allows others to provide feedback and permits learners to reflect on and extend their emergent knowledge and revise their artifacts.

Promonents of project-based learning claim that as students investigate and seek resolution to problems, they acquire an understanding of key principles and concepts. Project based learning also places students in realistic, contextualized problem-solving environments. In so doing, projects can serve to build bridges between phenomena in the classroom and real - life experiences; the questions and answers that arise in their daily entreprise are given value are shown to be opened to systematic inquiry. Hence project-based education requires active engagement of student's effort over an extended period of time. Project based learning also promotes links among subject matter disciplines and presents an expanded, rather than narrow view of subject matter. Finally, projects are adaptable to different types of learners and learning situations.

2.1.2.2. Some difficulties that students and teachers may encounter with projects and some sources of solutions.

Despite considerable potential, Project based education is not without problems. The idea that projects represent learning by doing certainly is not new. Roots of this conception, go back to Dewey. However, lessons from the past suggest that without adequate attention to ways of supporting teachers and students, these innovative educational approaches will not be widely adopted. Previous attempts at reform of curriculum and instruction in the 1960's used "hands-on" and discovery learning as central themes. Although evidence suggests that curricular enhanced student learning and motivation (Bredderman, 1983), their adoption was not as widespread as desired. This could be explained by the fact that projects were developed and disseminated without sufficient appreciation of the complex nature of student's motivation and knowledge required to engage in cognitively difficult work. More still, there was little regard for considering questions from the point of view of students (as distinguished from experts). Finally, little attention was paid to the nature and extent of teacher's knowledge and commitment and the complexity of the classroom organization.

The new cognitive based approaches require substantial changes in teacher's thinking about and dispositions towards classroom structures, activities, and tasks. These changes, as previous curriculum innovation have demonstrated, are not easy to achieve. Over twenty-five years of research and development have suggested that innovation in curriculum and instructional practices require that considerable attention be paid to curricular content and organization ,psychological factors associated with learners (e.g. individual and developmental differences in use of knowledge, motivational orientation, cognitive strategies and metacognition), and professional practices issues of teachers(e.g. teacher efficacy, opportunities for professional development with colleagues, and organizational time and support for teacher reflection). In order to observe the potential of project-based instruction, projects must be designed that sustain student's motivation and thoughtfulness and teachers must be supported in creating this type of instruction. Close attention then must be given to the design of project questions and associated activities and strategies to improve teacher's implementation of projects.

One of the major educational developments in the past twenty-five years that has potential for fostering project-based education is the creation and expansion of new educational technology tools that support teachers and students in obtaining, analyzing and sharing information and constructing artifacts. Technology is advancing and the price of technological tools are less expensive making sophisticated options affordable for schools. Technology has

the potential to sustain children motivation and support student learning and doing during the various phases of projects. It can support teachers in similar ways. Technology can supplement and complement teacher's instruction and managerial roles, relieving teachers of some difficulties of implementing projects. Furthermore, technology can help sustain teacher involvement in project-based education by enhancing their knowledge and professional competence.

2.1.2.3. The role of project design in enhancing motivation and fostering cognitive engagement.

To benefit from project-based instruction, students need to be cognitively engaged with subject matter over an extended period of time. Advocates on the focus on complex tasks as an important component of classroom instruction assume that learners will be motivated to test their ideas and deepen their understanding when confronted by authentic problems in a situation that is similar to how learning occur in out-of-school settings. Unfortunately, evidence indicates that students do not, necessarily respond to high level tasks with increased use of learning strategies (C.W Anderson &Roth, 1989). Students often are resistant to tasks that involve high- level cognitive processing and try to simplify the demand of the situation through negotiation (Doyle, 1983).

Although students may be interested in the topic and possess relevant knowledge and procedures for solving problems or mastering, new material, they do not necessarily use these strategies. It is insufficient merely to provide students with opportunities designed to promote knowledge that is dynamic, integrated and generative, if students will not invest the effort necessary to acquire information, generate and test solutions and evaluate their findings.

Complex high-level activities are often implemented by teachers in a manner that reduces the need for students thought. Consequently, project-based education is not likely to work unless projects are designed in such a way that, with their teacher support, they marshal, generate and sustain student motivation and thoughtfulness.

A number of factors has to be considered in project design that affect whether students will be motivated to do projects in a manner that fosters understanding. These factors include whether students find the project to be interesting and valuable, whether they perceive that they have the competence to engage in and the complete project, and whether they focus on learning rather than on outcomes and grades. Although, certainly, there are individual difference that influence what children find interesting and valuable (Pintrich & DeGroot, 1990) we can

explore how projects might de designed to increase the likelihood that most students will be motivated by them.

The interest and value students attribute to the problem and the elements in projects will determine how motivated they will be to engage to the project. Student's interest and perceived value is enhanced when;

- o Tasks are varied and include novel elements
- o The problem is authentic and has value
- o The problem is challenging
- o There is the realization of the end product
- o There is choice about what and how work is done and
- o There are opportunities to work with others (Malone & Lepper, 1987)

As far as the first factor is concerned that is variety and novelty, instructional activities that resemble entertainment programming on commercial television may suggest to learners that the medium requires active cognitive engagement.

Authentic questions are important to enhance student's motivation for example topics dealing with health and welfare, community concerns, or current events.

Tasks that have closure and that entail the production of authentic artifacts are more likely to sustain interest. Projects need to be feasible and manageable giving the time and the resources available to teachers and learners. Also, they should be rich enough to trigger knowledge in their creation as well as demonstrate student's mastery of the content.

Concerning finding an optimal level of challenge, students are often willing to exert what they consider to be reasonable effort to gain success (Brophy, 1983).But when the task become difficult or time consuming, students may focus simply on completing the work with minimum effort rather than engaging demanding strategies to try to understand it. So, there is need to set goals, providing opportunities for feedbacks to encourage continuing work and promoting cooperative learning.

Carefully designed cooperative learning programs have shown to enhance student's achievement and attitudes (Cohen, 1986). It is true that group work can reduce thoughtfulness by encouraging reliance on others as resources, thereby decreasing personal responsibility and independent thinking. Blumenfeld found that students reported more motivation when they worked in little groups but the use of learning strategies were less. The effectiveness of learning in this condition depend largely on the types of problems, posed the way groups are composed the ways in which children are handled accounts for their learning. Though learners may find the group work enjoyable, many may not have the skills to benefit from collaborative work.

Working with others requires that students be able to discuss ideas, communicate clearly, consider alternatives systematically, monitor their own understanding, compare their point of view with that of others, and ask clear questions. This is very important in group work.

2.1.2.4. The role of teachers in enhancing motivation and fostering cognitive engagement.

In project-based learning, as in traditional instruction, teachers need to;

- o Create opportunities for learning by providing access to information
- o Support learning by scaffolding instruction, modeling and guiding students to make task more manageable
- o Encouraging learner to use learning and metacognitive process
- o Assess, diagnose problems, provide feedback and evaluate overall result

In addition to the above, teachers need to create a conducive environment to constructive inquiry and manage the classroom to ensure that work in an orderly and efficient manner. Even a well-designed project cannot sustain student's motivation by themselves unless guided or supervised by a teacher. The main issue here is to determine how teachers can help students work through projects in a manner that sustain motivation and thought. No less important being how can teachers be motivated to implement Project based learning? Like students, teachers need to feel competent and value what they are doing in order to be willing to engage in new forms of instruction. Teachers are supposed to be sufficiently knowledgeable of the content of project-based instruction.

Project based instruction affords opportunities for teacher and students to explore problems deeply and to draw on concepts across subjects. This assumes that teachers possess knowledge of content included in projects, understand how to explain or illustrate the content and teach learning strategies. These requirements are not easily met. It has been argued that like their students, some teachers hold alternative or incomplete conceptions of the subject matter (Smith &Neale, 1989).Their knowledge of the concepts and the process skills addressed by the project may not be sufficient to enable them distill the concepts the project addresses, identify possible links between the central ideas in the project and other concept in the subject area covered in the curriculum. More still, recognize ways other disciplines can be incorporated into projects.

Teachers need to be assisted in understanding project content so that they too will help students. Some important elements teachers can use in project-based learning are; instruction, assessment, management and classroom environment.

Instruction, to successfully implement project-based learning, teachers need to help students become aware of, examine their own conceptions, develop and use learning strategies. Some learning strategies like predictions and analysis help to make students understanding more explicit. Moreover, to benefit from project-based instruction, students need to have to have considerable skills in using problem-solving and metacognitive strategies. Thus, scaffolding is prominent for students who are not proficient in using thinking strategies. Once again teachers themselves need models and support in learning how to help students learn.

Assessment: Project based instruction requires that teachers be able to ascertain what students know about the problem before beginning the project, their level of understanding during the execution of the project and what they learn as a result. For guidance in assessment teachers can rely on a portfolio assessment, notebook entries, interviews and examining student discourse. However, teachers need help in using such techniques to diagnose students understanding because they are time consuming.

Management: Project based instruction engages children in complex learning activities that cannot be accomplished one way (Tobin & Capie,1988). This type of academic work is difficult for teachers to manage and sustain. High -level cognitive tasks are associated with low completion and higher error rates; these factors take much time of the lesson, increase students need for help and give room to disorder. Consequently, teachers often feel pressurized to, simplify material or suspend accountability for learning under these circumstances. If teachers capitulate to these pressures the benefits of project-based learning will not materialize.

Classroom environment: Project based learning relies on a classroom climate that promotes inquiry and the mastery orientation. However, many classrooms promote performance rather than a mastery orientation to learning. Teachers in the former type of classrooms stress on correct answers, grades and completion of programs. As a result, students are less likely to take risks, worry about errors and make less use of cognitive learning strategies to obtain better understanding.

2.1.2.5. Technology: an asset to project- based learning

Technology can play an important role in enhancing student and teacher motivation to implement and do projects.

For students, technology enhances their interest in projects, provides them access to information, gives active representation, enable them to diagnose and correct errors, help them to manage complexity and finally aid in the production of the end product.

It is observed that students show more interest in project-based learning when projects focus on questions that they perceive as valuable, challenging, include a variety of activities, are realistic, allow interaction with others, and result to authentic products. Technology can thus provide multiple levels of task to match student's knowledge and proficiency, access to numerous sources of information that allow breadth in questions and offer and offer many possibilities for the production of artifacts.

More still, computer can access real data, can expand interaction and collaboration with others via networks, and emulate tools used by experts to produce artifacts. Observational research (Cognition and Technology Group, 1990) suggest that technology can make a project more interesting. For instance, Malone & Lepper (1987) found that computer activities motivated students because they allowed for control, were interactive, provided immediate results and allowed for different levels of challenge.

Technology makes information more accessible. Students access to information about key ideas concepts and subject matter topics that may arise. Traditionally, students' key sources of information were teachers and books, consulting other sources such as archives were time consuming and sometimes impossible. Electronic data bases allow learners access to massive amounts of information that are easily obtained from a computer. Through the use of networks, students discuss their findings and share their results with teachers and other students in other locations.

The use of Media- sound, graphs, videos, color pictures enhances students understanding. This helps them to construct their own representations easily. Computers respond quickly and children may be more willing to explore alternatives actively and take more risks. When students are acquainted with computers, mental effort can be devoted to the intellectual tasks of creating artifacts. Students need to diagnose and correct errors in specific parts of the project, be it in the process that was followed, or in the artifact produced. With technology areas of errors can be located via explicit statements of where errors occurred and how to correct them. In a nutshell technology affords considerable potential for motivating students to carry out projects. But how can technology also help teachers in project-based learning?

For teachers, the implementation of project-based learning is a complex and multi- faceted endeavor. There is likely to be a considerable gap between existing practices and practices called in project-based education. Through technology teachers can learn how-to carry-on projects in classrooms. Specifically, teachers firstly need to know about the project content and powerful ways to illustrate that content. Secondly, have the knowledge in project-

based instruction (that is how to help students plan, carry out and evaluate their work). Thirdly, know about the management of project-based learning and finally know adaptation or generation of projects in light of their students' specific needs.

Research on teaching and teacher development suggest how technological material can support teachers as they think about and cope with the problems, they are likely to face in doing projects. Teaching involves learning; just like their students, teachers construct their knowledge on subject content, pedagogical content, curriculum and design instruction from this knowledge (Shulman, 1987). Project support material should not only enhance teacher knowledge based on projects but also aid in the planning process. The materials should allow teachers to access to information about projects in a variety of ways.

Blumenfeld and collaborators proposed a hypermedia information system under a Project Support Environment (PSE) that will enable teachers to see actual videotapes of implementation of project-based learning on the computer. It will also enable them to access information about content and instructional issues from a concrete (for example how to help students make predictions) and more theorical perspective (what factors promote thinking).It include a tool that allows teachers to construct plans and networking capabilities to facilitate communication among teachers. The envisaged contribution of PSE to teacher's implementation of project-based learning goes as follows;

Content and pedagogical content knowledge: Teachers can benefit from the information access, multiple representation, multimedia and networking capabilities of technology. via networks, teachers can get information about the central ideas and concepts in projects as well as numerous incidental questions that are likely to arise. Their understanding will surely both broaden and deepened because they can see information represented in a variety of ways and also use the technology to manipulate and create their own representations. Moreover, methods of helping students understand ideas or concepts as well as information about possible student's misconceptions or alternative conceptions can be stored in a hyper media system illustrated visually and shared among teachers through networks.

Instruction, hypermedia information systems that combine text, video, animation graphics and audio can be developed in which teachers can see examples of how others have implemented projects (how can a project be introduced? how can learners generate and test predictions? And so on) in their classrooms.

Planning and managing teachers will need to tailor existing projects or develop new projects to meet the specific needs the constraints and their classroom, school, and community. Also, they will need to develop plans for designing and implementing projects in their specific

contexts. Technology can provide support for planning such design activities and for carrying out those plans. Moreover, these plans themselves are artifact that can be shared and critiqued by others, reflected and revised by the teacher.

As part of the Project Support Environment, Blumenfeld and collaborators implemented a first version a project-planning software called IByD (Instruction by Design) with pre-service teachers. The program is an expert shell that provides pre-service teachers with strategic support for processes (developing goals, selecting activities identifying evaluations and describing possible instructional examples) and tactical support by requiring the user to provide rationales for choices and to show the coherence of plans by visually illustrating and explaining how elements of the plans are linked (Blumenfeld, Soloway, Urdan & Brade, 1991).The preliminary results suggest that IByD helped structured the process of planning the rationales of plans generated by computer users were significantly more systematic and explicit than those of the plans produced by non-computer-using subjects in the same teacher education course.

Globally, Blumenfeld & al (1991) argued that the technology teachers need to support their efforts at realizing project-based instruction corresponds to the technological tools that professionals in other areas routinely use (for example planning software, telecommunications software, and multi data bases). Although it is not unanimously agreed that teachers indispensably need such tools, few will argue against technological support to teachers. Hence this study holds that technology can directly support teachers as they learn about and implement projects and as they support student learning.

2.1.3. Project- Based Learning for the 21st Century: Skills for the Future.

Bell Stephanie (2010), presented a view of project-based learning as an innovative approach to learning that teaches a multitude of strategies critical for success in the twenty first century. This approach is very beneficial to learners as they drive their own learning through inquiry, as well as work collaboratively to research and create projects that reflect their knowledge. From gleaning new knowledge, viable technology skills, to becoming proficient communicators and advanced problem solvers, this approach to instruction is very advantageous to students. The twenty first century skills comprises skills, abilities and learning which have been identified and considered as important skills to succeed in today's workplace. They prepare learners to career readiness. Such skills include critical thinking, creativity, technology literacy, autonomy, entrepreneurship, imagination, decision making just to name these few.

Project based learning is a student-driven/teacher-facilitated approach to learning. Learners pursue knowledge by asking questions that have piqued their natural curiosity. The genesis of a project is an inquiry. Students develop a question and are guided through research under the teacher's supervision. Discoveries are illustrated by creating a project to share it with a selected audience. Student's choice is the key element of this approach and teachers oversee each step of the project, approve each choice before student embark on a direction. Students with the same inquiry may decide to work cooperatively, thereby nurturing twenty first century collaboration and communication skills and honoring student's individual learning styles or preferences. The outcome of project-based learning is greater understanding of the topic, deeper learning, high level of reading and increase motivation to learn. Project based learning is a key strategy for creating independent thinkers and learners as the gain valuable skills that will build a strong foundation for their future in their global economy. It has been proven that students who learn under project-based learning achieve high grades than students still under traditional learning.

Boaler, (1999) carried a student to assess two schools; one using the traditional learning and the other project-based learning. The findings revealed that over three years successively learner under PBL scored the highest marks. Thomas, (2000) carried a similar a study in Boston where students were asked to apply the concepts of geometry to architecture and submit design for a new playhouse for a community center. Upon evaluating these designs, 84 percent of the submissions were judged accurate enough to build. This was impressive measure of achievement of students under project-based learning.

2.1.3.1. Learning to be self-Reliant through Planning and Organisation

Through the several phases of project-based learning, each phase of the project has to be completed in a timely manner. Thorough and careful planning is essential to the flow of the project and the success of the student. When a problem is detected, learners after brainstorm on which procedure to use, identify the materials that they will to do their research. After this step, learners select a way to display what they have learned in the form of a project. A target audience with whom to share their project is selected englobing the peers, the teachers, head teacher and even parents. The audience must be authentic and appropriate. For example, if students are working on a science inquiry on the topic of energy, they may choose to research how to harness hydropower to make a machine. A group may choose to make a working catapult. The end product might be a contest how far they can catapult a ball or an egg, with the

class as audience. Accountability to the audience coupled with a due date keeps learners on track.

Learning to be responsible, independent and disciplined are three outcomes of project-based learning. The organizational blueprint that students have designed for themselves guides them and allows them to stay focused and on-task. As children become more proficient in the project-based learning approach, they learn to self-monitor their progress through daily agenda setting. At the end of each work session, student report on whether they have met the goals for the day. Students must use their work time effectively, stay focused and on-task. Goal setting help children to manage their own time. It is thus important for teachers to confer with students regular to ensure that students are on tract and developing their ideas and skills fully. These skills are both critical for school and life.

Students learn accountability with project-based learning through the daily settings of goals as well as through the expectations of their peers. Bell, (2010) holds that when students work cooperatively, there is an expectation that each child will contribute to the project equally. The group dynamic creates an interdependent team in which students must each do their part, and as a result, a natural consequence exist for those learners who fail to do their own part. Unfortunately, others may no longer want to be paired with student who do not do their fair share. Therefore, peer pressure contributes a lot to the accomplishment of the ongoing group task throughout the learning process and the culmination of a successful final product and provides more motivation for students than if they were only responsible to their teacher. Children will not want to let their friends down.

2.1.3.2. Social learning Enhances collaboration Skills

Communication, negotiation, collaboration is part of the twenty first century skills and with project-based learning, social learning is promoted. As children work on their projects, they must brainstorm ideas and act as good listeners to their group members. Teaching students active listening skills enhances collaborative ability as well as creativity. Students learn the fundamental skills of productive communication, respect for others, and teamwork while generating ideas together. Negotiating how to collectively solve a problem is also part of project-based learning. At the end of the project, children do a self-evaluation not only evaluating their learning but also the success of their interactions. They assess their communication skills to see whether they listened carefully to the other students' ideas and if they believed their own opinions were taken into consideration. Consistent and practice of these

skills will strengthen learners over time and lead to proficiency and mastery. Bell believes that these skills are critical to future success in the success of the global economy.

2.1.3.3. Differentiation: a provider of intrinsic motivation

Choice is a very crucial element for student's success. Differentiation also enable students to, develop their own interests and persue deeper learning. It also allows students to soar and learn at their own levels. Students use resources that are appropriate for their individual reading levels and compatible with their technological knowledge. What is good about this intrinsic motivation is that students will often reach higher and attempt to read more challenging materials to glean the information they seek. Doppelt (2003), contends that student's motivation to learn their discipline and their willingness to work on their projects for longer hours indicate that they behaved like high achievers.

The active learning process of project-based learning takes students various learning styles and preferences into account. Students use a range of tools and resources to conduct their research. They also choose individual ways to demonstrate their learning in the final product. Moreover, children can select their own environment. Children learn so much about themselves when they are empowered to make their own decisions. It is true that the opportunity to make mistakes is part of the learning process that is why when project-based learning is implemented, children discover who they are as learners. They are able to make their choices, whether relating to process, environment, or outcome, which enables them to become more independent and responsible for their own learning.

Scaffolded instruction ensures success. Scaffolding refers to the support provided to students to assist them in making cognitive growth just beyond their reach; Learners require much support and monitoring in project-based learning. Therefore, teachers have to scaffold learners by using organizers that aid students to bridge the gaps that exist in knowledge and skill making the task manageable and achievable. As with most support scaffolds are temporary and as the learner gains fluency in the skill, the supports are removed, leading to a self-confident and capable learner.

2.1.3.4. Technology as a means to enhance creativity

In the twenty first century, students use computers in very advanced ways, but it should not be forgotten that they are still kids and need guidance to use technology safely and effectively. Technology as a means, not as an end, enable students to experiment all the aspects of project-based learning. An authentic use of technology is highly engaging to students because

it taps into their fluency with computers. Students participate in research using internet. They learn how to navigate the internet judiciously, as well as to discriminate between reliable and unreliable sources. It is important to set parameters to ensure that students can explore safely.

Students can use a multitude of applications, including web 2.0, for their projects. Students may use a wiki to share knowledge or blog with other learners to troubleshoot during the process segment of their projects. Students may use many technologies to display their learning for example a podcast, a video, a photo story, a comic and so on. These uses of technology provide instruction to the student by demonstrating innovative usage of various applications. When children share their work or challenges, a brainstorming session often helps them to build on each other's ideas for future possibilities. This exercise promotes creativity and critical thinking.

2.1.3.5. Real-world Connections with project-based learning.

Research supports Project based learning as a tool to engage students in real-world tasks. It is important to remember that even though a project may be based in one curricular area, it crosses over all areas of the traditional academic studies. Evidence exist that through project- based learning, students become better researchers, problem solvers and higher order thinkers (Gultekin 2003). Again, studies support that students using project-based learning perform better on both standardized assessments and project test than students in the traditional direct instruction program and, not only do they learn real world application skills, but also analytic thinking (Boaler 1999). Real world projects deepen student's learning.

Students develop twenty first century skills with project-based learning that will aid them to become productive members of the society. Children learn from their processes. They reflect on how well they work in teams and how they contributed, negotiated, listened, and welcomed other group member's ideas. They self-evaluate their own projects, efforts, motivations, interests, and productivity levels. Students become critical friends by giving constructive feedback to each other, which helps them become aware of their own strengths and improve on their interactions with each other.

According to Bell (2010), in this century, children must enter a workforce in which they will be judged on their performances, evaluated on their outcomes and their skills. By implementing project-based learning, we are preparing our students to meet twenty first century with preparedness and a repertoire of skills they can use successfully. The earlier we begin with this approach; the more competent children will be with the processes of project-based learning and the implementation of skills.

2.1.4. In-Service Training for Teachers and its effectiveness In School.

Marsha & Naftali (1999) assert that one of the important components to improve quality of education is through in-service training of teachers. The role of a teacher is crucial for the implementation of education reforms in accordance with the aspiration of the national philosophy of education. As such, the need for in-service training also known as staff development program play an essential role to update teachers' skills and knowledge for improving teaching and learning which leads to better job performance. Education usually faces many changes; curriculum revision, new pedagogic approaches, technology and education, in - service training is a means for teachers to acquire knowledge to face the new challenges thus in-service training becomes a fundamental aspect to improve teacher's professionalism.

2.1.4.1. The need for in-service training for teachers

The need for in service training in schools is getting more attention for teachers to equip with new knowledge and skills that enables them to be acquainted with the educational reforms. This professional and personal activity helps teachers to improve their efficiency, ability, knowledge and motivating their professional work.

In-service training offers one of the most promising roads to the improvement of instruction. It includes goals and content, the training process and the context. According to Ong (1993), in-service training is the totality of educational and personal experiences that contribute towards an individual be more competent and satisfied in the assigned role. The primary purpose of in-service training is to enable teachers to acquire new understanding and instructional skills. It focusses on creating learning environments which enable teachers to develop their effectiveness in the classroom.

In this aspect, in-service-training for teachers is the driving force behind much changes that occur the teaching/learning process. It is vital for teachers to keep up to date on the most current concepts, thinking and research in their field and also enhances professional growth among teachers in order to promote excellent and effective teaching and learning environment for students. According to Kamzi, Pervez & Mumtaz (2011), in-service training of teachers enables them to be more systematic and logical in their teaching style. In-service training is a planned process whereby the effectiveness of teachers collectively or individually is enhanced in response to new knowledge, ideas and changing circumstances in order to improve, directly or indirectly the quality of pupil's education. Rashid (1996), argues that in-service training

comprises two elements that is the fulfillment of pupils learning needs and ensuring personal and career development of the academic staff.

In-service training as earlier said is a fundamental aspect for the enhancement of teacher's professionalism related to the teacher's vision to improve in the quality of their work. Through in-service training teachers can identify and evaluate critically the culture of the school which can bring changes to the working culture. Studies by Ekpoh, Oswald & Victoria (2013) shows that, teachers who attend in-service training perform effectively in their work concerning knowledge of the subject, classroom management, teaching method and evaluation of students. Also, in-service training plays a major role improve teacher's performance in schools.

During in-service training, teachers acquire school management skills, evaluation techniques and master wider content areas of their subjects. For this reason, teachers and educational experts should increase their effort in fostering and implementing in-service training in schools so as to improve effectiveness of development in schools.

In-service training has undergone considerable change in the recent years. As a practice, result-driven in-service training in concerned with changing behavior and/or attitudes of teachers, administrators and staff members rather than being concerned with the number of participants in such programs (Ronald, 2004). It is therefore difficult today for any individual enter a profession and remain in it without any changes. Hence in-service training desirable but also an activity to which each school system must commit human and fiscal resources to maintain a skilled and knowledgeable staff (Ronald, 2004).

The importance of in-service training should be looked in various perspectives. It promotes a flexible environment and allow teachers to adapt with the working situation and it is also one form of motivation for employees and will continue to increase creativity in the teaching and learning process. It also enables teachers to acquire new understanding and instructional skills to develop their effectiveness in the classroom. In-service training should yield a positive effect on teachers in increasing knowledge, communication with their involvement in planning school activities and also it increases the staff motivation. Thompson (1992) holds that after going through in-service training, there are positive changes in teachers' attitude, increase self-confidence and also follow up the teacher's readiness in facing any resistant situation. This shows that a well-planned training program and implementation will give a positive change effect on students, teachers and schools.

According to Owen (1990) "the positive aspect concerning professional development of teachers is that the program will make sure that learning activities are planned and concentrated in empowering teachers to correct policies, curriculum development, teaching and views on

how to achieve high productivity and student's performance". It is vital that the positive performance of students will bring profits to teachers themselves based on the additional recognition of colleagues at work place and the administration. Gains will be observed both for teacher and students and equally to the school from in- service training.

2.1.4.2. Effectiveness of in-service training in school.

The important factor in conducting in-service training for teachers is the effectiveness of the program. Many researchers stated that, an effective training program should be conducted in the school itself because the teachers will be involved in the planning and implementation of the training from the beginning to the end. In addition to that, the effectiveness of the training program is very much related to the awareness of teachers for self-improvement and development. For some researchers, there are some factors that contribute to the effectiveness of in -service training which are; the role of the administrator, attitudes of teachers, training needs and strategies in conducting in-service training.

2.1.5. The role of administrator

In-service training must be proactive rather than reactive and its effectiveness depends on the extent to which it is personalized and based on positive constructs. In this aspect in- service training in schools requires strong leadership which is usually the role of the school head. Administrators as leaders, establish an atmosphere of support and trust, offer incentives and rewards for participation and provide sustained moral and material support. Administrators should serve as a role model by participating fully in the training activities.

School administrators face the challenging task of providing for the professional development of teachers in their schools. According to Alice (1993), "this responsibility is assigned to them because administrators have ready access to data that provide a clear picture of strength and weaknesses of the individual staff members, the needs of the students, the weak areas of the curriculum, the value and the desires of the community and how their school measures up with the objectives and goals of the ministry of education". Hence it is necessary for administrators to provide a process of involving teachers in the identification of professional skills that need to be improved and involving them in the design of activities and program that provides this skill development.

The school head can implement in-service training even if he might not be technically involved. School heads own style, level of activity, authority, leadership and can collaborate

with teachers about the idea of school improvement. He is the potential person who can manage the in-service training. As such, can also be a facilitator to the teachers being able to give full support and encouragement to the teachers in training. Heaney (2004) & Lee (2005), stated that, the school head should be committed in identifying the training needs for teachers and prepare a suitable training bases on their needs. School heads should create awareness regarding the need for in-service training for teachers. The need for in-service training must be identified and accepted by the staff members themselves. Teachers perceive that the evaluation that administrators do after a training is very important and useful in motivating them.

The role of a school head is subject to bring changes making sure that the needs of teachers in the school is fulfilled. They have to make sure of the success and effectiveness of the training program.

2.1.6. Attitudes towards the in-service training

The effectiveness of in-service training in school is also related to the attitude of teachers in school. Teachers should have a positive attitude towards in-service training organized in their school. It has been noted teachers that have high positive attitudes towards their job are more interested to try new techniques and strategies, including those that they have learn in training conducted in their schools. Apart from that, the objectives of in-service training in schools is to change attitude and work schedules of teachers so as not to depend solely on instructions or circulars that will cut down the emphasis on perspective culture. In this way, teachers will emphasise on team spirit and the feeling of ownership as a source of importance when they attend in-service training and this will contribute towards the effectiveness of the training.

Attitudes are important issues for training because they affect motivation. Motivation is reflected in a person's selection of goals and the amount of effort expended in the achievement of those goals. According to Blanchard (1999), goals and efforts are influenced by the person's perception about the goal. Teachers must have a positive attitude and consider that continuous in-service training as absolutely essential to their professional growth and the improvement of teaching. One of the most important aspect of in-service training is self-development thus teachers have to express a positive attitude towards the training. This will help them to participate actively in the training program.

Professional growth is after all personal in the sense that what motivates somebody differs from the other. In-service training is self- development in that professional growth begins with a personal need and teachers develop by taking responsibility for their own growth

with a positive attitude when attending a training program. This will definitely lead towards the success and effectiveness of the in-service training attended by the teachers.

2.1.7. The need of analysis for in-service training

The main purpose of in-service training is to increase the knowledge and skills of the employees and thereby increase the potential of the school to attain its goals and objectives. The process of assessing employees' needs is essentially the process of determining the discrepancy between the existing and the needed competences of the staff. This analysis also must consider projected human resource needs. Robert (2004) asserts that "the data obtained from the human resources inventories used on the human resource planning process along with the data obtained from the needs assessment techniques provide the framework within which program goals and objectives are established".

An effective in-service training must be able to identify systematically the needs of employees because it's the base to develop the objectives and the activities for training program. In identifying the training needs, many aspects have to be taken into consideration. It is important to understand that training 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 that is performance, job satisfaction and so on. Another is direct feedback from the school employees regarding what they feel on the organisation's and development needs. The final method of determining training needs involves projections. If the new programs, procedures or equipment are predicted, some type of corresponding training will be needed.

It is thus obvious that training needs analysis to determine the objectives and the content of the training so that teachers are really trained for their professional development, improve their knowledge in many aspects of teaching and learning which will be to the benefits of students. Thanks to this, training will run well and will be effective with the aim of improving the quality of teachers.

2.1.8. Strategies for in-service training

In-service training shall be implemented according to or through a comprehensive and well-organized plan that include 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 channeling knowledge becomes reality, the approaches used in presenting in-service training should be appropriate with 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 higher level of self-development efforts and learning through experience.

The various methods and approaches used in in-service training in schools should suit the objectives, contents, ability of the participants and the facilities available in the program. The effectiveness of such method and approach used will depend on the knowledge, skills and discretion of the coachers or facilitators with respect to the concept, planning, implementation and evaluation of the approaches used.

The contents that is 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 to the subject syllabus, the pedagogy of learning, teaching and learning strategies of certain subjects or skills and classroom management. According to Matnoh & Minan (1995), the suitable course content will only develop through observation, listening and the feedback from potential participants by the facilitators or coaches.

A very important aspect of conducting in-service training is what kind of materials and media is suitable and effective in delivering the course content. The choice of equipment and materials must be suitable with the contents and training objectives that will be presented. The materials and equipments must be evaluated from time to time to make sure of its effectiveness and suitability. According to Hacer (2012), the effectiveness of in-service training is also very much depended on the materials and resources used and whether new materials created during the course.

Time factor is also an important point in conducting effectively an in-service training program. A session that is too long will interfere the teacher's concentration, while sessions held just after school 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 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 enable teachers to be more prepared and readier to attain the training program. review has shown the need and importance of in- service training for teachers as a tool of professional development, the enhancing of their knowledge and quality of teaching and learning. Teachers are facing new challenges and changes in the education world and it's important for teachers to equip themselves with new

knowledge and skills by attending in-service training in order for them to play an important and effective role as educators.

2.1.9. Overcrowded Classrooms: A problem in the teaching learning process.

The over crowdedness of classrooms have been considered as one of the most challenging problems that schools and teachers face. A classroom is said to be overcrowded in which the number of students exceed the optimum level such that it causes hindrance in the teaching learning /learning process. Research argue that there is no exact definition of a large class. It differs from country to country. According to Hayes (1997), there can be no quantitative definition of what constitute an "overcrowded class", as perception to this will vary from context to context.

Hayes argues that the term "large" is of course relative, and what can be considered a "large class" will vary from place to place. For instance, a group of twenty maybe considered large, others would argue that a large class could have over one hundred learners and so on. Coleman (1989), indicates that an average perception of a large class maybe around fifty (50) students. However, must teachers generally agree that a class with 50-60 or more is "large" enough.

Filling classrooms with more students than intended can affect teacher's ability to teach effectively and student's ability to learn. Overcrowded classrooms may create an obstacle in the progressive activities of classroom teaching and learning process. The primary objective of a teacher in the classroom is to treat each and every individual learner in a proper way in order to regulate his activities and develop his inner personality, not only that, he has to give him a wide opportunity to develop his skills, abilities and potentials at the optimum level. Meanwhile in overcrowded classrooms, teachers may spend most of their time in calling on learner's attention or concentrating on classroom management activities rather than conducting effective teaching.

Instruction in a large class is a challenging task in a classroom situation to any teacher who is involved effectively in the teaching learning process. In an overcrowded classroom, since the number of learners is high teachers face difficulties to prolong their teaching-learning process in an effective way in order to attain the awaited objectives. In addition to this, teachers cannot make adequate interaction with their students in large group.

2.1.9.1. Overcrowded classrooms and teachers-learners interaction

Farrant (2000), says that classroom interaction is one of the primary means by which learning is accomplished in a classroom. Interaction occur every day in class activities between the teacher and his students. Farrant defines the concept of interaction as *"reciprocal events that require at least two actions. Interaction occurs when these events naturally influence one another"*. Therefore, interaction do not occur only from one side, there must be mutual influence through giving and receiving messages in order to achieve communication as well as through understandable output from the teacher. The idea of a two-way effect is very essential in the concept of interaction.

Farrant mentioned two main types of classroom interactions; teacher-learner interaction and learner-learner interaction.

The teacher-learner interaction is an interaction that happens between the teacher and one or many learners. The part play by the teacher in such an interaction is important as he discusses with his students about the content of the course, asks questions, use students' ideas, lectures, gives directions, criticizes or justifies students' responses.

On the other hand, the learner-learner interaction is an interaction that occurs between and among learners. Many theories of learning maintain that knowledge is actively constructed and skills improved through interactions between learners. Johnson (1995) supports that if learner-learner interaction is well structured and managed, then it can be an important factor of cognitive development, educational achievement of students and emerging social competences. It also develops learner's capacities through collaborative work.

2.1.9.2. Effect of class size on teacher-learner interaction

Interaction between teacher and students may be affected by many aspects for instance the class size. According to Blatchford (2007), the first difficulty encountered by teachers in an overcrowded class is the management of the class. Limited physical space due to large classes results in an increase in student's misbehavior and this disrupt teachers-learners interaction. Many studies have argued that teachers interact less with their students in large classes as compared to those in smaller classes and better managed the class. Blatchford holds that teachers concentrate more in delivering the lesson in overcrowded classes rather than interacting with their students. This is often due to indiscipline that turns to occur in an overcrowded class. Teacher-to-student interactions are affected by the class size, which also affects the instruction of students and classroom management. In large classes, teachers are not

able to build the relationship that they are able to build in smaller classes (Blatchford et al 2007). When teachers are able to interact with their student, they spend less time in trying to control the class and increase time devoted to instruction

2.1.9.3. General problems of large size classes

Hayes (1997), enumerates some recurrent problems regarding large classes as follows:

- **Discipline**

Teachers face difficulties in controlling students who make noise especially when they carry out activities or when they finish before others. It becomes then very difficult for teachers to stop them from disturbing. A disciplined class is an ideal field for teachers to impart knowledge and smaller classes enjoy of this advantage. It is nearly impossible for teachers to maintain discipline in overcrowded classrooms. A teacher may be very competent in his profession, his preparations satisfactory, is smart and punctual; but will fail to control and maintain discipline in an overcrowded class. Hayes (1997), says that an overcrowded class is always noisy and students who are not interested in class will disturb others and during activities, it is always very difficult to control and solve their problems. Discipline is actually a common problem in large classes. Teachers should be proficient enough to be able to master the class.

- **Discomfort.**

Many teachers as well as students may find themselves uncomfortable when teaching in an overcrowded. They might feel unhappy and hopeless because of the overall hostile condition. Teachers cannot keep proper eye contact with the class. They cannot involve their students in learning activities. They feel uncomfortable when this cannot be realised thus the teaching-learning process will not be in a natural manner. Hayes (1997), complains that large size of classmates frustrates him, gives tiredness and discourages him to manage the class successfully. Thus, it is important that the class should be a comfortable place to gain successful interaction.

- **Individual attention.**

Due to the number of students as well as the shortage of time, teachers cannot pay attention to every individual learner in class. Hayes (1997) holds that it is difficult to know and follow the progress of all the learners in an overcrowded class because they are too many and so different. He asserts that teachers recognize that it is impossible to concentrate on all students therefore not enough reinforcement will be made to encourage all the learners to participate in the different activities. In such a context, some students, especially the shy or weak ones might be neglected or left behind.

- **Evaluation of students' progress.**

According to Farrant (2000), it is very difficult for teachers to carry out proper evaluation in a large size class. It is indeed a challenging task to teachers to supervise and give the appropriate feedback to a class that exceeds forty students. More still, it is hard to check all the exercises done by each student in the classroom. It becomes nearly impossible to correct their mistakes. It is troublesome for the teacher to mark too many scripts of assignments even though all this evaluation is essential in the teaching system.

2.1.10. Teaching and Learning Resources

Teaching and learning resources comprises basically three components: material resource physical facilities and human resources (Lyons 2012). Studies done in the past with regard to the availability of teaching and learning resources reveal that teaching and learning resources are not always available in schools. This inadequacy of teaching learning resources has been a serious concern to educators. According to Lyons (2012) learning is a complex activity that involves interplay of student's motivation, physical facilities, teaching resources, skills of teaching and curriculum demands. The availability of the teaching and learning resources therefore enhance the effectiveness of schools as they are the basic resources that bring good academic performance of students.

According to Coombs (1970) the adequacy of teaching and learning resources refers to satisfactory or acceptable quality and quantities of material resources physical facilities and human resources. Adeogun (2001) holds that adequacy of Teaching and Learning resources determines an educational system's efficiency. To him, for effective teaching and learning, textbooks and resource materials are the basic tools, their absence or inadequacy makes teachers handle subjects in an abstract manner, portraying it dry and non-exciting.

Several studies have been conducted on the impact of instructional resources on student's academic on education. Momoh (2010) conducted a research on the effects of instructional resources on student's performance West Africa School Certificate Examination (WASCE).

This study revealed that achievements of students in the examination were related to the resources available for teaching. He concluded that material resources have a significant effect on student's achievements. When teaching and learning resources are inadequate, education is compromised and this inevitably is reflected in low academic achievements, high drop-outs rates, poor teacher motivate on and unmet educational goals.

According to Atkinson (2000), materials resources include textbooks, charts, maps, audiovisual and electronic instructional materials as radio, tape recorder, television and video tape recorder. Other category of material resources consists of paper supplies and writing materials such as pens, eraser, exercise books, ruler, slates and so on.

Adeogun (2001) established a very strong significant relationship between instructional resources and academic performance. Adeogun holds that schools endowed with more materials performed better than schools that are less endowed. This corroborates with Lyons (2012) who supports that student's performance is affected by the quality and quantity of teaching and learning materials. The author noted that schools with adequate facilities stand better chance of performing well in examination than the poorly equipped ones. Therefore, poor performance could be attributed to inadequate teaching and learning materials and equipment.

2.1.11. Influence of school facilities on student's academic achievements.

The availability of basic infrastructure and services such as school buildings, computers, laboratory equipment, classrooms, water and electricity supply, sports grounds, libraries, have a great role in improving learning achievement in schools worldwide (Santika, 2021). In offering a good learning environment, physical facilities such as buildings, tables, chairs, cupboards, and writing tools are highly needed. Schools should pay attention in the building and maintenance of infrastructure to make them more durable and to enhance quality education.

Mkwama (2023) conducted a study on the influence of school facilities on academic achievements in some public schools in Tanzania. The data collected as far as the availability of school facilities in schools indicated that basic school facilities were available in public schools in different proportional rate and there was difference in extent of the availability of school facilities. Moreover, the data collected through structured observation revealed that some schools were gifted with good school facilities; classrooms, libraries, computers, good water and electricity supply and in good maintenance while others missed some of these essential facilities. Also, the data indicated that most public secondary schools have basic school facilities such as libraries and laboratories but they were poorly equipped.

The results of this study revealed that school facilities have great influence on a student's academic achievement. The findings showed that in schools where there is availability and equipped school facilities, academic achievement tend to be improved in reference to the academic results or performance of learners in the different schools. The findings of the study corroborated with the works of Kimaro (2020) who holds that physical facilities such as classrooms, laboratories, libraries tables, chairs as well as teaching materials brought positive influence on student's academic achievements. Availability of school facilities enable learning to be smooth thus increasing interest and motivation on students in the learning process the findings also ties with Oyediran (2018) who conducted a study on the factors affecting student's performance in Nigeria. He found that the lack of classrooms, water and electricity supply and playing grounds as well as lack of staff office led to difficulty in academic performance of the students. These inadequate school facilities made teaching and learning more difficult. The government provided alternative power supply with materials such as generator plants, more classrooms, laboratories with other school facilities equipped with materials to improve learning achievements. School facilities are indicators of good academic achievements;

2.1.12. Assessing the implementation of the Competency Based Approach in primary schools in Cameroon.

Many studies have been carried out to investigate on the implementation of the competency-based approach: modes of appropriation, constrains and the challenges teachers encountered in its implementation.

The competency-based approach in recent times has gained grounds in the academic world. Actually, it is no longer vogue to teach with the purpose of restoring knowledge and or applying isolated know-how. It is rather mandatory, that the learners are confronted with problem situations which they need to solve. According to Donovan cited by Michael Niehoff (2020), the Competency based Approach is a multi-layered approach to teaching and learning that involves learners progressing on not only on what they know, but what they can do. He adds by saying that "it focuses on providing learners with the necessary support and opportunities needed to build skills, not just content knowledge. Through this approach the learner will not acquire knowledge but also use it in a meaningful way in various situations of life, work and the family, social and even professional situations. In the Competency Based Approach, the focus is to enable learners to master the knowledge, skills and attitudes needed for the world of employment and general life.

According to Rogiers (2004), the Competency Based Approach relies on three fundamental objectives: firstly, to emphasise the competency that the student must master at the end of each academic year and at the end of a compulsory schooling, rather than stressing what the teacher the teacher must teach. Secondly, to organize the learning outcomes in the best way so as to bring their students to the level expected. Thirdly, to entrust the responsibility for learning to the student who has to build his or her own knowledge through the means made available by the teacher. According to Boutin (2004), the student becomes a learner who, must suggest the idea first, have desire to know and learn, organize work using technologies, assimilating new learning methods and looking for new information. The new role of the teacher consists in encouraging the learners to acquire the knowledge, which must be facilitated but not mechanically transmitted, and in trusting the preparation of certain tasks to the student.

In the Competency Based approach, 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 (Mulder & wesselink, 2004).This means teachers implementing this approach encourage learners to be creative, ensure the organization and planning 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, Soumia, Souad and Karim (2017), in implementing the Competency Based Approach, the teacher should use didactical approach that is based on the facilitation of active learning group work, presentations and self-study. According to Anane (2013), Competency Based Approach demands a different approach and even assessment and certification. This is because conceptually, Competency Based Approach 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. This means that more emphasis is placed on the learner's role in the learning process than teacher- center. Anane further highlights that the various facilitation methods that are employed for the Competency Based Learning programs are direct instruction method, discussion method, small group method, problem solving method and that teachers acquire knowledge of Competency Based Approach through seminars, workshops and research.

The Competency Based Approach was introduced in Cameroon secondary schools in the 2012/2014 academic year and in primary schools in 2007.This reform has brought about profound changes in the teaching practices as the teacher becomes a true mediator between the learner and knowledge. However, teachers faced a lot of difficulties and challenges in the implementation of the Competency Based Approach in the classrooms.

2.1.12.1. Challenges of the effective implementation of the competence-based approach

Mahamat (2011) studied the implementation of competence-based approach in some primary schools in kousseri, Far North region of Cameroon and realized that the approach was not being implemented effectively due to its novelty in the educational system and the teacher's indifference about the new visions and competences. His students-respondent commented that most competences in their learning were irrelevant for their socio-economic insertion. He further stated some of the challenges as follows; most teachers continued to use the explanatory method, they display poor mastery of the method, the large class sizes which impeded the individualization of instruction and assessment strategies, and the lack of adequate didactic materials. Aschcraft (1994) on his part revealed that the sources of challenges implementing Competency Based approach is learner-centered, hence small class sizes are preferred to enable effective use of Competency Based Approach techniques.

According to Makunja (2015), the ideal CBA class size is between 40-50 learners. Currently in most institutions for instance in Tanzania, the average class size is a hundred students and above which restrains teachers from attending to individual needs. More still, in a study conducted by Nadia & Samia (2012) teachers revealed that they faced to overcome problems related to CBA because they lacked sufficient information about it. Makunja (2015), investigated the challenges facing teachers in implementing competence-based curriculum in secondary school in Tanzania and found out that teachers faced a variety of challenges that impeded the effective implementation of competency-based curriculum in teaching and learning especially lack of effective training on the use of the competence-based approach.

Hatmanto, (2011), adds that the implementation of Competence Based Approach is ineffective because of readiness among the learners and teachers. The ideal condition of the competence-based approach demands that both facilitators and students be ready to undergo the teaching and learning process in class, but in reality, the opposite condition happens. According to him, there are some students and teachers who area not ready to learn and teach respectively and this makes it difficult for the competency-based approach to be fully implemented. Another challenge according to Badan & biklein,(2003) is that students under the competence-based curriculum class be proactive, unfortunately some students still maintain themselves as passive learners. In this condition, it becomes the teacher's responsibility to encourage them to be more active. Garavan &McGuire, (2001) reiterate that the challenge comes from students being less "tuned in" in class whereas it is clear that the shift from

knowledge based to the competency-based approach involves not only teachers to change their self-mind-sets but also students.

Assessment is also a big issue faced by the facilitators during the implementation of the competency-based approach. It is more difficult to assess student's performance in the competency base approach class than in a conventional class. This might be as a result of the class size or better still the number still the number of students per class. Hatmanto (2011) argues that in a conventional class, premium is given to the student's hard skills through the fixed mechanism of examination, but in the Competency based approach teachers have to assess both the hard and the hard and soft skills of the learners. The issue of using students' assignments, projects, student's-self assessments, portfolio, tests and examinations as the instruments for collection of student evidences on the attainment of knowledge, acquisition of skills and attitudes seem to be a challenge to the facilitators. Hatmanto emphasizes that the hard skills of students can only be assessed through their learning tasks on daily basis which is really time consuming.

Another challenge of implementing the competency base approach on the side of the teacher's changing roles. It can easily be overloaded the role of teacher and students' changes, when competence base approach is implemented (Jellema, 2003). In this paradigm shift, the teacher is supposed to switch from an expert role to transferring knowledge towards a coaching role and guiding students learning processes. Students are supposed to take self-responsibility for their learning whereas the teacher becomes the facilitator. This requires totally different attitudes for both parties, perhaps even a paradigm shift. This challenge is related to professional development. Anane (2013), holds that unless initial training and follow up assistance is provided for these facilitators on periodic bases, there is a tendency for teachers to teach as they were taught. In this case CBA trainers quickly slip back into the role of the traditional teachers. This is due to the fact that, it is the same teachers who handle the two systems traditional and Competence based approach. Switching from one role to the other might pose a serious challenge for some teachers.

2.1.12.2. Ways of acquiring knowledge and skills on the use of Competence Based Approach in enhancing the teaching learning process and challenges.

Liliane F. (2021) researched in finding out how teachers in secondary schools in Cameroon specifically in Bamenda municipality acquire knowledge and skills on the use of Competence Based approach in enhancing the teaching learning process and the challenges they face in the implementation of this approach.

The findings of the study indicated that majority of teachers had basic knowledge and skills on how to effectively use the competence-based approach. These are embedded from seminars, conferences and workshops held occasionally and sadly, less practical to keep them abreast with the dynamics in the art the model. The findings corroborated (2013) with the work of Anane which states that teachers can acquire skills on any newly introduced approach of teaching through seminars, workshops on the job training and research. Though teachers listed diverse ways of acquiring knowledge and skills of the CBA, they overlooked the importance of Albert Banduras social learning theory which is based on observation and modelling.

According to Nizam et al (2009), Bandura's Social learning theory could be used in helping teachers to acquire knowledge and skills on the CBA, because this theory indicates that the information, we glean from observing others influence our behaviour. This means that teachers can observe others who are effectively practicing this approach and they model their behavior. This is really positive because observation of other teachers teaching using this approach will help them to see the practicality of the approach and model them. Observation or others in the art of teaching is an important tool which is encouraged as far as teacher's professional development is concerned. Most teachers fail to teach effectively because they minimize the role of observation in their profession. This is also reiterated by Carroll, Jobling & Forline, (2003) who states that the inadequate field-based experiences like observation in pre-service training program and on the job training fail to equipe teachers with the practical skills necessary for effective implementation of the Competence Based Approach.

Although majority of the teachers indicated to have some basic knowledge on how to use CBA, some stated that they found it difficult to implement this approach because of inadequate training. This is an indicator that teachers need diverse professional development activities like in- service training. This ties with the view of Bourdersa (2016) who holds that teachers professional training and professional development is a necessary ingredient to support innovative and beneficial teaching because most of them come to their career as teachers with little formal professional training or experience in current approaches of teaching. Boudersa further explains that such lack of professional training and professional development of teachers can be a key source of any dissatisfaction in the quality of teaching to form competent students with the necessary knowledge and skills in the different subject matters the respondents indicated that to enhance their knowledge and skills on the use of the CBA in the teaching learning process, there is need for in service training, intensive workshops and conferences. This ties with Hammond &McLaughin (1995) who indicate that teacher's training and

professional development are central mechanisms for the improvement of teacher's content knowledge, skills and practices to meet high educational standards.

These findings are in congruence with the Cambridge Professional Development Qualifications (2014) which recognizes the importance of teacher training and professional by development by stating that, the most important factoring the quality of student's learning is the quality of teachers gained through in-service and pre-service programs. The findings also confirmed the work of Cavkartar, (2006) which emphasis that pre-service training strategies that depend on continuity tune with the new roles for teachers should be offered. Carroll, Jobling and Forline (2003) had foregrounded this position when they concluded that the pre- service training is very necessary in building b teachers' knowledge in the implementation competence-based education.

Even though some respondents indicated to have undergone pre-service training where they were trained on the practical aspects of the Competence based approach, some who did not receive this very important part of their training, suggested that for teachers to have adequate knowledge and skills on the competence-based approach, pre-service and in-service program should be modified to meet up with the demands of the new approach. This suggestion ties with the ideas of Rosenberg, sindela & Hardman, (2004) which suggest the need for teachers to a rigorous training program in order to possess the vital competencies, abilities, knowledge and skills necessary to carry out the teaching process in an effective and efficient way. This also matches the findings of Fitch &Kopp, (1990) who posit that in the case where the teachers are already in the field, In-service training programs will be necessary to improve their skill, knowledge and performance competencies associated with the Competence based approach. Teachers who are already on the field will certainly require more professional development programs to improve on their knowledge and skills on the implementation of the Competence based approach. This aligns with Wisahnyuy (2019) who emphasis that to enhance professional development of teachers there is need attend conferences, seminars, workshops, short courses and undergo in-service training if need arises to improve or gain more knowledge on the subject matter, teaching techniques, skills and assessment strategies which are in one way or the other related to the competence-based approach. Though the respondents indicated that there is need for training of teachers to improve on their knowledge and skills on the competence-based approach, they overlooked importance of short and long course which could be offered to teachers to train them on what the competence-based approach is all about and how to effectively implement it in order to attain the anticipated gains.

The findings of the study also revealed that teachers faced difficulties in implementing the CBA because of overcrowded classrooms. This indicate that when the teacher-student ratio is too disproportionate it become a serious challenge to effectively implement the Competence Based Approach. Despite teacher's ability to provide facilitation and coaching tasks at required frequency using the competence-based approach, it was difficult for teachers to pay individual attention to learners, to motivate and give them stimulus to focus on study because of the overcrowded nature of the class. This is in line with Aschcraft (1994) who asserts that it is very difficult for any facilitator or instructor to develop soft skills to a large number of students when the facilitation is dealing with many students. He adds that teachers often experience many difficulties to attain to individual differences in terms of learning activities and assessment as a result of a large number of learners in a class.

The issue of using student's assignments, projects, student's self-assessments, portfolios, tests and examinations as instruments for collection of student's evidences on attainment of knowledge, acquisition of skills and attitudes seem to be a challenge to the facilitators when they deal with congested classrooms. Equally the findings corroborate the work of Waal (2005) who maintains that it is very difficult to implement a learner-centered approach of teaching in a large class, teachers' fine difficulties to cope in such classrooms. This indicates that in order to implement Competence Based Aproach effectively the teacher-student ration should be moderate. This will enable teachers identify and attain to individual problems during the teaching-learning transaction. According to Makunja (2015) for the CBA to be effectively implemented a class should not go beyond forty learners

Time factor was also indicated as a problem in the implementation of CBA in this study. The number of hours allocated for subjects was a great impediment to implement CBA. Some teachers emphasized that they would have loved to implement Competence Based Approach to the fullest but the fact that they just have forty-five minutes for each lesson makes some of them to use teacher-centered methods. This observation squares with the findings of Makunja (2015) who situates that majority of facilitators at schools complain of limited number of hours on the time table and that some teachers are often overloaded with administrative responsibilities. Although the competence-based approach requires much time, some teachers lost sight of the fact that they could prepare a number of learning activities for students to work on at home or during their study periods in schools.

It was also realized that one of the challenges teachers faced in relation to the implementation of the competence-based approach was the inadequate teaching and learning facilities such as computers, laboratory equipment and text books. They emphasized that most

students did not have the required text and workbooks which made it very difficult to handle some of the lessons as teachers were required to copy some of the learning activities on the board. This become a serious issue given the limited hours allocated for the lessons. The findings tie with the ideas of Renita et al (2004) who posit that inadequate library services and relevant texts have made students to search for these services outside the institute and this condition affects the students academically as they delay to submit assignments at the required time. This shows that the availability of teaching and learning resources are very crucial in the competency-based approach of teaching and learning.

2.2. Theoretical Framework.

Our study raises the problem of difficulties encountered by teachers in the implementation of project-based learning in schools which is a new instructional method of teaching in primary schools. Some factors were highlighted in our different hypotheses which could provide an explanation to this situation and we presume that some measures were to be taken into account to support the implementation of Project Based learning in primary schools. We employed three theories in this study to support our hypotheses;

- The situational contingency theory
- The Adult Learning Theory-Andragogy
- The Scaffolding learning theory

2.2.1. The Situational Contingency theory

This theory was initiated in the 1960's by Fred Fiedler and later on developed by many other authors like Robert Blake, Jane Mouton, Jay Lorsch, Lex Donaldson and others. This theory is based upon the premises that all management is essentially situational in nature. It posits that planning and organizing must be tailored to the specific issues or circumstances an organization might face. All decisions by managers will be affected (if not controlled) by the contingencies of a given situation. According to this theory there is no one good way to address any decision. Contingencies arise from various environmental factors. As such managers must take into account these contingencies when making decisions that affect the organization.

The primary characteristics of the contingency theory include:

- **Non-universality of management theory**-There is no one best way of doing things.
- **Contingency**-Management decision is contingent upon the situation
- **Environment** – Managerial policies and practices to be effective, must adjust to changes in the environment.

- **Diagnostics**- Managers must possess and continue to improve diagnostics skills so as to anticipate and ready for environmental changes.
- **Human Relations** – Managers should have sufficient human relations skills to accommodate and stabilize change.
- **Information and Communication** – Managers must develop a communication system adequate to deal with environmental changes.

Project Based Learning is implemented in Primary schools since 2018, the researcher noticed the difficulties that teachers encountered to apply Project Based Learning in schools which might be related to some factors. According to the contingency theory, an organisation should adapt with changes. The educational policies makers were supposed to take into account the fact Project Based Learning has its own exigencies for it to be successful in schools. As such teachers needed to be trained on how to tackle and handle Project Based Learning, more classrooms built for example, Project Based Learning demands some facilities and resources (pedagogical and material). Unfortunately, these facilities and resources are not found in schools. If the contingencies of Project Based Learning were considered by educational policy makers, Project Based learning would have been well planned and obviously been more successful in schools.

This theory supports the general hypothesis of the study which is "barriers to teachers' implementation of project Based Learning significantly affect learners' acquisition of competences".

2.2.2. The Adult Learning Theory-Andragogy

The Adult Learning Theory or Andragogy was developed by Malcom Knowles in 1968. According to the author, Andragogy is the art and science of adult learning. Knowles made five assumptions about the characteristics of adult learners.

- **Self-Concept**: As a person matures his/her self-concept moves from one of being a dependent personality towards one of being a self-directed human being.
- **Adult Learner Experience**: As a person matures, he/she accumulates a reservoir of experience that becomes an increasing resource of learning.
- **Readiness to learn**: As a person matures his/her readiness to learn becomes orientated increasingly to the developmental tasks of his/her social roles.
- **Orientation to Learning**: As a person matures his/her time perspectives changes from one of postponed application of knowledge to immediacy of application. As a

result, his/her orientation towards learning shifts from one of subject-centeredness to one of problem centeredness.

- **Motivation to learn**: As a person matures the motivation to learn is internal.

In addition to these characteristics of Andragogy in 1984, Knowles suggested four principles that are applied in adult learning. The first principle is that adults need to be involved in the planning and evaluation of their instruction. Secondly, experience (including mistakes) provides the basis for the learning activities. Thirdly, adults are most interested in learning subjects that have immediate relevance and impact to their job or personal life and fourthly, adult learning is problem-centered rather than content-oriented.

One of the sub variables of our study is the insufficient in-service training of teachers on Project Based Learning. The Adult Learning Theory in this study enables us to understand the necessity of teachers to go in for in-service training so that, as the theory says will gain experience and be more confident in the exercise of their job. Teachers have to be implicated in the planning and evaluation of their instruction.

2.2.3. The Scaffolding learning Theory

Inspired by the work of the Russian psychologist Lev Vygosky on socio constructivism, Jerome Bruner developed the Scaffolding theory in the 1970s which posits that children need support and active help from teachers and other adults when learning new concepts. In other words when students are given the support they need while learning something new, they stand a better chance of using that knowledge independently. When children start to learn a new concept, they need help from their teachers and adults in the form of active support. Children are more dependent on people who have more knowledge than they do.

Instructional scaffolding is used in education to enable students to push further into their zone of proximal development. It involves providing learners with the necessary support and guidance to master a new skill or grasp a new concept, while gradually reducing that support as the student becomes more competent.

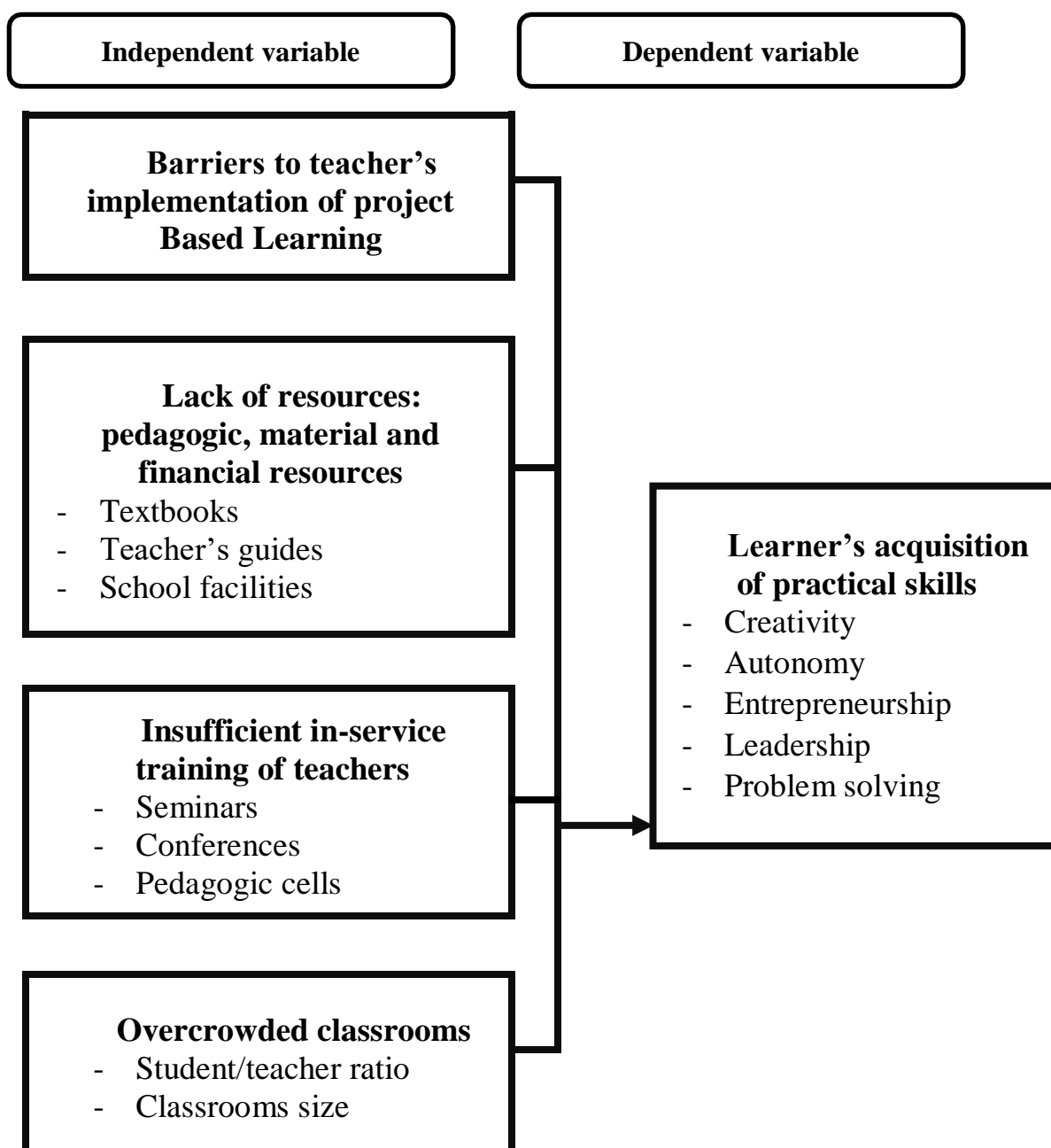Project Based learning still a new concept in learning, primary school learners definitely need help and active support of their teachers in order for them to grasp this new concept. Teachers are for that reason supposed to be sufficiently tooled to assist learners in Project Based Learning. Therefore, teachers need to be provided with the necessary training and resources for them to be able to scaffold learners.

2.4. Conceptual Framework

The conceptual framework of the study is a diagrammatical representation of the relationship between the variables of the study. The purpose of this is to enable readers to quickly see the proposed relationship of concepts (Orodho, 2008). Our research topic has two variables: one independent Variable (IV) and a dependent variable (VD).

The independent variable of the study are the barriers to teacher's implementation of Project Based learning. It was operationalized to three sub variables (lack of resources: pedagogic, material and financial, insufficient in-service training of teachers and the class size). Each sub variable has a number of indicators for instance in the case of the first sub variable, the indicators are: stationaries, school facilities and materials. Indicators of the second variable that is the in-service training of teachers are seminars, pedagogic animations, conferences. Some indicators of the third variable that is overcrowded classrooms are the number of classrooms in terms of building, the student/teacher ratio. Figure 1 below shows this information in details.

The dependent variable of the study is learner's acquisition of practical skills. It is not operationalised but has indicators which are skills developed by learners such as creativity, autonomy, entrepreneurship, leadership and problem solving. The independent variables are all linked to the dependent variable.

Independent variable	Dependent variable

Barriers to teacher's implementation of project Based Learning

Lack of resources: pedagogic, material and financial resources
- Textbooks
- Teacher's guides
- School facilities

Insufficient in-service training of teachers
- Seminars
- Conferences
- Pedagogic cells

Overcrowded classrooms
- Student/teacher ratio
- Classrooms size

Learner's acquisition of practical skills
- Creativity
- Autonomy
- Entrepreneurship
- Leadership
- Problem solving

Source: Done by the researcher

Figure 1: conceptual frame work

CHAPTER THREE: RESEARCH METHODOLOGY

This chapter deals with the procedures and methods used in carrying out the study and it explains the techniques used for the presentation and analysis of data. Obviously in this chapter the following shall be discussed: the research design, the research approach, the area of the study, the population of the study, sample of the study, the sampling techniques, the description of the instruments of data collection, the reliability of the instrument and pilot study, administration of the instruments and the technique use in data analysis.

3.2. The Research Design

Our research is soaked in the vast domain of educational sciences precisely in educational management, particularly in the domain of evaluation of educational projects. The study highlights the difficulties that teachers encounter to be acquainted with new educational concepts and the question of the effectiveness of the implementations of these concepts. This is the case with Project Based learning which faces a lot of difficulties to be applied in government schools in Mfoundi Division. Therefore, the research design of our study is the descriptive design. A descriptive research design is a means of gathering information from a group by interviewing or presenting them questionnaires (vaus, 2008). It was chosen because it allows the researcher to do findings in a larger population. Also, the descriptive research design is more precise and involves a well-organized description of events.

3.2. The Research Approach

In the quest of having a global opinion of the factors that obstructs teacher's implementation of Project Based Learning and precise information about this new concept, we opted for the mixed research approach. That is the quantitative and the qualitative methods. According to Cawey (2005),

"The mixed method research is a research approach with philosophical assumptions as well as methods of inquiry. As a methodology, it involves philosophical assumptions that guides the direction of the collection and analysis of data and the mixture of the qualitative and quantitative approaches in many phases of the research process. As a method, it focusses on collecting, analyzing,

and mixing both the qualitative and quantitative data in a single study or series of studies. Its central premise is that the use of quantitative and qualitative approaches in combination provides a better understanding of the research problems than either approach alone."

The researcher opines with Cawey that the mixed method has a wider spectrum of the problem so decided to use this research approach.

3.3. Area of study

Our study was carried out in some selected government bilingual schools in Mfoundi division. They were six (06) schools altogether in three (03) different sub divisions partitioned as follows:

3.3.1. Schools in Yaounde 2 sub division

In this subdivision, Government primary School Ekoudou Group I and 2 were one of our research sites. GPS Ekoudou is situated around the neighborhood of the quarter called Briqueterie mostly dominated by the muslim community in Yaounde.

GPS Ekoudou was created in 1988. Due to the growing population and the increase in the demand of education, the school was shared into two groups in 2003 hence is considered as two independent schools. Government primary school Ekoudou group I is made up of six classrooms and an office. It is headed by a (01) head teacher and has fourteen (14) teachers. The classrooms are populated with some classrooms having close to a hundred learners. Each classroom has at least two teachers.

Government Primary School Ekoudou group 2 equally has as structure six classrooms with an office. It is headed by a (01) head teacher who assure all the administrative duties of the school. He has fourteen (13) permanent collaborators in the name of teachers who assures the education of the learners. The classrooms are handled by two teachers. The school is also populated with classrooms having more than ninety learners.

From the above, we can retain that Government Primary School Group1 and 2 altogether have 29 teachers and 2 head teachers.

3.3.2. Schools in Yaounde 5 sub division

In Yaounde 5, we choosed the Government Practicing Primary School Essos group2 and the Government Primary School Essos Group 3. The two schools are found in the same campus in a quarter called Essos. The school is one of the oldest Government Primary School

in Mfoundi Division created in 1982.The school was shared into two schools in 1998. Group 2 was made a practicing school in 2016. Government Practicing Primary School Essos Group 2 is the practicing school in the campus that is, the school is in charge of the training of student teachers. It is made up of six classrooms with an office. It is headed by a (01) head teacher and has a staff of fourteen (14) teachers. The classrooms are spacious but a high population of learners. Likewise, the other schools some classes are handled by two teachers. This is mostly seen in the junior classes which have a high number of learners

Government Primary School Essos group 3 is an ordinary school gifted with six classrooms and an office. The school is headed by a female head teacher. The staff is made up of fifteen (15) permanent teachers. The school being built by the Japanese donation, the classrooms are spacious and welcome a great number of learners.

The information above reveals that altogether, the research site provides us with a population of twenty-nine (29) teachers and two (02) head teachers.

3.3.3. Schools in Yaoundé 6 sub division

Our third research site was in Government Primary School EtougEbe Group 1 and 2. The school started as one and due to a high demand in education the school was seen shared in 2002. Despite this sharing, it remains one of the most populated school campuses in Mfoundi Division with classrooms going far above one hundred learners.

Government Primary School EtougEbe Group I have six classrooms and a head teacher's office. The staff is made up of one head teacher and fourteen (14) teachers. The classrooms are overcrowded with a high population of learners.

Group 2 of the School is a total independent school having an infrastucture of six classrooms with an office. The staff is made up of thirteen (13) teachers and obviously a head teacher. Nearly all the classes are handled by two teachers and the classes are highly populated.

The EtougEbe campus is made up of two groups which are considered as two independent schools. The population of the site being of twenty-nine teachers and two head teachers.

3.4. The Population of the study

Tsafack (2004) defines the population as "*a group of finite or infinite defined elements in advanced on which observations can be made*". Rongere (1979) on the other hand holds that a population is a group of individuals who can enter in the field of an inquiry and among which a sample will be derived. We can therefore indicate that a population is a group of subjects or

people having one or many common observable characteristics which carries the investigations of the researcher. We are therefore going to present the target population and the accessible population

3.4.1. The target population

Draugalis and plaza, (2009) defines the target population as the sum total of all individuals or participants under the study. It refers to group of institutions, people or objects having the characteristics that are used in research. The target population of our study is an heterogenous population of teachers and head teachers in Government primary schools in Mfoundi division.

3.4.2. The accessible population.

The accessible population of the study are teachers and head teachers of the selected schools in the three sub divisions of Mfoundi division that is Government Primary School Ekoudou Group 1 and 2 (Yaounde 2 sub division). Government Practicing Primary School Essos group 2 and Government Primary School Essos group 3 (Yaounde 5 sub division). And Government primary School Etougebe Group 1 and 2 (Yaounde 6 sub division).

Table 1: Representation of the accessible population.

schools	Head teachers	teachers	total
Ekoudou1	01	14	15
Ekoudou 2	01	13	14
Essos 2	01	14	15
Essos 3	01	15	16
EtougEbe 1	01	14	15
Etoug Ebe 2	01	13	14
Total	06	83	89

Source: Field data, Mekui 2024

3.5. Sampling technique and sample size

Sampling is the process of selecting the required individuals from a population in such a way that the selected group has elements representative of the characteristics found in the entire population (Amin, 2005). Two sample techniques were used in this study; the simple random and purposive samplings. A simple random sample is obtained from the population in such a way that samples of the same size have equal chances of being selected. In other words, the simple random sampling provides equal chances for everyone in the accessible population to be selected. This

ensures fairness and equality in the distribution of the questionnaires. On the other hand, a purposive sampling is obtained when the researcher uses his own judgement or common sense regarding to the participant from whom information will be collected (Amin, 2005).

As far as the simple random technique was concerned, Mfoundi division being so large having 7 sub-divisions we decided to work in three sub-divisions. The names of the sub- divisions were written on pieces of papers which were twisted and put in a carton. After reshuffling, we picked out a piece of paper a time in the carton and the name of the sub-division was written down. This procedure was carried out again until the three sub-divisions were all selected. When we were through with the selection of the sub-divisions, we repeated the same procedure for the selection of schools in the sub-divisions. Thus 3 groups of schools were selected, each group having 2 schools hence we had altogether 6 schools in the three sub- divisions. As a reminder, our study is a mixed type so this procedure concerned the quantitative sampling technique.

The sampling technique used for the qualitative data was the purposive sampling technique where we decided to work with the head teachers of the selected schools and some teachers. The is represented on the table below

Table 2: The sample size

category	population	Sampling percentage	sample
Head teachers	6	83.3%	5
Teachers	83	72.2%	60
TOTAL	89	77.75%	65

Source: Field data, Mekui 2024

3.5. Description of instruments of data collection

According to Zaza et al (2000) a research instrument are devices or tools a researcher uses to collect data for the purpose of answering certain questions research questions. In the case of our study. Two instruments of data collection were used: the questionnaires and interview guide due to the mixed nature of the research.

3.5.1. The questionnaire

It refers to a series of written or oral questions in which we are submitted to provide answers, written or typed document on which figures a list of questions asked. Birou (1966) defines it as *"a series of written interrogations or questions to serve as guide and orientation in an investigation"*. As far as the quantitative side of the study is concerned, this instrument was chosen for many reasons:

-It enables to easily collect information in the field within a short period of time.

-    It is suitable for a large sample and does not pose a problem of representativeness. Kothari (2012) points out that questionnaires are suitable for a large population.

- It is straight forward, precise, concise and permits to reach the target.

Our questionnaire is divided into 2 sections. Section A is just the preamble of the questionnaire which concerns the participant consent. Section B is divided into 5 themes with 31 explicit closed questions where the respondent has the latitude of answering freely by ticking the answer that best suits him or her. The first theme deals with the demographic information of participants, themes 2, 3 and 4 deals with the independent variable and theme 5 the dependent variable. The questionnaire was scaled as follows; Strongly Agree (SA), Agree (A), Neutral (N), Disagree (D), Strongly Disagree (SD). The anonymity of the respondent is guaranteed according to the provisions of article 5 of law n° 91/023 of December 16, 1991 relating to censuses and statistical surveys and instructions.

3.5.2. The interview guides

According to Cawey (2005),

"An interview is a conversation with a purpose. It is a process of exchanging information and gathering data and perhaps, the oldest and one of the most acknowledged research tools. The purpose of interviewing is not to influence other people's minds but rather to open access to other people's perspectives that is meaningful, cognisable and explicit".

Cawey believes that the main task in interviewing is to understand the meaning of what has been asked to the interviewees. In social sciences an interview guide is defined as a group of specific instructions in a qualitative or semi directive interview. The interview guide was our second tool of data collection used to explore the various opinions of respondents to have supplementary information to the main point of matter of the study. Our interview guide is made up of 6 (six) explicit opened questions.

3.6. Administration of instruments

The researcher first of all had a letter from the Faculty of education, university of yaounde1 authorising the research. This letter was obviously presented to the head teachers of the various schools who then introduced the researcher to their teachers. The researcher proceeded by personally administering the questionnaires to the teachers. Since the researcher was working in three sub-divisions, it took the researcher 3 days to administer the instruments of data collection. Each sub-division, its own day. As the questionnaires were given to teachers, the researcher also seized the opportunity to administer the interview guide to the head teachers and some teachers.

The interview was done face-to-face using a tape recorder. The interviewer presented the questions one after the after giving the interviewee all the necessary time to answer the questions freely. The atmosphere was calm and friendly, conducive, so the interviews went on good conditions. The researcher succeeded to work altogether with 60 teachers in all the six schools of the 3 sub-divisions and 4 head teachers.

3.7. Validity and Reliability of the instruments

3.7.1. Validity of the instruments

The validity of an instrument refers to the extent to which the instument accurately measure what it is designed to measure (Naing, 2003).

As far as the face validity was concerned, the instruments were submitted to some elders in the field of education and the supervisor for cross- examination and scrutiny. Some items were dropped and others rephrased accordingly. All of this was done to avoid ambiguity and to make that the questions were clear enough to enable the respondents to answer with ease.

Content validity refers to the degree to which the test actually measures what it is designed to measure or is specifically related to the traits for which it was designed (Ngorwu, 1991). To enhance content validity, we conducted a pre-test or pilot study in Government Biligual Primary School (GBPS) Nkoldongo Mbida primary School (yaounde 4 sub-division) with a reduced sample of 12 teachers and 2 head teachers This step enabled us to re-structure and reformulate some ideas in the quiz. In fact, it was question for us of readjusting our questionnaire not only in relation to the level of understanding of the respondents, but also in relation to the quality of the information sought in the field.

3.7.2. Reliability of the instruments

Reliability is the degree of consistency among the test scores. Shaughness & Zechmeister (1990) cited by Tamajong (2010) opines that an instrument is reliable when it is consistent in measuring what it seeks to measure. The reliability of the instruments was also tested from the same pilot study mentioned above that is in Nkoldongo Mbida primary school where questionnaires were administered to 12 teachers and the interviews to 2 head teachers. The results were used to determine the internal consistency reliability index to confirm that the items were understood and easily rated. The Cronbach Alpha test was applied and results obtained was approximately 6 as shown in the table below.

Table 3 : Reliability Statistics

Cronbach's Alpha	N of Items
,533	35

Source: SPSS

3.8. Data analyses techniques

Due the mixed nature of our study, both quantitative and qualitative data analyses techniques were used. The quantitative data was analysed using the descriptive statistics with Khi square test of independence presented in frequency tables and graphs. This was generated using the Statistical Package for Social sciences (SPSS) version 25 software. Qualitative data was analysed using content analysis with the verbatim method.

3.9. Variables of the study.

According to Weiten (1999) cited by Amin (2005) a variable is defined as acceptable condition, event, characteristics or behaviour that are controlled and observed. Our study is made up of two main variables: The Independent variable and the dependent variable.

3.9.1. Independent variable

This refers to the characteristic that the researcher controls or manipulates in order to determine its relationship with the dependent variable. In other words, the independent variable is that which we attempt to measure and understand through its influence on the dependent variable (Ibid, 2005). It is the explanatory variable manipulated by the researcher. The independent variable of this study are the barriers to teacher's implementation of project-based learning in schools.

3.9.2. Dependent variable

Amin (2005) holds that a dependent variable is the variable of primary interest to the researcher. It can be seen as what triggers the research because it indicates the phenomena that the researcher seeks to find. It is the variable that receives the effects of the independent variable. The dependent variable of this study is Learner's acquisition of practical skills.

3.10. Ethical consideration

Mcmillan and Schumacher (2010) define research ethics as dealing with beliefs about what is right or wrong, proper or improper, good or bad for which the research is executed, a respect of the integrity of the individual, the obligation of the researcher to guarantee unequivocally individual's privacy and an informed willingness on the part of the subject to participate voluntarily in the research activity.

Participants were informed in advance of their right of choice to participate were given time to decide on whether to participate or not. The researcher assured the respondents that the inquiry will be confidential and anonymous. Permission to use the available information for the research was obtained from the six schools. The researcher introduced herself, explained the purpose of the study, and pleaded for cooperation in completing the instruments of data collection.

The researcher insisted on voluntary participation and promised to treat their responses with confidentiality.

Table 4: Synoptic table - operationalisation of the variables

Hypotheses	Independent variable	Indicators	Dependent variable	Indicators	modalities	Number of items	Statistical tool
The lack of resources: pedagogic material, and financial significantly influence learners' acquisition of practical skills	Lack of pedagogic, material and financial resources	-Teachers guide -Textbooks -Proposed Project books -Handouts on PBL -School facilities and materials; kitchen, workshops, laboratories, computers ovens, p pots, hammer, hoes, -budget allocated for PBL	Learners acquisition of practical skills	-Production of artifacts -Creativity skills -Autonomy skills Entrepreneurship skills -Problem solving skills Leadership skills	-Strongly Agree -Agree -Neutral -Disagree -Strongly Disagree	Questionnaire 8-17	Chi- square
The insufficient in-service training of teachers significantly influences learners' acquisition of practical skills.	Insufficient in-service training of teachers	Seminars Conferences Pedagogic cells				Questionnaire 18-21	
Overcrowded classrooms significantly influence learners' acquisition of practical skills.	Overcrowded classrooms	Student/teacher ratio Classrooms Teachers				Questionnaire 22-25	

Source: done by the researcher 2024

CHAPTER FOUR: DATA ANALYSES AND INTERPRETATION

This chapter has as objective to give a clear description of the results of data collected in the field. The study being a mixed one we used descriptive statistics for quantitative data analyse with the help of software such as Microsoft excel, SPSS 25 for the realisation of the frequency tables and graphs. The qualitative data was analysed with the verbatim analysis.

4.1. Descriptive statistics

As a reminder, our questionnaire is divided into 4 themes; theme 1 concerns the demographic information of participants, theme 2 are the items under pedagogic, material and financial resources, theme 3 are items under in-service training of teachers and theme 4 items on the dependent variable –learners' acquisition of practical skills.

4.1.1. Theme 1: Descriptive statistics on demographic information of participants

Table 5: Distribution of teachers according to the sub-divisions

	Frequency	Percent
Yaounde 2	24	40,0
Yaounde 5	22	36,7
Yaounde 6	14	23,3
Total	60	100,0

Source: field data; Mekui, 2024

Table 5 presents the distribution of respondents according to the sub-division. The frequency table reveals that 24 teachers are from Yaounde 2 sub-division, 22 respondents from Yaounde 5 sub-division and the graph indicates that 23% of respondents are from Yaounde 6 sub-division. The sub divisions were selected randomly to give equal chances to each sub division to be selected. As a remainder there are altogether 7 sub divisions in Mfoundi Division.
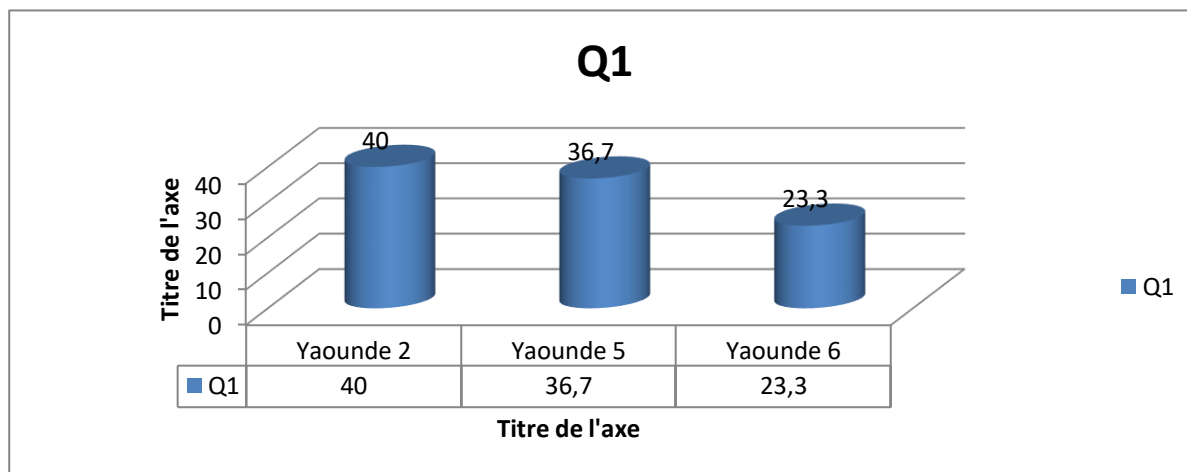
Figure 2: Distribution of teachers according to the sub-divisions.

Source: Field data; Mekui, 2024

The graph equally shows the distribution of teachers according to the selected sub-divisions and indicate that 40% of teachers are from Yaounde 2 sub division, 36.7% of participants are from Yaounde 5 sub-d and division and 23,3% respondents are from Yaounde

6. The research studies the factors that render teacher's implementation of project-based learning difficult in schools so was very important to us to obtain the various views of teachers in different sub-divisions. This to avoid a wrong appreciation of the problem.

Table 6: Frequency distribution of teachers according to their schools:

	Frequency	Percent
GPS EKOUDOU G1	13	21,7
GPS EKOUDOU G2	11	18,3
GPPS ESSOS G2	11	18,3
GPPS ESSOS G3	11	18,3
GPS ETOUG-EBE G1	6	10,0
GPS ETOUG-EBE G2	8	13,3
Total	60	100,0

Source: field data; Mekui, 2024
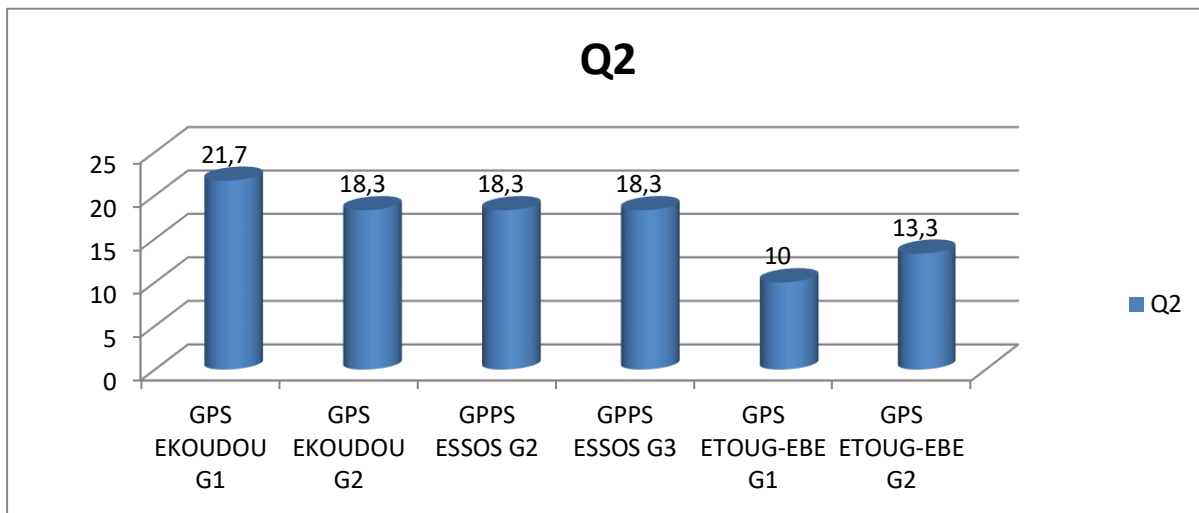
Figure 3: Distribution of teachers according to schools.
Source: field data; Mekui 2024

Table 6 and figure 3 represent the distribution of teachers according their schools. The results of the data collected indicate that 13 teachers responded from GPS Ekoudou 1(21,7%), Ekoudou 2 gathered 11 participants (18,3%), Essos 2 equally had 11 teachers (18,3%) and Essos 3 had 11 teachers (18.3%) who participated in the survey,10% (6 teachers) of the respondents are from GPS Etougebe 1 and 8 teachers (13,3%) are from Etoug-Ebe group 2. It is clearly seen that 6 schools participated in the survey, two schools in every sub-division. Due to some circumstances, we were confronted with a reduction of our population in some schools for instance some teachers were absent and some very busy with other learning activities.

Table 7: Frequency distribution of teachers according to their gender

	Frequency	Percent
Male	28	46,7
Female	32	53,3
Total	60	100,0

Source: Field data, Mekui 2024

The table above shows the frequency distribution of teachers according to their gender and indicate that 28 teachers are male teachers that is 46,7% of the population, while 32 teachers are female that is 53,3% of the population.
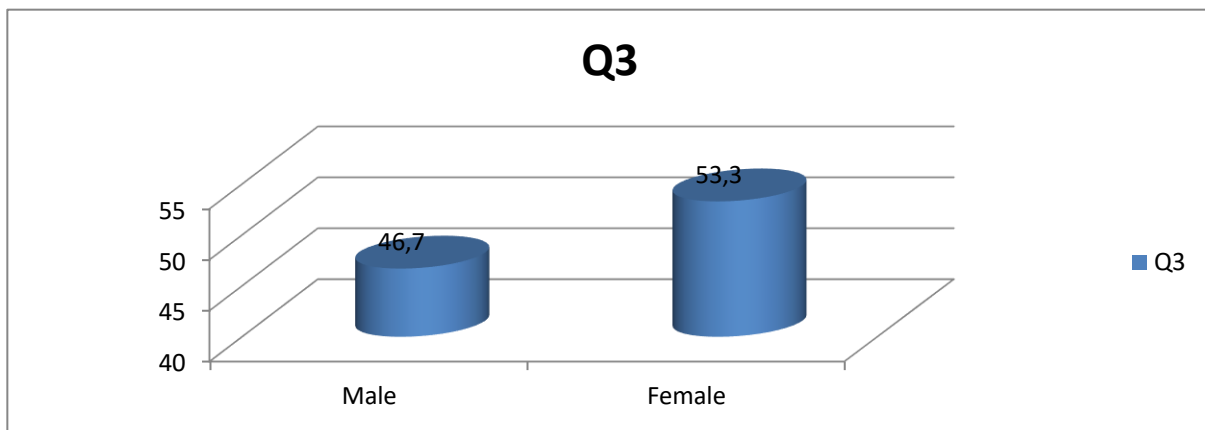
Figure 4: Gender distribution of teachers.

Source: Field data; Mekui, 2024

The graph above present the distribution of teachers according to their gender and indicate that 46% of the respondents are from males that is 28 teachers out of 60. The female population is of majority that is 32 female teachers out of 60. This reveals that actually the study is made up of a heterogeneous population which ascertains that both male and female teachers are concerned with the research preoccupation. This makes the investigation trustworthy.

Table 8: Distribution of teachers according to their status

	Frequency	Percent
Civil servant	31	51,7
Contract teacher	29	48,3
Total	60	100,0

Source: field data, Mekui 2024

The analysis of table 8 above indicate that from the 60 teachers of the different schools 31 teachers are civil servants while 29 teachers are contract teachers. This information is of great importance to the study because a teacher being a civil servant means that teacher has perform at least 10 years of service. This item helps us to know who among the two status would likely face difficulties in the implementation of project-based learning. This result is equally well spelt on the graph below.
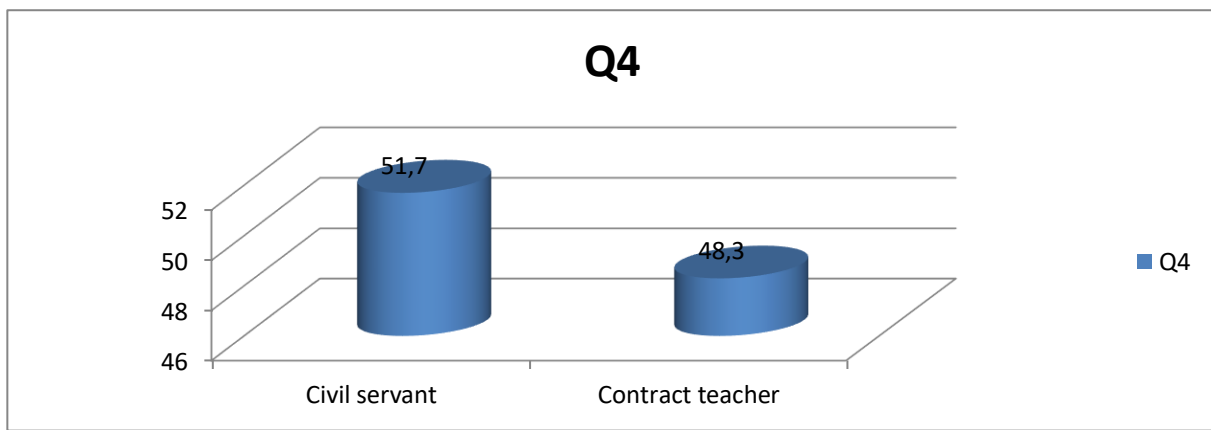
Figure 5: Distribution of teachers according to their status

Source: Field data; Mekui, 2024

Figure 5 is the graph showing the distribution of teachers according to their status and the graph reveals that 51% of the respondents are civil servants and 29% contract teachers. This information helps the researcher as a reminder to underline that being a civil servant needs at least 10 years in service. The population of the study can therefore be considered as an experienced one.

Table 9: Distribution of teachers according to their highest certificate

	Frequency	Percent
CAPIEMP	35	58,3
HND	15	25,0
BACHELORS	9	15,0
MASTERS	1	1,7
Total	60	100,0

Source: Field data, Mekui 2024
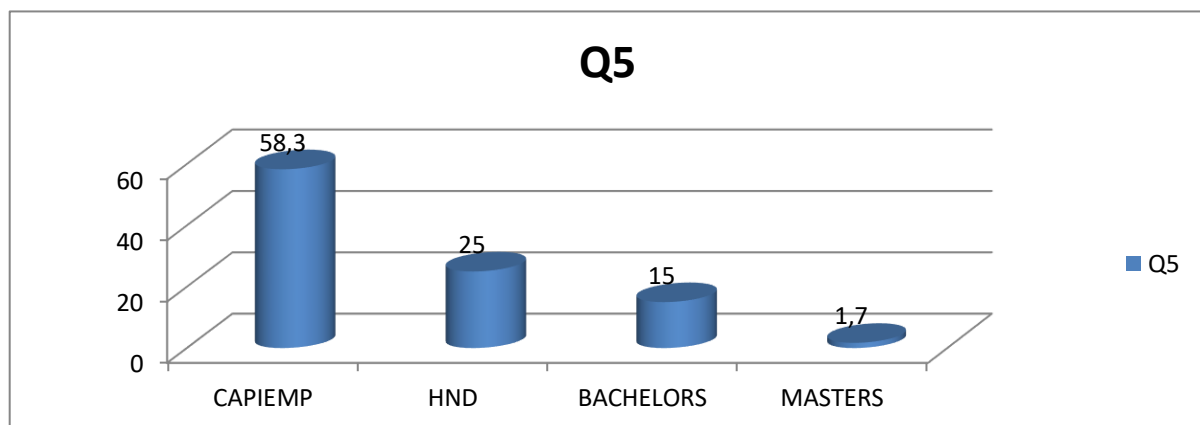
Figure 6: Teacher's highest certificate.

Source: Field data; Mekui, 2024

From the analyses of teacher's highest certificate, figure 6 and table indicates that 58% of teachers are CAPIEMP holders, 25% are HND holders, 9 teachers own a degree and only 1 teacher out of the 60 teachers in the survey had a MASTERS. In the Cameroonian educational System, the CAPIEMP is the least level of education in the teaching field and the initial professional certificate in the teaching field. It corresponds to ADVANCED LEVEL as academic certificate. HND corresponds to Advance level + 2, Bachelor is Advanced level +3 and Masters Advanced level +5. This item was to clarify us on whether the level of education of teachers has a role to play on teacher's difficulties to implement project-based learning in schools.

Table 10: Teacher's work experience

	Frequency	Percent
4-6 years	11	18,3
7-9 years	18	30,0
More than 10 years	31	51,7
Total	60	100,0

Source: Field data; Mekui, 2024
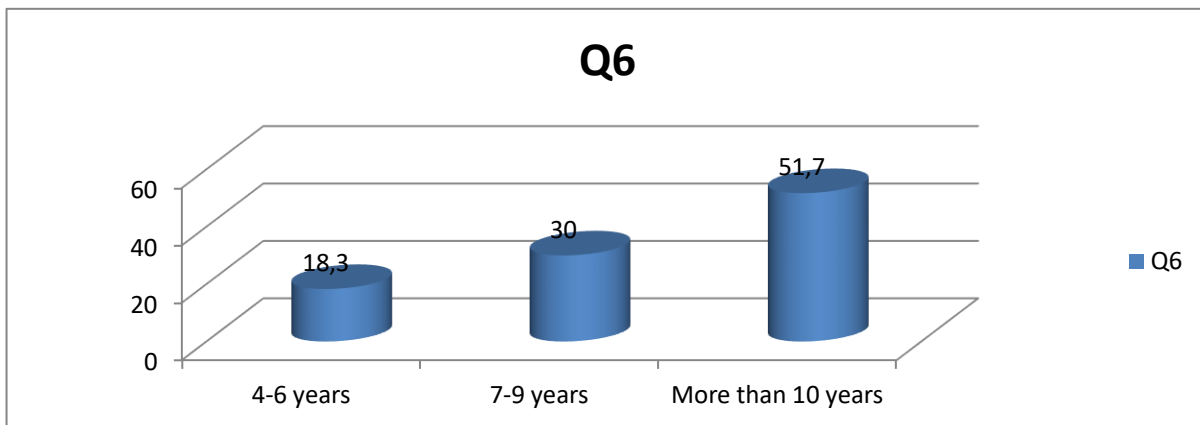
Figure 7: Distribution of teacher's according to their work experience distribution
Source: Field data; Mekui, 2024

The figure and table above show the distribution of teacher's work experience. The analysis indicates that, 11 teachers (18,3%) fall under the range of 4-6 years' work experience, 18 teachers (30%) fall under the range of 7-9 years' work experience and 31 teachers (51%) out the 60 teachers have more than 10 years of work experience. This item is of great significance to the study as we want to find out whether teacher's work experience also has a role to play in teacher's difficulty to implement project-based learning in schools. From the graph it is seen that all the teachers who participated in the survey had a work experience of at least 4 years. It is thus

a very important point to know whether the problem of teacher's implementation of project-based learning is a matter of work experience or not.

Table 11: Frequency distribution of teacher's age range

	Frequency	**Percent**
20-30 years	3	5,0
31-40 years	13	21,7
41-50 years	30	50,0
51-60 years	14	23,3
Total	60	100,0

Source: field data; Mekui, 2024
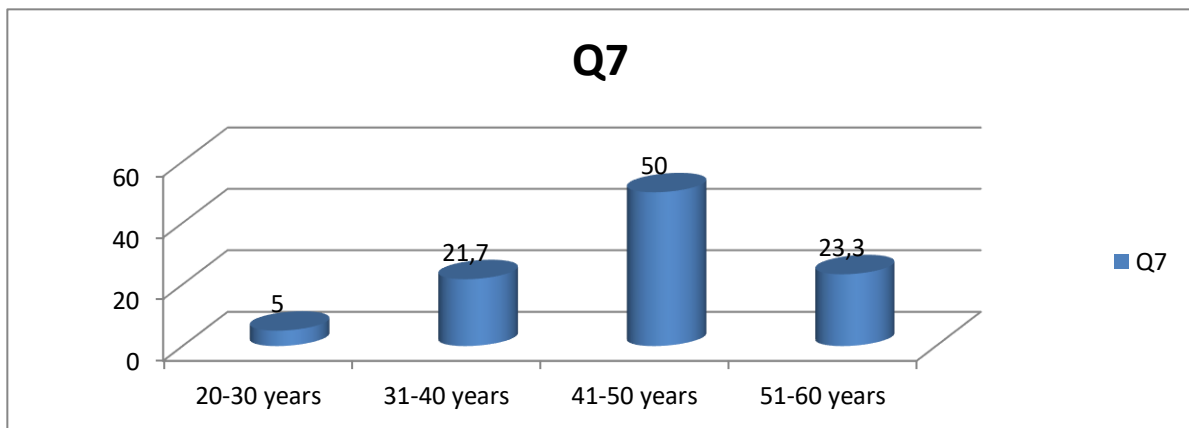
Figure 8: Distribution of teachers according to their age range.

Source: Field data 2024

Table 11 and figure 8 present the analysis of the distribution of teacher's age range and the result reveal that a majority of 50% of teachers are between 41-50 years. 14 teachers (23, 3%) have between 51-60 years, 13 teachers (21, 7%) fall between 31-40 years and only 3 teachers (5%) fall under the age range of 20-30 years. This result indicates that majority of teachers in schools have at least 40 years which is not a very young population of teachers. Maybe age is also an indicator of teachers demotivation to carry out project based learning in schools.

This is the end of data analysis in relation to theme 1 of the questionnaire which concerned the demographic information of the participants of the study. This went from question 1-7. Our descriptive data analyses continues with the second theme of the questionnaire.

Theme 2: Descriptive statistics on pedagogic and material resources.

Table 12: Frequency distribution of teacher's view on the availability of handouts on project-based learning

	Frequency	**Percent**
Strongly Agree	3	5,0
Agree	44	73,3
Neutral	11	18,3
Disagree	2	3,3
Total	60	100,0

Source: field data; Mekui, 2024
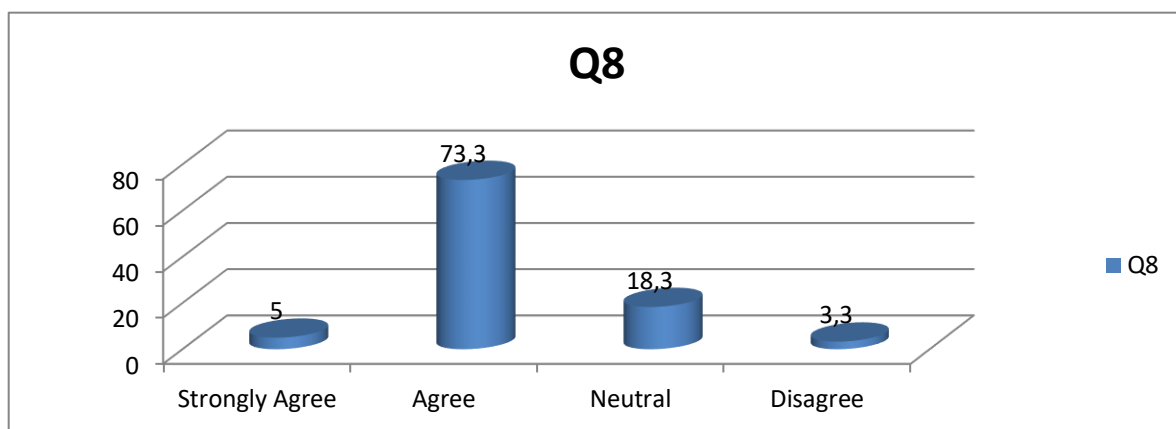
Figure 9: Distribution of teacher's view on the availability of handouts on PBL
Source: Field data; Mekui, 2024

From the table and graph above on the question to find out if teachers have handouts on project-based learning the results reveal that 3 teachers (5%) Strongly Agree that they have handout on Project based learning, 44 of the respondents (73,3%) Agree that there are handouts on PBL .4 respondents (18, 3%) remained neutral and 2 respondents (3, 3%) Disagree with this statement. This information indicates that, to say that teachers don't have any handout at all on project based will be an overstatement. Teachers are surely aware of project-based learning through the curriculum for example which is an obligatory and indispensable pedagogic material for every teacher.

Table 13: Teacher's opinion on teacher's guide on monthly projects

	Frequency	Percent
Strongly Agree	2	3,3
Agree	3	5,0
Neutral	11	18,3
Disagree	43	71,7
Strongly Disagree	1	1,7
Total	60	100,0

Source: Field data; Mekui, 2024

Table 13 shows the frequency distribution of teachers on the different opinions as far as the availability of teacher's guide on monthly projects is concerned. The results reveal that 43 (71, 7%) teachers Disagree to have teacher's guide on monthly projects, 11 (18, 3%) of them were Neutral to assert this view, 3 teachers (5%) Agree to have teacher's guide on monthly project, 2 Strongly Agree to have teacher's guide and 1 teacher Strongly Disagree to have teacher's guide on monthly project. From this information, we can note that though teachers are aware of project pedagogy from the results of the table many cannot admit that they have a teacher's guide that will help them to carry out their monthly project.
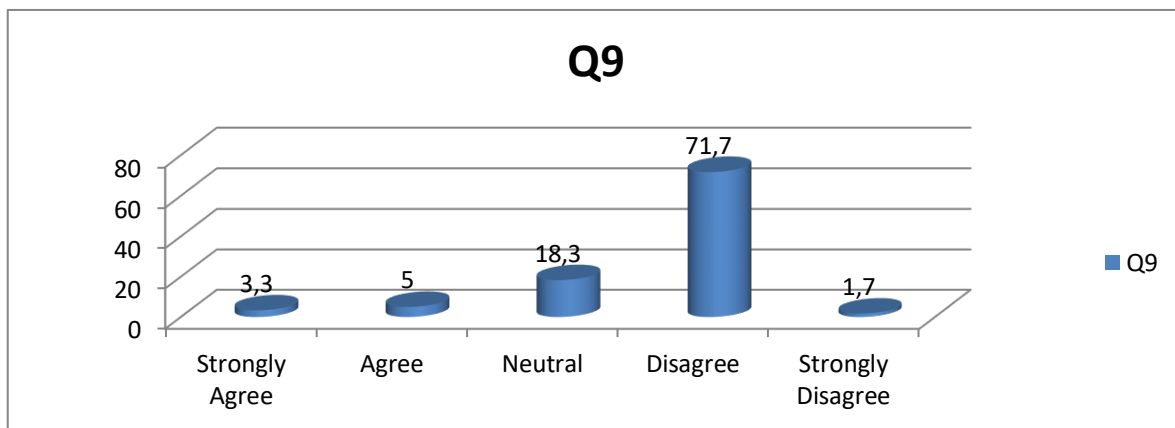
Figure 10: Teacher's opinion on teacher's guide on monthly projects
S*ource: Field data; Mekui, 2024*

Figure 10 presents the distribution of teacher's opinion on the existence of books that can help or guide them to carry out monthly projects interpreted indicate that only 3,3% of teachers Strongly agreed to have a teacher's guide on how to conduct projects in schools, 5% Agreed, 18,3% of teachers were neutral, 71.7% of the respondents Disagreed and 1,7% strongly Disagreed. The fact that a great majority of teachers do not possess a teacher's guide on projects

is really a handicap to them. Majority of teachers would like to have a booklet on where to refer to and where they can draw their inspiration. As a consequence, teachers turn to neglect the approach.

Table 14: Distribution of teachers on successfully stationaries that guides to conduct projects

	Frequency	Percent
Strongly Agree	2	3,3
Agree	2	3,3
Neutral	9	15,0
Disagree	47	78,3
Total	60	100,0

Source: field data; Mekui, 2024
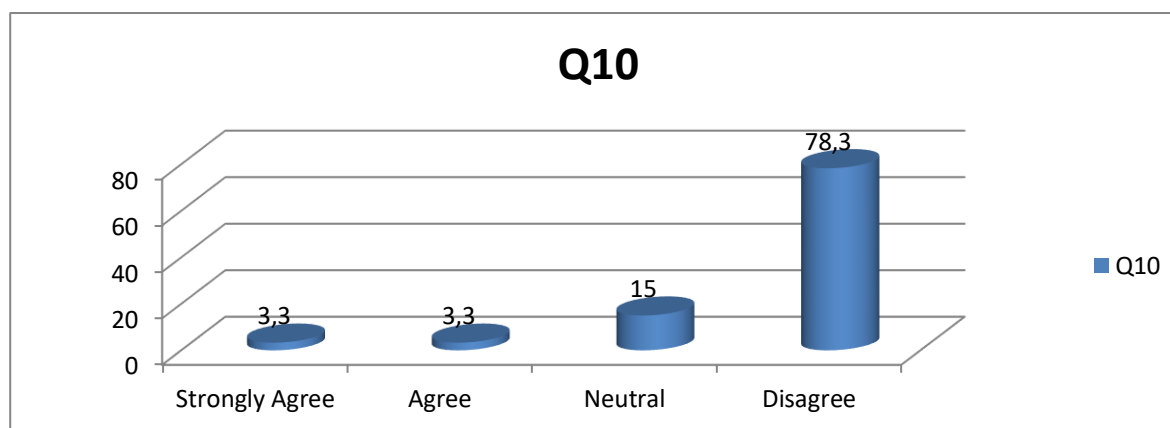
Figure 11: Teacher's opinion on having a stationary that helps them to conduct projects successfully.

Source: field data; Mekui, 2024

The results of the analyses above indicate that 2 respondents Strongly Agree to have a stationary that help them to conduct projects successfully in their classes, 2 teachers equally Agree, 9 teachers (15%) are neutral and 47 teachers(78,3%) Disagree to have a stationary that help them to conduct project successfully. Teachers admitted that it is not really easy for them to create projects off head. They need stationaries that will help them to carry out projects.

Table 15: Teachers' opinion on having books where projects are designed according the integrated theme of the month

	Frequency	Percent
Strongly Agree	1	1,7
Agree	3	5,0
Neutral	2	3,3
Disagree	50	83,3
Strongly Disagree	4	6,7
Total	60	100,0

Source: Field data; Mekui, 2024

The table above presents the analysis of teacher's opinion on having a stationary where projects are designed according to the intergrated theme of the month. The results indicate that a majority of 50 teachers out the 60 respondents (83,3%) Disagree to have a textbook where projects are designed according to the Intergrated Learning Theme of the month.4 (6,7%) teachers Strongly Disagree, 2 teachers are neutral, 3 teachers Agree to have the textbooks and 1 teacher (1,7%) Strongly Agree with this statement. Learning in primary schools is based on eight Intergrated learning themes. According to the ministry of basic education via the curriculum recommends eight projects related to each of the Intergrated Learning themes. Unfortunately, these results indicate that nearly all the teachers are unanimous that there are not stationaries where projects are designed according to the Intergrated themes.

Table 16: Frequency distribution on teacher's opinion if stationaries on PBL will help them to carry out projects

	Frequency	Percent
Strongly Agree	53	88,3
Agree	4	6,7
Neutral	2	3,3
Disagree	1	1,7
Total	60	100,0

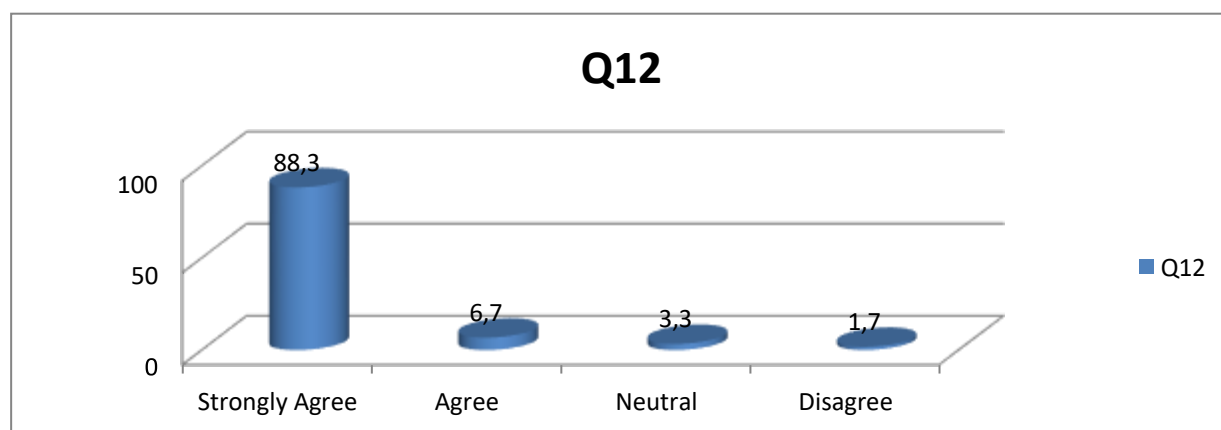*Source;Field data; Mekui, 2024*

**Figure 12: Teachers view if stationaries will help them in project pedagogy**
Source:Field data; Mekui, 2024

Table 16 and figure 12 present a blowing majority of 53 teachers (88,3%) Strongly agreeing that textbooks, handouts, teacher's guide will be of great help to them in project Based learning. 4 teachers Agree, 2 teachers are neutral and 1 (1,7%) teacher Disagree. This result translates that teachers are really in need of pedagogic resources, they nearly all admit that these resources will them in project pedagogy.

Table 17: Teacher's responses on the availability of computers in their schools

	Frequency	Percent
Strongly Agree	1	1,7
Agree	11	18,3
Neutral	25	41,7
Disagree	23	38,3
Total	60	100,0

Source: field data; Mekui, 2024
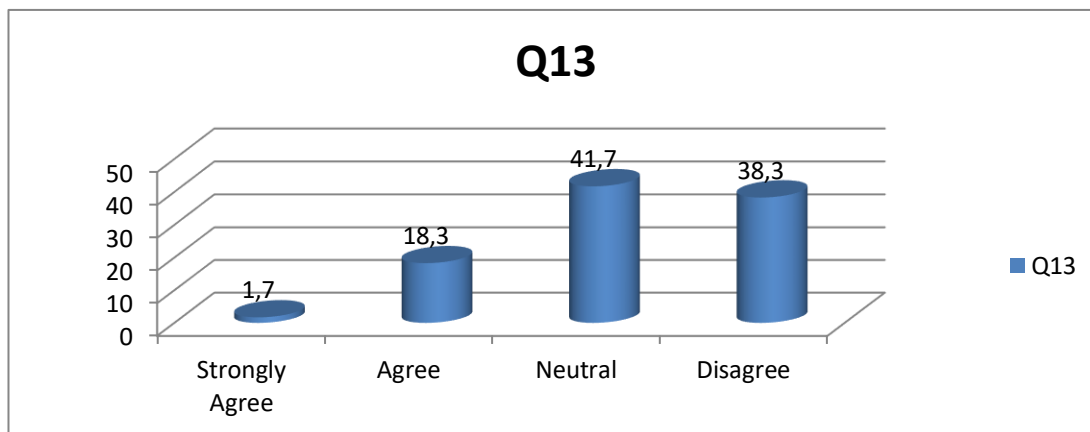
Figure 13: Teacher's responses on having computers in their school.
Source: Field data;2024

The figure and table above show the distribution of teacher's responses on having computers in their schools. The results of the analyses indicate that 1 teacher Strongly agree that they have computers in their school, 11 respondents (18,3%) Agree, 25 respondents are Neutral that is 41% of the participants, and 23 teachers (38,3%) Disagree. The results transmit that majority of schools do not have computers in their schools which is an important asset in project-based learning. The fact that a great majority of teachers are neutral with this item can be explained by the fact that in most schools the existing computers are absolute and in bad state and are not used at all. Nevertheless, some schools do have computers gotten through donations of the councils and NGO's. This is the case for example of GPPS Essos 2.

Table 18: Teacher's responses to the existence of some materials for PBL in schools (oven, cooker, pots, hammer…)

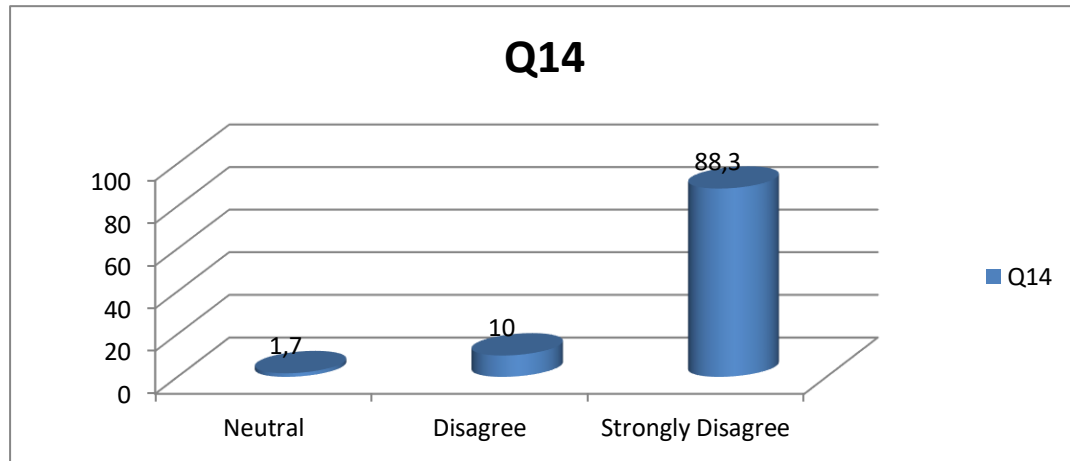|	Frequency	Percent
Neutral	1	1,7
Disagree	6	10,0
Strongly Disagree	53	88,3
Total	60	100,0

Source: field data; Mekui, 2024

Figure 14: Teacher's responses to the existence of materials for PBL in schools.
Source: Field data; Mekui, 2024

The graph above shows the distribution of teacher's responses to the existence of materials needed for project-based learning in schools. The responses indicate that 53 respondents (88, 3%) Strongly disagree to have materials in their schools needed for Project based learning, 6 respondents Disagree and 1 Teacher is Neutral on this item. The analysis transmits that nearly all the teachers are unanimous that there is lack of materials needed for project-based learning such as hoes, cutlasses, cookers, oven, pots and so on. How are teachers then expected to carry out projects when the necessary and basic materials are not available in schools. Teachers during our field work really laid this complain.

Table 19: Frequency distribution of teacher's responses to where they acquire materials for projects.

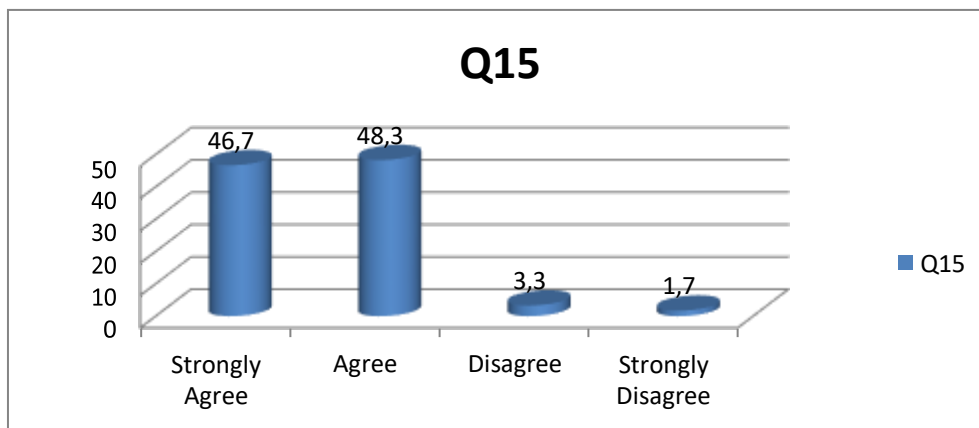|	Frequency	Percent
Strongly Agree	28	46,7
Agree	29	48,3
Disagree	2	3,3
Strongly Disagree	1	1,7
Total	60	100,0

Source: Field data; Mekui, 2024

Figure 15: Teacher's responses on where they acquire materials for projects.
Source: Field data; Mekui, 2024

Table 19 and Figure 15 above shows teacher's responses on where they acquire materials when they want to carry out projects. The results reveal that 46.7% of teachers Strongly Agree that they seek the materials from parents, 48,3% of them Agree that they also seek materials from parents ,2 teachers Disagree and 1 teacher Strongly disagree to seek materials from parents to carry out projects. From the results, a total of 57 teachers out the 60 respondents Agree that they acquire materials from parents. The question to ask here is that are parents the ultimate provider of materials on a governmental policy of education? This still portrays the non-availability of materials needed for projects in schools.

Table 20: Frequency distribution of teacher's opinion to know whether the available materials in school enable them to carry out projects easily

	Frequency	Percent
Agree	2	3,3
Disagree	35	58,3
Strongly Disagree	23	38,3
Total	60	100,0

Source: Field data; Mekui, 2024
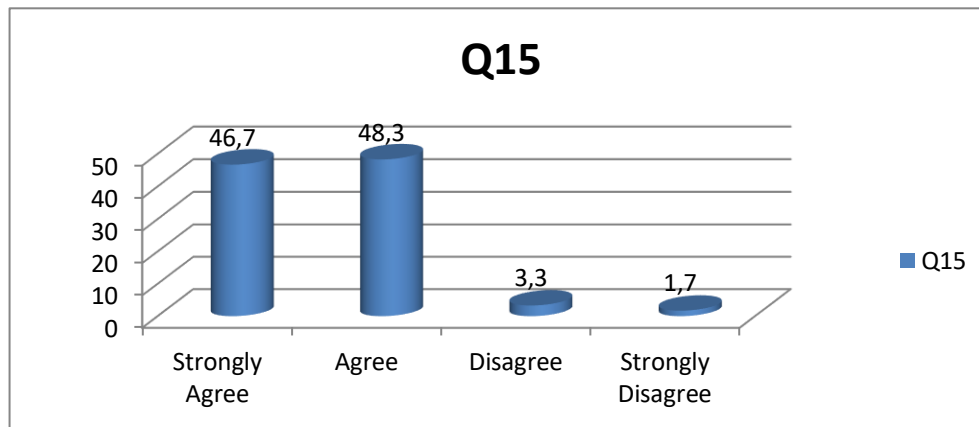
Figure 16: Teacher's opinion to know whether the available materials in schools enable them to carry out projects easily.

Source; Field data; Mekui, 2024

For the question to know whether the available materials in schools enable teachers to carry out project easily, the table and graph above indicate that 35 teachers (58,3%) totally Disagree, 23 of them (38%) Strongly Disagree and 2 teachers Agree. From this result, a strong majority of 58 teachers deny that the available materials in schools enable them to carry out project easily. This translates that there is actually little or no material allocated for project pedagogy in schools. During our investigation to know the content of the minimum package (a support in terms of instructional material), the head teachers asserted that the resources available were materials like chalk, pens, erasers, colours, gum, exercise books that are not really indispensable for project pedagogy.

Table 21: Distribution of teacher's responses on parent's provision of materials.

	Frequency	Percent
Agree	2	3,3
Neutral	6	10,0
Disagree	43	71,7
Strongly Disagree	9	15,0
Total	60	100,0

Source: Field data; Mekui,2024

The analysis of the distribution of teacher's responses to know whether parents easily provide the materials for projects, the results indicate that 43 respondents (71, 7%) Disagree with this statement, 9 respondents Strongly Disagree, 6 respondents are neutral and 2 Agree. During our field work, in one school we were expecting a project in class two of that school. We thought could be lucky enough to witness the project but the project failed because parents didn't respond correctly so this discouraged the teacher. Some parents reacted but was a minority so could not render the project successful. The teacher postponed the project.
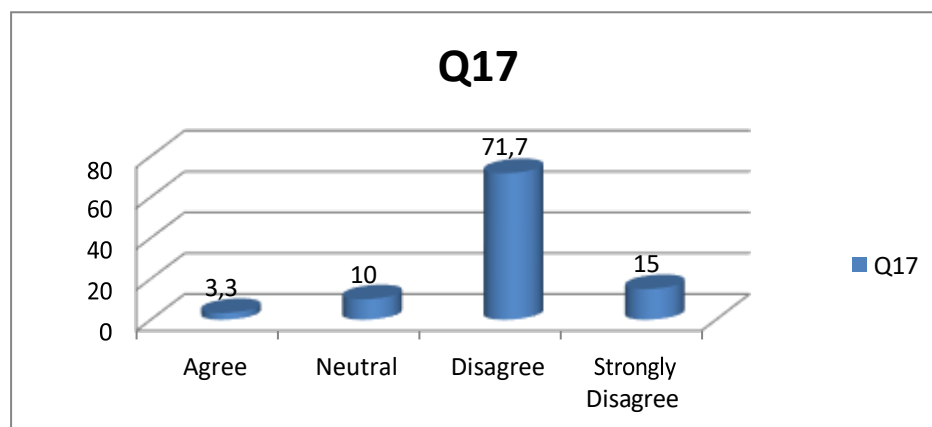

Figure 17: Distribution of teacher's responses on parent's provision of materials for projects.
Source: Field data; Mekui, 2024

Figure 17 above presents the distribution of teacher's responses to know whether parents easily provide the materials for projects. The result is explained in table 21.

This was the last item under the second theme of the questionnaire, which concerned the first specific hypothesis of the study; pedagogic and material resources. The questions under this theme went from question 8-17. Our descriptive data analysis continues with the third theme.

Theme 3: Descriptive statistics of in-service training

Table 22: Teacher's responses to their training on Project based learning

	Frequency	Percent
Strongly Agree	1	1,7
Agree	5	8,3
Neutral	29	48,3
Disagree	24	40,0
Strongly Disagree	1	1,7
Total	60	100,0

Source: Field data, 2024

The table above presents the distribution of teacher's responses to know if they are sufficiently trained to handle Project based learning, the results reveal that 29 teachers (48, 3%) are neutral to this declaration , 24 of them (40%) Disagree, 5 teachers Agree to be sufficiently trained and 1 teacher (1, 7%) Strongly agree to be trained. The neutral majority of this item signifies an uncertainty in the training of Project based learning coupled with those who disagree to be sufficiently trained translates that teachers are not sufficiently knowledgeable of this new concept. The curriculum gives the fundamentals of Project based learning by describing the various steps to carry out project. But this is not sufficient enough to make teachers master Project Based Learning.
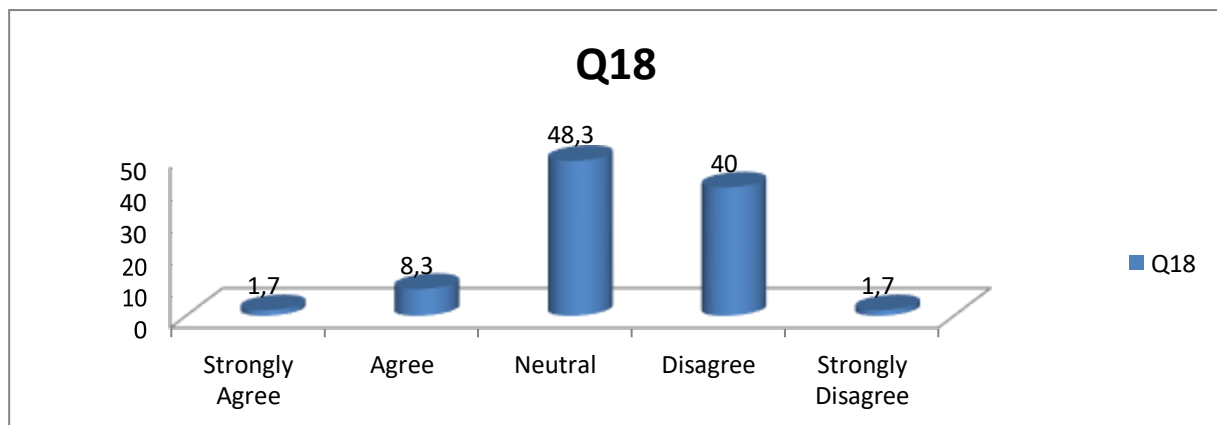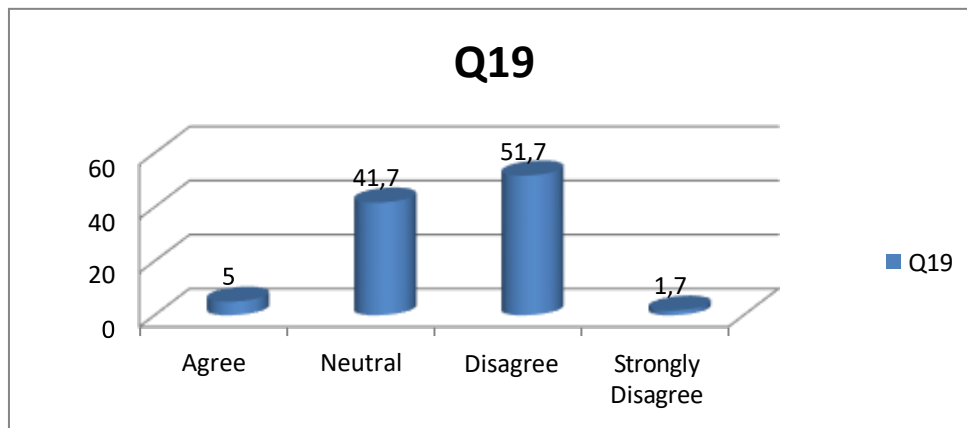

Figure 18: Teacher's responses to their training on PBL.
Source: field data, Mekui, 2024

Table 23: Teacher's opinion on time allocated for PBL in seminars

	Frequency	Percent
Agree	3	5,0
Neutral	25	41,7
Disagree	31	51,7
Strongly Disagree	1	1,7
Total	60	100,0

Source: Field data; Mekui, 2024

Figure 19: Teacher's opinion on time allocated for PBL

The table and graph, above shows the distribution of teacher's opinion to know if the time allocated for project-based learning during seminars is sufficient for the to master project pedagogy. The results gotten indicate that 31 respondents (51,7%) Disagree , 25 respondents are neutral (41,7%), 3 respondents Agree that the time given to Project Based learning during seminars is enough, and 1 teacher Strongly Agree (1,7%).The result translate that the time allocated to train teachers on PBL is not enough at all. During our research we investigated on how seminars are being scheduled and come to realize that PBL is always a sub-topic in most seminars carried on till then. So, most of the times it is always pushed at the end of seminars after other topics. Consequently, Project Based Learning is rushed over and teachers come out nearly empty. Teachers affirmed that seminars on Project Based Learning are always very brief. A new concept needs time for teachers to be assimilate and be acquainted to it. Teacher are supposed to be sufficiently knowledgeable of Project Based learning to successfully implement it in classrooms.

Table 24: Teacher's responses on seminars attended.

	Frequency	Percent
Strongly Agree	1	1,7
Agree	31	51,7
Neutral	21	35,0
Disagree	7	11,7
Total	60	100,0

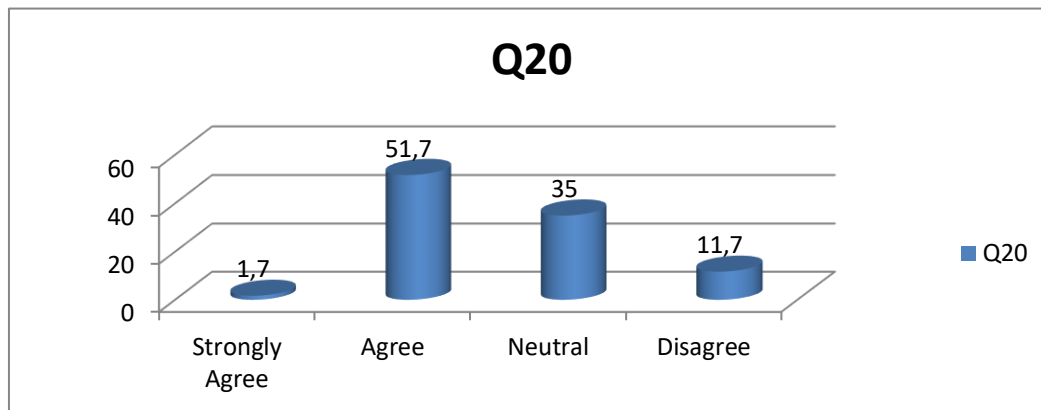*Source: Field data, Mekui, 2024*

Figure 20: Distribution of teacher's responses for seminars attended.

Source: Field data; Mekui, 2024

The responses on the question to know if teachers have attended many seminars on PBL, the frequency distribution and graph above reveal that 31 respondents (51%) agree to have attended many seminars on Project based learning, 21 respondents (35%) are neutral,7 respondents Disagree and 1 respondent (1,7%) Strongly agree. This result reveal that seminars have been organized averagely. Sometimes there might be a seminar but scheduled for another problem. Project based learning is not tackled in all seminars organized. This justify the limited knowledge that teachers have on project pedagogy. With little seminars and little time allocated for seminars as highlighted further, shallow knowledge will deliver shallow implementation of Project Based Learning.

Table 25: Frequency distribution of teacher's responses on the efficiency of the content of seminars on PBL

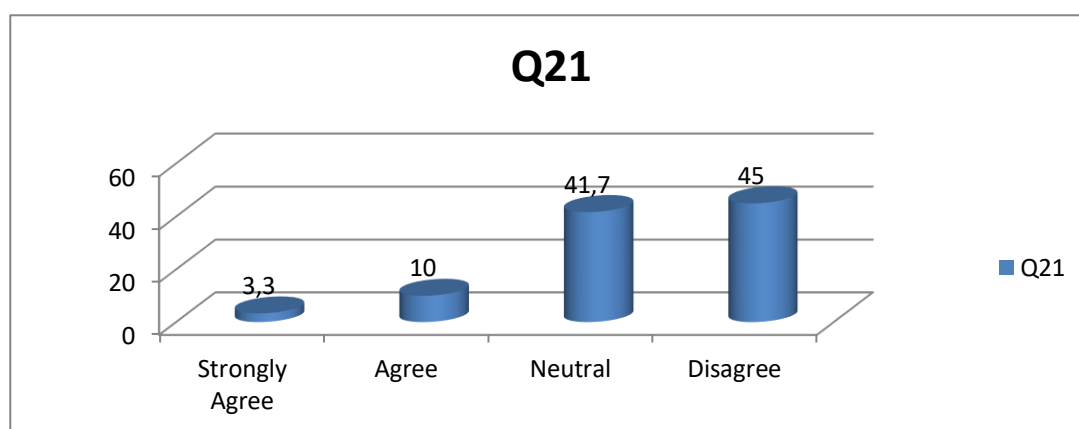|	Frequency	Percent
Strongly Agree	2	3,3
Agree	6	10,0
Neutral	25	41,7
Disagree	27	45,0
Total	60	100,0

Source: field data, Mekui, 2024

Q21

Figure 21: Teacher's responses on the efficiency of the content of seminars on PBL.
Source: Field data; Mekui, 2024

Table and figure 21 present the distribution of teacher's responses on whether the subject matter of seminars on PBL are well structured and permits teachers to be versed with the new pedagogy. The analysis of the responses indicates that 2 teachers (3, 3%) Strongly agree with the efficiency of the content, 6 teachers Agree (10%), 25 teachers are neutral (41,7%), and 27 teachers Disagree (45%), Due to the time and number of seminars provided for project based learning from this investigation, teachers express a dissatisfaction on how training is carried out on PBL. Also, some teachers reported that seminars on project bade learning are very theorical meanwhile they are expected to carry out concrete projects in their schools. They would have loved to be trained on the fabrication of little artifacts so as to be on their turn be able to scaffold learners. So even after the seminars there is not a great change in PBL in schools.

These were the data analysis of items on Theme 3 of the questionnaire, which dealt with the in-service training of teachers as far as PBL is concerned (second specific hypothesis of the study). The questions under this theme went from question 18-21 of the questionnaire.

Theme 4: Analysis of overcrowded classrooms

Table 26: Teacher's responses on the number learners in the classrooms

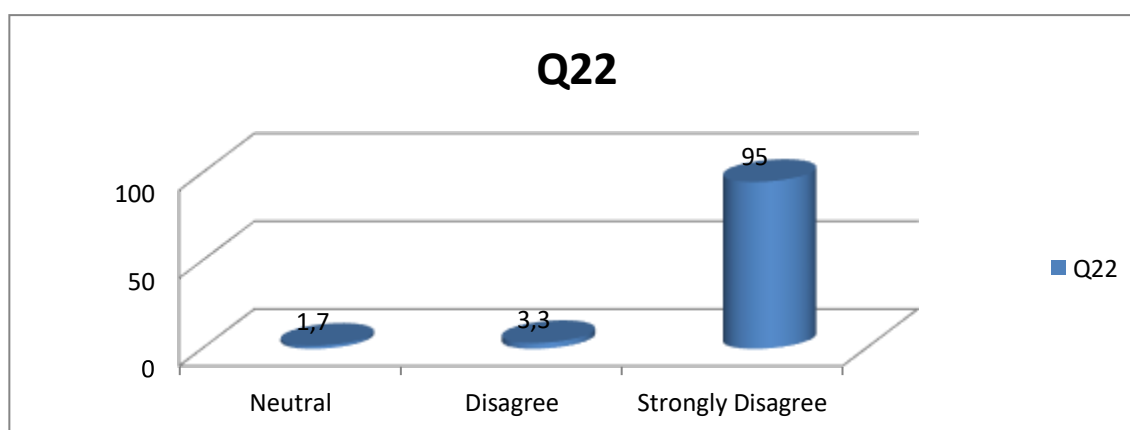|	Frequency	Percent
Neutral	1	1,7
Disagree	2	3,3
Strongly Disagree	57	95,0
Total	60	100,0

Source: field data, Mekui, 2024

**Figure 22: Teacher's responses to the number of learners in the classroom.**
Source: Field data; Mekui, 2024

The results of the table and figure above reveal that 1 respondent (1,7%) is neutral on the fact of having a normal enrolment of learners that is 50 pupils in a classroom as the norm states. 2 teachers (3,3%) Disagree and 57 teachers (95%) Strongly disagree with this statement. This results clearly translate that majority of the classes in government schools are overpopulated. The class size is a great worry in the teaching learning process. During our field work, we noted that nearly all the schools were populated. Some classrooms going above one hundred (100) learners. Teachers expressed their difficulty in carrying out projects in an overcrowded class. There are some projects that needs that learners should change their sitting positions for instance group work. With an overcrowded class in is nearly an impossibility. Consequently, teachers turn to drop project pedagogy and continue with lecturing.

Table 27: Distribution of teacher's opinion on group work in overcrowded classrooms

	Frequency	Percent
Strongly Agree	5	8,3
Agree	44	73,3
Neutral	4	6,7
Disagree	6	10,0
Strongly Disagree	1	1,7
Total	60	100,0

Source; field data; Mekui 2024
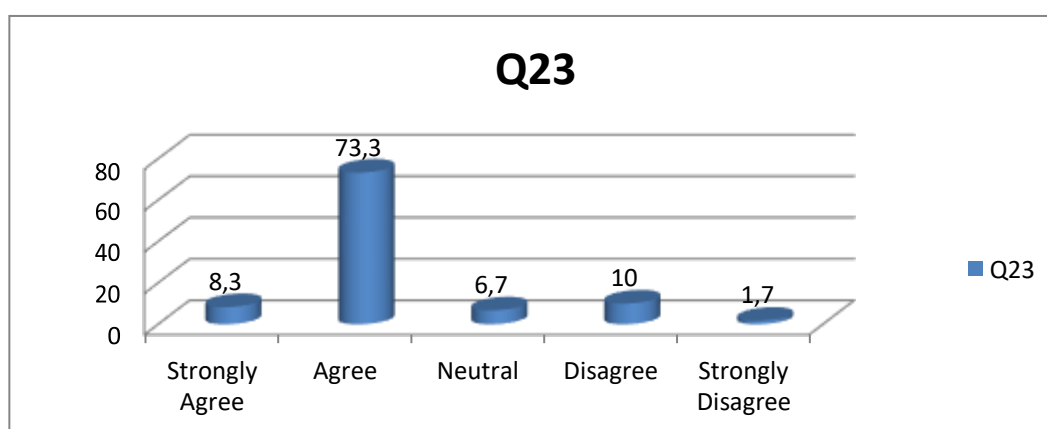
Figure 23: Distribution of teacher's opinion on group work in overcrowded classrooms.
Source: Field data; Mekui, 2024

Table and figure 23 show the responses of teachers to know whether they face difficulties in grouping their learners during PBL. The analysis reveals that 73, 3% (44 respondents) of teachers Agree to face difficulties to group their learners in an overcrowded class, 5 teachers (8,3%) Strongly agree, 4 teachers (6, 7%) are neutral, 6 teachers (10%) Disagree to face difficulties to group their learners and 1 teacher (1, 7%) Strongly disagree. There are some projects which are successfully carried out in PBL in groups. This enables learners to build some skills like problem solving, leadership skills and so on. It is true that one the strategies of class control is grouping learners but all depend on the degree of which the class is populated. For instance, an overcrowded classroom of eighty learners is different from a classroom of one hundred learners. Some of the classrooms in the field study actually had pupils beyond a hundred learners. The result reveal that a great majority of teachers face difficulties to group their learners in an overcrowded classroom.

Table 28: Teachers' opinion on time management in an overcrowded classroom in relation to PBL

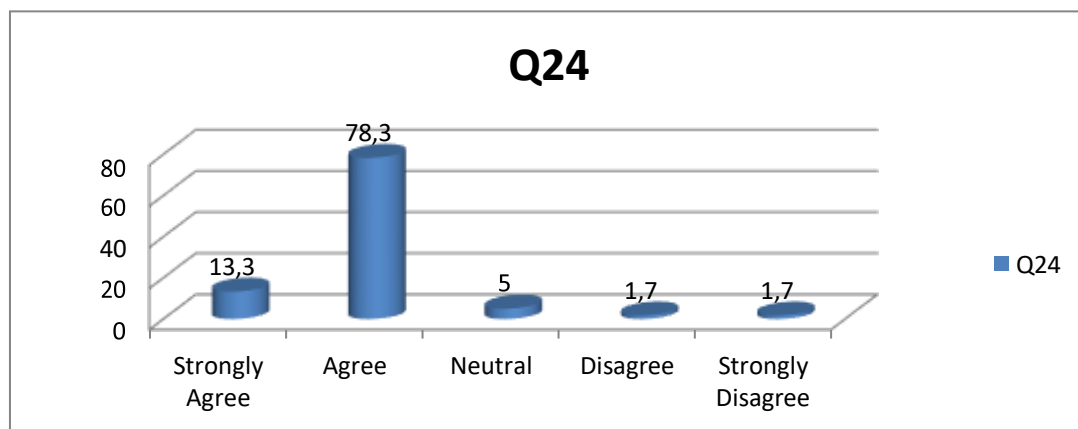|	Frequency	Percent
Strongly Agree	8	13,3
Agree	47	78,3
Neutral	3	5,0
Disagree	1	1,7
Strongly Disagree	1	1,7
Total	60	100,0

Source: field data, Mekui 2024

Figure 24: Teacher's opinion on time management in an overcrowded class in relation to PBL.

Source: Field data; Mekui, 2024

The table and figure above present the distribution of teacher's opinion to know if classroom management in an overcrowded class is time consuming, the analysis of the responses indicate that 13,3 % of teachers Strongly Agree that it is time consuming , 47 teachers (78,3%) Agree that classroom management in an overcrowded class absorbs a lot of time, 3 that is 5% teachers are neutral, 1 teacher Disagree and another 1, 7% Strongly disagree. Still from this result majority of the respondent admit that classroom management in an overcrowded class takes them much time to carry out project base learning in class. It is easy to assign a task to a few learners and attain to all of them but quite difficult in an overcrowded classroom.

Table 29: Teacher's responses to their motivation in PBL in an overcrowded class

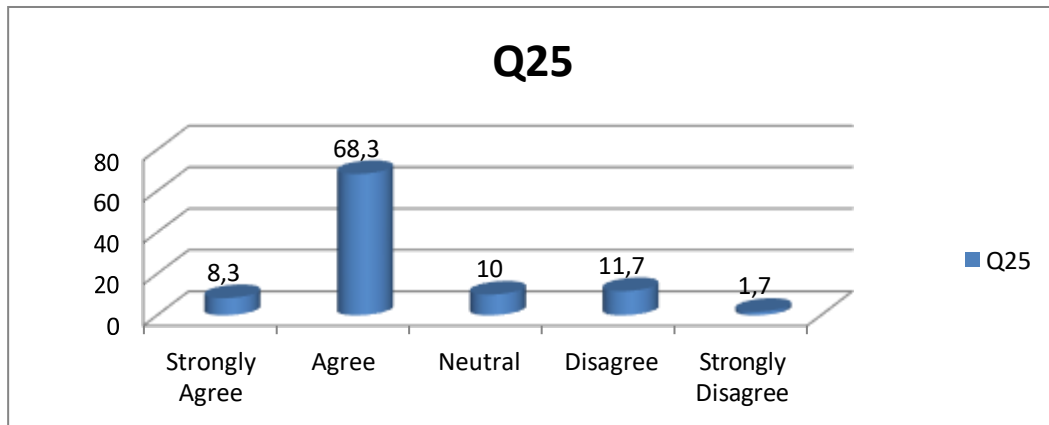|	Frequency	Percent
Strongly Agree	5	8,3
Agree	41	68,3
Neutral	6	10,0
Disagree	7	11,7
Strongly Disagree	1	1,7
Total	60	100,0

Source: Field data; Mekui, 2024

Figure 25: Teacher's responses to their motivation in PBL in an overcrowded class.
Source: Field data; Mekui, 2024

Table 29 above show the frequency distribution of teacher's responses to know whether the number of learners in the classroom demotivates them to carry out projects. The responses went as follows; 41 respondents (68, 3%) Agree to be demotivated by the number of pupils in their class to carry projects, 5 respondents (8, 3%) Strongly Agree to be demotivated, 6 teachers (10%) are Neutral, 7 (11,7%) teachers Disagree and 1 teacher (1,7%) strongly disagree with this statement. The results reveal that teachers are demotivated to carry out projects in an overcrowded classroom.

These were the items under the fourth theme of our questionnaire in relation to Overcrowded classroom (third specific hypothesis). The questions on this theme went from question 22-25.

Theme 5: analysis on learner's acquisition of practical skills (The dependent variable).

Table 30: Distribution of teacher's responses to learner's production of artifacts

	Frequency	Percent
Strongly Agree	4	6,7
Agree	54	90,0
Neutral	2	3,3
Total	60	100,0

Source: field data; Mekui, 2024
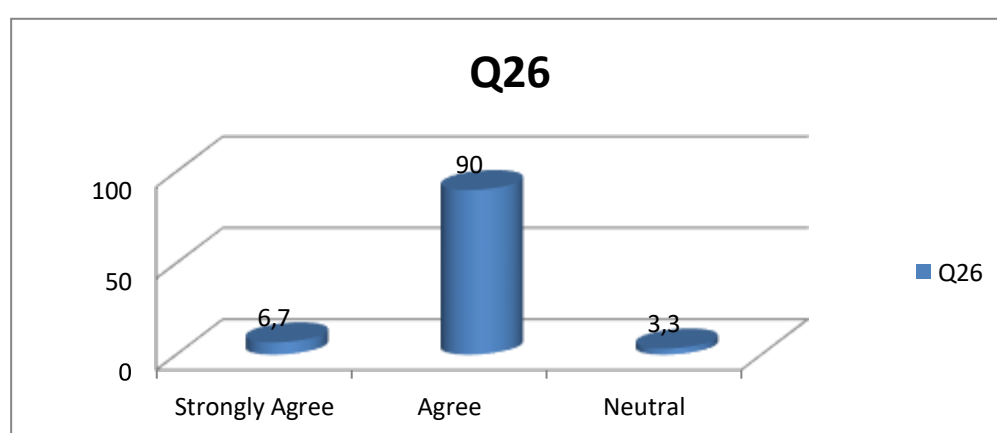
Figure 26: Teacher's responses to leaner's production of artifact.
Source Field data; Mekui, 2024

The table and figure above show the responses of teachers to know whether learners have been able to produce some concrete objects (artifacts) during PBL. The responses reveal that 90% of teachers Agree that learners have produced some concrete objects during PBL, 4 teachers (6, 7%) Strongly agree on the children production of concrete objects, 2 teachers (3, 3 %) remain Neutral. Teachers try in one way or the other to carry out projects in schools. After all, it is an obligation .8 projects are recommended in an academic year but through our investigation only a few are carried out (1 or 2 projects). Nevertheless, when opportuned to do project-based learning, learners are able to produce concrete objects or products; broom, chair, cake, bamboo car etc.

Table 31: Distribution of teacher's opinion on learner's activeness in group work during PBL

	Frequency	Percent
Strongly Agree	3	5,0
Agree	45	75,0
Neutral	5	8,3
Disagree	7	11,7
Total	60	100,0

Source: Field data; Mekui, 2024

The frequency table above shows the distribution of teacher's opinion on whether learners interact easily and are active in group work during project-based learning. The results indicate that 3 respondents Strongly Agree, 45 teachers Agree that pupils interact easily and are active in group work during PBL, 5 teachers are Neutral and 7 teachers Disagree
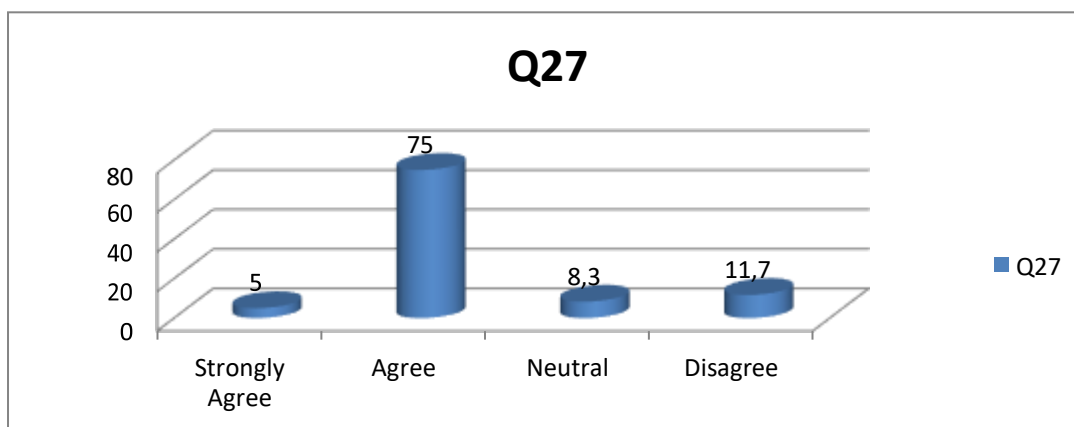
Figure 27: Teacher's opinion on learner's activeness in group work during PBL.
Source: Field data; Mekui, 2024

From the analysis of the graph, majority of the teachers 80% Strongly agree and agree that pupils interact and are active in group work. One of the objectives of PBL is to make learning more practical. When learners are gathered, they exchange ideas and learn more and are at the center of their own learning. The fact that there is a handful of teachers who are skeptical and Against this view (8, 3% neutral, 11, 7%) Disagree), translate that learning an overcrowded class still remains a problem though under normal circumstances learners interact and be active in PBL

Table 32: Teacher's opinion on learner's creativity skills during PBL

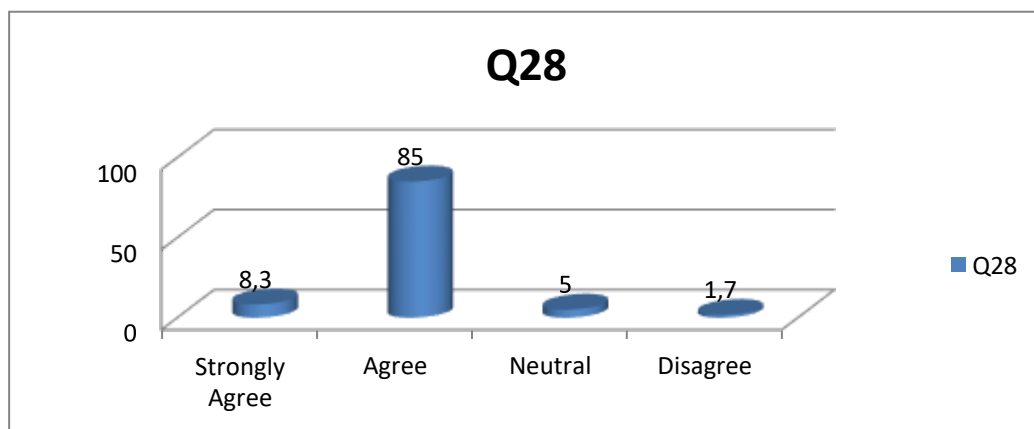|	Frequency	Percent
Strongly Agree	5	8,3
Agree	51	85,0
Neutral	3	5,0
Disagree	1	1,7
Total	60	100,0

Source: field data, 2024

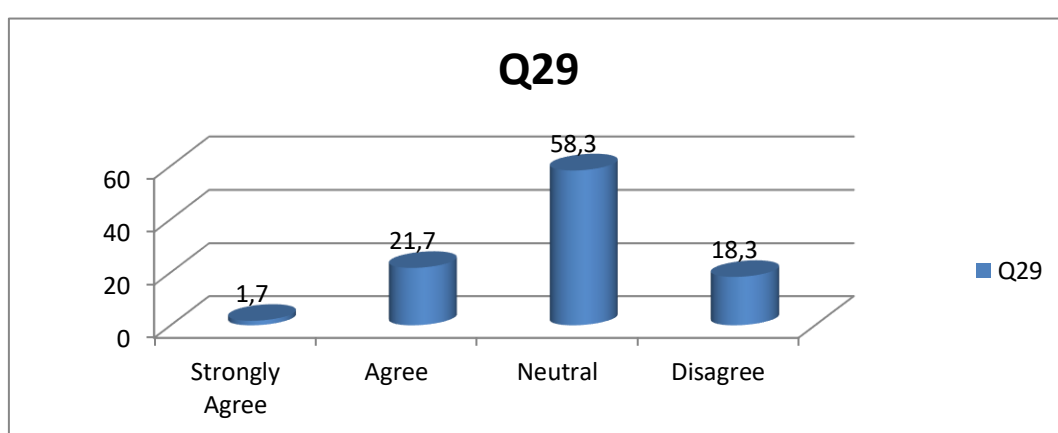**Figure 28: Distribution of teacher's opinion on learner's creativity skills.**
Source: Field data; Mekui, 2024

The table and graph above present results of the distribution of teacher's opinion on learner's creativity skills. The results reveal that 51 teachers (85 %) Agree that learners are creative during PBL, 5 teachers (8, 3%) Strongly Agree with this assertion, 3 teachers (5%) are Neutral, 1 teacher (1,7%) Disagree. During our investigation teachers reported that children are very creative in projects. It can be seen from what they attempt to produce when they are submitted to project-based learning. Learners also develop other skills during PBL such as entrepreneurship, leadership, autonomy, problem solving.

Table 33: Teacher's responses on learner's mastery of ICT tools

	Frequency	Percent
Strongly Agree	1	1,7
Agree	13	21,7
Neutral	35	58,3
Disagree	11	18,3
Total	60	100,0

Source: Field data; Mekui, 2024

Figure 29: Distribution of teacher's responses on learner's mastery of ICT tools.
Source: Field data, Mekui, 2024

Teacher's responses from table and figure 29 above indicate that 1 respondent (1,7%) Strongly Agree that learners are versed with ICT tools in their schools, 13 of them (21%) Agree, 35 respondents (58,3%) are Neutral, and 11 respondents (18,3%) Disagree with this idea. The analysis of the availability of computers in schools revealed that majority of schools did not have computers and many were in bad state. It is thus obvious that majority of learners should not be versed with ICT tools. Meanwhile technology is an asset in Project based learning.

Table 34: Teacher's opinion on the usefulness of materials resources to learner's acquisition of practical skills

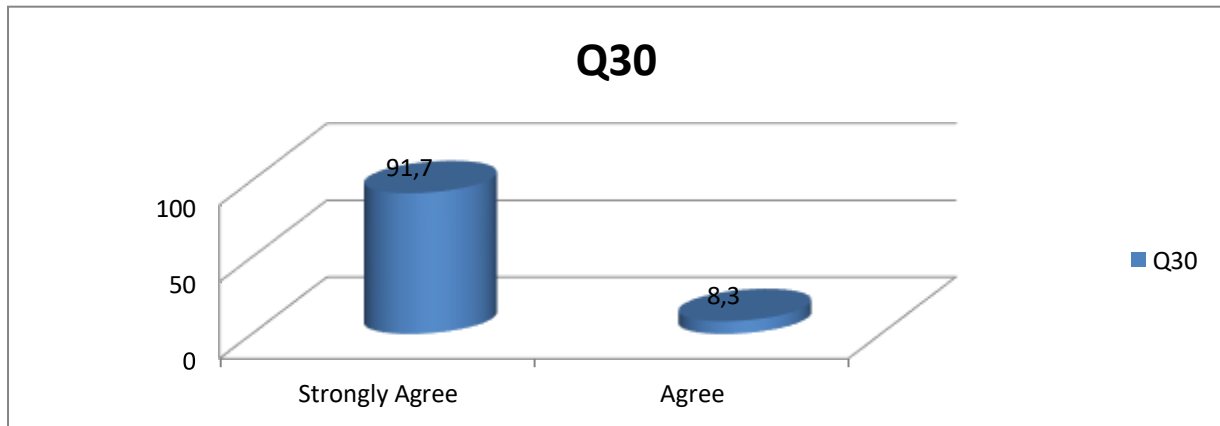|	Frequency	Percent
Strongly Agree	55	91,7
Agree	5	8,3
Total	60	100,0

Source: Field data, Mekui, 2024

Figure 30: Teacher's opinion on the usefulness of material resources to learner's acquisition of practical skills.

Source: Field data; Mekui ,2024

The table and graph above show the distribution of teacher's opinion whether material resources will enable learners to acquire practical skills easily. The analysis reveals that 91.7% of respondents that is 55 teachers out of the 60 teachers Strongly Agree with this statement, 5 teachers Agree (8,3%). The result translates a 100% agreement that material resources will enable learners to acquire practical skills. The investigation had shown that there is little or no working materials for project-based learning in schools and that most of the times teachers seek materials from parents when they want to carry out projects. Children have the potentials far beyond our expectation and need to be supplied with materials that will help them to carry out projects successfully thus develop their competences. Practical work demands that the necessary tools and school facilities should be available.

Table 35: Teacher's opinion on whether the conditions in which PBL is carried out to assure learner's acquisition of practical skills

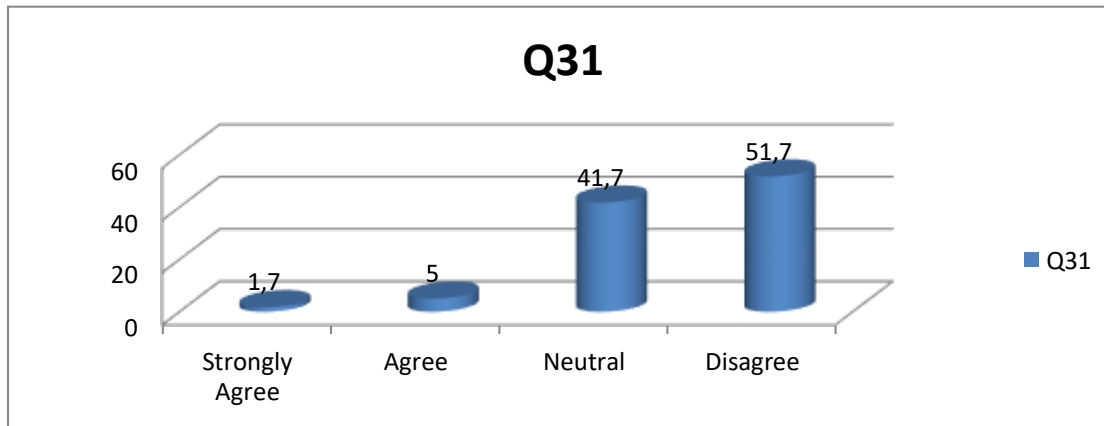|	Frequency	Percent
Strongly Agree	1	1,7
Agree	3	5,0
Neutral	25	41,7
Disagree	31	51,7
Total	60	100,0

Source: field data, Mekui 2024

Figure 31: Distribution of teacher's opinion on whether the conditions in which project Based learning is carried out assures learners acquisition of practical skills.

Source: Field data; Mekui,2024

Table 35 and graph, shows the distribution of answers given by teachers to know if the present conditions in which project-based learning is carried out assure learners acquisition of practical skills. The results indicate that 31 respondents (51,7%) Disagree with this statement, 21 respondents (41%) are Neutral, 3 (5%) Agree and 1 (1, 7) respondent Strongly with this statement. The results translate that, teachers are very skeptical to affirm that learners can acquire practical skills with the present conditions in which Project based learning is being carried out in schools .With loopholes and numerous difficulties that teachers encounter to implement it; the lack of pedagogic and material resources, the training of teachers in PBL, overcrowded classrooms. The neutrality and disagreement of teachers can then be understood.

4.2. Qualitative Data analysis –content analysis.

As earlier said in chapter three we used the interview guide for the collection of qualitative data and the content analysis using the verbatim method as technique of data analysis.as a reminder, we had 5 interviewees had to stop there since the responses reached saturation (the same answers were repeated). The results of the content analysis are presented on the table below.

Table 36: Content analysis

N°	Questions	Items	Contents
1	Which pedagogic resources do teachers use to guide them in project realization in their different classes?	Pedagogic resources in project realization	-official references: curriculum, schemes of work, textbooks -all references are use both for teaching and PBL -no book designed for PBL only - no handout with proposal of projects according to the different classes
2	Which concrete materials are available in your school that facilitates teachers to carry out projects?	Concrete materials to carry out projects	-no material provided by school available e;g pots, hammer ,oven, saw, hoe , computers and no physical facilities in school such as laboratories, kitchen, project work places. -teachers and learners use recycled materials for example, cartoons, bottles, old toys. teachers can ask learners to bring palm fronts to school for the fabrication of a broom -the provision of materials used for projects mostly comes from parents.
3	How is the financial budget allocated for projects used in your school?	Financial budget allocated for projects	-no heading in the budget school that is assigned to PBL, no specific budget for project -the school budget is use for school projects for example provision of benches, blackboards, painting and repares. -the school finances is managed globally for the different expenditures of the school. -teachers are not aware of any financial budget allocated for project-based learning.

4	Which are the different ways in which teachers are trained on project-based learning?	Training on project-based learning	-seminars -pedagogic cells in schools -any type of training like PAREC training to understanding curriculum, how to teach some -difficult subjects and PBL -time provided for project-based learning during seminars is relatively small. -no practical exercise in project-based learning during seminars
5	Do teachers easily carry out all their projects in their different classes after seminars and pedagogic cells? Is there an amelioration?	The effectivity of project realization in schools after training	-little amelioration in PBL though we learn a lot from seminars -some follow up - still few teachers succeed to carry out projects -PBL is a new concept and a big challenge -difficult to say that there is an amelioration -difficult to carry out all the 8 awaited projects in the academic year.
6	How do teachers go about with the carrying out of projects in overcrowded classes?	Carrying out of projects in overcrowded classes	-learners are rowdy and undisciplined, not easy to control, them -difficult to group learners in terms of space and population.

Source: Field data; Mekui,2024.

The item of the first question of the interview guide concerned the pedagogic resources in project realization. From the responses of the interviewees, it was pointed out that teachers use the curriculum as the main reference for project-based learning, and textbooks of the various classes. But till date there is no book designed only for project-based learning. A respondent asserted that

"The pedagogic resources at our disposal are textbooks, scheme of work, the curriculum… I think that's all what we have that guides us in teaching and project-based learning. To my knowledge I don't think there are books designed only for projects for the different classes, no."

Through our investigation of the curriculum, schemes of work and textbooks, we find out that for instance in the curriculum there is just the broad idea project-based learning (definition, objectives…), schemes of work partition subjects and lessons for the academic year. These books enable teachers to have a theorical idea on project-based learning and nothing that guides concretely to carry out projects. When we cross check the responses of the questionnaire, we find a similarity in the responses where majority of teachers agreed to have documents that gives them sufficient knowledge about project based learning but disagree to have teachers guides for projects, no book that proposes projects according to the Integrated Learning Themes, Teachers may have an idea of project based learning but may not know which project to carry out and how should that project be carried out. There is thus the necessity for teachers to have books where projects are designed according to the different classes or levels. We underline that in Cameroon primary school has a cycle of six years shared into three levels; level one consists of classes one and two, level two consist of classes three and four and level three classes five and six. Projects designed for level one will not obviously be the same as for level three.

The item of question 2 of the interview guide was to know about the concrete materials available in schools to carry out projects. From the content analyses of the respondents, the material resources present is school were so scanty and nearly inexistent in schools. One response we had from a teacher was:

"We don't have material resources provided by the school for project-based learning. We always ask learners to bring them from their homes and even sometimes I myself can provide something I see necessary for me to carry a project that the children cannot afford. For example, if we have a project on food and nutrition, let's say we want to bake a cake, I will ask learners to bring flour, eggs, butter, etc. I may bring a baking pan, a pot and so on, since these facilities are not

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found in school… no oven nor kitchen in school so the cake will be baked outside and on fire wood regardless of the weather. That is how we struggle to carry out projects"

Another response from a head teacher says,

"Well madam concrete materials that teachers use gotten from teachers and learners depending on the project. In fact, the teacher knows what to do…most often we see objects arranged from local materials such cartoons, bottles, old toys etc…"

Through our investigation, it was realized that globally schools don't have school facilities such as kitchen, labs, workshops and materials, oven, pot cutlasses, harmer, hoe, wheelbarrow and so on to ease teachers in carrying out projects with learners. Most schools don't have even a computer or the existing ones in bad state. When we confront the response of the questionnaire to this item, we find out that the responses coincide. Teachers really disagree to have concrete materials in schools that enable them to carry out project-based learning successfully. What is more stressful to teachers is that the material for projects are most of the times are demanded from parents. And through this investigation, it was affirmed that parents don't easily provide these materials. So, we can imagine how difficult it is for teacher to carry projects.

Question 3 of the interview guide had as item to know how the financial budget allocated for projects is used. The responses we had were

"Madam, when you say financial budget allocated for project-based learning, well to my knowledge there is no heading as far as budget allocation is concerned that says that this is budget allocation for projects. But you know when a budget is drawn in the academic year, the money is use for enhancing the teaching learning process".

From the responses it is clear that there is no financial budget allocated for Project Based Learning. The school financial budget is well spelt for other school project such as repares (benches, blackboards painting the school etc). Financing project-based learning becomes an additional load so avoided. Hence schools are found with no material resources that encourages them to carry out Project based learning. Naturally as last resort teachers are forced to turn to parents to provide the materials.

Question 4 of the interview guide had as item the training of teachers on project-based learning. The results indicate that teachers are trained through a number of seminars and pedagogic cells that are scheduled in the academic year. A respondent said

"Teachers attain seminars, pedagogic cells and any other type of training that may occur for example the PAREC training which always conduct very good seminars where teachers are still trained on the understanding of the curriculum, the teaching of complex subjects a project-based learning"

Another response was that:

"Teachers and head teachers are trained on project-based learning through seminars and pedagogic cells… we usually have seminars at the beginning of every academic year and pedagogic cells where issues like projects which is a new concept in the educational system are being discussed and teachers that are more well informed about it help other teachers in their difficulties".

The analysis of these responses indicates that actually in-service training of teachers is being carried on Project Based Learning. Teachers are knowledgeable of the concept through seminars and pedagogic cells. When we cross check the responses of the questionnaire we notice an assertion that teachers have attended seminars on project-based learning. The question is the time given for the training of teachers on PBL. Our investigation revealed that teachers are very skeptical to accept that they are well trained on PBL. They affirm that project-based learning is always tackled as a sub topic of the theme of the seminar thus much time is not given to it. Consequently, teachers remain nearly empty and there is no good amelioration in schools. This is more elaborated on question five below

Question 5 of the interview guide has an item the amelioration of teachers after seminars. Some of the responses gotten from the interviewees are:

"You know madam this concept of projects is really a big challenge to teachers. Normally teachers are supposed to carry a project in all the integrated themes and there are eight integrated themes but…anyway some teachers are trying with their learners…others are very reluctant to carry projects…some even write down their projects in their projects evaluation book because teachers have books where they write their different projects but don't carry out those projects. So, it is difficult to say there is an amelioration after seminars. Maybe a slight amelioration especially on teachers that who put in efforts."

Another respondent

"Eeeh well madam I must admit that project-based learning is a new concept and teachers are still being acquainted to it. We cannot deny the fact that seminars are of great importance but to answer to your question few teachers succeed to carry out projects in their class…really few".

Another respondent

"Well… there is always an amelioration because there is follow up. you know normally at the end of every pedagogic month a teacher is expected to come out with a project; Though due to some reasons beyond control don't come out with that number."

This can be considered as a justification to the fact that seminars on project-based learning are rushed over. It is already agreed that seminar is organized on project-based learning but the question goes to know why there is little or no amelioration in school. Project based learning is learning by doing but in seminar teachers just learn but they don't do. Seminars are supposed to be more of a practical seminar where teachers are supposed to be trained in craft work, how to use a computer just to name these few.

Question 6 of the interview guide has as item Project Based Learning in an overcrowded classroom. The analysis of the responses of the interviewees shows that teachers don't find it easy at all to conduct projects in an overcrowded class. A teacher responded:

"It is not really easy for us to carry out projects with overcrowded classes; the only alternative we have is group work. but the problem with group work is that when many groups are created with few learners, the work load is too much on us trying to attend to all the groups and follow up the learners whereas creating few groups with many learners causes a lot of indiscipline. Only few groups will attempt to offer good products and satisfaction"

A head teacher responded that:

There is nothing we can do as far as overcrowded classes are concerned. It is a common phenomenon in government schools, but should we send children away?? they all need to come to school. They all need to learn…yes teachers do complain of learners being rowdy in class, some learners take it as fun time, but you know majority of the classes have two teachers. they try their best

The responses of this questions translate that it is difficult to carry out project-based learning in an overcrowded classroom. teachers are always advice to do group work as a strategy or way to manage project-based learning in an overcrowded class but as a teacher responded even that strategy has its limits; as when many groups are formed with few learners

for instance, in a class of 100 learners, children are grouped in 5's. We are going to have 20 groups in class. It is going to be difficult for teachers to attend to all the group and it will be time consuming. The teacher acts as a facilitator, a guide and has to follow up all the groups. and when learners are grouped, they take more space and the classroom turns to be small. It becomes very difficult for teachers to circulate freely round the class.

On the other hand, when few groups with many children are formed for instance 5 groups of 20 learners, children will be very noisy, many will not be concentrated, some will disturb others etc. It will not still be easy to manage them.

Though majority of the classes have two teachers, normally mathematical two teachers should be able to handle a class of one hundred learners as the ratio student/teacher will be 50:1 (fifty learners to one teacher). But majority of teachers said they preferred to be in an individual classroom with their 50 learners than to be two teachers in one classroom of 100 learners. When we do a cross examination of the responses in the questionnaire, we actually find that teachers face a lot of difficulties in carrying out projects in an overcrowded classroom.

4.3. Test of Hypotheses

4.3.1. Verification of research hypothesis 1

H0: The lack of resources; pedagogic, material and financial do not significantly influence learner's acquisition of practical skills.

Ha: The lack of resources; pedagogic, material and financial significantly influence learner's acquisition of practical skills.

Table 37: Chi-Square Test of independence on lack of resources: pedagogic, material and financial and learner's acquisition of practical skills

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	213,683[a]	99	,000
Likelihood Ratio	75,510	99	,962
Linear-by-Linear Association	7,131	1	,008
N of Valid Cases	60		

Source: SPSS, version 25

The Pearson chi-square statistic value of the first hypothesis from the table is 213,683 with 99 degree of freedom. The associate p-value is ,000. Since the p-value is below the threshold of 0,05, we reject the null hypothesis and validate the alternative hypothesis.

Decision: The lack of resources: pedagogic, material and financial significantly influence learner's acquisition of practical skills.

4.3.2. Verification of research hypothesis 2

H0: insufficient in-service training of teachers does not significantly influence learners' acquisition of practical skills.

Ha: insufficient in-service training of teachers significantly influences learner's acquisition of practical skills.

Table 38: Chi-Square Test of independence on insufficient in-service training of teachers and learner's acquisition of practical skils.

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	136,281[a]	81	,000
Likelihood Ratio	75,421	81	,654
Linear-by-Linear Association	8,653	1	,003
N of Valid Cases	60		

Source: SPSS, version 25

The Pearson chi-square statistics value of the second hypothesis revealed is 136,281 with 81 degrees of freedom. The associate p-value is, 000.since the p-value is below the threshold of 0,05, we reject the null hypothesis and validate the alternative hypothesis

Decision: The in-sufficient in-service training of teachers significantly influence learner's acquisition of practical skills.

Verification of research hypothesis 3

H0: overcrowded classrooms do not significantly influence learner's acquisition of practical skills.

Ha: overcrowded classrooms significantly influence learner's acquisition of practical skills.

Table 39: Chi-Square Test of independence on overcrowded classroom and learner's acquisition of practical skills.

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	155,740[a]	81	,000
Likelihood Ratio	69,273	81	,820
Linear-by-Linear Association	16,569	1	,000
N of Valid Cases	60		

Source: SPSS, version 25

The chi-square statistics value of the third hypothesis is 155,740 with 81 degrees of freedom. The associate p-value is ,000. Since the p-value is below the threshold of 0,05, we reject the null hypothesis and validate the alternative hypothesis.

Decision: Overcrowded classrooms significantly influence learner's acquisition of practical skills.

The validation of our 3 (three) research hypotheses showed a significant relationship between the two variables (independent and dependent variables) hence the general research hypothesis was validated.

Conclusion: Barriers to teacher's implementation of project-based learning significantly affect learner's acquisition of practical skills.

CHAPTER FIVE: INTERPRETATION OF THE FINDINGS, DISCUSSION, LIMITATIONS, PERSPECTIVES FOR FURTHER RESEARCH, RECOMMENDATIONS, CONCLUSION

This study aimed at investigating the extent to which barriers to teacher's implementation of project-based learning affect learner's acquisition of practical skills. This chapter presents the discussion of the findings based on the three hypotheses. The discussions will obviously be related to the literature review, theories, and the results gotten from data analysis. No work can go without any difficulty encountered so the limitations of the study are equally going to be presented in this chapter, followed by proposals of further researches, the recommendations and finally the general conclusion of the study.

5.1. Discussions of the findings.

Our first hypothesis was to find out whether the lack of resources; pedagogic, material and financial influenced learner's acquisition of practical skills formulated as follows:

RH1: The lack of resources pedagogic, material and financial influence learner's acquisition of practical skills.

Our first hypothesis was confirmed by the statistical Chi-square test value 213,683 with 99 degrees of freedom. The associate p-value was ,000 below the threshold of 0,05. So, we can confidently admit that the lack of pedagogic, material and financial resources influence learner's acquisition of practical skills. As noted in our investigations both from the questionnaires and interviews, teachers expressed their difficulty in carrying out Project based learning without the help of stationaries designed for project-based learning where they could find ideas and samples of project. The materials in the textbooks are not sufficient enough to make them grasp this new teaching method. This corroborate with the work of Shabban (2017) who holds that curriculum should be authentic and originally designed to be taught by Project based learning.

This study revealed that the most difficult aspect of implementing project pedagogy is the lack of material resources in schools for projects, no physical school facilities such as computer room or laboratory, no kitchen where food and nutrition practical activities can take place, no work place for leaners to carry some specific projects. This creates a great difficulty for teachers to carry out projects. This ties still with the work of Shabban (2017) who assert schools don't offer the necessary materials and facilities required for projects. He holds that different projects needs different materials and the facilities to be conducted. An absolute

majority of teachers admitted that the lack of material resources is really a handicap for them to carry out project-based learning in their classes. The findings corroborate with findings of Adeogun (2001) who holds that learning materials determines an educational system efficiency and that schools which are gifted with such resources perform well. In nearly all schools were our field work was done even simple materials such as computers, ovens, pots, hammers, cutlasses and so on were not available in schools. This opines with Blumenfeld (1991) who sees technology as an asset to project pedagogy.

The investigation revealed that teachers rely heavily on parents on the provisions of materials for projects who don't easily respond to this demand. This finding ties with the study of Shabban (2017) which revealed that since there is no School-Parent collaboration, some parents underestimate the value of project-based learning and were not keen to offer the necessary materials for their kids to do the project. He posits that School-Parent collaboration may help greatly in the success of the educational process. Effective communication is necessary between teachers and parents. Turning on the other side to see whether a budget was planned for project-based learning in schools, the answers were not affirmative. Head teachers deny to have any financial budget allocated for project-based learning. This ties with the opinion of Bell (2010) who asserts that the lack of financial resources devoted for projects is one of the major barriers that project-based learning encounters.

With this results our attention goes to ask whether the policy makers did not foresee that the implementation of such a concept will demand some adjustments in schools for it to succeed especially in terms of building and providing schools with computer labs equipped with computers, a school kitchen with some basic equipments (oven, cooker pots), work places or workshops where learners can comfortably carry out projects just to cite these few examples.

The situational contingency theory developed by Fiedler (1960) holds that planning and organising must be tailored to specific issues or circumstances an organisation may face. Project based learning cannot be very successful in schools without considering these contingencies. Mukamenza (2017) believes that new pedagogic concepts implemented in the country are borrowed from developed countries and that underdeveloped and developing countries face difficulties to adopt it. But why should only the concept be borrowed and not the measures of supporting it too?

The second hypothesis of our study was to find out the extent to which insufficient in-service training of teachers could influence learner's acquisition of practical skills formulated as follows:

RH2: The insufficient in-service training of teachers significantly influences learner's acquisition of practical skills.

The hypothesis was confirmed by the statistical test chi-square value 136,281 with degree of freedom 81, the associate p-value ,000 below threshold 0,05. With this we assert that the insufficient training of teachers significantly influences learner's acquisition of practical skills. The investigation revealed teacher's worries about the content and the time provided for project-based learning during seminars. Teachers expressed their dissatisfaction on the way they are trained. Firstly, they complained on the fact that project-based learning is always a sub point in seminars most of the times the last point, consequently, the trainers often tired at that time just rush through it. As a result, teachers go back nearly empty on project-based learning. Although majority of teachers indicated to have basic knowledge on project-based learning some stated that they found it difficult to implement the concept because of inadequate training.

The findings opine with the work of Wiysahnuy (2021) who indicate that majority of the teachers have only basic knowledge and skills on how to effectively use project-based learning due to seminars held occasionally and sadly, less practical to keep them abreast with the dynamics in the art of the model. This is an indication that teachers need diverse professional development activities like in-service training. Martha and Naftalie (1999) assert that one of the important components to improve quality of education is through in-service training of teachers.

The second worry of teachers according to the finding was that the training on project-based learning is very theorical instead of being more practical. If project-based learning for learners is 'learning by doing', then seminars should also be more of doing than listening. As such teachers are expected to be trained on hand work activities, how to use a computer for projects, food and nutrition, tailoring and so on. This ties with Thompson (1992) who holds that a well-planned training program will yield a positive change effect on teachers, students and the school. The adult learning theory- Andragogy of Knowles, (1968) holds that adults need to be involved in the planning and evaluation of their instruction.

The third hypotheses of our study were to find out how overcrowded classroom could affect learner's acquisition of practical skills formulated as follows:

RH3: Overcrowded classrooms significantly influence learner's acquisition of practical skills.

The hypothesis was confirmed by the Chi-square value 155,740 with degrees of freedom 81, the associate p-value ,000 below threshold 0,05. This asserted that overcrowded classrooms significantly influence learner's acquisition of practical skills.

Overcrowded classrooms have always been a problem in the teaching and learning process. In fact, it is the most challenging problem that schools and teachers face. This was confirmed through our investigation. All government schools where the field work was done were over populated. Some classes exceeded a population of one hundred and twenty (120) learners. Though all the classes had two teachers, from the responses of the teachers, it was indicated that two teachers in a class does not solve the problem. Teachers preferred to be alone in a class of 60 learners than to be two in a class of 120 learners. While according to the norm concerning the class size, a class above 50 learners is already an overcrowded one. Managing an overcrowded class is first all very difficult during normal teaching and is worse during project-based learning.

The class size in terms of space when it comes to grouping the learners becomes problematic because group work takes a lot of space since learners are forced to change their sitting positions. More than 90% of teachers Strongly Agreed to have difficulties in carrying out projects in an overcrowded class. This corroborates with Hayes (1997) who asserts that filling the classrooms with more students than intended can affect teacher's ability to teach effectively and student's ability to learn. Blatchford (2007) holds that the first difficulty encountered by teachers in an overcrowded class is the management of the class. One of the best techniques of classroom management advice to teachers is group work. But the teachers argued that forming few groups with many learner's causes a lot of indiscipline, on the other hand creating many groups with few children make the work load heavy on teachers. It will be difficult for them to follow up all the groups and attend to all learners Scaffolding becomes difficult meanwhile the scaffolding learning theory of Brunner posits that children need support from their teachers when learning a new concept.

This ties with Hayes (1997) who asserts that it is difficult to follow the progress of all learner's in a class and scaffold them because they are many and so different. This also corroborate with Farrant (2000) who admits that it is difficult for teachers to carry out proper evaluation in a large size class. Teachers recognized their demotivation to carry out projects in their classrooms because of the number of learners in class. Though a head teacher from the interview instead looked at an overcrowded class as being an advantage where children can come together and exchange their different ideas and experiences. The reality in the field being very different.

All the aforementioned difficulties encountered by teachers affect learner's acquisition of practical skills which are normally developed through Project Based learning. Because there is lack of pedagogic, material and financial resources teachers are weakened in carrying out

projects and in turn makes learners to do practice anything. Because teachers are not well trained on how to go about Project based learning, they will not know how to follow up learners and the old teaching style will continue and learner's will not gain any practical skill from this. Because of the class size teachers are discouraged to handle project-based learning and learner's stay in the classical teaching without undergoing practical activities.

5.2. Recommendations

Our recommendations are mostly addressed to the government to ameliorate the implementation of Project Based Learning in schools. The recommendations are going to be in terms of resources, training of teachers and the class size.

In terms of resources

- Handouts where projects are designed per level should be made available to teachers
- Teachers guides on the procedure to carry out some projects should be produced to enable teachers to refer to them during Project Based Learning
- Some school facilities and materials should be provided to school for Project Based Learning to be carried out successfully. For example, kitchens furnished with basic equipments such as cooker, oven, pots; computer labs, workshops furnished with materials and tools such as, hoes hammers, nails, needles, thread, scissors, iron etc.
- A budget should be allocated specially for Project based learning in schools.

In terms of in-service training

- Special seminars only on Project Based Learning should be scheduled to allocate enough time for teachers to be sufficiently knowledgeable of the concept.
- Practical seminars to train teachers on how to realise some projects should be organized. Some professionals in certain activities like weavers, carpenters, tailors, informaticians should be invited to train teacher practically and empower the seminars so that teachers can also 'learn by doing' and acquire more.

In terms of class size

- Additional classrooms should be built to reduce overcrowded classrooms
- Young teachers should be recruited.

Our last recommendation goes to schools and we propose that rewards for best projects should be provided. This might be a source of motivation to teachers and learners.

5.3. Limitations of the study

Globally our research went on well but we cannot deny of facing some difficulties in the course of our work. We encountered some difficulties with some teachers being very reluctant to accept our questionnaires. Some even totally refused to participate in the investigation which frustrated us a little. Also, we were sometimes hooked up financial making us to put a pause on the work before gathering again a token to continue the research (internet, transport, printing…) Last but not the least we encountered difficulties in the availability of references in the school library.

5.4. Perspectives for further studies

Our study was carried out in Mfoundi Division which is made up of seven subdivisions. The study was circumscribed in three sub divisions. Studies can be carried in the other sub divisions.

CONCLUSION

Our study entitled "Barriers to teacher's implementation of Project Based Learning and Learner's Acquisition of Practical Skills", seeked to investigate on the factors that obstructs or hinder teachers to implement project pedagogy in schools. The general research question was formulated as follows:

To what extent do barriers to teacher's implementation of Project Based Learning affect learner's acquisition of practical skills?

We had three specific research questions formulated as follows:

- **RQ1**: In what way do lack of resources: pedagogic, material and financial influence learner's acquisition of practical skill?
- **RQ2:** How do insufficient training of teachers influence learner's acquisition of practical skills?
- **RQ3:** In what way do overcrowded classrooms influence learner's acquisition of practical skills?

We proceeded by constructing our various hypotheses. The general hypothesis being: Barriers to teacher's implementation of project-based learning significantly affect learner's acquisition of practical skills.

The secondary hypotheses were stated as follow:

- **SH1:** The lack of resources: pedagogic, material and financial significantly influence learner's acquisition of practical skills.
- **SH2:** The insufficient in-service training of teachers significantly influences learner's acquisition of practical skills.
- **SH3:** Overcrowded classrooms significantly influence learner's acquisition of practical skills;

Our field work was carried in 6 (six) schools in three (03) different sub-divisions of Mfoundi (Yaounde 2,5 and 6) and worked with a population of sixty (60) teachers and five (5) head teachers. The study was a mixed research type. So, used the questionnaire and interview guide for data collection. The data collected was analysed through the Chi-Square Test of Independence for quantitative data and content analysis for qualitative data. From the results of the analyses, our three hypotheses were validated.

The first hypothesis gave us a Chi-square value of 213,683, ddf 99, p-value ,000 which was below threshold of 0,05. The null hypothesis was rejected and the alternative hypothesis accepted.

The second hypothesis resulted with Chi-square value 136,281, ddf 81, p-value ,000 below threshold of 0,05. Hence the alternative hypothesis confirmed and the null rejected.

The third hypothesis gave us a Chi-square value of 155,740, ddf 81, p-value ,000 below threshold of 0,05. Hence the alternative hypothesis was accepted and the null hypothesis rejected. The validation of all the three hypotheses automatically confirmed the general hypothesis of the study which stipulated that barriers to teacher's implementation of project-based learning significantly affect learner's acquisition of practical skills.

The study creates an awareness of a pedagogic problem in primary schools. That of the shallow implementation of Project Based learning in schools. If learners don't acquire practical skills the awaited objectives and goals of Project Based Learning will not be attained. That is, building a competent and productive young generation of learners gifted will knowledge, skills and know-hows.

Some solutions were proposed in terms of resources, the training of teachers and overcrowded classrooms. The study thus calls on the attention of the competent bodies in the field of education precisely Ministry of Basic Education (MINEDUB) to consider the difficulties teachers encounter to implement Project Based Learning, provide solutions so as to facilitate or ameliorate the implementation of Project Based Learning in primary schools in order for learners to acquire practical skills. Project Based Learning is a bright concept full of hope that needs to be catered to have a positive impact in education.

PROPOSED PROJECT

INTRODUCTION

The implementation of new educational concepts in schools has always been a great challenge to teachers as most often the move from one concept to another is always very abrupt. Consequently teachers face difficulties in implementing these concepts. This is the case with pedagogic approaches such as the New Pedagogic Approach (NAP), the Competence Based Approach (CBA) and today Project Based Learning.Mukameza (2017) holds that most of these concepts are borrowed from developed countries and that underdeveloped countries face difficulties adopting it. The problem of resources then arrises to support the successful implementation of these concepts. Meanwhile educational policies are set up to tie with the nation's development vision, for instance today the vision in education is that which is directed towards proffessionalism, entrepreneurship,the preparation of learners to self-employment and career readiness. Same as earlier said with the difficulties in the implementation of pedagogic concepts Project Based Learning instituted in the primary curriculum in 2018 is equally facing a lot of difficulties to be implemented. Hence our concern in this project which is to facilitate the implementation of Project Based Learning in Government primary schools in Mfoundi division.

I-Project title

Facilitating the implementaion of Project Based Learning in Government Primary Schools in Mfoundi Division.

II-The Problem.

The non acquisition of practical skills by learners due to the shallow implementation of Project Based Learning in schools.

III- Context and Justification.

Being in an educational era directed towards the promotion of skills and entreneurship, learning nowadays is moving towards more of practical work than lecturing.The vision of basic education today is to make primary school not only a provider of certificates but also a builder of skills and aptitudes in learners. Learners should gain in creativity skills, leadership, entrepreneurship, autonomy and problem solving skills. This possible through the realisation of micro educational projects in school such molding a pot, baking a cake, weaving a basket, producing a broom or any other artifacts. The goal being building an empowered generation

of youths. The National Development Strategy 2030 asserts that with the growing population by 2030 Cameroon will reach a population of 40 million inhabitants with a great majority of youth and that if the population is not well fed, well educated and in good health, the population will be a burden to the state meanwhile youths are supposed to be an asset to the state.

The classical method of teaching which was mostly based on theories proved to be limited to guarantee learners insertion in the job market. This is justified by the rate of youths unemployment in Cameroon. Therefore , Project based learning which is an active method of teaching aimed at preparing learners to career readiness is worth to be supported with the appropriate resources so that learners can gain in practical skills and the vision of basic education be attained.

IV- Objectives

i) General objectives

The project aims at :

- Contributing to youths autonomisation.
- Contributing to carrer readiness
- Contributing on the promotion of entrepreneurhip
- Contributing in the reduction of youth unemployment

Specific objective

ii) The specific objective

The specific objective of the project is to ammeliorate the implementation of project Based learning in Government Primary schools in Mfoundi Division

V-Beneficiaries of the project

Teachers, learners, parents and the society in general

VI- Project Promoter

MEKUI AKOU'OU Marie Joselyne

VII- Stake holders

- Ministry of basic education
- PAREC

- councils
- Parents
- Teachers
- Learners

VIII- Awaited Results

- Schools are provided withfacilities and resources ; pedagogic, material and financial resources

-teachers are trained practically on how to produce some artifacts

-learners acquire practical skills.

IX- Activities of the project

- mount micro educational project projects and conceive project books.
- Reach the Camerooun Educational Support Reform Program (CERSP) to propose practical training of teachers in the production of artifacts
- Meet the headteachers and PTA (Parents /Teachers Association) exegative to provide as a priority some essential materials to schools and eventually council too.
- Request for donations to non governmantal organisntions (NGOs) to support schools in terms of materials
- Propose programs to medias that will advertise project Based learning in schools.

X- Impact of Project Based Learning (Long term results)

- ❖ Increase youth motivation in self-employment
- ❖ Reduction of youths idleness
- ❖ Improving in the creation of minor enterprises
- ❖ Promotion of peace and security

XI- Resources of the project

- ➢ Human resources
- ➢ Material resources
- ➢ Financial resources

X-Financial Plan and Budget

Personal contribution and voluntary contribution of stakeholders.

XI- risks and constraints

- The non implication of partners
- The relunctance of teachers to participate in Project Based Learning
- The non capability of reaching the hierachy (MINEDUB)

XII-Organigram
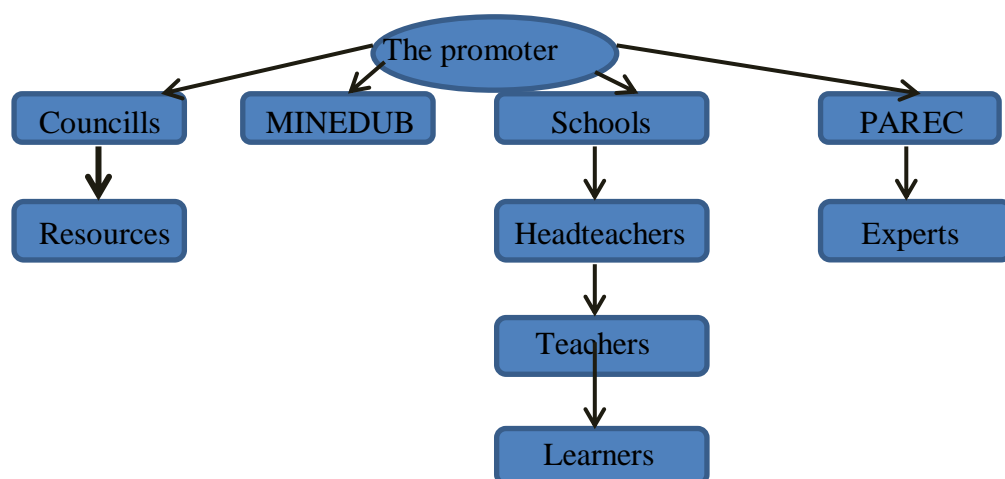
XIII-chronogram
The project can be effective over a period of nine (09) months which correspond to an academic year.

XIV-Log Framework

Intervention frame or chain of results	Observable reliable indicators	Verification sources	hypotheses
1-general objectif **-**contribute to youths autonomisation -promotion of entrepreneurship and reduction of youths unemployment -contributing to career readiness	-95% of learners can produce objects -creation of minor entreprises -95% of learners are orientated in various professional courses	-Practicals in GCE examinations -increase in the request of finances at the National Employment Fund -more admission in technical schools	-Learners may not be fully engaged in PBL Slow intervention of the government -lack of adequate insfrastructure
2-specific objective			

-ammelioration of teacher's implementation of PBL.	-All government primary schools in Mfoundi Division carry on PBL successfully	-reports from inspectorates and delegations	-laxity if the hierachachy
3- awaited results -schools are povided with facilities and resources -teachers are trained practically in PBL. -learners acquire practical skills	-building of classrooms, computer labs, kitchen, workshops. -practical seminars are organised -90% of learners can produce an artifact	-donations from the coucils, NGO's -report from PAREC -performance in FSLC practicals	The non conviction of partners -Teacher's absenteisme in seminars -lack of learner's motivation.
4- Activities -mount micro educational projects and conceive project books -approach PAREC for the practical training of teachers -meet headteachers and PTA exergative to provide minimum facilities for PBL Request donations from councils	-100% of schools have all the necessary stationaries on PBL -Practical seminars are organised -Organistion PTA projects -donations of material resources to schools	-headteachers PAREC -PTA annual report Report from councils	Time factor Teacher's non participation in seminars -non collaborationof PTA Rejection of the requests.

Conclusion

This project is elaborated based on the problem of learner's non acquisition of practical skills due to the difficulties encountered by teachers to implement Project Based Learning in   schools. Obeying to the project elaboration guide we were able to highlight the general objectives of the project, the specific objective, the awaited results as well as the activities of the project. We ended by producing a logical framework of our project which can be effective over a period of nine (09) months aiming at ammeliorating the implementation of Project Based Learning in government primary school in Mfoundi Division.

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APPENDIXES

Appendix 1 : Research Authorization

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

REPUBLIC OF CAMEROON
*****
Peace – Work – Fatherland
*****
THE UNIVERSITY OF YAOUNDE I
*****
THE FACULTY OF EDUCATION
*****
DEPARTMENT OF CURRICULUM AND EVALUATION

Le Doyen
The Dean
N° ...../23/UYI/FSE

AUTORISATION DE RECHERCHE

Je soussigné, Professeur BELA Cyrille Bienvenu, Doyen de la Faculté des Sciences de l'Education de l'Université de Yaoundé I, certifie que **MEKUI AKOU'OU Marie Joselyne**, Matricule **21V3116**, est inscrite en Master II à la Faculté des Sciences de l'Education, *DEPARTEMENT DE CURRICULA ET EVALUATION* Filière : *MANAGEMENT DE L'EDUCATION*, Option : *GESTION DES SYSTEMES D'INFORMATION*.

L'intéressée doit effectuer des travaux de recherche en vue de la préparation de son diplôme de Master. Elle travaille sous la direction du **Pr EYENGA Pierre.** Son sujet est intitulé: « *Project based learning and development of competences in level 3 learners of public schools in MFOUNDI Division*».

Je vous saurai gré de bien vouloir la recevoir et mettre à sa disposition toutes les informations susceptibles de l'aider dans son travail.

En foi de quoi, cette autorisation de recherche lui est délivrée pour servir et valoir ce que de droit.

N90123

Fait à Yaoundé, le......................

Pour le Doyen et par ordre

Dr. Mbeh Adolf Tanyi

Appendix 2 : Questionnaire

UNIVERSITE DE YAOUNDE I	THE UNIVERSITY OF YAOUNDE I
******	******
FACULTE DES SCIENCES DE L'EDUCATION	FACULTY OF SCIENCES OF EDUCATION
******	******
CENTRE DE RECHERCHE ET DE FORMATION DOCTORALE EN SCIENCES DE L'EDUCATION ET INGENIRIE EDUCATIVE	DOCTORAL RESEARCH AND TRAINING SCHOOL IN EDCUATION AND EDUCATIONAL ENGINEERING
	******

QUESTIONNAIRE

THEME 1: PARTICIPANT CONSENT

Dear Respondent,

Iam MEKUI AKOU'OU MARIE JOSELYNE, a Masters II student in the faculty of education in the university of Yaounde 1. I would like you to participate in this survey to enable me complete my Masters thesis entitled **"Barriers to teacher's implementation of Project Based Learning and Learner's acquisition of practical skills"**. The study investigates on the various factors that may obstruct teachers implementation of Project Based Learning in schools and how this affects learners acquisition of practical skills .There is no wrong nor right answer.You just need to indicate your degree of agreement or disagreement on the questions below.Your responses will remain strictly confidential and used only for an academic purpose.

THEME 2: DEMORGRAPHIC INFORMATION

For questions under this section, please tick one choice that is applicable to you.

QO1 Indicate your sub division

	SUB DIVISION	TICK
1	Yaounde 2	
2	Yaounde 5	
3	Yaounde 6	

QO2 indicate your school

GPS EKOUDOU G1	
GPS EKOUDOU G2	
GPPS ESSOS G2	
GPS ESSOS G3	
GPS ETOUG-EBE G1	

QO3 Indicate your gender

Male	
Female	

QO4 Indicate your work statut

Civil servant	
Contract teacher	
PTA teacher	

QO5 What is your level of education

CAPIEMP	
HND	
BACHELORS	
MASTERS	

QO6 Indicate your work experience

1-3 years	
4-6 years	
7-9 years	
More than 10 years	

QO7 what is your age range

20-30 years	
31-40 years	
41-50 years	
51-60 years	

THEME 3: Pedagogic and Materials Resources

Please choose the answer that suits you best by putting a tick in the appropriate box.1) **SA** stands for Strongly Agree,2) **A** stands for Agree,3) **N** stands for Neutral meaning neither agree nor disagree, 4) **D** is for Disagree and 5) **SD** Strongly Disagree

ITEMS		SA	A	N	D	SD
QO8	You have handouts that gives you sufficient information on project-based learning.					
QO9	You have a teachers guide that proposes monthly projects for your class.					
Q10	You have documents for your class that guides you to carry out projects successfully.					
Q11	You have books where projects are designed according to the Intergrated theme of the month.					

Q12	Stationaries (hand outs, text books, teacher's guide…) on project based learning will help you to carry out projects.					
Q13	Your school is gifted with computers devoted to project based learning.					
Q14	Materials such as oven, hammer ,pots, hoes, cutlass, wood, painting materials etc are available in your school for PBL.					
Q15	You happen to seek materials from parents and pupils to carry out a project.					
Q16	The available learning materials in your school enable you to carry out projects easily.					
Q17	Parents easily provide materials for projects realisation when asked.					
THEME 4: In -service Training Put a tick on the answer that suits you best.						
Q18	You are sufficiently trained to handle PBl in your class					
Q19	The time allocated for PBl during seminars is enough for you to master this new concept					
Q20	You have attended many seminars and pedagogic animations on project-based learning					
Q21	The subject matter of seminars on Project Based Learning are well structured and permits you to be versed with this new pedagogy					
THEME 5: The class size Please tick in the answer that suits you best						
Q22	You have a normal enrolment of learners that is 50 learners in class as the norm states					
Q23	You face difficulties to group your learners during project Based Learning					
Q24	Classroom management in an overcrowded class absorbs a lot of time to carry to out Project based learning.					
Q25	The number of learners in your class demotivates you to carry out projects					
THEME 6: Learners acquisition of practical skills						
Q26	Your learners have produce some artifacts individually during Project based learning.					
Q27	Your learners interact easily and are active in group work during Project Based Learning					
Q28	Your learners express creativity skills in the course of Project Based Learning.					
Q29	Learners are versed with some ICT tools in your school					
Q30	Material resources will enable learners to acquire practical skills easily					
Q31	The present conditions in which you carry out project Based learning assures learners acquisition of practical skills;					

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THE UNIVERSITY OF YAOUNDE I
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FACULTY OF SCIENCES OF EDUCATION
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DOCTORAL RESEARCH AND TRAINING SCHOOL IN EDCUATION AND EDUCATIONAL ENGINEERING
******

INTERVIEW GUIDE

QI) Which pedagogic resources do teachers use to guide them in project realisation in their different classes?

Q2) Which concrete materials are available in your school that facilitates teachers to carry out projects?

Q3) How is the financial budget allocated for projects used in your school?

Q4) Which are the different ways in which teachers are trained on project-based learning?

Q5) Do teachers easily carry out all their projects in their different classes after seminars and pedagogic cells? Is there an amelioration?

Q6) How do teachers go about with the carrying out of projects in overcrowded classes?

TRANSCRIPTION OF PARTICIPANTS RESPONSES OF THE INTERVIEW GUIDE.

FIRST RESPONDENT

Q1) Which pedagogic resources do teachers use to guide them in project realisation in their different classes ?

R) well, one of the pedagogic resource we use first of all, we use the curriculum, then the scheme of work,then the textbooks that are offiially proscribed by the ministry of basic education. But for now madam there is no pedagogic book as such specifically designed for projects. You know projects come as a result of a problem being identified. A project is designed according to a problem identified. And so the only thing for that help teachers to design project are the textbooks as earlier said.

Q2) Which concret materials are available in your school that facilitates teachers to carry out projects ?

R) Those material resources that teachers use are the textbooks that are available for them. The texbooks are beeing provided to them by PAREC from class one to six. Especially in disciplines like mathematics, English and French. Beside that teachers also make a lot of research in their computers.

Q3) How is the financial budget allocated for projects used in your school ?

R) Madam there is no heading as far as the budget allocation is concerned that says that this is budget allocation for projects. but you know when the budget is drawn in the academic year everything that that money is to be use is for the enhancement of the teaching/learning process. And so the entire budget is based on the ammelioration of the teaching /learning process.

Q4) Which are the different ways in which teachers are trained on project based learning ?

R) Yes , at the beginning of every year we first af all have an in-service training at least three days before school starts and within the year we attend seminars.We also have pedagogic cells where issues like projects which is a new phenomenon in the educational system today are being discussed and teachers that are more well informed about it help other teachers in their difficulties.

Q5) Do teachers easily carry out all the projects in their different classes after seminars and pedagogic cells. Is there an ammelioration ?

R) well ... there is always a little ammelioration because there is follw up. You know normally at the end of every pedagogic month a teacher is expected to come out with a project. Though due to some reasons beyond control some teachers don't come out with that number.

Q6) How do teachers go about with the carrying out of projects in overcrowded classes ?

R) I don't see any problem with an overcrowded class carrying out a project. A teacher who is versed with projects will understand .. .the children are shared in groups as many as they will be as many ideas will come up. So an overcrowded class should be an added advantage to a successful

project.

SECOND RESPONDENT

Q1R)
Our first reference is the curriculum that gives us the general idea on the concept of project based learning. then the schemes of work and also the texbooks are the official references that teachers use.

Q2R)
(smile) ... well madam concret materials that teachers use are derived from the project that the teachers intends to carry with his or her learners. Most often we see objects arrranged from cartoons ,bottles,old toys etc .. Learners most of the times bring these local materials.

Q3R)
Madam when you say financial budget allocated for project based learning well to my knowlegde there is no budget specially attributed to projects or project based learning.The school finances are being managed by the PTA and decides on how the money should be used.

Q4R
We are all trained through seminars, especially zonal seminars always referred as big seminars where among other points we are trained on project based learning.we also have little seminars that is pedagogic cells where we try to work on Project based learning.

Q5R)
Eeehh well madam i must admit that project based learning is a new concept and teachers are still being acquainted to it.We cannot deny the fact that seminars are of great importance but to answer to your question few teachers succeed to carry out project in their classes…really few

Q6R)
There is nothing we can do as far as overcrowded classes are concerned. It is a common phenomenon in government schools (laughs) but should we send children away ?? they all need to learn. yeah, teachers do complain of learners being rowdy and indisciplined in class but we always advice them in classroom management .

THIRD RESPONDENT

Q1R)
The pedagogic resources at our disposal are textbooks, scheme of work, the curriculum ... i think thats all we have that guides us in teaching and project based learning.To my knowledge i don't think there are books designed only for projects….no. Teachers use the texbooks in the various classes.

Q2R)
The school has a computer and i think teachers asks children to come with the needed materials depended on the project that they want to carry and teachers too may come with materials and anything in school that could be of help , teachers use.The initiative comes from teachers.

Q3R)
Financial bugdets for project based learning ?there is no finances that we have for projects .the school budget is well spelt on the different expenditures of the academic year and there are many defined rubrics where the money is spent.

Q4R
Teachers and of course headteachers are trained on project based learning through seminars, pedagogic cells….we usually have seminars at the beginning of every academic year And pedagogic cells in the course of the school year where all pedagogic issues are discussed, and ideas are shared on how projects can be carried out.

Q5R)
You know madam this concept of projects is really a big challenge to teachers.Normally teachers are to carry a project in all the intergrated themes and they are eight intergrated themes but ...any way some teachers are trying with their learners ... but others are very reluctant to carry projects ...Some even write down their projects in their project books because teachers have a

project book where they write down their different projects but don't carry out those projects. so it is really difficult to say that there is an ammelioration after seminars maybe a slight especially on teachers who put efforts.

Q6)

They cope as they can. Though it is not easy to control learners during projects because some will take it as fun time but when learners are grouped and disciplined with other techniques of classroom management teachers try their best with their learners.

FOURTH RESPONDENT

Q1R)

Pedagogic resources teachers use are the curriculum, the schemes of work and the textbooks....I think those are the references used both for normal teaching and project based learning

Q2R)

We have computers and labtops that were offered to the school by the world bank via the delegation of basic education ...a donation. you know everything is now computer computer. At least teachers and learners can use anytime they need.then most of the times learners are asked to bring objects or any material needed from their homes.things that they can easily have of course for example teachers can ask learners to bring palm fronts to school for the fabrication of a broom.that's each child will bring even five palm fronts then when all the palm fronts are joined so may brooms can be made ...(smiles). It is an example.

Q3R)

There is no particular budget assigned for projects under project based learning.But a budget assigned for the functionning of the school in the whole academic year. But we try our best to make things move well through out the academic year.

Q4R)

Teachers attain seminars, pedagogic cells and any other type of training that may occur for example the PAREC training which always conduct very good seminars where teachers are still trained on the understanding of the curriculum, the teaching of some difficult subjects and project based learning

Q5R)

You know madam this issue of project based learning is still very new in our educational system, teachers try but globally it is very difficult for teachers to implement project based learning to be candid enough. Theorically teachers write their projects every month because when inspection is done on projects at least they have to escape from problems but concretly we don't actually see projects as expected.and most often thesame things are produced every time.

Q6R)

They usually share their learners in groups ,that creates competition though not easy at all with the population...because to discipline learners in a class with a high enrollment of learners is not very easy but you know majority of the classes have two two teachers. At the end sometimes we are impressed with what some learners realise as projects.

FIFTH RESPONDENT (a teacher)

Q1R)

We have the curriculum,the scheme of work ,textbooks.Those are our references

Q2R)

We don't have material resources provided by the school. we always asks learners to bring things from their homes and even sometimes i myself can provide something i see will be neccesary for me to carry a project that children cannot provide. For example if we have a project on food and nutrition lets say we want to bake a cake.i will asks learners to bring flour .eggs,butter ,etc .i may add what is lacking or provide the pot, spoon dish and so on. that is how we struggle do carry out projects

Q3R)

We dont know how the financial budget is managed for project based learning we don't even know weither it exist or not. Headteachers can answer best to that question.

Q4R)

We attain seminars, we also have pedagogic cells in our school and zones.

Q5R)

It is true we learn a lot from seminar because all aspects of education are tacked in these seminars but i have not yet attained a seminar based only on project based learning. Project based learning is always a sub topic among others consequently they rush through it so i if am to talk about what i experience is that it is not still easy for me carry out all the eight project in the academic year despite the seminars.There are even some intergrated theme that i don't really know the type of project i can carry out.

Q6R)

It is not really easy for us with overcrowded classes.The only alternative we have is group work. But the difficulty we have is that when many groups are created with few learners the work load is too much on us to attend to all the groups and follow up the project whereas creating few groups with many learners causes indiscipline among them. But some groups sometimes really offer us good products and satisfaction.

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