UNIVERSITE DE YAOUNDE I
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CENTTRE DE RECHERCHE ET DE FORMATION DOCTORALE EN SCIENCES HUMAINES, SOCIALES ET EDUCATIVE
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UNITE DE RECHERCHE ET DE FORMATION DOCTORALE EN SCIENCES DE L'EDUCATION ET INGENERIE EDUCATIVE

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DOCTORAL RESEARCH UNIT FOR EDUCATION SCIENCES AND EDUCATIONAL ENGINEERING
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THE PEDAGOGICAL INTEGRATION OF THE INFORMATION AND COMMUNICATION TECHNOLOGIES IN PRIMARY SCHOOL.

CASE OF THE GOVERNMENT BILINGUAL PRIMARY SCHOOL BASTOS – YAOUNDE.

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Dissertation in partial fulfillment of the requirement for a Master's Degree in Fundamental Studies in Education

Speciality:

Sociology and Anthropology of Education

Presented by

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Bachelor's Degree in Sociology

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ACADEMIC YEAR: 2021/2022

To:

My mother, Mama Juliana MANJUNOH,

My father, of blessed memory, papa KWENGEH Mathias,

My wife, KWA Rosemary NOMBOH,

My children, KWENGEH Tresor, KWAITIE Brandon and KWENGEH Desmond.

ACKNOWLEDGEMENT

For this work to come to a successful end, intellectual, moral and financial assistance was acquired from a number of persons to whom I extend my heartfelt gratitude. This goes first to all the lecturers and the administration of the Faculty of Education especially of the Department of Fundamental Studies in Education (EFE), and Professor EYENGA ONANA Pierre Suzanne, the head of Department.

Thanks particularly to Professor Christian BIOS HELEM who guided, directed and examined this work. His guidance, observations and corrections contributed to enrich my research capacity. Thanks Equally go to Professor Armand LEKA ESSOMBA, Professor Emmanuel BECHE, Professor MAIGARI, Dr. Raphael AKA'A, Professor. NNA NTIMBAN, Dr. MAPTO and others who are not named here.

I equally recognize the assistance of Professor Michael NKWENTI at the Ministry of Basic Education, Inspectorate of Pedagogy in charge of Computer Science Education. His advice and recommendations contributed much as well as documentary assistance.

The assistance from my classmates cannot be underestimated, especially Roger Roland EKENGUE, and SOUSSE KORE, who were always available. I recognize any bit of academic assistance they gave which helped me to get to this point.

Thanks also go to the management of the Government Bilingual Primary School Bastos Yaoundé, especially the head Mistress, teachers and pupils. I thank them for the time they sacrificed to attend to me during the interview. The head mistress was so hospitable and collaborating as she enabled me to get the information I needed.

In the same line, I thank the manager of Graceland Business Center cybercafé at Carrefour carrier Yaounde, for giving me access to his business premises where I observed learners, how they use these technologies and their attitude towards these tools.

I cannot end this page of acknowledgement without thanking Mr. TIEMINI Michael, computer analyst for his assistance to go through this work.

SUMMARY

LIST OF ACRONYMS

NAICT: National Agency for Information and Communication Technologies

CAMTEL: Cameroon Telecommunications

CRTV: Cameroon Radio and Television

GBPS: Government Bilingual Primary School

ICT: Information and Communication Technology

MRC: Multimedia Resource Center

MINEDUB: Ministry of Basic Education

MINPOSTEL: Ministry of Posts and Telecommunications

MOG: Millennium Objective Goal

NAIC: National Agency for Information and Communication Technologies

NGO: Non-Gouvernemental Organisation

PTA : Parents Teacher's Association

ROCARÉ : Réseau Ouest et Centre Africain de Recherche en Éducation

TRA: Telecommunications Regulatory Agency

UNDP: United Nations Development Program

UNESCO: United Nations Educational Scientific and Cultural Organization

UNICEF: United Nations International Children's Emergency Fund

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ABSTRACT

This research is on the pedagogical integration of the information and communication technologies in primary schools, case of the Government Bilingual Primary School Bastos, Yaoundé. It seeks to examine the appropriation and use of the information and communication technologies by the pupils of this institution. The main question of research is: how do the pupils at this basic level of education appropriate and use these technologies in their pedagogical practices? The hypothesis in this case will be: the appropriation and proper use of the ICTs by learners can determine the quality of knowledge they receive. The sampling option that will be used is the random sampling, as each element of the population has same chances to be selected to test and confirm hypothesis. To get to this, the methodology we shall adopt is the qualitative method where the tools for the collection of data include documentary analyses through literature review, interview, direct and participatory observation. Facts collected were submitted to analysis of the content to understand the level of appropriation and practical use of these modern tools in the process of apprenticeship. We did not only see how learners use ICT but also how the teachers and school administrators use the ICTs to accomplish pedagogical and administrative duties. In a nutshell, we have seen how this technological innovation has changed the learning and teaching method from the traditional method to the modern pedagogical method. The results arrived at reveals that the teachers have revised their strategies to include the ICTs in their pedagogical practices. The basic sector of education is henceforth provided with the resources of ICT to facilitate the process of education, though not sufficient. The school administration has equally seen their work facilitated with the use of the ICTs in the general management of the school.

Key words : Information and communication technology(ICT), pedagogical integration, appropriation, use.

RÉSUMÉ

Cette recherche porte sur l'intégration pédagogique des technologies de l'information et de la communication dans les écoles primaires, cas de l'Ecole Publique Bilingue Bastos, Yaoundé. Il vise à examiner l'appropriation et l'utilisation des technologies de l'information et de la communication par les élèves de cette institution. La question principale de la recherche est la suivante: comment les élèves de ce niveau d'éducation de base s'approprient-ils et utilisent-ils ces technologies dans leurs pratiques pédagogiques? L'hypothèse dans ce cas sera la suivante: l'appropriation et la bonne utilisation des TIC par les apprenants peuvent déterminer la qualité des connaissances qu'ils reçoivent. L'option d'échantillonnage qui sera utilisée est l'échantillonnage aléatoire, car chaque élément de la population a les mêmes chances d'être sélectionné pour tester et confirmer l'hypothèse. Pour y parvenir, la méthodologie que nous adopterons est la méthode qualitative où les outils de collecte de données comprennent les analyses documentaires par le biais d'une revue de la littérature, d'un entretien, d'une observation directe et participative. Les faits recueillis ont été soumis à l'analyse du contenu pour comprendre le niveau d'appropriation et d'utilisation pratique de ces outils modernes dans le processus d'apprentissage. Nous n'avons pas seulement vu comment les apprenants utilisent les TIC, mais aussi comment les enseignants et les administrateurs scolaires utilisent les TIC pour accomplir des tâches pédagogiques et administratives. Dans un piège à noix, nous avons vu comment cette innovation technologique a changé la méthode d'apprentissage et d'enseignement de la méthode traditionnelle à la méthode pédagogique moderne. Les résultats obtenus révèlent que les enseignants ont révisé leurs stratégies pour inclure les TIC dans leurs pratiques pédagogiques. Le secteur de base de l'éducation dispose désormais des ressources des TIC pour faciliter le processus d'éducation, mais pas suffisamment. L'administration de l'école a également vu son travail facilité par l'utilisation des TIC dans la gestion générale de l'école.

Mots-clés : Technologies de l'information et de la communication (TIC), intégration pédagogique, appropriation, utilisation.

GENERAL INTRODUCTION

1. CONTEXTS AND JUSTIFICATION

This work seeks to understand the pedagogical integration of the information and communication technologies in primary schools and the use of these tools in the process of teaching and learning. It will give us information on the increasing prevalence of ICT and their use in education. ICT is becoming so prominent and their implementation in school, access and use is so significant and unavoidable in education. The information and communication technology is an innovation that is present in almost all aspects of our daily lives and has brought many changes in our daily activities particularly in education. We have seen the rush for smart phones by almost all the citizens and all ages in our society. Each individual has its own use of these new instruments, what interest us here is the pedagogical use in the interest of education.

Recently, the head of state in 2016 offered computers to students of higher education supplied by the Chinese enterprise Sichuan Telecom Construction Engineering to promote the development of numerical education. This is to encourage the computerization of the Cameroonian system of education. In this same light, we observe the creation of the Center for Technological Excellence Paul Biya 2012 in Yaounde, testifying the necessity of these tools for our pedagogical practices. These tools may not be of help to the students in a situation where they are not computer literate. That is why our study is based on the primary school, where the pupils need to acquire the culture of ICT to facilitate their pedagogical practices.

Some writers have written on this topic, but they have not written or have not written enough on the integration of these tools in the basic level of education. Though Mbangwana and Ondoua (2006) wrote on the integration of these technologies in pubic primary schools in Cameroon, it is on a general perspective. I researched on primary schools with precision, that is, the pedagogical integration of ICT in a specific context, which is the Government Bilingual Primary School Bastos-Yaoundé. The result and recommendations arrived act can be generalized to the other primary schools all over the national territory for a better future for education with these technologies.

The information and communication technologies is a technological innovation which has dramatically changed the teaching and learning process, opened new learning opportunities and provide access to educational resources. It is aimed at improving the educative situation through the method of teaching, procedure and content, which will lead to new objectives to ameliorate the quality of education, Fonkoua (2006). The introduction of these technologies in education is backed by the Presidential Decree N^{o} 2002/004 of 4th January 2002 and decision N^{o} 65c/88/MINEDUC/CAB of 18th February 2001 of the Ministry of Education. These are the two main text that carry the introduction of the information and communication technologies in the school program. Tchameni, and Karsinti, (2008).

The basic education is seen as the backbone of an education system. The challenge of providing school with these modern technologies is to improve on the quality of knowledge transmitted to learners. Information and knowledge are fast growing in modern societies thanks to the information and communication technologies (ICT_s). Education today is fast changing from the traditional and classical activities of teaching to modern innovative technological method. Depover and Strepelle (1997). The active population needs to be trained in the use of these tools in education to facilitate the process of teaching and learning.

This research is focused on the basic education with the Government Bilingual Primary School (GBPS) Bastos Yaoundé as our case study. The reason for primary school being that, the pupils at this level need to be included in the culture of ICT, which they will meet in the process of learning as they progress in education. That is why Leborgne-Tahiri, (2002), talks of the computerization of primary schools to inculcate a new style of apprenticeship and a culture of the information and communication technologies in learning at the basic level of education. Since basic education is seen as the back born of every educational system, the government has the duty to ensure that every school has access to these ICT tools, which will benefit the learners. Our children need high quality teaching and learning, as it will create a solid foundation in the process. The Ministry of Basic Education has the vision of “quality technological driven education”. This is to ensure that, the process of teaching and learning be capable to meet targeted objectives. To get to this, stakeholders should see to it that school obtains the necessary resources as well as a conducive learning environment. Talking of literacy today is no longer the capacity to read and write but computer literacy. So modern education demands that learners be

introduced to the computerize world which they will meet in all aspects of life in the modern society. The policy and strategy of the government is to enable Basic education possess and use of the information and communication technologies, which will create access to quality education for all.

The reason for the choice of the Government Bilingual Primary School is that it is a bilingual school and receives children from different social background. In this school children of different social categories meet and interact. It satisfies the politics of educations for all without discrimination as to class, gender and origin. This was launched in 1990 in Jomtien, at the initiative of UNICEF, UNESCO, PNUD and The World Bank to generalize education at the base. This choice meets with the objective of inclusive education to all social categories. The Government Bilingual Primary School Bastos is an example of social inclusion, with a demonstration of social integration.

In the Cameroonian system of education, the information and communication technology has become an unavoidable tool, which is present in the daily activity of teachers, learners and researchers. Technology is evolving rapidly with continuous evolution. It is used as tool for inquiry, a tool for construction, a tool for communication, a tool for productivity and a tool to assist in problem solving, Thomas et al. (2002). The information and communication technologies hold the future of education as well as any other aspect of human existence. Education has an interest in it because it plays a great role in building the competence of learners; improve capacities as well as output. Reason why this research on the impact of the integration of ICTs in the process of learning. The integration of ICTs in the system of education has provoked a change from the traditional method to the new digital system of education. The introduction of these technologies in schools demands the putting in place of strategies, aimed at improving the pedagogical and social practices of both teachers and learners. ICT serves school both for pedagogical and administrative purposes for the smooth functioning of the school. This permits an opening to the world and requires diverse studies, pedagogical and didactic for a better utilization, Matoussi, (2006).

2. RESEARCH PROBLEM

The problem of research emanates from the fact that knowledge of the information and communication technologies is of great interest to education today. This interest is found in the desire to put to use this technological innovation in the field of education and in the classroom. It is also the desire to improve the quality of knowledge that is transmitted to learners. The intension of the government to insert ICTs in the system of education since the year 2001-2002, Beche, E. (2013) is to ameliorate the environment of teaching and learning. There is consequently the need to see how this is applied and its contribution to improve the practice to enable leaners reap maximum benefits offered by this innovation. Today, the information and communication technologies has become indispensable in the daily activity of students, teachers and researchers, as it is an element of quality improvement. Therefore, the question of research comes from the desire to know how this integration in apprenticeship can affect the process of teaching and learning. Research on the integration of ICTs in education is of necessity as it can lead to improvement of strategies in the system in this world, which has become a global village thanks to information and communication technologies. That is why the third chapter of this research is concerned with the witnesses of the integration of ICTs in education. This will guide stakeholders to improve strategies to overcome the obstacles so that the impact of ICTs in education can be positive. The objective of this research is to find out how the pedagogical integration of ICTs in education can contribute to the process of apprenticeship. The society is in need of digital literate citizens in the use of ICTs in pedagogy, as this will lead to greater understanding, improve skill, creativity and greater outputs. This confirms the fact that ICTs is a real potential to education where the rule of the teacher is very important to impart knowledge and create awareness of the necessity of these technologies in the learning process

3. PROBLEMATIC

The problematic in this work is centered on the integration of the information and communication technologies in education. This shall be seen through the following points:

- The technological disposition of ICTs in schools.
- The appropriation and use of ICT by learners.
- Difficulties faced in the process of integration of ICT in school.

Concerning the government policies and strategies on the integration of ICTs in education in Cameroon, Koutou N'Guessan, (2009) looks at the politics of techno-pedagogical innovation and organizational strategies. He sees that, if properly applied and managed, it will have a positive impact on the process of teaching and learning. The government has as challenge to provide schools with these modern technologies to enhance the quality of education for the benefit of apprenticeship. Owing to this importance, the public and private sectors join hands to ensure that pupils have access to the tools of the information and communication technologies for high quality teaching and learning. With the technological dispositions of infrastructures and equipment of information and communication technologies in primary schools, research will include the availability of such equipment, as it is an unavoidable factor to measure the level of integration of ICTs in school. Do the pupils have access to the necessary ICT resources such as infrastructure, electricity, computers and internet connection? These elements are seen as essential for the proper integration of ICTs in education. Onguene Essono, (2006).

Concerning the information and communication technologies in the improvement of apprenticeship, we are to look at the manner in which teachers exploit these tools in their pedagogical practices. What use do learners make of ICT tools for it to create an impact in the process of learning? What are the educative potentialities that can favor apprenticeship and have a positive impact on the result of learners? Fonkoua. (2006).

As to what concerns the difficulties that hinders the integration of ICTs in education, we shall look at the factors that retard the implementation of this innovation. We shall study the points of view of actors to make good diagnosis of the difficulties they face with these technologies and the possible solutions that may ameliorate the situation, give education the quality it deserves and get it accessible and affordable to a greater population.

4. QUESTION OF RESEARCH

For us to get a better understanding of our topic of research, we shall formulate some research questions, which will include the main question and some specific questions.

4.1. The main question of research is:

How do learners appropriate and use the information and communication technologies in learning?

4.2.Specific questions:

To facilitate the organization of our work, we shall be guided by some specific questions.

- What are the technological dispositions that permits the pedagogical integration of ICT in the Government Bilingual Primary School Bastos, Yaoundé?
- How do the pupils appropriate and use these technologies in the process of learning?
- What are the difficulties encountered in the process of integration of ICT in education?

5. LITERATURE REVIEW

The information and communication technologies are central to the changes taking place all over the world. The digital media has revolutionalised the information society causing a great change in the teaching and learning process. It has opened new learning opportunities, which takes knowledge closer to learners. This is testified by the fact that many authors have carried out research and published books on this technological innovation.

In this literature review, we are going to see what researchers have written on the integration of the information and communication technologies in education through the following preoccupations:

- The technological dispositions of the tools of ICTs and their accessibility by learners.
- The appropriation and use of the information and communication technologies in the process of teaching and learning and its contribution to ameliorate the system of education.
- The factors that obstruct the proper integration of these tools in schools.

5.1 The technological disposition of the information and communication technologies and accessibility by learners.

An innovation can only attain its objectives where the necessary equipment are available and accessible to the users. Concerning the tools of ICT in schools, the government sees into the

provisions of the infrastructures and technological instruments for learning. In this light, Leborgne-Tahiri, (2002) sees that the tendency seems to be in favor of computerization of primary schools, so as to inculcate into the young learners a new style of apprenticeship, a new behavior and culture of ICTs in this world dominated by modern technologies. This has led to the creation of multimedia centers (MMC) in some schools in the country. There is also the creation of Pilot Centers for the pedagogical integration of ICT in education, Beche, (2013). In the process of technological innovation, Depover (1999) sees that the teacher has the rule of directing, the availability of these tools remain very necessary. The teacher is the engine but that engine cannot function without the technological equipment. The effective and efficient pedagogical use of this equipment in class depends on the teacher who develops technological habits in learners. This is however made possible through the available tools put in place to that effect. That is why in 2001-2002, the government lunched the project within the framework of the integration of ICTs in schools, to create Pilot Centers for multimedia resources in some schools in urban centers. Beche, (2013). To facilitate access of these technological tools in school, Karsenti and Tchameni Ngamo, (2009) called for the physical integration of ICT tools in the classroom. The integration of these computerized technologies in education as become unavoidable to any system of education that has to survive. Barry (2011) looks at the approach of the pedagogical integration of ICT in education through the appropriation of these tools and their effective use in the teaching method. The acquisition of this technological equipment in schools couple with the capacities that is developed by teachers will permit an effective use, which will render these tools a perfect pedagogical instrument. Karsenti, (2008) studies the pedagogical appropriation of the ICT tools by directors of the schools. This will ease its integration, as these directors are responsible for organization, plannification and management of these school programs. An efficient management of school program will ensure the proper use of these technologies for purpose, which will ease the improvement of the process of apprenticeship. Koutou N'Guessan, (2009) on his part looks at the politics of techno-pedagogical innovation and the organizational strategies. He sees that if well applied will facilitate its integration in schools at the interest of learners as it brings a change to ameliorate the process of learning.

5.2 The appropriation and use of the information and communication technologies in the process of teaching and learning and its contribution to ameliorate the system of education.

Concerning the appropriation and use of the information and communication technologies in education, it is observed that these tools have potentialities that can help ameliorate the process of learning if well exploited for academic purpose as observed by Beche, (2013). Political actors and stakeholders in the field of education are in search for solution to give the process of teaching and learning a good quality and accessible to a greater population. This is by paying attention to the potentialities that this information offers which helps ameliorate pedagogical practices. Cheneau-Loquay (2001) observes and increase in the rate of consumption of the equipment and services linked to the information and communication technologies, given example of increase use of mobile phones and internet all over the Yaoundé. He sees that this can be a good potential to accelerate development and ameliorate the quality of education. Glikman (2002) looks at these potentialities and conclude that, if the different actors in this domain can exploit them positively, then it can bring fort solutions that will give education the quality it deserves, where learners can benefit by receiving improved knowledge. Learner equally have the opportunity to access to quality knowledge by the use these modern technologies. Fullan, (1998) sees that this new method of apprenticeship can have an influence in the system of education. These technologies need to be adapted he says and implemented with the aim of extending new ideas and a new pedagogical approach. All this with the desire to ameliorate the process of apprenticeship. Still with the aim of improving the process of learning, Ferry, (1999) sees that if this innovation is well integrated it will give an opening to new opportunities, which will lead to the creation of new curricula. This will increase the quality of knowledge offered to learners who are seen as the final consumers of these technologies.

Looking at the possibilities these technologies offer in education, Karsenti, and Tchameni, (2009) see the pedagogical integration of ICTs in education for the purpose of development of competence. Integrate ICT in school will get learners appropriate it especially in respect of prescribe rules to that effect. They observe that developing countries has as mission to better prepare their citizens to meet the challenges of the third millennium, so they have to work in favor of the integration of these technologies in their system of education. This will have an impact on the quality of education and increase the number of learners who will have access to education. Another writer who looked at the contribution of the ICTs in improving the process of apprenticeship is Tchombe, (2006) who sees that the different actors in the field of education need to access these technologies and give it an academic use. He observed that the presence of

cyber café is an advantage to learners and education as a whole. This is because it gives access to learners who consult documents online, download and store learning material with the different tools of ICT. This is an advantage to education as quality education is at the reach of all. This innovation to Fonkoua, (2006) is aimed at improving educative situation through the method of teaching, procedure and content, which will lead to new objectives to ameliorate the quality of education. It can equally improve the results of learners because the educative potentialities they have can favor and support apprenticeship and ameliorate pedagogical practices. In a situation where the actors in education are in search for solution to make knowledge accessible and of quality to a greater, population, the information and communication technologies can be a solution to overcome the challenges in education. In this era of modern technologies, attention should be paid to its proper use so that it can improve the quality and assure a brighter future for education. Since ICT is full of potentialities in favor of apprenticeship, Depover, (1999) sees the teacher as having a major rule to play in the process. Therefore, for school to better integrate ICTs, it is through the teacher who on his part has to renew his method of action and redefine his pedagogical practices to include the use of the information and communication technologies. This is a new pedagogical approach put in place at the service of learning which considers training and apprenticeship as a process of joint contribution. Here the teacher has to make the learner to see the necessities of these technologies in the process of education. This is what will give a push to the objective of this innovation, which is to ameliorate the process of learning and guarantee a brighter future for education with the use of the information and communication technologies.

5.3 Factors that obstruct the proper integration of the information and communication technology in school.

The information and communication technologies represent an important element in education for the attainment of the millennium objective goal (MOG) for development. There are some conditions, which retard this objective such as inappropriate or lack of infrastructures and equipment, irregular energy supply and internet connection as well as the competence of teachers. Djeumeni Tchamabe, (2010) and Cuban,(2001) bring out the main weaknesses of these technologies in school and points out some recommendations to contribute renew the realities in this direction. Tchombe, (2006) talks of the insertion of the information and communication

technologies in some Cameroonian schools, but the problem is the ratio of computer per student, which is too low. He brings out the problem of insufficient ICT equipment in our schools. This he says hinders the evolution of ICT in education. Onguene Essono and Onguene (2006) on the integration of modern technologies in the process of teaching and learning look at the stakes and challenges related to the pedagogical practices in this era of techno-pedagogical innovation. Though it motivates the learners, it sometimes troubles some teachers who are not having enough competence in this innovation. They see that some teachers are reluctant to adopt these tools in their pedagogical practices. Leborgne Tahiri (2002) points out some factors that render the computerization of schools difficult. Same as Djeumeni Tchamabe, (2010) he sees that these new technologies in education has some weaknesses such as lack of qualified personnel, ill adapted infrastructure and equipment, irregular energy supply and low debit internet connection with high cost. Karsenti, (2008) equally observes that some of the weaknesses of the integration of ICT in education is the fact that it is not well understood. The pedagogical use is still limited in many schools in Africa, especially in rural areas where the infrastructure and equipment of ICT are not available, not to talk of energy supply and internet connection. Duchateau, (1996) saw as weakness the lack of qualified staff who are confronted with new practices which they are not yet familiar with and are not prepared to face. He saw this as a handicap in the process as it creates resistance. It is more a problem because teachers are not accompanied enough to meet up with the challenges. There is a deficit in training and recyclage. The number of qualified human resources is limited. All these factors contribute to slow the process of integration of the information and communication technologies in education. These obstacles can serve the stakeholders in the field of education to rethink the method and strategies to overcome these weaknesses so that the proper integration of ICT in education can be realized in our schools.

6 . HYPOTHESIS

Regarding the hypothesis, we shall look at the main hypothesis of research and secondary hypothesis.

6.1 The main hypothesis

The process of teaching and learning in the Government Bilingual Primary School Bastos, Yaoundé can be improved if the technological dispositions of the infrastructure and equipment of

ICT are made available and the proper use made in apprenticeship. A study of the appropriation of these technologies and its proper use will give us a picture of the contributions it can make to improve the process of education.

6.2 Secondary hypothesis

With the secondary hypothesis, we shall look at the technological disposition of ICT equipment and how it is being used to make an impact in the process of teaching and learning. The following hypothesis shall therefore be looked in to.

- Proper technological dispositions of adapted infrastructures and equipment can lead to an effective integration of ICT in education.
- The respect of prescribed use of the ICT tools, can lead to a positive impact on the process of apprenticeship and contribute positively in the process of education.
- Proper diagnoses of the difficulties faced by this integration can lead to the discovery of appropriate methods to overcome the obstacles.

7. METHODOLOGY

Our methodology is based on the empirical approach, which is aimed at collecting data for our research. We consult documents that treat facts concerning the integration of the information and communication technologies in education. We equally consult persons who can provide us with information. This is a systematic process, which will permit us to acquire the knowledge we need for our work. The aim of this methodology is to easily understand, explain and describe certain phenomenon in relation to our topic of research.

7.1 Explicatory theory

To get to the objective of this research, the methodological process we shall follow is the qualitative method. This method is used to exploit facts through interview in order to get the actors opinion on what they think of the integration of ICT in the process of teaching and learning and how it can improve the quality of knowledge transmitted. This is an attempt to

understand the dynamics of the integration of ICT in primary schools particularly in the Government Bilingual Primary School Bastos, Yaoundé. Our method will be qualitative because we place emphasis on actors who are the main users of this technological innovation in education, Donez, (2011). We shall therefore be interested in their actions, opinion, discussion and interpretation. Qualitative method will give us what, who, where, when, why, how and under what circumstances events unfold. This is concretized with interview and direct observation, which will help us to acquire the information that is necessary for the accomplishment of our work.

Qualitative method is used to explain and analyses the appropriation, use and impact of the pedagogical integration of ICT in the process of learning. Emphases are equally placed on the actors who are the teachers, the management of the school and learners who are at the center of this technological innovation. Attention is paid to the manner in which users understand and explain their point of view on the subject matter of our research. This will enable us to understand the dynamic of the appropriation of ICT by learners and the impact it has on learning. The opinion of the learners need to be taken into consideration owing to the fact that they are those to whom this pedagogical integration is of interest and they are the main beneficiaries. The qualitative approach is equally essential for understanding the meaning, the sense and action that users share on these new technologies. This renders evident the signification of users, their particularities, diversity and how it affects the quality of knowledge. This technique of research helps us to establish scientific facts essential for objective findings.

7.2 Tools for the collection of data

The collection of data for research is a methodology, which facilitates the progress of research. The data and information collected is diverse, each type of research requires tools that correspond to context and specificity. In the case of research on the impact on the pedagogical integration of ICT in the process of learning, the appropriate tools will include documentary analysis, interview and direct observation. Note shall be taken of questions as what, who, where, when and how. Searching for answers to these questions will guide the researcher to mobilize facts that will enable the realization of the objective of research.

7.2.1 Documentary Analysis

As a tool for the collection of data we went in for documentary analysis that is consult what others have written on the pedagogical integration of ICT in the process of teaching and learning. Through this method, we are able to get the opinion of other researchers, their findings and the conclusions they arrived at. This will permit us to make a comparative analysis of the different practices, bringing out similarities and differences between the various phenomena of our study. This will lead us to draw pertinent conclusion. Such conclusion will only be arrived at where the documents consulted are equally pertinent and of quality concerning context.

7.2.2 Interview

Interview is a conversation or questioning for obtaining information, to find out the opinion of actors on the precise topic of research. It is communication between two or more persons to with the aim of receiving information on a particular phenomenon. Interview is conducted in such a way as to get detailed information on some defined issues. It should be done in a kind manner to understand and convinced your informant to give all possible information at his disposal. They are expected to answer freely without fear, for their identity shall not be released or disclosed.

Interview is a technique of collection of data, which consist of organizing a conversation with selected individual from a target population. It consists of direct contact for exchange between the researcher and the persons under investigation. It is therefore a scientific investigation with the process of verbal communication to obtain information in relation to a given topic. What sense do the actors make what meaning or social representation, perception, interpretation, experience, analyses, opinion or points of view on the facts under research?

Interview is an exercise carried out by a researcher where he converses and questions an individual or a group of persons to get information and testimony related to his topic of research. In this light, we shall search for information on how learners appropriate and make use of ICT tools in their pedagogical practices through the impact that it will make. The collaboration they have within themselves as learners, with their teachers and the general appraisal and challenges they face coming in contact with ICT tools. What do the teachers think should be done to facilitate and ameliorate the integration of ICT in their practices?

The next interview concerns the pupils on how they perceived this technological equipment. What are the difficulties they face as learners in the apprehension of ICT lessons? Do they possess ICT equipment such as android phones, or computers with internet connections? This will give us an idea of what they think and do in the process of learning. This will make us understand how this can influence their learning practices.

Another interview shall be addressed to the principal of the schools. This will enable us to discover the level of technological dispositions of ICT infrastructure and equipment in this school, which can insure a proper integration of ICT in teaching and learning. It will question the impact of this integration on the process of apprenticeship. All this with the aid of an interview guide, which will permit us to give an account of the social representation and usage, developed around the integration of ICT in the establishments.

7.2.3 Direct Observation

Direct observation is one of the tools for the collection of data for research. It consists of taking record of facts that are related to the integration of ICT in the pedagogical practices of teachers and learners. There is need to precise the period that research is carried out and the reason for the choice of such a period. Then observed the learners during a lesson in class on the ICT or in the multimedia center if it exists in the school. Here we observe how the pupils receive lessons, particularly their attitude, reaction and interaction. This will give an understanding of the interest they have in the use of ICT in the process of learning. With direct observation, we need tools as a note book, pen, tape recorders, camera, and so on. This is to take note of the descriptive elements, images, extracts of conversations and commentaries made by users.

7.2.4 Participatory observation

To participate is to act in common with others in doing the same thing. That is, to be a participant in an event. Participant observation will mean be an actor and observer at the same time. Where an observer is participating, he is accepted as part of the population. He is allowed to penetrate the group and get information he could not get as a simple observer. He gains the confidence of the members and there is no fear or suspicion to let him access detail information about the group. This enables the researcher to get to the depth of his investigation.

In our case, I carried out participatory observation in a cybercafé where I paid access fee and installed myself same as the other children present. This permitted me to properly observe what they were doing because they never paid attention to what I was doing. My presence never disturbed them since they saw me as one of them, thus a participant. Thanks to this technique, I was able to gather all the information I needed within the context of my research.

8 . SAMPLE

For interview and observations to be well effected, a good sample should be identified. Sample is part of a population intended as representative of a whole. It is a portion of the total population chosen for interview and observation. In this case, our sample shall be made up of pupils, teacher at the multimedia center of the school. As to what concerns the pupils, random samples will be used from pupils of class 6 where each element of the population has equal chances of being selected and used to test hypothesis. Concerning sample of the teachers, those of class six shall be chosen for interview on how they use ICT tools both in preparing their lessons and in teaching. At the level of primary schools, the pupils are brought into contact with ICT tools, some for their very first time. This is a context where the integration of ICT is to initiate and facilitate awareness and utility of computerized technologies and the impact it creates in the process of apprenticeship.

8.1 Choice of sample

The choice of primary school in Yaoundé is owing to fact that, in this town, the practice of computer is highly visible especially with the youths we find a good number of cyber café with high internet debit and most learners have an email address which gives them access to the internet, Matchinda (2006). This town represents one of the towns in Cameroon where computer practices are well developed both at the private and public sectors of education, economy and social aspects of life. Here, majority users of cyber cafes are youths and students, Baba Wame, (2005).

The choice of primary schools is to have the modalities of appropriation of the ICT tools by learners at these early stages of education. The primary schools offer a specific context for the pedagogical use of the information and communication technologies in teaching and learning.

This goes in line with the capacity of these young learners who find these tools new and strange to most of them. The choice of class six because it is the final class of this level, where the pupils are prepared for secondary education where they will face these technologies more in their lessons. To Leborgne-Tahiri, (2002), the tendency in education seems to be in favor of computerization of primary schools so as to inculcate in these young learners a new style, practice and culture of the information and communication technologies in education.

9 . DEFINITIION OF KEY WORDS

In research, words are used and defined according to the context. The meaning of words needs to be specified and clarified. The words are:

1. **Information and communication technologies**
2. **Appropriation**
3. **Use**
4. **Pedagogical integration**

9.1 Information and communication technologies

In this context, we shall consider the information and communication technologies in school as a technological innovation at the disposition of teaching and learning. It favors the modernization of the educative system that leads to a new method. Information is the act of communicating knowledge or intelligence obtained by personal study and investigation such as reading, observation, experience or instruction. With the ICT information is gathered, manipulated, recorded, stored, can be retrieved and shared when need be. ICT will include the computer and internet, radio, television and telecommunication. It equally includes technological and computerized equipment that facilitates communication from far and near distances.

9.2 Appropriation

To appropriate a technological tool is to access and use it for a given objective that is, appropriate a technology for achieving a particular end. It is the technical mastering of a technological tool and its integration in the daily practices of learners and users and the possibility to work with these technologies, Proulx. (1988). The appropriation of a technology

can be identified and understood through the use and social representation that individuals and group develop around it, Beche (2013). That is why the appropriation of these technologies by pupils of the Government Bilingual Primary School Bastos, Yaoundé is seen as a motivating factor in the process of transmission and acquisition of knowledge.

9.3 Use

Use signifies the access and the proper use of a technological tool for a pedagogical purpose, Breton and Proulx, (2002). It includes what is made of a technological equipment as well as the social and practical use. Use is seen as a process, Proulx, (2005) linked to the manner of doing with an objective and within a precise context. In our context, usage is what the pupils of GBPS do effectively with the tools of ICT in apprenticeship. In this perspective, we shall consider usage of the computer in its effectiveness and reality as the use goes beyond prescribed values. This reality is constructed in the social and technical perspective, Beche, (2013). Usage is seen as task, action and a technical a social activity that is effectively realized with a given technology and within a given context.

9.4 Pedagogical integration

Pedagogical integration of the information and communication technology is the implementation of networks and technological equipment to enhance the process of teaching and learning. ICT constitutes an overwhelming tool for the transformation of pedagogical practices. Pedagogical, is pertaining to or is characteristic of a pedagogue.

10. INTEREST OF TOPIC TO RESEARCH

The interest of this research to education is within the context of the appropriation and use of the information and communication technologies in the process of education as integrated by teachers in their pedagogical practices at the benefits of apprenticeship. When learners integrate these technologies in their activities, it ensures the implementation of technological innovation, a field dominated by digital technology. This topic will be of interest as the impact will be felt on the performance of learners who will acquire the culture of information and

communication technologies in learning. We find writers as Mbangwana and Ondoua, (2006), Matchinda, (2010), who looks at the impact of the integration of the information and communication technologies in the practice of teaching on the performance of learners. This interest can be found in the fact that ICT is a tool for research, teaching and learning which facilitates the process of education. Each learner will have the opportunity to discover the world with the help of a computer having an internet connection where ever he finds himself and whenever he wishes. Each individual will define his vision of the world, Mallet (2004).

This study is essential in the improvement in the system of education as it studies the development of the different faces of the integration of ICT in education, Tchombe, (2006). To further confirm this in education, Fonkoua, (2006) and Essono Essono, (2006) look at the achievements, stakes, challenges and perspective of pedagogical integration of ICT within the context of technological innovation. This testifies that there is a gap, which needs to be filled for this interest to be satisfied. Owing to the fact that there an interest to satisfy and challenges to overcome, the findings from this research will let stakeholders to formulate adoptable models of teaching, evaluate the educative environment and improve on the system that is put in place. This with regards to the use of computerized technologies.

The pedagogical integration of ICT in primary schools will be effective when human and material means are put in place, Beziet, (2012), which will ease the integration of the information and communication technologies in the practices of both the teachers and learners. For the interest of this integration of ICT to be felt, there is need to find out the factors that hinder its implementation. To this effect, Depover, (1999) question if school will one day integrate this technology successfully in their pedagogical practices? For this to be realized, a participatory approach is necessary where learners will be involved in the process where they and their competence are the major concern of training making the integration of ICT in the teaching process a great interest to education, Karsenti, (2005). The interest of ICT in teaching will be found where teachers renew their actions and redefine their pedagogical practices to include the use of this technological innovation. This young learner will be inculcated the numerical culture which will serve as a methodological tool in educative situation to include the strategy of integration and proper use of ICT in apprenticeship, Papadundi H. (2000). ICT is thus of great interest to education as it has come to develop and ameliorate the quality of education. This can

only be possible where users cultivate the habit of ICT in their educational practices. The level of integration needs to be established, as it will have an impact on the performance of learners and the quality of knowledge they receive. It will determine if this integration is satisfactory as to meet objectives. If not, why this slowness? Depover, (1999) and Leborgne Tahiri, (2002) question the factors responsible for the slowness. A proper research of these obstacles will be of great interest to education as a good diagnosis of a problem is the beginning of the solution. Therefore, as this work is on the integration of ICT in education, it will be incomplete if it does not open a page on the factors that hinder it progress. This will create awareness and make policy makers to redefine strategies that will help overcome the witness and improve on its level of integration. These benefits result from the fact that, the information and communication technologies has brought a change in the nature of training, has define new objectives and contents of curricula, which renders education professional. The information and communication technologies and its proper use will have an impact on the teaching, learning and development of competence of learners.

This work will also be of interest to education in the context of corona virus, which saw the closure, and limited intakes of pupils in other schools. For the government to save the school year they had to turn to the use of the information and communication technologies to ensure the continuity of education.In this case, teachers had to be transmitting knowledge to learners through the television, WhatsApp and other electronic models. Therefore, the integration of ICT is essential, as it will equally solve the problem of overcrowding of learners in the classroom, which may favor the propagation of the corona virus. It will equally solve the problem of insufficient infrastructure and reduce the chances of violence in the school milieu, which is sometimes caused by excessive number of learners in the classroom.

This work is equally of interest, as it will help the government in shaping educational policies and strategies to promote this innovation and see into its proper implementation. The government will assure the availability, affordability and accessibility of ICT equipment. This is relevant as she is looking for answers to and education situation which seen today as archaic, outdated and deficient, Charlier and Payara, (2003).

The pedagogical integration of ICT in education will necessitate a change from the traditional and classical activities of teaching to the modern innovative technological method, Depover and Strebelle, (1997). The main objective is to fight against failure in school by improving on the quality of knowledge that is transmitted to learners, Mvesso, (2006). It should be noted that ICT if properly used could improve teaching, research and apprenticeship. It can equally promote change and foster the development of skills of learners. It gives the opportunity to ameliorate pedagogical practices, gives quality to education and make it available and accessible to a greater population, Glikman, (2002). For this to be realized, the government and stakeholders still have much to do as most primary schools are still to have the necessary infrastructure and equipment for the integration of the information and communication technologies in education.

11. PLAN OF WORK

For a better understanding of our work, we shall present it in such a way that will facilitate research and give a plus to the process of the integration of the information and communication technologies in education. This wise, we are going to present our work in such a way as to guide research and facilitate understanding. Our work shall be divided into four chapters.

In the first chapter, we shall look at the government policies and strategies in the integration of the information and communication technologies in school because a proper integration depends upon the availability of these tools at the disposal of learners. The role of public power is to assist education and research. This is through the training of teachers and the provision of appropriate infrastructure and equipment of ICT. What does the government do to get the ICTs to the classroom?

The second chapter shall study the appropriation and use of this technological innovation by the teachers and pupils. What use do they make of these tools? How does the integration of these tools influence the process of learning in the Government Bilingual Primary School Bastos Yaoundé? For the proper comprehension of this process and for it to be successful, we shall look at the prescribed use of these tools in learning. How can the prescribed use contribute to the development of the competence and skills of the pupils? To assure this, we shall look at how

these pupils are made to respect the prescribed norms as well as the sanctions for any deviant behavior in the use ICT in learning. This wise, the benefits of the integration of ICT in education can be realized.

The different points of access and use of ICT shall be studied, looking at the different uses of these tools at the different points of use. This is because, beyond the school, these pupils have access to these tools at homes and in the cyber café. In this same chapter, gender consideration is looked into, paying attention to the treatment that is given to the girl child in her effort to integrate the information and communication technologies in her pedagogical practices. What does school do to assist her? In this context, inclusive education is considered, as it is a determining factor for development and sustainable growth.

In chapter three, we shall analyze and present the results of the investigations carried out in the field. Here, we shall talk of the technological disposition of the tools of ICT in school, as well as the use learners make of this innovation. It is in this chapter that we shall look at the contribution of ICT in the process of teaching and learning.

In chapter four, we shall look at the factors that hinder the integration of the information and communication technologies in education. What are these obstacles and how can they be overcome so that learners benefit from the potentialities that these technologies provide for the growth of apprenticeship? Reason being that, a good diagnosis of a problem is the beginning of the solution, so that a better future can be guaranteed for education with the use of the modern technologies of the information and communication.

CHAPTER ONE
THE INFORMATION AND COMMUNICATION TECHNOLOGIES IN EDUCATION IN CAMEROON AND THE VIEW OF IMPROVING PEDAGOGICAL PRACTICES.

Until recent past, knowledge was acquired, accumulated, organized, preserved and shared through libraries, cultural centers and institutions of learning. Recent innovations in the domain of the information and communication technologies has transformed the modalities of acquisition, storage and sharing of knowledge. This is with the computer and internet connection. This has caused a great change in many aspects of life especially in the domain of education. Owing to the fact that the information and communication technologies represent a real need in our system of education, the government sees to it that citizens be prepared to meet up the challenges of the third millennium by working in favor of the proper integration of these tools in education. It is equally the responsibility of the government and other actors to take majors to see that this integration creates an impact on the quality of education.

This new method has brought a significant advancement in pedagogical practices and in the system of education as a whole. It has equally opened more avenue for research in the field of the information and communication technologies in education as learners have easy access to knowledge by the presence of these tools in their society at different levels.

To get to the proper understanding of our topic we shall start by looking at the political and institutional context, which will interest us in this technological innovation in school. This is because it concerns the study of the integration of the information and communication technologies in school, especially the appropriation and use of these tools by learners. It is thus necessary to look at the policies and strategies of the development of these technologies in Cameroon. This will permit us to understand the appropriation by the school actors concerned, within the context of this innovation and its introduction into the system of education in Cameroon.

1.1. The information and communication technology as tool for apprenticeship. How effective at the basic level of education?

Looking at the obstacles responsible for the weaknesses of the integration of ICT in school, how can apprenticeship be effective at the basic level of education? The pedagogical integration of ICT in school depends on its availability and most essentially how the pupils use it. Analyses of the use of these technologies in the Government Bilingual Primary School Bastos shows that, the pedagogical use of ICT is still limited. This renders apprenticeship with these tools difficult. Why then do we talk of the pedagogical integration of ICT in school in the mist of these difficulties? Karsenti (2003). The pedagogical integration of ICT in school is still problematic not just because of its limited supply and use, but also because it is not well understood. The integration and use of these tools by teachers and learners should be such that will develop competence in favor of apprenticeship. These tools are equally to get learners make the proper use at the benefit of their studies.

1.1.1. The information and communication technologies to improve the quality of knowledge.

The necessity of the information and communication technologies in education is of great importance in the system of education today. That is why we observe a sharp increase in the demand and use of resources linked to the information and communication technologies. This has lied learners into the digital information universe, where a great Varity of information and knowledge can be perceived. In order to improve in the quality of education, the system need to include the ICTs to facilitate their acquisition and transmission of quality knowledge. The ICTs has cause profound change in education, making most system of education to introduce the development of competence linked to these technologies in their curriculum. That is why Brown (1996), indicated that the most important change that has taken place in education is the increasing phenomenon of the internet, which has modified the manner of teaching and learning. The internet has become unavoidable in the daily lives of citizens. Karsenti and Larose (2001). The appropriate use of these tools in school is indispensable for the integration of new technologies in the process of education. Therefore, access to these technologies should be

without restriction. Learners should be given the opportunity to access them to improve the quality of knowledge given them to the vast technological world, complex and on permanent evolution. Face with this situation, the teachers need to be recycled on permanent bases for them to be in line with these new technologies. Therefore, the activities of actors will be in favor of real integration and proper used of these technologies in favor of teaching and learning. If the impact of this technological innovation need to be felt on the quality of education, its use should be pedagogical, daily and regular so as profit from the new possibilities and diversity of technology. The socialization of pupils is regrouped within a number of social and economic factors, which sometimes make this integration difficult or too slow. That is why we observe the obstacles on the way of the integration of ICT in the system of education. In developing countries, the system of education is confronted with difficulties, which has encourage a number of reforms to respond to the modern exigencies of education. This reform is susceptible to ameliorate the quality of teaching at the basic level of education. Karsenti (2003) shows that limited studies had been carried out on the impact of ICT in education. The level of research in this topic is still insignificant as he observes. That is why the system of education takes into consideration the information and communication technologies in the school environment. In this case, the system can survive with time as technology evolves. The aim of these technologies is to make school be that institution where education and instruction is of quality to realize the objectives it was main for. The importance here lies in the fact that the arrival of this technologies in class is to give it a judicious use in teaching and learning so that it goal can be attained. That is why the use should be pedagogical and linked to the amelioration to the quality of education. This is when we can obtain an effective integration of ICT in education especially at the basic level of education.

1.1.2. Integration of the information and communication technologies at the basic level of education.

The context of the primary school in the integration of ICT is characterized by the first level of accessed to these tools by pupils. At this level, it is not used as a means of apprenticeship but as object of learning. The aim is to initiate the pupils to computerized education. To the teachers interviewed at the Government Bilingual Primary School Bastos, the multimedia resource center is to initiate the learners to the use of ICT in their pedagogical practices. The first

thing they said, is for the pupils to understand how the computer is constructed before getting to use. The primary school constitute the base for a proper integration of ICT in education. All the learners learned the different parts of learn the different parts of the computer, that is the hardware before getting to study the use in learning. That is what is necessesary in the program at this level. The teachers indicated they are convince that to use properly, it is essential to study and master the different part. That is why a teacher of ICT should have a proper mastery of these technologies. It is a good base for the teachers themselves to master these technologies so that they can easily transmite such knowledge to the pupils. It should be noted that, some pupils are very much familiar with these tools so much that they can surprise their teachers with some facts that they do not master. Reason why the teacher need to have the proper mastry of these tools to avoid such emberasment from the pupils.

After teaching the pupils the various parts of the computer, the next stage is to make them study the functioning of the computer. This method will favor a significant impact and the understand of these technologies by learners. The teacher present the computer to the pupils who are called upon to manipulate and make practical use of it. These pupils learn better than manipulating these instruments themselves. If not their activities will just be theoritical and the objectives of these tools will not be realize. This is most appreciated by the pupils because they are acitively implicated in the use of the computer. It should be noted that this manner of teaching practically increases anxiety of learners and they involve themselve more in the lessons as full paticipants. BECTA (2006), shows clearly that pupils learn better with ICT by manipulating practically than doing it theoritically. These medel of teaching at the basic level will guarantee a proper integration of these technologies in the learning habits of the pupils as they go futher in education. They are equally made to know the verious tools of the information and communication technokogies and the potentials they can provide in education.

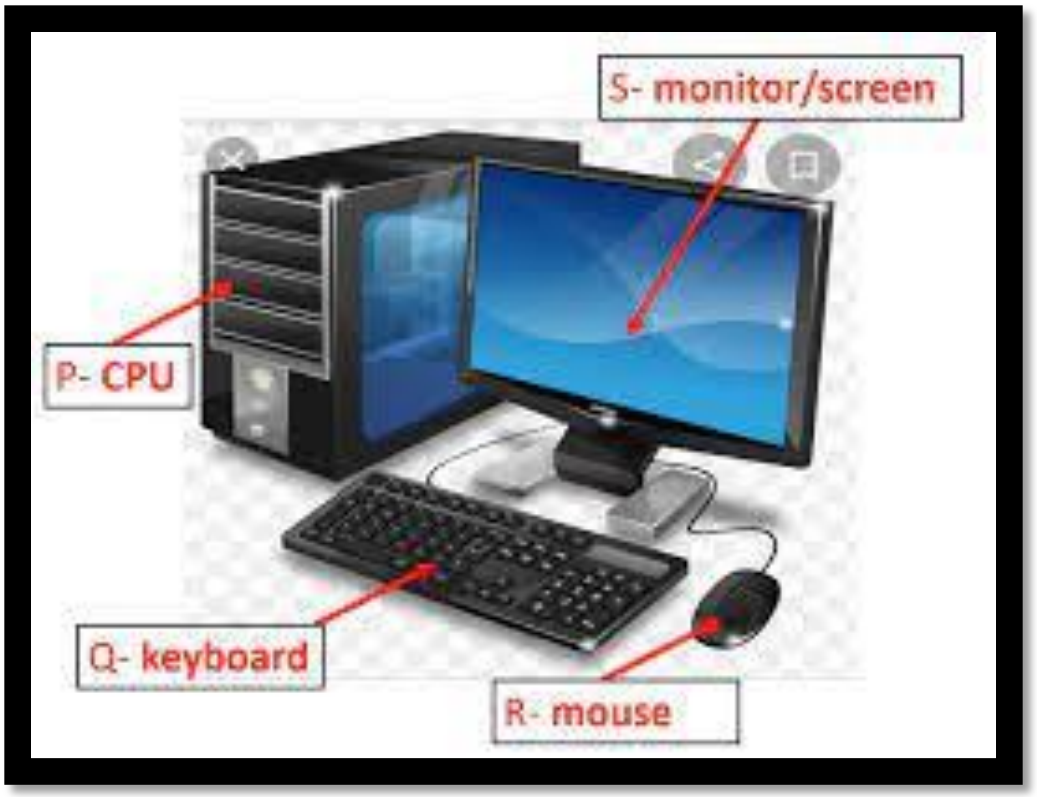

Figure 1: Computer and its parts

At the basic level of education,pupils are made to build basic skills taught the first cours of ICT in education. ICT in education is a broad, deep and rapidly growing field of study. It has the pontential to contribute substaintial improvement in out system of education. The pace of change of the ICT field currently exceeds the pace of progress in making effective use of ICT in education. So the gap between the potentials and the current use is growing larger. To reduce this gap, the system seeks to available and affordable, train teachers and experts of ICT, then get learners make the appropriate use in learning. That is to say, create a condusive environment for the integration of ICT in the teaching and learning process. Studying the information and communication technologies is an attempt to improve our educational system. We try to make learners master the acquisition and retention of knowledge and skills, understand the active use of such skills in problem solving. This is oriented towards making an effective pedagogical use of these technological tools. This will provide a solide foundation for an effective integration of ICT in education, by making learners have a great deal of knowledge and experience both at school and out of school.

1.1.3. Why integrate the information and communication technologies in teaching and learning practices.

The world today is characterised by modern technologies especially in the field of education. The information and communication technologies can impact pupils learning where teachers themselves are digitally literate and integrate it in their pedagogical practices and into the curriculum. Computer technology has change the way we live, work, play, and learn. It has an impact on the construction and distribution of knowledge, the production of information and improved the method of research in education. Teacher's policies should thus target basic ICT literacy skills especially in the primary school where learners are still new in this of modern technologies, necessitating the integration of ICT in their learning program.

For learners to know what this innovation signify to them especially in the process of learning, in the era of digital technologies, the teachers have to integrate the attitude of ICT in their teaching practices in their classroom. These digital tools have an influence and great repercussion on the system of education. The necessity to integrate these tools in education is found in the fact that they offer great possibilities that facilitate communication, learning opportunities and freedom of expression. Either use negatively or positively, it is a fact that these technologies are henceforth part of our daily lives.

Besides the use of ICT in learning, children use these tools to communicate easily and reinforce friendship creating new relation with the global world. With these tools the circle of friends is enlarged with the use of application as WhatsApp, Facebook, Messenger, Instagram and Twitter. This strengthens their relationship with friends from far and near.

1.2. Government policies and strategies for the integration of the information and communication technologies in school.

Since the introduction of the information communication technologies in education, these technologies have become part of the daily lives of citizens especially in the domain of teaching and learning. The need for these tools is increasing as time goes by. It is the duty of the Government to see that basic education is extended to the reach of all young citizens, quality and quantity assured. The government is therefore obliged to draft her policy in education taking into

consideration this innovation, which has come to change the situation of education today. The provision, access and use of these instruments has become the preoccupation of all the actors in education especially the government.

What is the politics of the government concerning the integration of these technologies in school, where learners will have the possibility to access and use them in learning? We shall look at the situation under which the information and communication technologies are integrated. How this technological tool is put at the disposal of learners and how is the educative environment prepared to facilitate the integration of this equipment in the process of apprenticeship at the Government Bilingual Primary School Bastos-Yaoundé? The ICT is a major challenge to stake holders in charge of the system of education of a country in this modern era seen as the digital age. In this era, research is assisted by modern technologies, that is, research-based approach with the use a hardware (computer), software and internet connect. At the primary level as is our case, basic skills in computer education is expected to be mastered by the pupils. This field of study is seen as very essential in modern education, reason why it is fast growing. How can it contribute to improve the process of education? How can the government and stakeholders get these technologies to the classroom? How can learners be made to respect the proper use of these tools? What are the factors that hinder its integration in the process of teaching and learning? These issues preoccupy the government and other stakeholders in the domain of modern education. To understand this process, Koutou N'Guessan (2009) sees that it is important to first reflect on the instigators of the project in the politics of the integration of the information and communication technologies in education. He observes that where there is a good policy and strategy of integration, there will be success. The information and communication technologies has given hope and expectation in favor of the attainment of the millennium development goal on the universalization of primary education, that is, the democratization of education. The aim of the government is to provide ICT in partnership with the private sector whose rule is not to be neglected in this basic sector of education. This will encourage an effective integration of these technologies in school. The ICT will equally offer new possibilities to ameliorate the teaching and learning practices that is why the government takes it as a responsibility to furnish school with these essential tools. This is because an effective use of the ICT can constitute an additional tool to solve educative problems, especially where it is made accessible, affordable, well manage and of the desired quality. There is need to

examine the strategies of the development of ICT put in place so as to bring in the necessary change in this domain. This is owing to the potentialities that this innovation possess which can help to improve pedagogical practices, Glikman (2002).

1.2.1 Access to quality education with the information and communication technologies.

With regards to access and the quality of education, the teacher constitute a facilitator and motivator in favor of improving the quality of knowledge with use of the information and communication technologies, Karsenti and Larose (2001). It is the teacher to guide and carry out new practices for the interest of learning because of the possibilities offered by ICT in education, Depover (1999). It is through the teacher that school will easily integrate ICT and pedagogical practices. The competence and capacity of teachers as well as their techno-pedagogical practices has direct influence on the effective use of ICT in teaching and learning, Karsenti and Larose (2001). The teachers are therefore the field actors of this innovation in school. The pedagogical action that they practice makes them an important factor in favor of the use of ICT in education. To the teacher, this technological innovation is a means to provide tools for better learning conditions at the interest of apprenticeship. To the teachers of the Government Bilingual Primary School Bastos Yaounde, the computer connected to an internet network can ameliorate the pedagogical practices of learners, giving them access to quality education. It's motivate them and makes them to be more performance. It create a conducive environment for learning and a better organization of learning activities. Learners are motivated to the use of a computer so that it produces a positive effect on their school work. It should be noted that, it is not the machine or the program that play essential role, it is the learner himself at the center of the process. His participation, motivation, his desire to learn, is what will lead to the positive change that is expected of this innovation, Beche, E. (2012). Though the guidance of the teacher is very essential in this process, the role of the learners is not to be neglected. The success of this innovation therefore depends first of all on the learner, especially he who is conscious of what he wants and is hard working. In this case the use of the computer will enable him to ameliorate his performance. So the computer alone is not capable to ameliorate performance, it needs the joint participation of both the teachers and learners for access to quality education to be achieved.

1.3. Factors that determine the integration of the information and communication technologies in school.

The government is interested in this innovation because the information and communication technologies has become an indispensable tool in the daily lives of citizens, which could not be thought of some years ago. This innovation has brought a method of conception and construction of a system of education that will facilitate the acquisition, exchange and the sharing of information for the interest of learning. These technologies have their specificity as opposed to the ancient traditional method. The ICT has its principles and practices that facilitates the acquisition and transmission of knowledge. This innovation offers potentialities which makes them very essential in education today. This is welcomed in developing countries such as Cameroon where education is still in search of an educative system that will give teaching and learning a good quality, and make it competitive. This is by making it accessible and affordable to a greater population.

Owing to the important role played by the information and communication technologies in the process of education, the government finds it necessary to pay attention on the factors that can facilitate an effective integration of these tools in the system of education. These factors are determinant to the success of this venture. Government policies should include accessibility, affordability and the proper use of these technologies to attain quality education.

Figure 2: The various ICT tools

1.3.1 Availability of the tools of ICT in school.

To understand the presence of the ICT in school, particularly its appropriation by learners, it is important to examine the availability of these tools especially at the Government Bilingual Primary School Bastos which constitutes our case study. What is the nature of this technological innovation in school and how do learners adopt these technologies in their pedagogical practices? In the development of ICT in school, Koutou Nguessan, (2009) seeks to understand the process of this technological innovation in school. He sees that an integration will be successful where there is a certain consistency in the politics of computerization of school at both local and global level. Looking at all the dimension which constitutes the integration of ICT in school, it is the institutional and political aspect, which determines its success or failure, Pouts-Lajus, 2007. Therefore, an examination of the configuration of a system will pay attention to the availability and affordability of the technological tools that will enhance and facilitate the integration of this innovation in school. The integration of these technologies in school will

modernize the teaching and learning process in Cameroon, Mvesso, 2006. He presents the ICT as a powerful tool that will transform the system of education and solve a number of problems around the learning environment. This measure is aimed at ameliorating teaching and learning practices. To Baron and Bruillard 19996, these technologies are supported by a number of ideas and benefits which favor the promotion of the potentialities of ICT in education.

1.3.2 Appropriate use of the information and communication technologies in school.

For the objectives of the integration of ICT in education to be realized, it is not sufficient to make the tools available. Its appropriate use passes through the teacher who has the duty and responsibility to get learners follow the right norms of usage. So the competence of teachers is equally a determining factor in the integration of this modern technology in school. To ensure the proper use of ICT in the process, the training of teachers to this effect is unavoidable. The intention to introduce these technologies in education, in effect, is to modernize education at the benefit of learners, Beche 2013, to motivate them and make them create familiarity with these objects in learning. The authorities assure proper use through prescribed norms of usage established and put at the disposal of learners, who are expected to educative use to improve competence. For prescribed use to be well understood, prohibited use is well defined and sanctions set aside against deviant practices. In this case the administration that prescribes sees to the control and application of these decisions and deviant elements sanctioned, Beche 2010. When these prescriptions are well defined, they oblige learners to follow the proper use of the computer which will lead to the change they were out for.

1.3.3 Deployment of trained teachers and experts of ICT in schools.

In the pedagogical integration of the information and communication technologies in education, the major points of worry are the technological equipment of schools, the problem of training and the deployment of teachers in this domain. The teacher in this case represent the main actor responsible for the development of strategies to ensure the transmission of quality knowledge to learners. It is a fact universally accept that access to the new technologies and quality education, the teacher constitute a facilitating elements to ameliorate the quality of education, Barry (2011). The teacher plays the role of guiding and directing, it is for him to transmit this knowledge for the benefit of apprenticeship, Depover (1999). The teacher who is

seen as the engine and instigating factor of this innovation has to be deployed to the school to assure learners benefit from their expertise. They are the important elements who favor the use of ICT in teaching and learning. An efficient and effective pedagogical use of ICT in class depend mostly on the teacher, who has the technological ability to integrate the ICT in a pedagogical perspective. All these gives the teacher the quality expected of him in the integration of these modern tools in education.

That is why the government of Cameroon gives more important and interest to teachers within the frame work of the integration of ICT in school. Initiated in 2001-2002, these project consisted of putting of pilot centers that is, center with multimedia resources in schools in urban centers, the introduction of computerized programs and the training of teachers in their use, Beche, E (2017). This project works in favor of the modernization of the system of education, with new method of teaching and learning, giving both teachers and learners opening to an active pedagogical world, Onguene Essonu (2009); Foukoua, (2010). This project was considered as solution to overcome pedagogical problems seen as insufficient, Le Guen, (2002); Charlier et Payara, (2003).

The endeavor of the government in this case is to fight against failure in school, overcrowded classroom and low quality education, Mvesso (2006). The interest of ICT in school is justified by the desire to modernize the educative system, develop the technological competence of teachers and that of learners through the use of ICT, Tchombe, (2006), where the necessity to deploy competence teachers in the domain of ICT to ensure an effective integration of ICT in education.

1.4. Government strategies towards exigencies the computerised era.

It is the duty of each government to ensure that the system of education be designed to meet with present day challenges. The government policies need to include the technical and human resources necessary for the putting in place of this innovation. This will make us meet up with the exigencies of the computer era. The government has an interest in this context as it will offer opportunities in a situation where the demand and consumption of services linked to ICT is fast growing. These strategies have to accompany the process to transform and improve pedagogical practices to overcome educative challenges especially at the basic level of

education. This is because this level offers a specific context in the pedagogical integration of computerized technologies. Here the capacity of the learners is limited, so they need to be initiated in the domain of ICT. The work therefore relies on the capacity of the teacher who has to formulate strategies to inculcate the culture of ICT in the young learners. The use of these technologies in class is thus the responsibility of the teachers who have the double their effort to that effect. That is why the government lays much emphases on the training of teachers in the use these tools in their pedagogical practices. The teachers have the responsibility to make the pupils see the necessity of ICT in the process of apprenticeship. How are these pupils introduced in to these new technologies which are seen as technical and scientific initiation of an innovation? The government considers the specificity of the primary school in a context where these young learners are still ignorant of these technologies and need to be aware of its necessity in the process of learning. So to build a strong system of education, serious attention should be paid to basic education seen as the pillar of the system.

What is the situation of the appropriation and use of the information and communication technologies in school developed? Under what framework can this be understood? The appropriation of a technological tool is determined by the political, economic, sociocultural and pedagogical environment, Do'Nascimento, (2004). At the national level, there is the putting in place of the plan for the development of ICT which is institutional and political, on which the success or failure of the integration of ICT depends, Pouts Lagus (2007). That is why it is necessary for us to examine the strategies of the development of these technologies put in place within the structures in charge of this innovation in school. This will be seen through the political framework, the government's strategy for the development of ICT in schools through the training of teachers in the use of ICT in teaching, the provision of the infrastructure and equipment in favor of the integration of ICT in education.

1.4.1. The Political Framework

The insertion of the information and communication technologies in education in Cameroon was observed in 1990 through the Canadian project (SOFATI) in certain government colleges in Yaoundé and Douala. The year 2001-2002 constitute a turning point in the development of the system of education in Cameroon as it saw the insertion of the technologies

of information and communication in school, Beche (2013). It was from then that text and structures for the pedagogical integration of ICT in education where put in place. With regards with the basic sector of education, an investigation by ROCARE Cameroon (2006). On the policy of provision of infrastructure, equipment and the development of competence on ICT, it was observed that the Ministry of Basic Education has the obligation of providing schools with these modern technologies, which will enhance the quality of teaching and learning. This policy pays special attention to the issue of access to quality learning at equal bases to all schools. This was following recommendations arrived at during the national meeting on education (Etats Generaux de l'Education,1995). This was after the law that defined the orientation of education in Cameroon. This structure modernized the educative system in the country. The development of these tools in education need to be done following laid down rules and a defined framework, Koutou N'Guessan, (2009). This is owing to the fact that the information and communication technologies have educative potentialities, which are based on political innovation that leads to a proper plannification of educative activities. Educative policies should ensure the application and conducive conditions for the use of ICT in teaching and learning. The objective is to understand the stakes and challenges involved in the integration and use of these new technologies in education. The methodology used has to facilitate the understanding of the educative situation and the complexity of this process. There is that necessity to go from the traditional method to the modern method of transmission of knowledge through an organized technic of work with these new tools. So, the need for real policies and strategies in these new technologies which prescribes the way forward and defines the manner of intervention of each actor. Government policies needs to be shaped such that we provide schools with the minimum and acceptable infrastructure for ICT, accompanied by a stable internet connection and regular electricity supply. So, to get to a successful implementation of this innovation in education, it requires the integration of these tools in the curriculum.

There is however some criticism against these policies as to their implementation and capacity to overcome the challenges and obstacles that hinders its implementation. Fonkoua (2009) sees that Cameroon does not yet have a legal policy on the information and communication technologies. There is no legal framework on the regulation of ICT. There is thus a deficit in the plannification of the process of integration of ICT in schools. To add to this policies and strategies which guides the integration of ICT, there is necessity for technical and

human resources to make operational this innovation as well as their development in the context of education in Cameroon.

1.4.2. Government strategies in the promotion of the information and communication technologies in education.

The government in her policy of integration of the information and communication technologies in education seeks to facilitate access to these modern technologies by learners. This is made possible through the training of teachers in the use of ICT in teaching because it will ease the pedagogical implementation of these technologies in school. Karsenti and Tchameni Ngamo (2009). The government equally assures the technological equipment of schools with the necessary tools and create an educative situation favorable for the integration of ICT in teaching and learning. It is obvious that school need to be provided with these equipments in a reasonable and acceptable manner. The government is bound to do so because of the potentialities that these new technologies offer, capable of ameliorating pedagogical practices of both the teachers and learners. The policy of the government recognizes knowledge as a base in education, reason why much importance is accorded to it. This reflects on the framework for collaboration between the government and other stakeholders in the provision of ICT in basic education. They equally provide opportunities for recycling teachers in the use of ICT in teaching. Here we are talking of in-service training of teachers and administrators in the use of ICT in their practices. Also assured is the provision of school with up to date infrastructure and equipment of ICT in favor of teaching and learning. Experts are needed for the maintenance and repair of damaged machines and training of trainers.

The government equally need to set up new orientations in the field of ICT in teaching to catch up with the continuous evolving technologies by renewing the basic education curriculum on the information and communication technologies. The National Pedagogical Inspector in charge of Computer Science Education at the Ministry of Basic Education in collaboration with stakeholders develop guidelines and standards to facilitate an effective implementation of ICT in the basic sector of education. This is done through the organization of a National Network to sensitize Basic Education Supervisory Staff on the use of ICT in school.

1.4.3 Competence of teachers in the pedagogical use of the information and communication technologies.

Political actors and managers of education are in search of solutions to make teaching be of quality and accessible to the greater population. This is within the context of liberalization and democratization of education which involves easy access and acquisition of knowledge with the use of the information and communication technologies. In the past, when the traditional method of teaching was used, access to knowledge was not easy. Today, teachers are trained in the use of these modern technologies in teaching. The teacher can hence forth accompany the pupils in the creation and development of new knowledge, all this on a collective platform that is shared online. This new method constitutes a significant progress in the process of teaching and learning as well as in the transfer of competence. The information and communication technologies will facilitate access to knowledge both to teachers and learners. Teachers who are well trained to that effect will improve their capacity as well as that of the pupils under their guidance. The internet helps the teacher to revolutionalise his teaching practices and easies the circulation and stockage of knowledge for the interest of research, anywhere and at any time as need arises. Educators use ICT to conduct research with the objective to better prepare their lessons. This will help to improve the quality of knowledge leading to enhanced and updated professional knowledge.

Figure 4: A teacher preparing his lessons

For the objective of ICT to be realized, new strategies should be adopted and put at the center of development of the career of teachers. The teacher is expected to take his pedagogical practices beyond just teaching the hardware of the computer to pupils. He should make learners have a mastery of ICT in their pedagogical practices, make them be able to search, produce, treat, store and share information with other users, Beche (2013). The training of the teacher here is very necessary because the success of the integration of ICT in the class room requires among other things the understanding of the educative technologies and better still, the approach to get learners make appropriate use of these tools in apprenticeship. This objective can be easily achieved where the teachers themselves received the appropriate training on the use of these tools in their pedagogical practice.

The training of teachers in the use of the information and communication technologies is a demonstration of the will of the government to enhance the quality of knowledge that is transmitted to learners. The intension of the government is equally to promote ICT in education and to modernize education at the benefit of learners who are called upon to appropriate and make the proper use of these technologies in education. Mvesso (2006), sees that in Cameroon the integration of the computer and associated resources of ICT in school has revolutionalised teaching and apprenticeship. These technologies serve as a spring board that has transformed the educative sector as they possess a powerful capacity that contribute to ameliorate the quality of teaching and learning. The teacher is thus of great necessity, pertinence and favors the integration of the computer in school, Fonkoua P. (2006). One of the competence expected of the teacher during their training is on the integration of ICT in their practices. This competence involves numerical expertise to be inculcated in their professional attitude to facilitate their work. These competences are linked to the different technological advancement which is fast evolving today and necessary to be applied in the classroom with the appropriate numerical tools. Fonkoua P. (2006) equally looks at the strategies of the integration of ICT in school insisting on the training of teachers as an absolute necessity that will make them develop the capacity and desire to use them in teaching. The teachers are therefore expected to have numerical competence that will facilitate research and the transmission of knowledge to learners by the use of these modern technologies. This is the preoccupation of the government and other stake holders in this domain. After assuring this aspect, financial resources are also deployed to equip

schools, train teachers, assure recycling as well as maintenance and the repairs of these equipment to assure the proper usage. The government uses ICT as a means to support and booster the process of teaching and apprenticeship. This is by improving on the deductive potentialities of the information and communication technologies. This will be of interest of education as it will be used for research, communication and sharing of knowledge between learners and the teachers as well as between the learners themselves. It will serve as a medium for exchange of information and knowledge. The teachers and pupils will appropriate and use the ICTs in the activities of teaching and learning. The teachers need to be adequately equipped to integrate these numerical lessons in class. This is the major objective of the government as to what concerns the integration of ICT in education.

Considering the potentials that ICT has to improve the quality education and training, the government has been fast to seize the opportunity presented by this innovation to support in this domain. The government in her educative policies, therefore, lays much importance in the training of teachers in the use of the information and communication technologies because, these technologies have become not just a social phenomenon but an indispensable tool for development. The ICTs is present in the daily activities of each individual in the society, Onguene Essono (2005). When teachers have a mastery of these tools in their pedagogical practices, it contributes to facilitate the liberalization and democratization of knowledge. This goal will be attained where anybody anywhere and at any time will be able to have access to desired knowledge as long as he has a computer with internet connection. The necessity hear is found in the fact that ICT serves as an appanage to overcome the challenges in the process of learning. The government does not only train but also organize retraining sessions for teachers and trainers in this domain to ensure a brighter future for education. Retraining will solve the problem of some teachers who are reluctant to adopt these technologies in their teaching practices, Onguene, (2006). Retraining has its place hear because, the pupils said that during the ICT lessons, they are being taught only the different types of computers whereas the integration of ICT in education involves much more that just knowing the parts of the computer. The pupils need to be taught how to use these tools to develop knowledge, search for information, exploit the information and be able to share it among themselves as well as being capable to store such information for future use. The training and development of the capacity of teachers will permit an effective integration of the potentialities they possess to render these tools a perfect

pedagogical instrument, Barry (2011). Depover (1999), on his part holds that going from the possibilities that school and ICT offer, it is certain that the teacher is the one that plays that rule of directing the learners according to their need for the benefit of apprenticeship. According to him, the teacher is the engine behind this innovation, because it is through the teacher that the information and communication technologies will integrate school. The teacher is therefore the key actor of this integration of ICT in education. Reason why the government accords much importance to the training of teachers in the use of ICT in teaching.

In the initial training of teachers as well as recycling, attention is not only paid to this phenomenon but equally on the appropriation and effective use of the tools of the information and communication technologies to facilitate apprenticeship. It is imperative to get teachers adequately trained in the use of ICT in teaching, as they will be able to efficiently manipulate these tools and integrate them in teaching. This will make the attitude of teachers towards the use of these tools in their pedagogical practices. At the Government Bilingual Primary School Bastos-Yaounde, the teachers confirmed that their knowledge on ICT is improved by recycling and the access they and the pupils have to these tools at the multimedia center of the school. They also testify to the fact that the internet facilitates access to a wide variety of documents. So the training of teachers will be beneficial where it is accompanied by the provision of these essential tools to accompany them in these project of integration of the information and communication technologies in education.

The Ministry of Basic Education is aware of the necessity to ensure that teachers who graduate from the Teachers Training Colleges have the required skills to integrate ICT in their teaching practices. Recycling is equally necessary to make educators be up to date with this technological innovation. A teacher who has access to the internet for example will be able to get in touch with enormous training resources. For an effective use of the computer to be possible in the classroom, the teachers need to have basic skills of the information and communication technologies. This will permit them to contribute their own idea, experience and teaching strategies in the process of ICT in education. This will guaranty an effective use of the technology which will enhance teaching and learning at the interest of learners. That is why the Ministry of Basic Education has as an obligation to see to the success of these innovation.

The integration of ICT in the system of education especially at the primary level, has brought a change in the teaching and learning process. The government therefore finds it necessary to train teachers in the use of these technologies, which provides diverse opportunities for new knowledge, Matoussi (2006). Consequently, the training and recycling of teachers is of great necessity for an effective pedagogical integration of ICT. It should be noted that, it is through the teachers and its competence that the expected results of the integration of ICT in education will be realized. So with the potentialities that these new technologies offer, education is having great chances of ameliorating its practices and give it the quality it deserves, Matoussi. (2006). This can only be possible in the context where sufficient attention is paid to the provision of the infrastructure and tools that will enable its exploitation by the actors concerned for the interest of teaching and learning.

Figure 5: Pupils in the multimedia center

1.4.4 Provision of infrastructure and equipment in favor of the integration of ICT in education.

For the Cameroonian system of education to be competitive at the international level, the government has to see to the provision of adequate infrastructure and equipment to that effect.

After the training of teachers, the availability of these technological tools is of utmost necessity in the process of apprenticeship. Concerning the integration of ICT in the Cameroonian system of education, different actors are concern as well as different sectors having the intension to promote ICT in education. Public policies have instituted strategies to develop and improve this integration. This is for example through the creation of multimedia research center in school. In addition to these national strategies for the development of ICT, different partners are also interested and implicated in this project of the integration of ICT in school. They include the Ministry of Basic Education in our context, the private sector, international corporations, the World Bank and so on. The politics of the integration of ICT in education will be easily applied where all the actors and stakeholders involve themselves in the process of integration of these new technologies in schools. This wise, the impact will be felt in apprenticeship, Djeumeni (2011). The perception an attitude users develop around these technologies will determine the use they make of it in apprenticeship. This goes to confirm the necessity to equip schools so that the objective of this innovation can be realized. It should be noted that these technological equipments facilitate the learning process in what concerns the use of ICT in learning. Learners on their part should be made to take cognizance of this technological innovation and the rule they play to assist learners in their pedagogical practices. This gives us an understanding of the appropriation and use of these as well as the rule they play in this process. That is why Karsenti, (2009) says that the integration and pedagogical appropriation of ICT in school is equally the appropriate use of by the learners so as to ameliorate apprenticeship through their attitude, capacity, representation and experience.

The provision of infrastructure and tools of ICT in the GBPS Bastos, the Headmistress said, is still to be optimized. This is because, the infrastructure and equipment of the information and communication technologies is inadequate as compared to the number of pupils who are in need. Despite the insufficiency, they are doing their best to see that the available resources are well exploited to ensure that these technologies are integrated in the learning habits of the pupils. The administration of this school counts on the ministry and other partners who usually assist in the provision of these tools, the repairs of the damage tools as well as the recycling of teachers to make their standards be up to date. The partners include, the World Bank, UNESCO, CRTV and so on.

The National Agency for information and communication technologies (NAIC), developed a long term national plan 2007-2015, (information and communication technology policy network and strategy plan for Basic Education sub-sector, Ministry of Basic Education), for the development of ICT in education and taken as national priority. This plan noted that there exists a tendency for a shift from the traditional method of teaching to a modern technological method with modern equipment. These new tools will improve learning opportunities, increase communication and efficiency. Reason why the provision of ICT equipment remains a priority to the government. The government with her partners in education work within a collaborative framework to see to the provision of ICT in school. This gives the possibility for learners to access quality knowledge and create greater opportunities to expand the scope of research, rendering school a center for quality teaching and learning.

Despite the much that has been done by the government and her partners, there is still a deficit in terms of politics of the development of ICT in education. This is owing to the difficulties in the process of integration of these technologies in education. The development of these tools does not have a coherent frame work of operation. Djeumeni, (2009). The educative potentialities of the ICT are not debatable, but the problem is that there is no veritable politics of these innovation seen on a true plannification of these activities, Koutou N'Guessan (2009). Fonkoua et al. (2009), after an investigation discovered that the national politics is not inscribed in the legislation of the country. Cameroon those not yet have a legal politics of the information and communication technologies. There is not judicial framework which regulated this innovation. These technologies are regulated by the Ministry of Post and Telecommunication (MINPOSTEL) through the Agency for the Regulation of Telecommunications (ART) and the National Agency of the Technologies of the Information and Communication (ANTIC)

CONCLUSION

Political actors and managers of education are in search for solutions to give education the quality it deserves in this modern era. They have the desire to make it accessible and affordable to a larger population. This is owing to the fact that the technologies of information and communication in education are seen as the action that introduces new technologies in the process of teaching and learning. We see that the government pays much attention to it because, it offers potentialities which can ameliorate pedagogical practices if well exploited. The government therefore has the interest to shape the education system such that will include the integration and use of ICT, aimed at ameliorating the quality of knowledge transmitted to learners. This is done through the training of teachers and the equipments of schools with the necessary infrastructure and tools of ICT to get knowledge closer to learners. The Government Bilingual Primary School Bastos has not been left aside in this struggle by the government in the provision of ICT instruments as well as trained teachers for the integration of these technologies in school. Though it is not satisfactory as concluded by the Headmistress, this school is however following the process of integration of ICT in apprenticeship, with the hope of having it improved as time goes on.

CHAPTER TWO
APPROPRIATION AND USE OF THE INFORMATION AND COMMUNICATION TECHNOLOGIES IN TEACHING AND LEARNING.

Most often, we are interested in the presence of the information and communication technologies in the school milieu without thinking of how it should be used for the interest of learning. The question that demands an answer is: how can the introduction of these technologies in school influence the practice of learning and create an impact in the performance of the learners, with regards to the use of ICT in learning? To get to this, we have to question the use that is made of these instruments and the impact on the teaching, apprenticeship and the development of competence in school as well as their evolution. In this context, it is not just the appropriation of ICT that interest us but its didactic and pedagogical use by the teachers and learners.

In this research, it is necessary to study the appropriation of the information communication technologies by learners, especially at the Government Bilingual Primary School Bastos Yaoundé. Appropriation is understood through usage of these technologies by teachers as well as learners. The dynamics of the culture of ICT is better explained through the way users exploit them in their pedagogical practices. They are not only seen as users but also as actors in this context. Usage is guided by prescribed norms if the objective of this innovation is to be achieved. For usage to bear fruits, it should be oriented, guided and its respect imposed to get it produced results.

With the desire to give education a good quality and get it accessible to a greater number of learners, the stake holders find it as an obligation to facilitate its acquisition. An increase has thus been observed in the consumption of services linked to the information and communication technologies in measure towns in the Country, Cheneau-Loquay (2001). The use of smart phones by individuals and visit at the cyber café centers with high internet debit connection observed all over. This gives the possibility to learners to widen their scope of apprenticeship. The appropriation of ICT is important and need to be exercised by stake holders in education, looking at the perception they develop about these technologies in education. The appropriation

of a tool of ICT is closely linked to the knowledge individuals develop around it. These technologies can easily be developed when integrated in the practice of learners, Karsenti (2008).

In the study of the appropriation and use of ICT in learning, we follow the approach of usage, which permits us to understand the practices that users carryout with these tools. The appropriation of these technologies depend on the problem of usage, Proulx (2001). The problem of misuse is equally in the study of appropriation, Paquelin (2009).

In order to understand the appropriation of these technologies by the users, it has to be linked to the context in which it is used, Beche, (2013). It is also the politics developed around this innovation that determines its appropriation in school. In the GBPS Bastos Yaounde, the appropriation of these tools is assured by the Ministry of Basic Education and by the Education Partners of the school as indicated by the headmistress of the school. This gives the possibility to the pupils to appropriate these tools in their pedagogical practices. The information and communication technologies do not only permit teachers to renew their pedagogical practices, it equally gives them the possibility to widen their scope in the domain of teaching as well as the learners in apprenticeship while working alone or in collaboration with others.

2.1. Appropriation of the information and communication technologies by learners.

An effective integration of ICT in pedagogy requires a proper use of these technologies within the context of learning, Karsenti, (2008). The integration of ICT in this case refers to the appropriation and use of these technologies which facilitates the process of teaching and learning. How are these tools accessed and used by pupils and teachers of GBPS Bastos Yaounde to ameliorate the quality of knowledge transmitted and acquired? In this case, the teacher is seen as a guide to the learners and facilitates the learning process in what concerns the appropriation and use of ICT in apprenticeship. The teachers possess the knowledge which permits them to effectively do their work as required. Learners are guided in the social representation they develop and use. They are made to take cognizance of this technological innovation so it can assist them in their pedagogical practices. This will make us understand how they appropriate these tools and the role they are called upon to play in the process. As their

actions and strategies of integration of ICT are well guided and the prescribed rules of usage respected, the interest and benefit of this innovation can yield the expected results. That is why Karsenti, (2009) says that the integration and appropriation of ICT is equally the proper use by the learners that will ameliorate apprenticeship through their attitude, capacity, representation and experience. Taking note of the use and social representation that learners build and share around the computers, this opens the way to understand the dynamics of the appropriation of this innovation and makes them rethink the role they have to play.

The appropriation of ICT by the pupils of GBPS Bastos determines the integration of the use and the representation they make of it. From observation, the pupils of this school do not have easy access to these technologies because of the limited number of machines at their disposal. This hindrance notwithstanding, the little time they have at the multimedia centre in school gives them the motivation and anxiety to put them to proper use. We see the interest they demonstrate working together and in collaboration, in an approach of appropriation, Millerand (1999), who insist on the integration of these technical tools in learning and the realities concerned. Note is taken of its object and the misuse of these tools are checked to see that it is put to proper use in school and in the social lives of learners. This approach also looks at the process of circulation of these technologies and the study of the use seen through the training they receive. This approach consist of analyzing the different usage and practice of users as we see with the teachers and pupils of this primary school. It is interested in the activities of users, while they develop this attitude and the definition they give to these objects which will determine the manner of use in learning. In this case, they are seen not only as consumers but also as actors and participants in the formation of new practices, Beche (2013). What makes the appropriation of a technological tool is the protection of its usage to guard against misuse, which may destroy the original goal of this innovation.

2.1.1. Use of ICT by pupils of government bilingual primary school Bastos-Yaoundé.

To better understand the object of this innovation in school, we shall see how it can help in the process of learning, how learners perceive it and how they use it. That is, the way school actors access and use these technologies in learning, Tchombe, (2006). Usage in the context of learning seems to be multiple and sometimes varies with different points of views. Educative use as is the case here relates to the pedagogical practices of teaching and apprenticeship. Owing

to the complexity of use of these tools, different types of use are observed. This is through the way learners see it, their opinion, attitude and appreciation of these technologies. The utilization of computerized tools enhance the effectiveness of basic education in this case. It gives pupils greater control over their learning and help them develop skills. The goal of the government is to produce citizens who understand how to use a computer in order to foster their education, reflect and develop their idea, to meet up with present day challenges in education. Pupils are encouraged to work together, share idea, competence and skills for fast and better understanding.

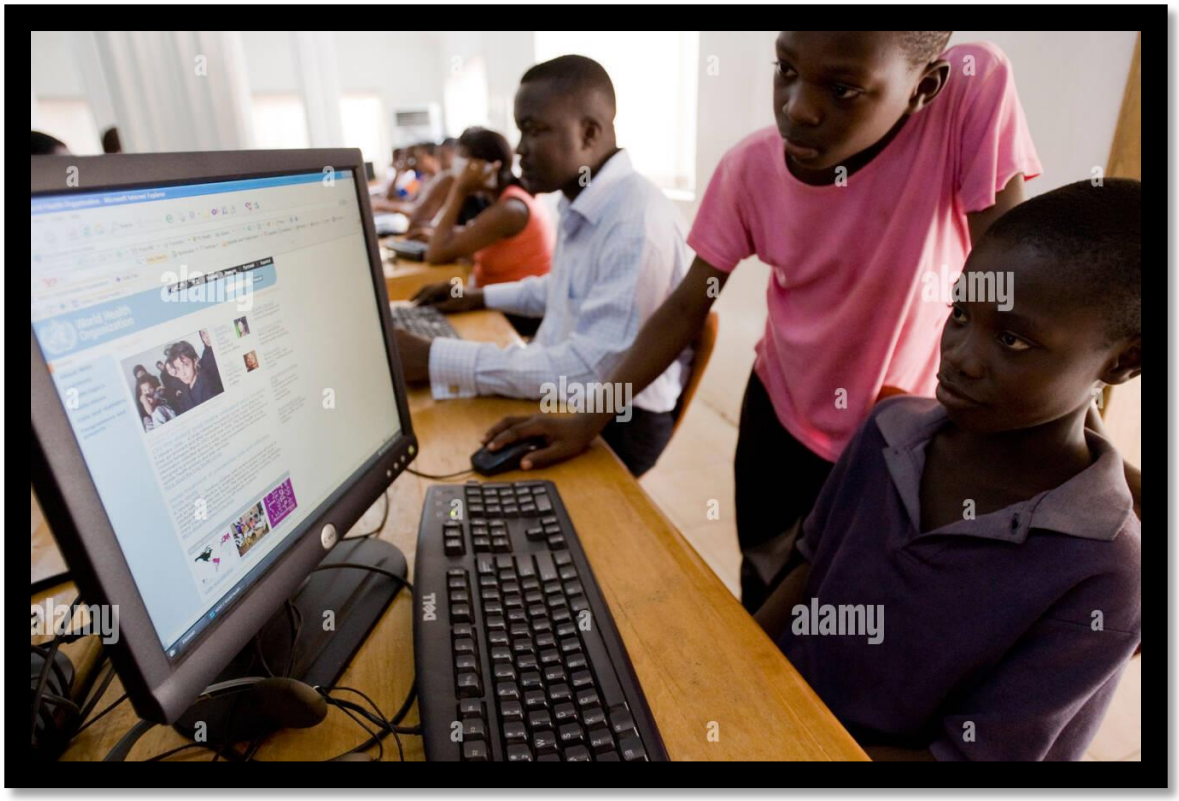

Figure 6: Learners sharing their experience

There is however diverse problems around the politics of the appropriation and use of these technologies, Chambat, (1994). This is how we observed in GBPS Bastos Yaounde that priority is given to the concept of appropriation and use of the tools of ICT in school as well in the daily lives of learners. The number of machines as we observed in the multimedia center are less as compared to the number of pupils in need. So use is limited as the time a learner spends on a computer is insignificant if we want to talk of proper usage.

Figure 7: Limited computers for many pupils at the multimedia resource center

An effective pedagogical integration of ICT demands an appropriate use of these technologies in school. In this case, the use of these tools is to facilitate the process of teaching and apprenticeship in school, Karsenti T and Larose F, (2005). How these tools are used by the different actors is what matters in this process. The study of the use of these technologies by learners is given much attention and importance today especially at the basic level, where the administrators see to it that a good foundation is laid. So the study of the dynamics of the appropriation and use of this technological dispositive is given priority. What do learners do effectively with these objects and how does their action enhance the process of education? This will throw more light and possibilities to study the stakes and challenges in the social representation and appropriation of these technologies and their integration in the primary school.

2.1.2. Analysis of the use of ICT by pupils of government bilingual primary school Bastos.

An analysis of the integration of the tools of ICT in the daily lives of pupils of the GBPS Bastos Yaounde lead us to develop and show that the use constitutes a major point in our study of the appropriation of ICT in the process of learning. The study of the information and communication technologies in class is purely theoretical. The teacher draws a computer on the black board, the pupils are asked to name the various parts, then they draw it in their exercise books. They are only made to have a mastery of the hardware of the computer and its proper usage remains wanting. At the multimedia centre of the school, they just have the possibility to touch a computer and learn some few exercises with it. Though the multimedia centre of the school is supposed to be a centre with educative resources for learning, the level of exploitation is low. This centre however contributes to the training and initiation of these young learners to computerized knowledge. When there is a good internet connection, the students as well as the teachers can better exploit these resources for educative reasons. So the use carried out by pupils on the computers show the level of mastery they have which shows their aptitude to adopt these technologies and their capacity to make good use of it for the interest of education. The study of the appropriation of ICT is made known through sociological analysis which describes what learners do effectively with these technical objects, Proulx, (2008). This leads us to look at what users really do with these tools in their pedagogical practice. An understanding of these phenomenon of appropriation and use leads us to the complexity involved in the use of these tools in the daily lives of learners.

2.1.3. Prescribed use of ICT in learning.

An effective integration of the information and communication technologies in education demands an appropriate use of these technologies in the context of learning. The integration of ICT involves the use of these tools to facilitate the process of teaching and learning Karsenti, (2010). What use is therefore made of these tools? We find educative use that is directly linked to the activities of teaching and learning. ICT in this context is indispensable in apprenticeship. That is why directives have to be given to guide its use in education to avoid misappropriation. Prescribed use is like laws which help to regulate the conduct or learners, leading them to make the right use of these modern tools in education. These are directives from the school administration which keeps the pupils from deviant behavior in the use of these technologies. The administrators see to the strict respect and application of these norms. Sanctions awaits

learners who do not obey these instructions. The objective is to make these technologies produce the changes expected of it. The purpose for which users exploit the tools is what can be qualified as proper use or misuse. Proper use is for academic purpose whereas misuse is deviant. That is the reason for prescribed rules to guide against deviant behaviors. It has been noticed that one of the lay down conditions in the use of ICT in school is the formulation of a system of norms and prescriptions to guide users, Baron and Bruillard, (1996). The authorized pedagogical use is prescribed to pupils who are seen as the final users. Sanctions are equally set aside for those who do not obey these rules in the process of learning. They make sure that what is authorized is for educative purpose. The aim of prescription is to regulate the conduct and practices of learners towards positive usage. The administration controls the strict application of this decision and inflicts sanctions on defaulters, Beche (2010). In this case, the information and communication technologies will produce the changes they are meant for. These norms make learners to develop a positive attitude towards ICT tools in their training. They are made to carryout practices that are useful to apprenticeship. The teachers initiate, regulate and judge the factors that will guide the manner in which these tools are used, Flichy (2001). The aim is to create ethical and moral conditions that will lead to targeted objectives. The practice users make should be morally acceptable such that will contribute to ameliorate apprenticeship, Beche (2013).

At the time when the use of ICT in education is taking a greater dimension, its proper use by learners have to be questioned in order to limit deviant practices which can disorient them from the prescribed pedagogical use. This prescription will guide their practices so that they can get the benefits that this technology offer in education. The information and communication technologies are becoming more and more present in education today. Its presence is seen in the fact that most learners have an ICT tool such as android phones and portable computers with an internet connection for the purpose of learning and sometimes for distraction. This involves some advantages, stakes and challenges which are linked to the use of these instruments which are so determinant in their performance Karsenti (2008). Directives for the use of ICT in learning is thus of absolute necessity for the objectives of this innovation to be attained.

2.1.4. Use of ICT and the development of competence.

The information and communication technologies have a role to play in developing the competence of learners. The use of ICT and the development of competence depends on the prescribed usage of these tools in learning. The prescribed laws will define and protect the potentialities that these technologies have come with and gives guidelines to its proper use. Here, it is not the ICT tool that matters but their appropriate pedagogical use, its impact on the development of learner's capacity and the impact it has on the system of education. This prescribed use, notwithstanding, has a role in the development of competence and on the quality of knowledge.

Where the pupils integrate ICT in the prescribed manner, the objective in education will be achieved but when deviant practices come in, we observe the misappropriation of these instruments which cannot help learners to progress in the academic work. How can learners therefore benefit from this prescribed use to develop competence and capacity building? In other words, what do learners benefit by integrating the prescribed use of ICT in their pedagogical practices? In this context, we shall use at the prescribed use, see its interest in learning and in the improvement in the system of education. We shall equally see how learners misappropriate these tools in favor of other reasons than academic. We shall finally see how the pupils of GBPS Bastos follow the instruction of the school in respect of the use of ICT in learning.

For the objective and purpose of the integration of ICT in learning to be realized, stakeholders in the field of education find it necessary to formulate some principles of use of ICT tools to guide the practices of learners. At the level of the GBPS Bastos, the pupils are given particular prescription as to the use of ICT. They are instructed on the things to do and not to do with the computer. They are restricted from some practices such as watching pornographic images, listening to music, playing video games, chatting etc. They are made to understand that this will deviate them from the pedagogical use which will benefit them in learning. Though most of these pupils do not have computers and internet connection at home, they are encouraged to work in groups with those who have a better mastery of these technologies so they can help each other and progress in learning.

Figure 8: Collective work on the computer by learners

In the Government Bilingual Primary School Bastos -Yaoundé, if a pupil or a group of pupils is caught going against the prescribed rules of use, they are given corporal punishment. If it concerns the viewing of pornographic films, in addition to the corporal punishment, their parents are summoned to school and advice to ensure proper guidance at home. The headmistress admitted that such cases have been recorded in her school, though so few. They are doing their best not to have such cases any longer, she confessed. As for the teachers, they say such cases can only happen behind them since the pupils are many as compared to the number of machines available. In such a situation, they can easily do something else when the teacher is occupied at the other end of the class. That notwithstanding, she says they are doing what they can to limit deviant practices through sanctions and counselling. The sanctions, counselling and other disciplinary measures are the joint responsibilities of the school administration consisting

of the headmistress, the disciplinary master, the teachers and those in charge of the multimedia center in school. So proper appropriation and use is a joint effort of both the users and the stakeholders involved in the process. The system of prescription that is put in place is initiated, regulated, judged and sanctions the factors that intervene within the framework of this innovation Beche, (2013). What is aimed at in this case is to create a situation where the desired change can be realized through a proper discipline of users and usage. In other words, it is to make sure that the practices effected contributes to ameliorate apprenticeship and improve the competence of learners. That is why these technologies have been introduced in school. Learners are thus made to consume these instruments in the proper manner. These tools should be integrated in learning while respecting the objectives of prescription for the interest of quality education.

2.2. Misapproriation of the information and communication technologies and sanctions.

2.2.1. Misappropriation

Misappropriation is the wrongful use of the facilities of information and communication technologies, which does not conform to the prescribed usage. Misuse is against the objective of ICTs, which is aimed at ameliorating the quality of knowledge that is derived from these technologies. The putting in place of the prescribed norms of usage notwithstanding, learners still carryout practices that are forbidden. This consist of visit of pornographic site "chatting" games, music, films, Facebook and zoom. They go beyond the prescribed value that accompanies the integration of the information and communication technology in school. They do other things that within the context of learning this shows that the use of the computer by learners is not always inconformity with the prescribed rules Beche (2010), all learners do not always respect the prescribed norms of usage of the computer. That is why we find some people go against these rules. Fraudulent, harassing, and offensive images and messages with anti-social behaviors are prohibited and punishable. Users are expected to apply acceptable and proper language in communication.

Prescription is of interest to education because some learners have subversive ways of using the computer. This behavior create a gap between the objectives of ICTs and what learners actually do with these tools. This is qualified as misappropriation. In defiance of the prescribed

norms of usage, some learners still succeed to downplay these rules by going against the other of the authorities and misuse the computer. That is why sanctions are set aside for deviant users, recalcitrant to the rules of usage.

Despite research that has been carried out on the appropriation and use of ICTs in teaching and learning, followed by prescribed pedagogical use of these tools, learners still go against such instruction. That is why deviant behavior is observe among users. This is owing to the fact that the notion of usage of these tools is complex and the point of usage are diverse, such as the cyber café and at home with diverse ICTs appliances.

One of the conditions undertaken by decision makes in the field of education with regard to the pedagogical integration of ICTs in school is the formulation of norms and prescription to guide its use and apprenticeship Beche (2013). The learners who are seen as final users are impost a particular type of usage which is for the interest of apprenticeship. These are rules of authorize use which are made known as well as the forbidden use. To ensure the strict respect of the prescribe norms, sanctions are envisaged against defaulters. Deviant behavior has to be checked and punished because this mislead the objective of the introduction of these tools in education. When pupils go distracting themselves with the tools of ICTs, they forget that they have to benefit from its potentials. Users are expected to study and understand the dynamics of appropriation of ICTs so as to get the benefit it comes with in education.

The prescribe use is imposed and defaulters sanctioned because ICT is seen as a technological innovation that has come to facilitate the process of teaching and learning. For this objective to be attain, stakeholders come up with these prescribe norms and sanction to compel learners to obey. This will discipline the users as well as the usage. Therefore, much emphases and control need to be effected for positive result to be achieve and the impact felt in the process of education. The stakeholders prescribe the acceptable use. These same authorities are responsible for the implementation and strict respect of these rules. This is necessary for a proper integration of the information and communication technology in schools. The authorities of Government Bilingual Primary School Bastos Yaoundé has laid down rules of use of the computer and the multimedia center of the school. It is a rule of conduct instituted to make learners avoid deviant usage of this technology in their learning practices. This will make them gain consciousness of what to do and what to avoid within the context of usage of these tools.

They are only to do what is permitted as it is within the interest of apprenticeship. Misappropriation will not favor learners because it's destroy and kill the spirit of learning. Reason why misuse of these tools is forbidden and sanction set aside for defaulters. To ensure the respect of these rules of usage, the implementation of disciplinary sanction is of necessity.

2.2.2. Sanctions on misappropriation.

Sanctions are of necessity to ensure proper usage because the serve as warning to users. Sanctions oblige learners to follow the rules of use of these technologies in school. To Baron (1996) prescription is put in place followed by sanctions to ensure the strict respect of thes rules. It is a normal and technical system to get users follow the prescribed manner. The producer of the computer attribute several functions to it. So it is for the users to use it according to need and context. Concerning education it is up to the user to conceive and make it a pedagogical tool. This wise, they have to define and precise the rules of usage so as to meet its objective in the field of education.

The use that is made of this innovation in apprenticeship need to be taken in to consideration as it is so determinant in the process and in the performance of learners. How their daily use is and what do they do effectively with this tools in the context of learning? The use need to be inconformity with the define norms in relation to the objectives assigned to it. This makes possible the analyses of the strategies and practices with regards to deviant behavior in the use of these tools in the process of learning. The imposed usage has to be respected so that control can be assured and sanction levied on deviant behavior. This wise, positive usage can be assured. The question at this point is how far do the learners respect the prescribed use? How successful can this control be respected? Appropriation of ICTs appears in terms of the distance that exist prescribed use and the effective use of these tools Paquelin (2009). Sanctions were help to reduce distance so that prescribe rules can be respected by learners for the benefit and prosperity of education.

2.2.3. Why insist on prescribed use.

Generally, a pedagogical tool is aimed at some objectives to attain. For this to be possible some laid down rules must be respected that is prescribed use. This will push the pupils to respect the rules and develop a positive conduct towards the use of ICT in learning. They are

bound to follow these rules while working on the computer either individually or in group. Any other practice which does not go in line with the authorized rules are punish. This deviant and forbidden rules practice include the viewing of pornographic images, chatting with friends, watching films and listening to music. Learners are warn of these forbidden practices orally and through announcement on the notice board in school and on the walls of the multimedia center. They are advised to make pedagogical use of the computer which will be beneficial to apprenticeship. This prescribed usage is introduce and reinforce by the school administration. The headmistress added that, during the parents and teachers meeting (PTA) the parents are advice to follow up the children at home to make sure they respect these rules they insist on the need for learners to respect these rules because the objective of these technologies is to ameliorate the quality of knowledge that is given to learners. So for this benefit to be convince, the actors in the field of education has to insist on the strict respect of these rules for the sake of quality education. It is through this method that the objective of the introduction of these technologies to education can be realized.

2.2.4. Benefits of prescribed use of ICT in learning.

The benefit of prescribed use of ICT is found in the fact that it is a strategy whereby learners are oriented, accompanied and guided to use the tool of ICT in such a way that a positive change can be observe. In this case, the process of learning will be ameliorated as the quality of education will be improve. This will lead to a situation where school problems will be solved or minimize such as school failure, school dropout, highly populated class rooms, violence at school and other social ills within the school miller will be avoided. This will see the modernization of the system of education Mvesso, (2006)

For the information and communication technology to produce the expected result, the administration of the school put in place some rules to guide its youth in learning. These are rules for the proper use of ICT in school. It helps learners to distinguish between the rightful use and the forbidden us. This wise, the benefit of prescribed usage will be observe. It motivate the pupils and lead them to improve their technological competence, giving them the possibilities to create self-effectiveness in the use of these technologies. Prescribed norms are of interest to learners as it makes them develop the attitude and habits of learning with these tools. This makes them appropriate and use this technical object within the context of education. The

recommendations given through these rules of usage will facilitate and favor the action of learners to a positive direction. To facilitate access to ICTs by learners, Mbangwana and Ondoua (2006) on the pedagogical technology in the primary schools, look at how teachers and pupils use the computer and internet, they observe that, the activities carried out at this level include reading, calculation, and some documentary research. Where the prescribed norms of usage are respected, the expected result will be at the benefit of learners who will see their capacity improved.

2.3. Different points of access and use of the information and communication technologies.

The existence of diverse points of use of the information and communication technology in learning renders control difficult. Usage which is seen as a number of practices exercised on the computer linked to an internet connection. This requires a particular way of use which is guided by a number of rules to be respected in the process. These rules need to be applied in order to check excessive misuse. The deviant use that is observe is owing to the fact that there exist different point of use, such as the multimedia resource center in school, the cybercafé center and the residence of the pupils. According to Bachelet and Tournier (2004), the notion of use has to be revised and excessive misuse of these tools controlled and sanctioned. We shall study the dynamics of the appropriation of ICTs in this different point of use. In this modern era, the use of the information and communication technologies in the process of teaching and learning is of great necessity. The hope we have in these technologies make us to question the availability and the proper use of these tools in education. What are the available tools and how are there use? A proper study at these different points will enlighten us more on the appropriation and use that learners carried out for the benefit of education.

2.3.1. Use of the information and communication technologies in school.

School by definition is a milieu whose fundamental mission is centered on apprenticeship, the transmission and acquisition of competence. Beche (2013) school should therefore provide the instruments that are necessary for learners to exploit in their pedagogical practices. In the absent of quality tools in school, learners will turn to other points of access such as cyber café, residence and other technical appliances. These other points of access gives

freedom to learners to use the computer and the internet at their own will and this will lead us to observe misuse that is for other reasons than pedagogical. The perception and attitude that users develop around these technologies will determine the use they make of it in apprenticeship Karsenti (2008).

We therefore look at the framework under which the information and communication technologies are used by the pupils of Government Bilingual Primary School Bastos Yaoundé. What are they aimed at and how do they go about in the process? The school administration has the responsibility to ensure that the introduction of these technologies into the class room is manage in such a way that the benefit it comes with are realize and the danger misuse avoid or minimized. This is of great important at the primary level where learners are still new in the domain of ICTs in learning. The appropriation and proper use of these technologies is seen through the gape that separate the prescribe use and the misuse of the ICTs tools Beche (2013). In school, the prescribe use is identify and distinguish from the forbidden use. This wise, expected results of the integration of these technologies in the practice of learning can be achieve. For these results to be attain, the authorities of the GBPS Bastos Yaoundé institute prescribed norms to guide the pupils in the use of these tools in their pedagogical practices. These norms are seen as rules of conduct and use which pupils are oblige to respect and follow in the process of learning. There are make to distinguish between the proper use and misuse. The educative use is what they are encourage to follow because it is linked to the practices of teaching and learning in an academic milieu.

In school, the pupils make use of the information and communication technologies at the multimedia center where they make practical exercises on the computer. This makes them get use to these tools which will help them improve their capacity in learning. Though the number of machines at the center is limited in relation to demand, pupils work in groups so that each learner can have access to the computer so access to this structure is programmed in such a way that each group exploit with time allocated to them for that purpose. They are all make to respect the prescribed norms of usage of the computer so that the short time they have on the machine can be of benefit to their education so these children are made to cultivate the culture of proper use of these tools for the interest of learning. The teachers say that when they are working with the children at the multimedia center of the school, they find it difficult to control the way the

children use the machine because of the number working on a single machine at the same time. As the computer has diverse application, the pupils can easily switch from one application to another without attracting the attention of their teacher. That notwithstanding, the teachers say that they are doing their best to see to the strict respect of the prescribed norms.

2.3.2. Use of the information and communication technologies at home.

As access to the information and communication technology and internet connectivity keeps increasing, we observe that some people have such facilities at home. Almost every house hold in Yaounde has a smart phone or a television set with modern technology. Children easily have access to these tools at home, but the unfortunate thing is that they exploit them wrongly since they access them for entertainment facilities such as games, films, music and other unauthorized use. Some of them however, go in for educational activities which are designed specifically to provide instructions for learning. These are the aspect that characterize the environment of ICT use at home. Here children spent most of their time on entertainment than educative programs. This home environment can be compared and contrasted with school environment where the pupils use the computer for a very short time at the multimedia center due to the limited number of machine at their disposal. During interview, it was observe that some pupils have computers at home but do not have internet connection. Some parents have USB Keys furnished with internet connection but they hardly leave it at the disposal of these children who are wrongly judge to be too young to use it. So these children out of anxiety are push to the cyber café center where they will be out of the reach of parental control. The few parents who accept that the children use the internet connection at home ensure supervision of use by the children. Some parents equally establish a time table for the use of the computer and the internet this is what some pupils testified. Other parents suspend the internet connection at late hours of the night so that the children will not misuse it in their absence Misse Misse (2004). All this is the endeavor of the parents to guide the children in the manner they use these technologies. Much emphases is put on control because most of the time the use the pupils make of these tools is around distraction. It is equally so because the internet is expected to bring a valued added to education as it enriches knowledge in the aspect of information, culture and apprenticeship.

Our field work was also carried out in school. So facts related to the use of the computer at home are collected through interview in school with the pupils who have the computer and internet connection at home. Also with some people who use the smart phones of their parents to do things that do not respect the prescribe use of learning. One of the pupils said he uses the mother's smart phone to listen to music and search news about starts in football, music and film actors. All these has no relation with the prescribed use of ICT tools in learning. Most often these children use the computer in the absence of parents making the control difficult that is why the headmistress said that during parent teachers' association meetings (PTA) they advise parents to strictly guide their children to the use of the computer at home. Therefore, we see that the proper use of a computer and the internet at home is limited and in most cases not pedagogical. The parents are advice to discipline the children and control their access and use of the computer at home. This is because the computer usually place in the pallor, so the children will sometimes exploit it at night or sometime when the parents are absence. The residence of pupils is seen as the context for the use of a computer is characterized by weak internet connection or total absence of the internet connection. There is equally inadequate parental control of the use of the computer by the children and other misuse that does not favor apprenticeship Beche (2013).

2.3.3. Use of the computer at the cybercafé.

A cyber café is a simple café in which customers pay to use computer terminals to access the internet. In the context of Yaoundé, a cybercafé is a type of business where computers are provided for accessing the internet, playing games, chatting with friends or doing other computer-related tasks. In most cases, access to the computer and internet is charged based on time. There are many internet cafes located worldwide, and in some countries, they are considered the primary form of internet access for people. It is also known as internet café. Cyber café centers are found all over major towns especially Yaoundé as well as other major towns in the country. These centers are for commercial purpose. So they are furnished with computers and high debit internet connection. Access and the use of these facilities is paid at the cost of 200frs CFA per hour 300frs CFA in well-equipped centers. Children have the liberty to visit and have access to this equipment as long as they have the entry fees. With these modern tools, they can get to the great Varity of materiel for both learning and distraction. Unfortunately, there is no control of the type of use that is made at the cyber café by children. They have the

laxity to disrespect the prescribed norms given by schools. The prescribed norms of use at school is not applied in the cybercafé, which is seen as a commercial center focalizing their interest on financial benefit. The use that is made of these technologies at the cyber café is different from the prescribed use impose by the school authorities which bring some discipline in the technological practices of users. Therefore, children in most cases visit these centers for distractions and some few for academic work.

The role of cybercafé is not to be neglected in their contribution to research in field of ICT. These are private initiative that contribute in it own manner to the development of ICT by offering internet services to the population, including pupils. Though it does not have a particular text that regulate its functioning, it however contribute to the integration of the information and communication technologies in the social and academic practices of users. These centers has come to satisfy the insufficiency that the family and the school has failed to satisfy.

A visit carried out at the cybercafé at "Carrefour Carriére" Yaoundé II sub-division called Grace Land Business Center gave me much details on the way these centers operate. This center shares the down floor of the building with Pharmacy Mon-gale it occupies a hall with about 12 computers, each separated from the other with plywood. So a user does not see what the other is doing. Privacy is respected. This environment favor the misuse of the computers in doing certain things that are forbidden at the multimedia center in school. During my visit at this center, I could not see what the users are doing on the computers. In a chat with the manager of the center, he gave me some information on the functioning of the center. I went there as a customer paid 200frs CFA for an hour with the objective of viewing functioning of the center. So I was acting as a participant observer. This enable me to gather fact needed for my research. Here majority of the clients are teenagers who sometimes pay 100frs CFA for 30 minutes. Most of them comes without books nor a pen to take note that already a sign that they are coming for distraction not for learning. Some come in groups of about two or three, might have contributed and pay to do joined work. In this case they collectively use one computer. Those who come alone do their private work which cannot be easily defined as they work in privacy.

Figure 9: Children in the cyber cafe

The cyber café constitute the usage of the information and communication technologies but the problem is what usage is made of it as there is neither control nor guidance of the practices of users. It is now left to the school authorities to make children respect the prescribed norms of usage of these tools wherever they find themselves on the computer. These centers, if exploited in the positive use will be advantageous to learners because there are well equipped with high internet debit which facilitate research and easy access to quality knowledge. These centers can be used to complete the work pupils could not do at school because of limited number of ICT resources. Beche (2013). The cyber café saves as an alternative to poorly equip multimedia centers in school. It permit learners to realize what was difficult to do in school. For those who have computers at home, there are certain things they will not be authorize to do at home so they will visit the cyber café in search for freedom to do what they want on the computer. Sometimes the connection at home may not be the best for them to do their work so they will find themselves at the cyber café for quality services. For these reasons, the cyber café is consider as a favorite point to access these tools by learners. It is at the same time

complementary with the other context of access that is the context of school and home. We see that school, home and cyber café each has its realities in the situation of access and use of the information and communication technologies by learners. Each having its preference and advantages to uses this shows the diversity of the different forms or context of use of ICT at the disposition of users for the interest of education. We find some teachers who visit the cybercafé especially where there is a good internet connection and a comfortable environment for research.

It is the duty of a teacher to make learners know what information and communication technologies signifies to them especially in the process of learning in this era of digital technologies. Reason being that these numerical tools have an influence, an impact and great repercussion on the system of education today. These tools offer possibilities that facilitate communication, learning opportunities and freedom of expression. Either used negatively or positively, it is a fact that these numerical technologies are hence forth part of the daily lives of citizens. The reason why these pupils must know the danger that the misuse of these tools represent. Misappropriation will destroy the objective of these innovation. So they should be made to understand that obeying the prescribe use is obligatory wherever they find themselves on the computer, be it at home or at the cyber café because it is for the interest of their studies and of education in general.

Figure 10: Modern well equipped cyber café

It has been observe that through the information and communication technology children can communicate easily, reinforce friendship and create new friends. Thanks to these tools, the circle of friends is enlarge. In this case they use application such as WhatsApp, Facebook, Messenger and so on to create and reinforce relation with friends from far and near. This platforms can equally constitute a space where conflicts and some tragic incidence can be exercise. We have seen situation where these tools are used to mount pressure by expressing some content that will attract or oblige others to carry out some actions to their favor for example: pornographic images acted and posted by some children in school they send such images to attract friends and also show that they are already grown up. These are some of the ills that the ICT tools are have come with. So it is left for the education actors to come out with strategies to stop or limit these disadvantages that are observe in the use of the ICT by learners. Researchers in the field of education shall stop searching for solutions that will guide the behavior of young learners concerning the appropriation and use of these tools in education. This is because as science evolves researchers continue to look for a system that will match with current evolution. That is the reason why the pupils need to be guided for them to use these tools as required for the benefit of education.

2.4. Other uses of the information and communication technologies in the school milieu.

Besides the use of information and communication technologies for the purpose of teaching and learning, the school administration equally use these technologies for administrative activities. These activities include the management and functioning of the school library as well as the management of personnel. Going beyond the pedagogical use of ICT in school, these tools are linked to diverse activities in school, Tchameni Ngamo and Karsenti (2008). It is used in school to satisfy a certain number of needs including out of school activities having an impact in the functioning of the school. The director of the school perceive ICT as a means to get to some important issue and contacts with education partners for the interest of the school.

2.4.1. Use of the information and communication technology for the administration of the school.

The Headmistress of the Government Bilingual Primary School Bastos Yaoundé acknowledged that she presides over meetings by video conference with partners of her school, especially in this time of corona virus, which limits the meeting of people physically. This is made possible thanks to the information and communication technologies. Much work is accomplished and many problems solved within the administrative sphere. They use these technologies for research and the management of the school activities. This management will involve evaluation, registration and keeping of the records of school intake equally used for keeping records on the performance of the pupils, produce, print and keep report cards, time table, and the program of work of the school personnel. These technologies are thus used as a tool of work for the school administration. These technologies are equally used as a tool for managing the finances of the school. Pupils pay fees by use of these technologies and other financial settlements with partners of the school. It therefore saves as an instrument for management and coordination of school activities. The headmistress says that her computer connected to internet, enable her to work both in the office and at home. One of the most important thing she does with her computer she said, is the control of number of pupils in school, those entering (new comers), those leaving (graduate) as well as the progress of the pupils in general from one level to another. They produce and print identification documents of the pupils such as the school identification cards, school attendances certificates and similar documents of administration and accountancy. It permits the following up of the pupils individually, rendering the management of pupils easier and faster. These technologies are unavoidable tools which help maintain contact with partners association all over the world, Karsenti (2008). These tools are also use for the exchange of communication within schools collaborators and parents of pupils for easy control and guidance of learners as well as exchange of information for common interest. This has facilitated the work of the school administration and reduce paper work and physical document has also reduce giving way to digital document which are fast and easily accessible by users as a tool for communication with her collaborators in sharing information at work leading to easy group work. It facilitates and increases effectiveness and result. The integration of the information and communication technology at work offer great advantages to

management in terms of flexibility, mobility, productivity, collaboration, organization and planning, Beche (2013)

Figure 11: The computer assists school management in their daily practices.

2.4.2. Use of information and communication technology by teachers for research.

Besides the pedagogical use of the information and communication technologies by teachers, these tools equally serve the teachers for other activities such as production of question papers. During examination, questions are no longer written on the blackboard, as was the case before. Questions are typed and printed with the use of these tools. The results of the students are also treated in the same manner that is, the calculation of their marks and the publication of results. The production of their report booklets, diplomas and the keeping of records of the performance of pupils are equally done with the help of the information and communication technologies. The teachers use these technologies to do research and prepare their lessons. This eases their work and gives quality to the knowledge that is transmitted to learners. In this era of

modern technologies and education, learners have access to a wide variety of information and resources related to apprentice. The teachers have to research more so that the pupils do not surprise with questions they cannot answer, because some pupils are good at research on the internet. This wise, the teachers need to enrich their knowledge in order to maintain their position as superiors over the learners. In a general way, the work of the teacher has been facilitated by the use of these modern tools in their pedagogical practices. This gives them the opportunity to renew their knowledge and teachings methods. It should be noted that the success or failure of an innovation is judged by the way it is used especially by the final users, that is, the learners because they are the true indicators of an innovation, Beche, (2010). Considering the place the learners occupy in this innovation, their opinion, attitude and the use they make of these tools determine their effectiveness and the contribution they give to improve the quality of knowledge.

2.5. Gender consideration in the access and use of the information and communication technologies in school.

The government through the ministry of basic education has always taken action to ameliorate the quality of education that is transmitted to learners. This, is done without discrimination as to gender. The government gives equal opportunities to both sexes to access these tools in learning. To put up and realize a good project of education, learners who are at the center of the project needs to be encouraged and motivated especially the young girl who is retarded by socio-cultural factors. The girl child is encouraged to develop interest in these tools in learning because girls have more difficulties than boys in the access and use of ICTs. They consequently need to be motivated more so that equity in this domain can be attained. Though this effort put in place by the authorities to democratize education, a low rate of schooling of the young girl is still observed. That is why this research focuses attention to the primary level, which is the foundation for a solid education system. This basic level offers a specific context in the pedagogical integration of computerized technologies in learning. At this initial stage, the girl child is encouraged to develop the culture of ICT in learning same as the boy. This is seen as a technical and scientific initiation of learners to an innovation. The specificity of the primary school has to be taken into consideration here because the context involves learners who are

ignorant of these technologies. They have to be introduced into these technologies and encouraged to involve it in their learning culture especially the girl child.

The difference between boys and girls is not very apparent. They all exhibit interest and enjoy using ICT. The teacher interview said that access to the computer was given to most motivated pupils regardless of sex. Out of school, it was observe especially at the cyber café that boys have access to computer than the girls. These makes the boys to have faster mastery for the tools of ICT.

Discrimination against girls or sex differentiation is a serious concern and a barrier to the integration of ICT in education. The disparities observed between boys and girls in learning to use ICT is visible in our society which is characterized by the socio-cultural environment, historical and traditional factors. The development of ICT integration policies should be such that will overcome the constraints that bar the girls from using these technologies at school. Behavior would have to change toward children and measures implemented to facilitate their access to the computer. There should be no barrier to a girl child. She should be offered same educational opportunities as the boys. It should be noted that, exclusion or marginalization constitute a great hindrance to the effective integration of ICT in education. The notion of discrimination should be banned and give way to provision that allow all pupils to learn ICT. If ICT is introduce in a school system without taken into consideration these special factors, it might be a failure.

However, a certain balance between boys and girls in ICT train would be required for a successful long term integration of ICT in education. Karsenti, T, Collins et Harper Merrett, T. (2012). ICT should not be a domain strictly reserve for male learners. Raising awareness among girls and facilitating their access to ICT and advocating sex equality can enable a better implementation of ICT in a system of education. Any effort to correct gender discrimination would require schools to encourage girls to the use of ICT in school.

2.5.1. Gender and information and communication technologies in school.

The concept of gender has recently been given much importance, which has brought a change in the perception of the girl child especially in the use of the information and communication technologies in apprenticeship. Generally, the boy child benefits more than the

girl because they show more interest and are more active in the use of these technologies. The female child needs to be motivated to join the wagon of ICT in learning. That is why Onguene Essono (2012) observes that in developing countries, the strategy of the education of the girl child and the use of information and communication technologies is still problematic. Mapto Kengne (2011) equally observes that the girl child is neglected in the aspect of education. This is a challenge that needs to be overcome, because it is a problem that retards development of what concerns gender and technology. So much attention needs to be accorded to the education of the female gender mostly in the domain of ICT.

The boys develop more interest than the girls do as we see the boys more alert, active and more attracted to these tools. Scientific subjects scare some girls. This notwithstanding, we still find some girls very alert, motivated and participating at same levels as boys. This is the case that is observed at the Government Bilingual Primary School Bastos Yaoundé where both boys and girls are engaged in the same manner.

While observing to see the disparity between boys and girls in the use of information and communication technologies at the Government Bilingual Primary School Bastos Yaoundé we discovered that there is gender equality between boys and girls to access lessons on ICT, both at the theoretical lessons in class and at the multimedia center for practical exercises on the computer. To better equate gender equality, some partners of education organized training for female pupils in ICT, such as CAMTEL. So the implementation and sustenance of ICT projects in the basic education will be enhanced through partnership approach involving the community, private and public organizations and funding agencies.

The strategies for the application of ICT promotes equitable access to educational resources to all learners irrespective of sex, origin or social category. This will make all primary school leavers to be computer literates. Efficiency and effectiveness needs to be improved in all learners through an equitable access to ICT in education for all. In a general way, it is known that social considerations related to gender helps to structure the society and school in particular. Gurumurthy (2005) sees that it is important to go beyond just access to know what the boys and girls think and do with the computer. He questions if access and usage is open on equal basis to both girls and boys in learning. Do they both have a favorable attitude towards this innovation? Who makes more use and have more competence in this domain than the other? So the problem

should not be limited to accessibility but also to the use that is made of these tools in the process of learning.

In the study of the disparity of boy-girl in the study of ICT, accessibility is a variable which is visible but needs to be understood in its connectivity and usage since technology and gender is a mutual construction Jouet and Pasquier (1999). Both sexes should be made to have equal access, competence, capacity, conception, development, control, opinion, attitude, representation, usage and mastering of the technological equipment Baron et al (2010). Gender and technology in school is influenced by socio-cultural factors, which have to be overcome through constructive feminism Gurumurthy (2006). Though the girl child has a status which is affected by socio-cultural prejudice where she is considered as a weaker sex, the girl child of GBPS Bastos Yaoundé is given same consideration and opportunities. Girls on same basis as boys are given same possibilities to use these new technologies in school. Since it is observed that the girl child is not naturally motivated as the boy child, the school authorities and partners come up with strategies to encourage and motivate the girl to develop interest in the use of ICT in learning. This has yielded the desired results as we find equality in the access of these tools by boys and girls. They both manifest positive attentive attitude towards this innovation in school.

2.5.2. Access by boys and girls to the multimedia resource center of the government bilingual primary school Bastos Yaoundé.

Following information gathered from the field, it can be said that there is equal access to the multimedia center by both boys and girls. Following the groupings that is made for the pupils to visit the multimedia center sex discrimination is not observed. In this context there is a certain degree of equality between boys and girls. Matchinda (2008) sees that when these technologies are used in school in this manner, they will have a positive effect on the performance of all the learners. So gender equality is observed at the level of access to ICT in school Onguene Essono and Beche (2013). Boys and girls have equal opportunities and are given equal treatment in the use of these instruments in learning. In the interview carried out for the pupils of class six, it was revealed by the all the pupils interviewed that they all have equal access to practical lessons on the computer. During direct observation at the multimedia center, there was a group of 24 pupils receiving practical lessons. In this group there were 14 girls and 10 boys. This showed clearly to us that the girl child is not neglected in this domain. When we tried to know why there were

more girls than boys, the teacher said that it was not intentional, it was just by hazard, for they are all given the same consideration.

The schooling of the girl child in our society present a challenge to stakeholders in the field of education. As a strategy for the schooling of a girl child and her use of the information and communication technology, there is a desire to motivate her in the appropriation and use of these tools in learning as it facilitate the process of education and the development of competence. To Onguene Essono, (2010), all learners without distinction do show a particular interest in ICT tools and in using them practically in their studies. There is no different between the girls and the boys in accessing these tools. There is no problem of gender in this concept. The girl child is given same opportunity to access ICT, same competence, but this equality is not well advanced as the actors might have wish. That is why the girl child is particularly motivated in other to reveal the gap between them in the use of ICTs in learning.

Research on the integration of the information and communication technologies for education and their contribution to the process of apprenticeship, the aspect of gender equality are of great important in education. We have examine gender consideration in the aspect of ICT by learners in school. We have seen what the authorities of the Government Primary School Bastos are doing to encourage and motivate the girl child in the use of these technologies in learning. This is by giving equal opportunities to both sexes to the access and use of these tools. This is owing to the important that is giving in recent time to the schooling of the girl child especially in the use of modern technology. We have seen that gender does not influence the way teachers carry out pedagogical practices. Since the girl child is naturally slow in the appropriation and use of ICT, stakeholders have developed strategy to encourage and get them involved in learning activities with the information and communication technologies same as the boys. At the multimedia center of GBPS Bastos, boys as well as girls are given same treatment with regards to access and used of ICT in apprenticeship. We have seen the effectiveness in the management of gender equality in school and in the system of education as whole. Looking at the appropriation and used of the ICT we have observe a certain level of equality between boys and girls. Their familiarity, used and competence on these technologies enjoy a certain amount of equality. There is the tendency to have male domination in the access and use of the ICT tools in school, but this has been disprove by research carried out in the campus of the school which

shows that the girls and boys are having same chances in the appropriation and used of these tools in their pedagogical practices. The girl child has equally developed the attitude of the information and communication technology in learning. That is what has bridged the digital gape between them. In this case we think that a real integration of ICT with the consideration of gender equality can contribute to ameliorate the process of education.

CONCLUSION

This chapter concentrated studies on the appropriation and utilization of the information and communication technologies in learning. We identified the factors that can contribute to an effective and durable integration of the information and communication technologies in education. We saw how the pupils of the Government Bilingual Primary School Bastos Yaoundé access and used these modern technologies in learning. For such usage to be of interest to education and produce the desires effect, prescribed norms of use are put in place. The administration of the school has formulated norms and rules to guide the use of these tools and keep learners away from misuse. This is what will lead to the realization of the objectives and the integration of ICTs in school. This benefit is thus protected by prescribed principles of usage.

The use of these tools depend on the different context of access. The different points of access are seen in these chapter include the school, the residence with internet connection and the cyber café. Each context has it particularity of usage. The context of school is in strict respect of laid down rules by the authorities, which learners are oblige to respect. At home, access and usage depend on the availability of these tools and parental guidance. At the cyber café, it is a sort of free context whose usage depends on the need of the users who are free to make the type of use they wish without control. So with these points of access and use of the computer, control becomes difficult.

This chapter also bring out the difficulties face by the authorities of the Government Bilingual Primary School Bastos in the integration of ICTs in school. They face the problem of infrastructure, equipment and the absence of well trained teachers in the domain of the information and communication technologies. They however propose some solutions such as applying to the Ministry of Basic Education and other partners for the provision of infrastructure

and equipment as well as trained experts in the domain of the information and communication technologies in teaching. The limited resources notwithstanding, they confirm that the integration of the ICTs in the teaching and learning practices is real in the school. The prescribed used of ICTs and the sanction are well implemented in school but at homes and cyber café control of use is difficult. We have seen that if these norms of usage are strictly respected, these will lead to the development of competence and improve the quality of knowledge. Prescribed use can bring this benefit to the process of education. We have equally looked at the access by young girls to these technologies. Gender consideration is well applied in the access and use of ICTs in school because equal possibility is given to both sexes. These will lead to the achievement of the millennium objective goal in education, which is aimed at education for all by facilitating access to educational resources to a greater population.

Concerning the manner in which these technologies are used, we have tried to understand the dynamics of the appropriation and their pedagogical integration in the process of apprenticeship. We look at what learners effectively do with these tools and what they think of it, that is appropriation and used of these objects, Millerend (2002). This makes us to understand the interest and the place these technologies occupies in education. It equally make us understand the stakes and challenges involved in the appropriation and used, giving a close look at deviant users, Beche (2013). We have also seen the appropriation of ICTs in learning through the use which makes it evidence that the benefit it would depend on the level of respect that learners give to the prescribed rules. We have looked at the interest that studying with the use of these technologies will lead us to examine the social representation of this innovation to users. How they access, use, think and the hope they have in these technologies to improve their capacity of learning as well as the quality of knowledge they acquire.

CHAPTER THREE
USES OF THE INFORMATION AND COMMUNICATION TECHNOLOGIES AT THE G B P S BASTOS YAOUNDE.
ANALYSIS AND PRESENTATION OF RESULT OF INVESTIGATION

Research on the pedagogical integration of information and communication technologies necessitates a systematic investigation that will established facts to give us a better understanding of the subject matter of our research. The fieldwork carried out at the Government Bilingual Primary School Bastos, gives us the opportunity to test the following hypothesis:

- The technological disposition of ICT in school,
- The use of these technologies in teaching and learning,
- Difficulties faced by the integration of these technologies in school.

The actors we interview at this school include the head mistress, teachers and pupils. We seek to have their opinion as well as proposals on how to ameliorate the situation of the information and communication technologies in school. This will lead to an effective use of the ICT in the interest of teaching and learning.

3.1. The technological disposition of ict in school.

In order to enhance the quality of teaching and learning, the question lies in the provision of school with the infrastructure and equipment of the information and communication technologies. Owning to the high demand, the public and private sectors as well as each school administration are leaving no stone unturned to see that schools are well equipped with these technological instruments. They have a duty to ensure that every school have access to the number of ICT tools to facilitate apprenticeship. The technological disposition of ICT in school is not as the authorities expected the head mistress said that they have only six functioning machines in the multimedia center of the school for the population of about 1 000 people. The Ministry of Basic Education has tried to furnish the school with computers and technical assistance for the repair of damage machines yet the ratio of pupils per machine is too low. What they have do to overcome this obstacle, the head mistress said, is to divide the children into

different groups for each group to take it time at the multimedia center for practical lesson. The Ministry of Basic Education has done much to this effect but it is not enough so the school authorities seek for technical assistance from educative partners such as UNESCO, UNDP and others. These nongovernmental organizations help the school in furnishing some equipment and expertise for technical work on the equipment. In this case, each learner can be given the opportunity to use the machine in practical work. She end up by expressing her wish to see her school well equip to enable each pupil to access the computer so that they can benefit from the potentialities offered by these technologies in education.

3.2. Use of these technologies in teaching and learning.

Concerning the use of these tools, we see that it is first a handicap because the multimedia center is not well equiped so the children have limited time to work on the machine. The few machines cannot conveniently serve the pupils for proper practical lessons. That notwithstanding, the pupils are program in such a way that each learner has the possibility to benefit from these technologies. All the actors interviewed were unanimous on the fact that gender consideration is respected in the division of groups. The girl child is given equal opportunity to access information and communication technologies in the same capacity as the boys.

The teachers cannot exploit the tools at this multimedia center of the school because they are insufficient in quality and quantity the internet debit is too low, comes on and off so the teachers nor the pupils can carry out an effective research. Some do learn at home and sometimes at the cyber café to complete what was not complete at school. This was the testimony of the teachers interviewed. They however acknowledge that the information and communication technologies has changed the teaching and learning process positively, creating new learning opportunities and greater access to knowledge. So generally the use of the ICT tools in school is effective despite the many challenges encountered. Asked if the information and communication technologies have produce the expected results, the head mistress as well as the teachers acknowledged that despite the obstacles and weaknesses observe, there is progress in the introduction of these new technologies in education. The pupils involve themselves more and more in the practical lessons, boys on equal basics as the girls in the use of ICT in their pedagogical practices and the sensitization of teachers who are still reticent to adopted the

culture of ICT in their practices. The human factor is as essential as the infrastructure and the equipment, which are seen as the basic element necessary for the use of ICT in teaching and learning. It is obvious that well trained teachers will build competence in learners. Lack of information, training, experience, technical and financial support retards the development of the use of ICT in education, Karsenti (2010). It is observe that, where more partners are involve in sponsoring the school on equipment and expert on these technologies this can promote the integration of ICT in learning.

3.3. Factors that hinder the integration of the information and communication technologies in school.

Concerning the weaknesses of the integration of ICT in school, the head mistress, the teachers and the pupils raised almost the same factors which they see as obstacles. The first obstacle they all raise is the insufficient infrastructure and equipment of ICT. They have limited infrastructures for ICT equipment. That is why we find the multimedia sharing the same hall with the library of the school. We equally find damage computers awaiting repairs. They have difficulties repairing these machine because of lack of adequate funds or expert in the domain. The space provided where machines are installed is too small and the number of machines also are too few as compare to the number of learners in need.

Another weakness raise is the fact that teachers are not initially trained in the use of these technologies in teaching. They are given in-service training and recyclage. The teachers are able to carry out their practical duties through the knowledge they gain from the retraining courses. In the use of these tools in teaching, they are confronted with new practices which they are not familiar with and are not prepared to face. The study carried out at the Government Bilingual Primary School Bastos made us to understand the context in which these tools are use and we observe the difficulties which hinders the proper integration of these innovation in school.

3.3.1. Proposals to ameliorate the integration of ICT in school

Concerning the future of the integration of the information and communication technologies in school, some proposers were made by the actors interviewed. This is for the interest of future research on the pedagogical integration of ICT in school. It will create opponent that may lead to a brighter future for education, thanks to these new technologies in school. The

teachers saw that the situation of ICT can be improved by the provision of adequate infrastructure and sufficient tools to facilitate and improve the process of teaching and learning. The future of ICT in school can equally be guarantee by the deployment of experts in the field of ICT in schools where their services are most needed. This will ensure access of quality education by the learners.

Concerning the supply of energy, they propose that if a permanent power supply and internet connection are assured, this will lead to an improvement in the quality of lessons and regular dispensation of lesson and practical work on the computer. They saw that if the use of solar energy can introduce it will remedy the situation of irregular power supply.

The Ministry of Basic Education is conscious of the fact that the Basic Education is the backbone of an education system. They have the duty to ensure that every school have access to the ICT tools at the benefit of learners. This will guarantee the equipment of school with ICT tools and expert in the domain.

Majority of the pupils interviewed said they started manipulating the computer in school, though they have been using a smart phone for other reasons not for academic purpose. Some few of them have computers of their parents at home, so they are used to it. The problem here is the use they make of it at home. At school they are bound to use the computer for learning, whereas at home they use it for play games and watching films. So the appropriate place for them to make a pedagogical use of the computer is at school. At home they find it difficult to use the computer pedagogically because they have nobody to guide them while at home. Yet we find some few learners who made the effort to exploit the computer positively at home. While at the multimedia center of the school, a learner confirmed that they are being taught the various parts of the computer. This make them develop the interest to learn more on how to use a computer. They will therefore develop the habit of working with a computer which will help them improve their knowledge and competence. It is certain that today is no longer the era when the computer were reserve for higher education and the administration. These tools are presence and almost indispensable in the daily life of citizens all over the world, not living the basic level of education which is the foundation of the system of education. So these young learners need more time and encouragement to make them grow up with the culture of the information and communication technologies in their learning habits.

Despite the limited number of machine, the pupils still have time for practical lessons because of the method of group work that has been developed by the school authorities. The pupils all agreed on the fact that they find working on the computer interesting, motivating and encouraging. They regretted that fact that they could not go fast because of the limited number of machines at their disposer. They are taught the various part of the computer, how to connect the part and how to enter some elementary work and communication with the use of the computer. Whereas they need to be able to do some little exercises on the computer. Their teacher said that it is due to lack of internet connection. So they operate within what they have at their disposals. More so, they said that beginners need to have a proper mastery of the hardware before studying a software. So the pace at which they are going is equal to their level the teacher concluded.

These lessons on ICTs, though limited has help the pupils to develop interest in learning as they are made to discover the potentialities that these tools bring in education. It makes them develop love for practical lessons and the desire to know more on these new technologies in education. What was interesting to note is the fact that the number of girls were almost the same as the number of boys during practical lessons at the multimedia center of the school. The pupils all admitted that boys and girls have equal access and giving same treatment during the practical lessons. So gender equality is exercise in the Government Bilingual Primary School Bastos. This will motivate the young girl who is sometimes sideline in certain activities in the society. All this element put together are determinant in education and will lead to an effective integration of ICT in education.

3.3.2. Determinant factors in the integration of ICT in education.

Following the result gather from interview, it is observed that there are certain factors that determine the pedagogical integration of the information and communication technologies in education. These factors contribute a great deal to the success or failure of this innovation. These tools are adapted to the teaching and learning practice of actors. Programs are conceived and elaborated in accordance with the context so that the school environment can favor the integration of these technologies. The availabilities and accessibility of these tools determine the level of motivation and engagement of users. These tools include the computer and internet connection in the context of the primary level of education. Therefore, a real appropriation and effective use of these tools will depend on the quality and quantity of equipment available and

the manner of using these tools in the process of teaching and learning. The presence of the computer and internet connection in school constitute a motivating element to both the teachers and learners as they use them in their pedagogical practices. They also need personal computer for research to proceed after school. The teachers interviewed confirm that they have a computer and internet connection at home for further research on their academic work. It is a tool for research and teaching at the same time. It enable them to appropriate this technological innovation as it help them ameliorate the quality of knowledge that they dish out to the pupils. This has been influence by the initial training that the teachers had at the Teachers Training College and from the recycling courses they receive while working.

It is equally of important to training school managers in the use of these technologies, as it is one of the factors that determine the proper integration of ICT in school. This is determinant in the development of these practices in school. These managers constitute a motivating force to the teachers as well as the learners. Beche (2010) states that it is necessary because these managers are responsible for the planning and administration of resources of the school such as technical, financial, human, pedagogical and so on. These managers create condition that facilitate the integration of ICT in the practice of teachers. To sharat (1999), a successful integration of ICT in school depends mostly on leadership and on the technological competence of the head of the school. At the Government Bilingual Primary School Bastos, the Head Mistress is computer literate. She has her computer in her office, which facilitates administration and discipline. The introduction of the information and communication technology in school, especially in the Government Bilingual Primary School Bastos is seen as a technological innovation that has come to ameliorate the environment of education. This is put in place in the context of teaching and learning as well as some administrative activities. To Charlier and Peraya (2003), it is a technological innovation put in place for the interest of training and apprenticeship. These innovation bring a change in the system of education, Depover and Strebelle (1997) and the present of these technologies in school favors modernization and hence forth a modern way of research. A new way of teaching and learning equally lead to "Competence Based Approach", Fonkoua, (2010). The introduction of ICT in school is equally seen as an answer to a pedagogical situation that had some weaknesses in the system. The information and communication technology has come to ease access to education and solve some problems such as failure in school, excessive number of learners in the same hall or overcrowded

classrooms, school dropout and the problem of professionalization of training. These factors justify the integration of ICT in education and are determinant in the success of the system of education.

3.4. Contribution of the information and communication technologies to the process of teaching and learnig.

It is common today to say that the information and communication technologies are indispensable tools to our daily lives. There is high level use of the computer and internet in our academic and social activities. Education explores the different tools to exploit the potentialities that ICT offers in education. The use of the computer is to produce pupils who understand how to work with these modern technologies in education. To facilitate this process, the teachers are expected to have a mastery of these tools in their teaching practices, this is because ICT offers much resources of education to learners. It is through the teachers that learners enjoy the benefit of ICT in learning. The teacher has to do more to avoid challenges from pupils. He guides learners, give them the capacity to collect information and knowledge which so determinant to the success of education. For the potentials to be acquired the guidance or teacher is very necessary. It is through this perspective that we can observe a positive contribution of these tools in the process of learning. To ensure that the project of ICT in education is realize, The Ministry of Basic Education came up with a policy instrument which include incentives, guide lines and performance evaluation instrument. For the access, use and impact of ICT to felt, the government assures the required funding for access, maintenance and sustainability of these modern technologies in school.

3.4.1. The information and communication technology as tool for teaching and learning.

The information and communication technology provide new tools to teachers, learners as well as administrator of schools to ease their pedagogical practices. This has created new and improve learning opportunities. These tools have changed the phase of education which can be term Knowledge Revolution, such as online learning as Fonkoua (2006), Look at the benefits learners derive through learning online with the use of the computer and internet connection. When these learners register online, get trained online, and are equally tested online, this makes

teaching and learning to be diversified in method and procedure to suit the program and time of each learner. This consequently gets education to a greater population. Here the impact is felt in the educative community as Matchinda (2006) questions the impact of the use of these technologies in teaching and learning on the performance of learners. In pedagogical practices, with the use of ICT, learners are motivated to be well organize to realize their activities, ROCARE (2005). To Matchinda (2008), for these benefits to be properly exploited by learners, they should have access and make appropriate use which should be pedagogical and their attitude and motivation directed towards that direction.

The information and communication technologies provides modern instrument to enhance teaching opportunities for learners and create possibilities for learners to increase their professional skills. It gives the teachers quality knowledge which they transfer to the pupils. For these tools to contribute effectively to the process of education, the government seeks to ensure equitable access to these resources by institution of learning so that the interest and benefit of this innovation can be at the reach of all learners without discrimination as to set race or place of origin. ICT strengthens teachers and learners' activities and give them the capacity to safe research and strategies for the acquisition and transmission of knowledge. The internet plays a major role in these case as to create easy access to knowledge, learners find it easy to construct knowledge, to have diverse resources to consult which will response to their specific preoccupations. The use of these technologies in schools will permit actors to benefit from the potentialities which will lead an improved quality of knowledge, Karsenti (2002). The integration of the information and communication technology in education opens a boulevard for learners to get closer to knowledge. ICT equally encourages collaborative and reciprocal relationship between the teachers and the learners. To Beche (2012), the use of the information and communication technology in education produces a real value added to pedagogy. He sees that these added value depend on the attitude of the learners, the teachers and the modalities of use of these tools. These technologies therefore give the possibilities not only to teachers to renew their pedagogical practices but also to learners to enhance their field of apprenticeship.

The importance of the technologies of the information and communication in education is no longer to be demonstrated. The speed at which this numerical information is evolving today is great, Karsenti (2002). What matters most is the understanding of how these technologies are

integrated in the teaching and learning practices and the value it adds to the process of education. ICT therefore has great potentialities to develop human resources and ameliorate these resources that is why the development of ICT is seen as the national priority NAICT (2007 – 2015) the system of education saw a switch from the traditional method of teaching to the innovated method with the use of ICT which is Competence Base with interactive training programs. It has come to improve the training effort throughout our education system. It gives teachers as well as learners great opportunities which could not be found in the ancient traditional method. It empowers learners and other stakeholder by facilitating collaborative learning, information and knowledge sharing by the use of the resources that are available at their disposition. It creates fast and easy access to information and expertise, increasing motivation through the use of multimedia such as sound, tape and videos. Each learner works at his or her pace and level, making them having control over their program of work. This has made learning to be active and interactive. It encourages research, help in changing the system of education which creates an educative labor force with computer literate individual. ICT is also changing the methodology through which educational services are delivered. It reinforces our system of training as it brings a change in the system of education, that is, modification in favors of teaching and learning. We see how it facilitate pedagogical activities leading to a better understanding to these technologies in education. ICT encourages learning while doing which permit learners to acquire experience and constructive attitude in apprenticeship.

Looking at the impact and advancement of ICT in the economy of the country, the government finds it necessary to provide access to computer-based tools to each pupil so they can make a valuable contribution to the society. The government ensure the supply of hardware and some relevant software resources to ease access to these tools to learners. She also provides funding to the acquisition, maintenance and sustainability of these equipment in schools. This is of great interest to education as will facilitate the transition of quality knowledge to pupils, make them develop interest in learning and get learning material closer to them. The teachers are equally encourage and prepare to integrate these technologies in the curriculum. The integration of these tools in the system of education has brought a drastic change from the ancient functioning to a modern computerized system. The introduction of these tools in education leads to putting in place of strategies to ameliorate the condition of teaching and learning and the manner in which these tools are used that is aimed at improving the system of education. We

observe diverse studies as pedagogical and didactical which leads to better utilization of these tools, Matoussi (2006).

3.4.2. The information and communication technologies as tools for computer literacy.

Talking of literacy today is not just the capacity to read and write as it was the case before. Literacy today will include the capacity of the learners to master the tools of the information and communication technology in the process of learning. In the government bilingual primary school Bastos the Headmistress emphasizes on the importance and necessity of these technologies to ease the process of learning for the benefit of learners. Despite the fact that she acknowledges the importance of these tools, she lamented on the fact that having access to adequate tools and enough trained teachers is a problem they are suffering from. She however admitted that the few ICT tools at their disposals contribute a lot to process of apprenticeship. Access to these few tools is facilitated by assistance from partners who provide material resources including human resources to assist in recycling the teachers who were not initially trained in the use of these modern technologies in education. The teachers on their part testified that, the integration of these technologies in school encourage more pupils to find interest in learning with the computer. They equally accepted that fact that these technologies has help them and is still helping them to ameliorate the teaching practices as well as improve the quality of educative resource that they obtain by the use of the internet.

These teachers observe that, despite the limited number of machines and the on and off energy supply at the multimedia center, there has been a positive change in the capacity of pupils especially those of class six in the use of these tools in learning. With regards to the contribution of these technology in the process of learning, the teachers see that learners are interested and motivated to learn. They have developed anxiety and curiosity to discover more about the computer and how to use it in learning.

The information and communication technologies are present in the day to day human activities and has potential in human resource development. Therefore, the necessity to build its foundation at the basic level of education. The integration of ICT at this basic stage has a great

role and importance in building that computer literate society which will meet up with the exigencies of modern education. It will permit an easy flow of information and communication at the interest of leaning. Interactive training and distance education are made possible with these technologies, which has provided new tools with improved teaching and learning opportunities.

3.4.3. The information and communication technology as facilitator of pedagogical practices.

These new technologies have equally contributed to ease the work of teachers. Some of their work, which was done manually, is today accomplished with the help of the computer. ICT facilitate the work of teaching not only in the classroom but also in preparing lessons and making statistics on examination and result. Both teachers and pupils use computer for fast calculation, reading and doing exercises. Therefore, ICT is of great assistance to teaching and learning process. This is because it facilitates and improves the quality of knowledge that is acquired. ICT has changed the teaching and learning process positively, creating new learning opportunities and greater access to knowledge. The actors interviewed at the Government Bilingual Primary school were unanimous on the fact that having access to quality tools, will enable the process of teaching and learning easier and will improve the quality of knowledge that will be obtain in the process. They said that the speed at which the integration is going is too slow owing to the obstacles that they face in the acquisition of these tools. It is therefor, their wish to see multimedia center of their school furnished with quality materials of ICT for them to have a proper integration and use of these tools in learning. This will create a new environment of teaching and learning, collaborative learning, group work as well as individual research. With the aid of these technologies, teachers can get to a larger number of learners at the same time through distance learning. This widen the scope of teaching and learning creating more opportunities to knowledge.

The teacher plays an important role in this pedagogical innovation through the strategy that he develops around this innovation. Concerning the pedagogical integration of ICT in education the teachers are seen as facilitators in the process. To Depover (1999), the teachers have the role to guide the learners and be an answer to their needs as far as these technologies are concern. For ICT to be integrated in school, the teacher should be seen as the pillar and the key actor behind this technological innovation in the process of teaching and learning. Because of the

strategic position that the teacher occupies in the process, it is important for him to develop technological competence which will enable him to do his work efficiently. Therefore, and effective and efficient use of ICT in the classroom depends on the teacher who will make these instruments integrated in the pedagogical perspective, Karsenti (2001). Thanks to the training on recycling of these teachers, they have received competence which has enable them to improve their practices, their capacity, and will to use these tools in the classroom. The existence of the multimedia center in school motivate and engages users to use these tools and apply them in their daily usage. So ICT does not only permit teachers to renew their pedagogical practices, but equally given the possibility to learners to widen their scope of apprenticeship while working alone or in collaboration with others. This innovation has brought a new approach and a favorable attitude in pedagogical practices. This favorable attitude is expected of users for integration to be effective because it is continuous process, Sheingold and Hadley (1990). The important role of recycling teachers is justified by fact that most teachers never received and initial training in computer study. So to assure that teaching is up to date in line with these innovation, regular recycling is necessary for a proper contribution to be felt in the process of teaching and learning.

3.4.4. Practical and collaborative attitude by the use of the information and communication technology in education.

The impact of the introduction of the information and communication technologies in education is visible as it makes learning more practical, participative and collaborative. At first lessons were theoretical, today learners are oriented and guided to manipulate the computer in order to widen their knowledge it makes learning interesting to the pupils who develop love for learning. ICT has made it possible for learners and teachers to access knowledge easier than before, so it is a great contribution to the system of education. The integration of these technologies in education is of interest to teaching and learning as it ameliorates the process, improve competence and motivate learners to be interactive. The use of these tools in education implies new pedagogy with a new approach in the system of education it brings a new environment of teaching and create an enabling educative situation with easy access to knowledge and rapid sharing of educative information. These encourages self and personal development. This is so because learners have a greater access to expert around the world in specific topics or research. Motivation is increased using multimedia allowing each learner to

learn at it level, leading to a greater control of it work and enhance the development of personal skills and abilities.

To succeed in attaining the objective of the information and communication technologies in education, the Head mistress of Government Bilingual Primary School Bastos says she and the administration of the school are encouraged to seek for sponsorship from nongovernmental organization for the benefit of the multimedia center. These benefits will include equipment, repairs of damage computers and offering retraining courses for teachers in the use of ICT in pedagogy.

3.4.5. The culture of the information and communication technologies to enhance digital literacy.

Information and communication technologies can influence learners in a situation where teachers are digitally literate and understand how to integrate these tools in their pedagogical practices. This can lead to high skills and get learners better prepared to meet up with the challenges that come with technological change. This digital culture has changed the manner pupils learn and has affected the construction and acquisition of knowledge. This is an important element in the system of education. It has given much consideration in the curriculum. Teachers' attitude and practices has been modified to integrate the ICT. It is thus essential for actors in the field of education to be trained in the use of ICT as it saves not only in teaching but also in keeping statistics on pupils, teachers and staff of an institution. In this case, schools need to be provided with minimum and acceptable infrastructure with ICT tools. That is why we observe more young people being interested in the use of ICT for diverse reasons. Digital literacy has open new opportunities of learning and acquisition of knowledge as well as access to educative resources. These goes beyond the used of the usual traditional model to the use of modern technologies in the process of teaching and learning. These technologies are central to the changes that is taking place throughout the world especially in the field of education as it has dramatically changed the process and method of educating the youth. It is for these reason that the government and stakeholders in education has the duty to ensure that schools are provided with the necessary tools of ICT which will benefit them as they integrate the culture of ICT which will lead them to digital literacy. These encourages joined action between the government,

the school authorities, and the private sector in the provision of ICT equipment in the sector of education especially the basic education which is seen as the pillar of the system. The aimed here is to come up with an education system that will produce computer literate citizens with help of up to date computer-based tools which will facilitate the process. So the government policy and strategies need to pay particular attention to access of quality equipment which will permit users to properly integrate these technologies in their pedagogical practices.

There is no doubt today as to the benefits that education can acquire from the proper utilization of the Information and communication technologies in teaching and learning. These benefits are felt in almost all activities of human existence. In the domain of education in particular ICT seeks to ameliorate the teaching and learning practices of the actors. It reinforces the motivation of learners, make them to work harder which will consequently improve their result. Digital literacy will help facilitate the work of teachers as it assists them in preparing their lessons as well as other activities in their pedagogical practices. Digital literacy facilitates the work of school administration in the management of school affairs especially financial, general organization and discipline. To inculcate the culture of ICT and digital literacy in learners they need guidance and follow up of learners by both teachers and parents as well as between the administration and the parents. This will enable learners to be up to the task that is involve in the integration of ICT in learning for a better future of digital literacy in the field of education.

3.4.6. Quality and inclusive education for sustainable growth with the information and communication technologies.

Providing quality and inclusive education to young citizens of a country is ensuring a better future. Without quality education, the youth will not bare the fruits expected of them. Improving the quality of education especially at the basic sector is a way to guarantee sustainable growth. It is thus the duty of the government of each country to ensure that children go to school and obtain basic education. This will be strengthened by the quality of ICT tools and making them accessible to all learners. One of the active partners of the Ministry of Basic Education such as the World Bank assists the government in the provision of the technological resources that are necessary in the process of apprenticeship.

The challenges in this sector keeps increasing especially when it comes to distance learning. This is owing to their level of mastery of these technologies and the problem of

availability and quality of this equipment. Besides the donation of pedagogical tools, the World Bank, as a privilege partner, also see to the retraining of teachers who will better exploit these tools and make maximum used in teaching. These will reinforce the capacity of actors who create strategies to include the young girls and children in disable situations who are sometimes left behind in education. The policy of integration of ICT in education will be easily applied where all the actors get involved in the process. In this case, the impact will be felt in apprenticeship, Djeumeni Tchamabe (2011).

CONCLUSION

We have seen in this chapter that for education to benefit from the potentials that come with the information and communication technologies, each learner should be given the opportunity to access modern computer-based tools for a valued contribution to the process. This chapter has identified the different factors that contribute to an effective and durable pedagogical integration of ICT in school. This makes pupils to have greater control over their learning and develop skills at their level with self-realization. It has equally facilitated the development of individual potentials. Collaborative work has been encouraged between the pupils, their teachers, their administration and parents of the children. This has eased guidance of learners with respect to the prescribed usage of these tools. It is through these modern technologies that the education system produces pupils who are capable of functioning in this new era of modern technologies, making them computer literate. This has been made possible through the diverse contributions that has been observed which has improved on the process of teaching and learning. The Information and Communication Technologies serve as a tool to ease the practice of teaching and learning, a tool for computer literacy at the interest of learners. One of the contributions is to facilitate the work of research by learners, teachers and researchers alike. It has finally made the teaching and learning practices more practical, interactive and collaborative.

The contribution of ICT to the process of teaching and learning is seen through the objectives of the introduction of these technologies in education. The integration of ICT in the process is to make school leavers computer literates, make these technologies facilitate and enhance the process. To make knowledge easily accessible to a greater number of learners, giving them the opportunity to extract, store and share educative resources. Through the internet, research and communication would be facilitated between learners, teachers, parents and the administration of the school. These technologies will equally facilitate the management of learning institutions in managing personnel, the student population and the general administration of the school.

In a general way, the introduction of these technologies in the process of education has revolutionize the educative environment and contributed much to ameliorate the system especially at the basic level. This level which offers a specific context in the pedagogical

integration of computerized technologies where the capacity of pupils is limited. At the Government Bilingual Primary School Bastos Yaoundé, the teachers have revised their strategies to adopt to the context looking at the level of the pupils involved. This makes it possible for these young learners to benefit from the positive contributions that this innovation comes with in the field of education. The contribution of ICT to improve the process would be properly felt where there is equitable access of these technologies to learners as well as to the teachers to optimize its use in their pedagogical practices. Accessing the technology will not be enough without experts and technicians to ensure the repairs and maintenance of these instruments. Sustainability of the ICT programs should be assured for a brighter future of ICT in education. As we seek to realize the benefits of these technologies in the system, there is hope that the basic sector of education will henceforth be provided with the necessary resources to enable learners have access to quality education making the primary school an environment for quality teaching and learning. This wise, the system can be sustainable with the use of ICT for the benefit of education.

CHAPTER FOUR
DIFFICULTIES FACED IN THE PROCESS OF INTEGRATION OF THE INFORMATION AND COMMUNICATION TECHNOLOGIES IN EDUCATION AND RECOMANDATIONS

4.1. DIFFICULTIES FACED IN THE PROCESS OF INTEGRATION OF THE INFORMATION AND COMMUNICATION TECHNOLOGIES IN EDUCATION

The provision of schools with modern technologies to enhance the quality of knowledge is a major challenge to stakeholders in the field of education. The government through the Ministry of Basic Education is bent on having a proper integration of ICT in the system of education. Despite this endeavor, the proper integration of these technologies in school still face some obstacles which can be referred to as weaknesses. This technological innovation is certainly meant to bring important changes in pedagogical practices and in the functioning of the system of education as a whole. This goal is however hampered by some factors which obstruct its effective integration in school. This is said to be the reason for the poor appropriation of these technologies in education. The government in collaboration with partners have carried out many initiatives to see an effective integration of ICT in school. Despite this endeavor, school still face a lot of barriers in term of ICT resources: inadequate number of qualified teachers with technology-based pedagogy, less qualified technical staff, ignorance of school administrators on the use of ICT in management, lack of finances to assure a suitable environment for the integration of these modern technologies. Other factors include the program of equipping schools with the ICT resources, problem of availability of experts in the field and the competence of the teachers themselves in the use of these modern technologies in their pedagogical practices. There is another crucial problem of irregular power supply and low debit internet connection at high cost, as well as the problem of non-respect of the prescribed usage of these tools by learners.

4.1.1. Availability of infrastructure and equipment of ict in school.

The introduction of the Information and Communication Technologies into the system of education in Cameroon was since the year 2000. This marked the beginning of the computer in school though the government has been thinking of it through the national plan for the infrastructure of information and communication, Beche (2013). The government has the will to see this become a reality but unfortunately, most schools are still lacking the basic infrastructures and equipment to promote the use of ICT in teaching and learning. Lack of these technological resources is a hindrance to the integration of ICT in school. At the GBPS Bastos, the infrastructure and equipment are inadequate to meet the needs of learners with regard to the tools of ICT. This is an obstacle which retards the integration of these new technologies in the process of education. Besides the inadequate infrastructure, we have ill adopted and insufficient equipment which renders the computerization of our school difficult, Leborgne Tahiri (2002). We can say that the insertion of these technological tools in our schools is effective but the ratio of computer per learner is too low thus rendering this integration slow, Tchombe, (2006). The availability of these tools determine the level of motivation and engagement to use them in pedagogical practices. The implementation of the ICTs in school necessitates a reliable infrastructure to facilitate the installation of the tools for the purpose of teaching and learning. Even where there is a multimedia center (MMC) in school, the number of machines are not adequate to satisfy the learners' needs. For example in GBPS Bastos, the MMC has only six functioning machines for the whole school. Because of these obstacles, the pedagogical integration of ICT is still limited. This is the same situation with many schools in developing countries, Karsenti (20…) especially in the rural areas where this equipment is absent, not to talk of energy supply and internet connection.

4.1.2. Irregular power supply and low debit internet.

In addition to the inadequate infrastructure and insufficient tools of ICT at the disposal of learners, there is the crucial problem of irregular supply of electricity and poor internet connection and sometimes saturated network and low electricity voltage retard this integration. The computer and the internet are seen as unavoidable tools for research but it cannot be manipulated without the use of electricity so the irregular supply of energy is a draw back to the integration of these technologies in education. Unfortunately, energy is a scarce commodity in our society. It is seen as a luxury because of the irregular supply. In some schools, electricity is

absent while in others, it comes on and off. The use of the internet is expensive as well as its maintenance. Internet connection is sometimes of very low debit rendering research slow and discouraging. If these factors are not taken care of by the stakeholders of this domain, then the integration of ICT in education will continue to observe the slow pace we see today, concluded the headmistress of the GBPS Bastos, Yaoundé.

4.1.3. Lack of competent teachers in the domain of information and communication technologies.

The availability of competent teachers and experts in the information and communication technologies is still a problem in most schools especially primary schools. This leads us to question the number of teachers who are initially trained in the use of ICT in teaching. It is certain that the government has to prepare teachers in training as well as upgrading their standards through recycling, but we still find some schools as the one in our case study with very few number of trained teachers in that domain. This remains a problem because the integration of ICT in education is determined by the availability of competent teachers and experts in the domain of these new technologies. It is clear that the use of these technologies in the classroom is the responsibility of the teacher who has to adopt strategies to that effect with regards to the context.

The information and communication technologies are seen as a tool for teaching and learning but it is not considered by all teachers as being central to their pedagogical practices. It is not given the same role or importance as the traditional or classical tools such as the blackboard, chalk, books. To some teachers, the use of ICT in teaching is an additional load to their work, Larose and Karsenti (1999). ICT in this context is seen as being strange, new and still looking for its place in pedagogical practices. It is seen as a technical object, which facilitates research and the treatment of information. For this reason, we see that the pedagogical appropriation of these tools is not yet as effective as expected. In some cases, we see that teachers have insufficient technological competence, they have a weak feeling in the use of these technologies as we see the traditional methods still persisting. The attitude of some teachers who were not initially trained in the use of ICT in teaching show some sort of dislike for the use of ICT in teaching. Teachers have the problem of training in the use of ICT and a problem equally in having access to these tools is not easy for most schools. Mbangwana (2006) equally examines

the use of ICT by guidance counsellors at the level of primary schools where he observes the lack of adopted ICT equipment according to their context.

With the use of ICT in teaching, teachers are confronted with the new practices which they are not yet familiar with and are not yet prepared to face it. This is for the teachers who were not initially trained in the use of these technologies in teaching. This therefore constitute a handicap in the process, Beche (2013), as it creates resistance to adapt in this new context. This leads to prejudice which is not favorable to the system owing to the socio cultural perspectives of these teachers.

The integration of ICT in our primary schools still face draw back because the policies of integration at this level is still slow. Teachers are in most cases not included in making decisions as to the choice of ICT tools, or they are included at a limited degree. We find teachers who are not pedagogically accompanied. We observed a deficit in training and recycling of teachers in the use of these new technologies in classrooms. The number of qualified human resources is limited as they have not all been trained to that effect. Onguene Essono and Onguene (2006) look at the stakes and challenges involved in these modern technologies, pointing out that it sometimes worry some teachers who do not have enough competence in ICT in the teaching practices. More so, some teachers are reluctant to adopt these modern technologies in their teaching practices, Fonkoua (2006). Lack of qualified teaching staff and lack of permanent technical assistance with ICT laboratories. When there is breakdown, it takes longer time to repair. This creates frustration and discouragement to teachers and learners.

Despite the existence of the political will in favor of the introduction of ICT in education, the national policy in the domain of ICT is not clearly defined. In some cases, the context is not well developed, Karsenti (2010). There is the problem of mystification of ICT for a change of mentality of the different users who are yet to inculcate the culture of ICT in their pedagogical attitude. This is the problem of resistance to change which plays a great role in the use of these tools in teaching. Some teachers are not even ready to integrate ICT in their practices. Some say they are not of the computer age so not ready to involve themselves. They are not ready to face the unknown. It is out of fear that they are staying away from it, do not want to take the risk to face this new technologies. So they stay completely away from it. This problem of mystification of ICT needs to be changed in the mentality of different users especially the teachers themselves.

This is because some teachers do not want to accept the change to adapt this innovation in their work. They are reticent towards the use of these tools in teaching that is why they seek to maintain the traditional method. They are afraid they do not have a good mastery of these technologies. This is because some pupils manipulate these tools more than some teachers. They are just afraid of disgracing themselves in front of their pupils by betraying their poor mastery of these technologies.

4.1.4. Inadequate financing of the multimedia centers in schools.

The budget allocated for the information and communication technologies of schools is usually not enough to take charge of the proper integration of these technologies in the institution. The finances are usually not adequate for the proper functioning of the multimedia center. For example, when some computers are broken down, they are simply kept aside awaiting repairs. This reduces the number of machines available for use. The headmistress of the school said that most of the computers at their disposal are recycled computers from Europe with short lifespan and easily have break down. The school does not have enough funding to repair them. She thinks that experts in this domain should be put at their disposal so that they give technical support to ensure a smooth implementation of this innovation. We see that there is limited budget in schools for equipment and functioning of the MMC. The introduction and maintenance of ICT equipment in education is expensive mostly in the primary sector where an effective integration of ICT requires a good budgetary allocation, yet inadequate financial support come from the government that cannot help overcome the challenges involved.

4.1.5. Disrespect of prescribed rules of usage of the information and communication technologies in learning.

For education to benefit from the educative potentials linked to the use of ICTs, there is need to get learners respect the prescribed use of these tools in learning. This goal is not easy to realize owing to the fact that there exist diverse points of access of these instruments by learners. The environment of study with the use of ICT is multiple. To control the strict respect of prescribed use is not easy. There is the multimedia center in school with more learners than the available machines, there is the private residence and there is equally the cyber café. There are equally android phones with possibility to connect to the internet. With these multiple points of

accessing ICT tools, no perfect control is possible over users. A certain level of control is possible at school, but at home and at the cyber café, there is almost no control. In this case, the objective of the introduction of ICT in the process of education will not be easily attained. It remains the responsibility of stakeholders to ensure that the introduction of ICT in school is managed with great care so that the benefits are attained and the risk around its misuse eliminated or brought to its lowest.

At the multimedia center in school, there are fewer machines than the learners. Thus we find many pupils (sometimes six of them) working on one machine. This makes effective control difficult because the pupils can easily switch from one thing to another without attracting the attention of the teacher and can easily get back to what they were doing when the teacher is approaching them.

At home and at the cyber café, the children are alone, in the private and can do all what is forbidden for them to do at school. There is no control over the use of these tools in these contexts. The pupils feel free to do whatever they think on the computer. In such a situation, the objective of the integration of ICT in education cannot be easily realized. We therefore see that this misappropriation is detrimental to the process of integration of ICT in education.

The use of information and communication technologies by pupils of the Government Bilingual Primary School Bastos is seen in several phases at school, at home and at the cyber café. In this case, the prescribed usage cannot be properly checked or controlled. In school, yes but elsewhere, difficult. In the cyber café, for example, control is difficult because these centers are created for commercial purposes. That is why, control of usage is absent. Sometimes, these centers are visited because of lack of internet connections at home. So for those who visit the cyber café, they say it's to complete what was started at school and some of their homework. In most cases, it is to avoid the prescribed usage at school, Beche (2010). To ensure the prescribed use only in school is not sufficient. Proper attention need to be paid to learners to give them an appropriate guidance in the process beyond the school. This is because the learners come into contact with the computer in different forms. Schools should therefore take note of the other context of access of ICT tools and make an effort to guide learners in respect to the other situations of learning out of school. We therefore see the need for the definition of a policy and program of education that will take care of all the different context of use of ICT by pupils. This

is because the mission of the school is centered on apprenticeship and acquisition of competence which these new technologies have come with. This is because, we see some learners who have more time on the computer not at school but at home and the cyber café where they mostly distract themselves than doing pedagogical work.

Despite all what has been done to get the information and communication technologies integrated in school, it has not yet been sufficiently integrated in the practice of teachers and learners. It is not yet effective at the level stakeholders had wished. The pedagogical integration of ICT means a regular use of these technologies in education, Karsenti and Tchameni Ngamo (2009). It requires that the use of ICT be practical and the pedagogical culture exercised by users. Unfortunately, this integration is retarded by obstacles that need to be well diagnosed so that the way forward can be traced. Users are often tempted to use the ICT for other reasons than learning. That is why we observe deviant behavior as the misappropriation of this innovation by learners. In some schools such as in our case study, it is not the problem of misuse but the problem of inadequate infrastructure and equipment that hinder the integration of ICT in teaching and learning. Besides, we observed other obstacles as irregular power supply and low internet debit, problem of training of teachers in the use of ICT and worst of all, inadequate financing of multimedia centers in schools.

The pedagogical appropriation of ICT constitutes a means for an effective integration of these technologies in schools and in the daily lives of users in the society. It is obvious that for an effective integration of ICT to be realized, there is need for stakeholders to take cognizance of these factors that hinder the progress of these technologies in education. This will permit them to formulate policies and strategies to have an effective integration of this innovation in the teaching and learning practices of teachers and pupils for the interest of education.

We have seen that the acquisition of the information and communication technologies by some schools is problematic due to the high cost of equipment, which is not easily affordable. The internet is also costly and sometimes of low quality or not available at all. The capacity of teachers in the use of the ICT is also a problem. After all these have been taken care of, then comes the problem of the proper manner of use to obtain the objectives for which these tools were meant. There is need to define the basic principles that will orientate and guide its use in learning. This is to ensure that ICT offers a conducive environment favorable for apprenticeship,

which is still a luxury to most schools. There is consequently a need to elaborate new methods and strategies of transmission of knowledge to facilitate learning. Stakeholders should also rethink the methodology to make learners enhance this innovation for the interest of education.

4.1.6.Inadequate computer skills of school administrators

Ignorance of school administrators in the use ICT is a major barrier in the process of the integration of these technologies in school. They are expected to have proper mastery of these technologies to facilitate management. It will reduce the level of physical contact among the staff and with the parents of pupils. Inadequate knowledge will be at the detriment of the proper functioning of the institution. An administrator in his office do much work in collaboration with partners who are not necessarily present. This makes them gain time, space and reduce chances of spreading contagious diseases such as corona-19 virus.TO overcome this obstacle, school administrators need to be trained in the use of ICT

4.2. RECOMMENDATIONS

At the end of this work, we have some recommendations, which emanates from interview with the various actors from the field. This can facilitate the integration of ICT in apprenticeship by easing access to these technologies and a proper guidance of their in the process of teaching and learning. This will permit the realization of the objectives for which this innovation was introduced in the system of education. It will help create openings that will lead to a brighter future for education, thanks to these new technologies in school.

4.2.1. Provision of ICT resources to school

Schools need to be provided with adequate and adopted infrastructures and tools of the information and communication technologies. This will permit appropriation and use by learners for the interest of education, each in its context.

4.2.2. Training and deployment of teachers and experts in the field of ICT.

The modern system of education requires that teachers be trained in the use of these modern technologies in their pedagogical practices. The proper mastery of these tools by teachers will facilitate its integration in school. Teachers who were not trained should be given recycling courses to put them up to date with this innovation.

Deployment of experts for the sensitization of teachers, repairs and maintenance of ICT tools. Owing to financial constraint which school management goes through, it is not easy to repair damaged machines. Therefore, they need to send experts for repairs and maintenance. This is to ensure the available machines are operational to keep the multimedia center of the school function.

4.2.3. Include ICT in school curriculum

School program should be established such that will include the information and communication technologies in the curriculum. This will encourage stakeholders to see to its integration and proper use in the process of teaching and learning.

4.2.4. Control of usage of ICT by learners

The school authorities in collaboration with parents of pupils should draw up strategies for the control of pupils in the use for these technologies in the proper manner. The involvement of the parents is of importance because other points of access to the computer and the internet exist after school such as the residence and cybercafé where abusive use is sometimes observed.

4.2.5. Ensure regular energy supply and internet connection

For a proper integration of ICT in education, there is a desire to have a permanent energy supply and a good internet connection, which is indispensable for the integration of ICT in teaching and learning.

Concerning schools located out of the reach of electricity, the use of solar energy can be of interest for the integration of this technological innovation in school in such zones. Even in the urban area, the solar energy and energy generator are equally of importance to solve the problem of irregular power supply.

Policy makers in education should take the result of research into consideration. This will enhance and encourage research in education. It should be noted that a proper study of the integration of the information and communication technologies in education has to include the role played by each actor for the success of this innovation. To facilitate this process, schools should be equipped with electricity, internet connection, software and hardware resources for the interest of education. With schools in rural zones, which are in most cases lacking in basic ICT resources, constituting a great challenge in education, other sources of energy should be envisaged such as solar energy.

4.2.6. Definition of policies and strategies of ICT in education.

ICT integration policies and implementation strategies should be well defined not only by the administrators, but also by teachers with the assistance of experts in the domain. Where major actors in an innovation are involved, concrete policies are defined and strategies formulated towards their implementation.

In this same line, the ICT syllabus should be well designed with defined national objectives to ensure its proper implementation. Teachers training programs should provide opportunities for trainees (future teachers) to learn skills necessary for the integration of ICT in their practices. It is equally necessary to copy and transfer experience from other systems while taking in to consideration realities of local context.

4.2.7. Constant research to improve quality.

Looking at the pace at which science is evolving today, there is need for constant research to enable the improvement of the use of the information and communication technologies in education. More research in the area of ICT should be carried out to enable the identification of problems and facilitate resolution for a better future for education with the ICTs as major tools.

GENERAL CONCLUSION

At the end of this work, we find it necessary to remind ourselves of what the problem has been all about. This research has been on the pedagogical integration of the information and communication technologies in the teaching and learning process with our case study being the Government Bilingual Primary School Bastos Yaoundé. In this context the pupils are introduced into the computerized world, are taught how to appropriate and make use of the computer and its related resources. The teacher get learners to familiarizes themselves with these tools and be aware of its necessity and importance in education as is required in the modern system of education. We have looked at the social reproduction and units of the computer by learners who are seen as final users. We elaborated a strategy to understand the dynamics of the appropriation and usage of these technologies. The integration of ICT in schools will include the proper analysis of what pupils do effectively with the computer. We equally try to see what they think and how they appropriate these objects in apprenticeship. We see them as users, actors and participants of this technological innovation, knowing that a successful integration of ICT in school depends much on the use that is made of them in the teaching and learning process.

We looked at the method applied to study the object of our research which concerns the integration of these technologies in education, on the one hand, and the contribution they made to improve the quality of knowledge on the other hand. This leads us to the understanding of how the integration of these technologies in the classroom can improve the competence of learners. We see how it has influenced the teaching method, improved the quality of knowledge and influenced the process, procedure and strategies of teaching and learning. We had tried to show that the introduction of these technologies in education has made the actors to be seen not only as users but also as participants of this innovation. We have seen the interest that these actors and the system as a whole can derive from the integration of these tools in the classroom. This can be seen through the diagnosis of the obstacles of this integration, that is, the weaknesses of this innovation and a look at the way forward for an effective integration of ICT in the school.

Looking at the object of research, we see that it has been on the pedagogical integration of ICT in the process of education and how it can contribute to ameliorate the process of teaching and learning. What has been the impact on the competence and performance of learners? What does these technologies signify and symbolize to these young learners? The attitude and opinion of learners towards these new technologies enable us to understand the stakes and challenges around them. That is why we studied the dynamics of the appropriation and use of these technologies in education.

To assure that learners respect the right use of the information and communication technologies, we had to study the prescribed norms of usage formulated by the school authorities for learners to follow. In this case, we studied the different contexts of use of ICT by learners looking at the challenges involved in getting these prescribed rules respected in the different points of access. This is to make sure that users do not deviate from the original purpose of the ICT in education, which is pedagogical. This is owing to the fact that the impact of ICT in apprenticeship depends on the manner in which it is integrated in learning.

1. ICT and the improvement of competence

The investigation carried out is to verify some hypotheses on the integration of ICT in the process of learning. The main hypothesis being to verify how the integration of these tools in the process of education can improve the quality of teaching and learning as well as the competence of learners. So doing, we looked at the availability of the infrastructure and equipment of ICT, the accessibility and use by learners. Then a proper diagnosis of the weaknesses of this integration, which will lead us to the discovery of solutions to the challenges it, faces. When these weaknesses are taken care of, the capacity of the learners as well as their competence will be improved. We see teachers redefine their pedagogical practices to adopt to the exigencies of modern time. We have also seen the school administration come up with prescribed norms to guide the learners in the use of these tools. All these elements contribute to ameliorate the performance and competence of learners. While looking at the strategies applied by the school authorities to improve the situation of the integration of ICT in school, we equally investigated on the issue of ICT and gender in the Government Bilingual Primary School Bastos. Here, it was observed that both boys and girls had equal access to these technologies in learning. We

looked at the social considerations linked to sex and the manner in which the girl child conceives the notion of computer and its use in learning. It was discovered that she is not as smart as the boy child in this context. That is why the headmistress said that the female child is motivated through seminars organized in collaboration with education partners of her institution. This has helped to motivate the male child and equilibrate the access and use of ICT in learning by the both sexes. So we can find both boys and girls having same opportunities to access the computer and benefit from the potentialities offered by these technologies in education.

2. Social development of the information and communication technologies in education

What has occupied us in this work is the study of the integration of the information and communication technologies in the primary school. This is to see the transformation of the traditional and classical method of learning to the modern technological method. This leads us to the problem of availability, accessibility and the proper use of these modern tools in the process of education. These are the factors on which this innovation relies to be able to ameliorate the quality of education that is transmitted to learner.

While studying the social development of ICT in education, we look at the condition of evolution of the integration of the culture of these technologies in the process of teaching and learning. The appropriation of ICT and its use in education is relevant in a situation where it seeks to improve the quality of pedagogical practices of users. The politics of the social construction of the system of education, if well apply will favour the proper integration of ICT in teaching and learning. The politics of the application of these innovation leads to the precision of the different task that each actor is call upon to play within the context of usage.

The politics, strategies and action of the government depending the appropriation and use of these tools in education. It is within this perspective that this research was carried out at the Government Bilingual Primary School Bastos Yaounde. That is why the hypothesis in these work is on the appropriation and use of the ICTs in education. In the course of our investigation we observe unfortunately that the effective use of tools is not always in conformity with the prescribe institutional use which is pedagogical. While looking at what the pupils do with these tools, we saw the various form of misuse especially at the cyber café. Theses cyber cafes constitute a point of misuse where learners carried out all sort of forbidden use which are not for

the interest of education this is what Beche E. (2013) qualifies as misappropriation of an innovation.

3. Understanding the use of the ICT tools by learners

To understand the use of these technologies by learners, we have equally looked at the different contexts where learners come in contact with the computer. These different points include the school, the private residents and the cyber café, each offering opportunities for academic practices as well as deviant use of these technologies. The effective use is not always in conformity with the prescribed norms. Learners have different strategies to deviate this technology for other reasons than pedagogical. That notwithstanding, we have seen that some people respect the rules of use such as for research, communication, exchange of information for learning between themselves and with their teachers. Those who deviate the use, we see that they carryout activities such as watching films, search for information about stars, film actors, watch and download pornographic images and many other activities of distraction.

In the course of our research, we equally got to the point of view and opinion of teachers and the management of the school as to what they do with these technological innovations. The teachers confirm they use the computer and the internet in preparing their lessons, prepare questions, produce and keep result sheets in digital copies. The administration through the headmistress confirmed how she and her administrative staff use these technologies in the general administration of the school. All these categories of users have different strategies of use since they are all actors and participants of this innovation.

4. The pupils' opinion and position in the use of ICT in learning.

The pupils of the Government Bilingual Primary School Bastos share diverse points of view on the pedagogical potentialities of ICT in their studies. From interview with the pupils on their opinion on the use of ICT, they said that this innovation is an opportunity for them to improve their learning capacity. They consider this integration as a real means to ameliorate their performance and strategies of apprenticeship, to Beche E (2013), for these educative potentials to be of value will depend on their use. A determinant factor here is the learner himself, his technical competence which determines what he does with these tools. It is here that the role of the teacher as a guide and companion is essential for an effective pedagogical integration of ICT

in school. The result achieved made us understand the interest in the use of ICT and how the pupils accept these new technologies in their studies. This gives us the opportunity to reflect on the proper use of these technologies in the interest of education, where the pupils are seen as participant and actors at the same time.

5. Shortcomings of this innovation

From the study carried out on the integration of ICT in school, we discovered some shortcomings observed within the context of the Government Bilingual Primary School Bastos. This was in respect with the appropriation and use of these technologies by the pupils, teachers and the administration. We saw the role played by each of these actors including the education partners of the school to enhance the use of these technologies in learning. The limits observed through interview and direct observation are at the level of the infrastructure, equipment, energy supply and internet connection. We equally observed an inadequate number of trained teachers in the use of ICT in teaching and the difficulties to get learners respect the prescribed use of these tools. We have seen that it is owing to the fact that there exist diverse points of access of these tools by learners. Reason being that while at home or at the cyber café, control of use is difficult, sometimes, impossible. These weaknesses show how the educational system especially primary schools still witness a slow integration of these technologies in their pedagogical practices. We observed that for the culture of ICT to be inculcated into the learners attitude, these tools should be accessible, affordable, having trained teachers within a context of an environment that is favorable for teaching and learning with the use of computerized technologies. We observed that if these weaknesses are taken care of, then the way forward for an effective and efficient integration of ICT in education can be assured.

6. The way forward for an effective integration of ICT in school

We have seen that for education to benefit from the potentials offered by the information and communication technologies, the availability of these tools should be assured. Where learners have access, the next preoccupation is what they do effectively with it. What use is made of these tools to be beneficial to the process? In effect, appropriation and use go together that is why we see the school authorities come out with prescribed rules of usage and obliges the pupils to respect them. It is the respect of these norms that will enable learners and the system as

a whole to gain the advantages that come with these technologies. It is in this perspective that we can measure what is done actually with these tools and the objectives that are fixed behind them. This will show how far this integration has gone and the way forward for an efficient and effective integration of these technologies in education.

In our case study, we have seen that appropriation and prescribed use are mostly respected in school. It is in school that control of use is possible. Within the other context of usage out of school, control is difficult. That is why the school authorities in collaboration with parents have to do more to see to it that children exploit these technologies for the purpose of learning. The headmistress confirmed that during PTA meetings, parents are advised to continue guidance at home so that the children will not misappropriate these technologies. Parents of recalcitrant pupils are summoned to school and advised on how to discipline them at home and get them follow the prescribed use in learning. This collaboration will reduce the rate of misuse of these tools by learners so that the objectives of these technologies can be achieved in education. On the part of the teachers' interview, their contribution during PTA meetings and their collaborative efforts were put together to get learners on the right part especially in the domain of ICT in learning.

Concerning the problem of recycling of teachers, the authorities of the school said the contribution of education partners has been much to their interest as they organize retraining courses for the teachers especially those who were not initially trained in the use of ICT in teaching. Even those who were initially trained to that effect are still given the retraining courses because technology is ever evolving. The teachers themselves testified how beneficial these courses have been in their pedagogical practices. What they were not taught during training are being taught to them in the recycling classes and this keeps them up to date with modern technologies. They wished that such endeavor by the school authorities and their partners continue for the interest of education. This technological approach is essentially based on the appropriation of ICT by the teachers put in practice in school for the interest of the learners. This approach enables them to initiate, conceive, define, orient and regulate the use of ICT by their pupils Proulx (2001). Where this is done, the problem of inadequate teachers in the domain of ICT will be reduced.

The result of this investigation will lead us to increase awareness of ICT in education by the different actors involved. In the new pedagogical approach, the effective integration of ICT in education is a continuous process, which necessitates time and effort Shiengold and Hadley (1990). Though most teachers were not initially trained in the domain of ICT, retraining has come to solve this worry. The teachers are accompanied, sensitized and made to adopt new strategies to include ICT in their pedagogical practices at the benefit of learners.

In Cameroon, there is a positive impact in the use of ICT in education such as its management, planning, teaching, learning and access to knowledge with new technologies. This notwithstanding, the government still needs to do more to encourage and facilitate the integration of ICT in school ROCARE-Cameroon (2006). We have seen that the use of ICT is fast growing in the education milieu. It has changed the internal organization of schools in its strategies of transmission of knowledge. This phenomenon is seen to be of great importance to education as it attracts the attention of researchers who question the impact of this integration on the quality of knowledge and how it can be ameliorated and given a better future.

In this work, we have also analyzed the contribution of ICT to the construction of knowledge, how it impacts the performance and results of learners. The obstacles that hinder the effective integration of ICT in education has been looked at. From investigation in the field, it is observed that ICT plays a great role in apprenticeship today. It facilitates the construction of knowledge and gives a new perception to education as it permits access to knowledge by all, at all-time and anywhere a learner finds himself as long as he has a computer connected to the internet. It is observed that for ICT to improve the performance of learners, it necessitates a good mastery of the tools and a strict application of educative measures because a good use of these tools will ameliorate the process of teaching and learning with all the potentials it comes with.

It is obvious that the integration of ICT in education will be effective if attention is paid to the availability, accessibility and affordability of the technological equipment, the pedagogical practices of teachers and learners and a good diagnosis of the obstacles. Research on integration of ICT in education is continuous because as technology keeps evolving, research has to equally evolve so that education can meet up with changing time. To ensure that ICT contributes to the progress of education, political actors and management of education are in permanent search for

solutions to make teaching and learning of good quality accessible and affordable to a greater population anywhere and at any time for the interest of learning.

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ANNEXES

INTERVIEW GUIDE

Visit to the terrain

The first visit at the Government Bilingual Primary School Bastos, I presented my Attestation of Research given by the Doctoral Research Unit for Education Sciences and Educational Engineering of the Post Graduate School for the Social and Educational Sciences of the University of Yaoundé I. I created contact with the administration, made known the objective of my visit, to have access to the school premises for research through interview and observation on the topic: "The pedagogical integration of the information and communication technologies and how it can contribute to ameliorate the quality of teaching and learning practices". I clarified my topic of research and how the results can be of interest to improve the teaching and learning environment. This interest is not only for the GBPS but also for education at large. I asked for permission to interview the teachers, the pupils and the administrators of the school. I also express my intensions to visit and observe the functioning of the multimedia resource center of the school. I ended this first visit by taking an appointment for the day proper for the interview, making them know that all information shall be confidential.

Interview

1. **The Head mistress of the school**

- Assure her of the confidentiality and anonymous nature of the interview. The information shall be solely for scientific analysis and the identity of the informant shall not be reviled.
- The availability of the ICTs in the G.B.P.S Bastos Yaoundé.
- The sources of supply or acquisition of the ICT tools.
- The quality and quantity of the tools in relation to the number of pupils in need.
- The regularity of the supply of electricity and internet connection.
- The management of these tools to meet objectives.
- Use of ICT in administration and running of the school.

- Problem of maintenance and repairs of damage machines.
- What majors to assure the availability of trained teachers and expert?
- Use of ICT in the management of personnel, pupils, teaching staff and parents of pupils.
- Your assessment of the impact of the introduction of the ICTs in the process of teaching and learning in your institution.
- Major challenges in the integration of ICT in school.
- Proposals to overcome challenges and ameliorate the education environment.
- What else have to add within the context of the integration of ICT in school?

2. The Teachers.

- Assure the teachers of the confidentiality of the interview.
- Availability of trained teachers in the use of ICT in teaching.
- Initially trained in the use of ICT or recycled?
- Access to retraining sessions ?
- Do you use ICT in the classroom?
- How do you manage the few machine in relation to number of learners?
- What other uses of ICT than teaching?
- ICT as a tool for teaching, communication and guidance at the service of teachers, pupils and parents.How effective do you see it?
- How do you appreciate the level of integration of ICT in the G.B.P.S Bastos Yaoundé?
- What is contribution of ICT to improve the process of teaching.
- What measures are taken to ensure the respect of prescribed norms of use of ICT.
- What are the sanctions for misuse?
- What are the difficulties faced in the integration of ICT in teaching, and what do you proposal for an effective integration of ICT in education?

3. The Pupils

- How often do you access and use the computer?
- When and where was your first contact with the computer?
- What do you do with a computer especially linked to an internet connection?
- How does it help you in learning?

- Do you have a computer at home?
- Do you visit a cybercafé center?
- If yes, what effectively do you do at this center?
- If not, where else do you use the computer?
- Besides learning, what else do you do on a computer?
- Are you aware of the prescribed rules of usage?
- How far do you respect these rules?
- Have you ever been sanction for misuse of ICT tools?
- For those with computers at home, do your parents control your usage?
- How can a computer make you improve your skills?
- Do you do group work or individual work and why?
- What do you think can facilitate the integration of ICT in your pedagogical practices?

At the end of the interview thanks go to all those who gave their precious time for the interview, especially the Head mistress for her collaboration and also the teachers and pupils.

FRAMEWORK OF OBSERVATION.

1 OBSERVATION AT THE MULTIMEDIA RESOURCE CENTER OF GBPS (MRC)

1- Why observe?

This process is aimed at observing the manners in which teachers and pupils of GBPS Bastos use the tools of ICT in teaching and learning. Also to observe the environment where these tools are found. We try to understand how these technologies can ameliorate the pedagogical practices of users.

Type of observation: Direct and guided observation.

Instruments of observation: Pen, Notebook and Camera.

Place of observation: The multimedia center of the Government Bilingual Primary School Bastos Yaounde.

Time of observation: 10am

Duration: Thirty minutes

Position of observer: At an angle of the hall

Availability of internet connection:

Position of the multimedia center: at the ground floor of the building hosting the Anglophone section of the school.

Access to the multimedia resource center

What to observe

- The size of the hall
- The number of machines
- The number of damage machines
- The position of the machines
- Number of pupils per machine
- Individual or group work
- The position of the teacher
- The action of the teacher
- Information on the wall
- The general atmosphere and other actions observe within the context of ICT

2 OBSERVATION AT THE CYBER CAFÉ

Reasons for observation

To understand the functions of other points of use of ICT, the process of observation was extended to the cyber café. The aim is to observe the function of this center and how it can be integrated in the context of the use of the information and communication technologies in education.

i. Identification of the cyber café:
   - Name of cyber café
   - Geographical location
   - How location favors access.

ii. Access to the cyber café:
   - Who frequent the center?
   - Condition of access by users

iii. ICT resources at the center:
   - Number of machines available
   - Position of the machines
   - How favorable is position to users?

iv. Use of ICT at the cyber café:
   - What use of these tools at this center?
   - Individual or group work
   - Interaction of users
   - Restriction or control

v. Appreciation of center by users

vi. Contribution of the cyber café to the integration of ICT in education.

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