

Teachers' Level of Training on ICT and the Implementation of ICT Curriculum in Some Public Primary Schools in Mezam Division, North West Region of Cameroon

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Abstract

Purpose: This paper buttress the importance of training teachers on use of Information and Communication Technology (ICT) as one of the major boosters the government could support implementation of ICT curriculum in Cameroon public primary schools. This study examined teachers' level of training on ICT and implementation of ICT curriculum in some public primary schools in Mezam Division.

Methodology: The study employed a mixed method research design consisting of a cross sectional survey and an interpretive phenomenology. The sample was made up of 375 teachers and 72 head teachers who

were teaching in public primary schools in Mezam Division. Data was collected using questionnaires and interview guide. Data obtained was analyzed using descriptive statistical tools and thematic analysis approach.

Findings: The study found that teachers' level of training on ICT has a positive and significant influence on implementation of ICT curriculum. In order to become confident users in the classrooms, teachers require extensive, on-going exposure to ICTs to be able to develop their ICT competences, evaluate and select the most appropriate resources. Not only does training aid teachers in the development of ICT competence, it equally helps teachers to recognise ICT as an essential teaching and an enabler of other teaching and learning practices.

Conclusion: This study conclude that teachers' level of training influences the implementation of ICT curriculum.

Recommendations: The study recommend that teacher training colleges should ensure that the period given for practical implementation of ICT curriculum is proportionate to the period spent in class to acquire theory on the implementation of ICT curriculum. The study also recommend Ministry of Education as well as the Regional Pedagogic Inspectors for ICT to organize regular and practical in-service training with demonstration lessons that help teachers develop basic, intermediate and advanced ICT skills.

Keywords: Teacher training, implementation, ICT curriculum, pre-service training, in-service training, ICT competence.

BACKGROUND OF THE STUDY

Teachers are great contributors to the improvement of quality and sustainable education. Since teachers are physically involved in the implementation process, they are capable of translating the officially designed course of study (the curriculum) into syllabus, schemes of work and lessons plans to be delivered to pupils in the classroom. Encouragingly, the teachers' capability to perform this effectively is hinged mainly on the quality of training and other factors such as the availability and adequacy of the instructional materials, attitude etc. This implies that teachers would not be preparing their learners adequately to live in the 21st century if teachers are not adequately trained. Since the world is becoming a global village, there is need for teachers to be adequately trained during pre-service training, practical and regular in-service training. However, Nkwenti (2015) asserts that a common criticism of professional development activities designed for teachers is that they are too short and offer limited follow-up to teachers once they begin to teach. Hence, emphasis should be laid on teacher training on ICT as the key to effective implementation of policy, curriculum and to using ICT to raise educational standards.

Apparently, the rampant globalization and penetration of the current digital era (21st Century) has influenced not only social interaction, commerce and political engagement but also the teaching and learning process all over the world. Generally, digital literacy underscores the cultural changes produce by the development and transmission of information and communication technologies (ICTs). This domain aims at empowering learners with technological skills for present and future actions and it is developed through ICTs (Cameroon Primary School Curriculum, 2018). ICTs are transforming schools and classrooms by bringing in new curriculum based on real world problems, project based learning, providing teachers and students with more facilities and opportunities for feedback. Hence, enhancing their cognitive skills and helping them to solve complex problems (Nihuka & Peter, 2014). Thus, this has necessitated education systems around the world to integrate ICT in their curriculum in varying degrees at all levels from pre-schools to universities to teach learners the knowledge and skills they need in the 21st century era (UNESCO, 2012). For learners to be able to develop ICT knowledge and skills, there is need for effective implementation of ICT curriculum in schools.

The Cameroon government involvement in the area of ICTs effectively began with the development of the policy document and the general strategy for the integration of ICTs in all sectors by the National Agency of ICTs (ANTIC). To ensure a step into the implementation of ICT curriculum, Ministère de l'Éducation de Base known in English as Ministry of Basic Education (MINEDUB) has been working through PAQUEB (Projet Pilote pour L'Amélioration de la Qualité de L'Éducation de Base) meaning Pilot Project to improve the quality of Basic Education concerning the implementation of the one laptop per child project in Cameroon (Ngajie & Ngo, 2016). Equally, the ICT syllabuses and National Sequential Schemes of work published in 2008 were made available to Nursery, Primary and Teacher Training Education and textbooks have been written and validated by the National Book Commission to facilitate the teaching of ICTs (République du Cameroun, 2007 cited in Mbangwana, 2008). République also made mention of the draft strategy to implement the national ICT policy in basic education which was applicable from 2007/2015 that was developed in 2007. The strategy includes training in ICT for teachers and school directors and integration of ICT into the curriculum. Based on training objectives, national guidelines were also drafted for teaching ICT in pre-school and primary schools. The guidelines were based on six modules adapted to each level, from discovery and presentation skills

to applying skills to knowledge construction and finally learning health and safety issues related to the use of ICT. The teacher modules include productivity and research, applying ICT to teaching and learning, evaluation, and lastly, social, moral, and human questions related to ethics and equality.

Encouragingly, for effective and efficient implementation of ICT curriculum in the classroom, there is growing and widespread awareness that the pedagogical and technical expertise of the teacher is absolutely significant here. Nevertheless, Tondeur et al. (2008) opine that for teachers to effectively implement the ICT curriculum, they should be able to design instruction according to the intended objective of ICT curriculum, adapt content materials to suit pupils' needs, to search and manage information and select various learning experiences based on the learners' interest and needs. Based on the fact that teachers are key implementers of the curriculum, they should be able to select teaching method, ICT materials, evaluate learner performance, involve in effective team work and use of ICTs to support the development and delivery of instructions. Therefore, meeting the desperate need of the country for more qualified competent teachers is necessary for effective implementation of ICT curriculum in schools, empowering learners to powerfully embrace the information era likewise the global world.

Problem Statement

The Cameroonian government has seen education as a platform for equipping their nation with ICT skills in order to create dynamic and sustainable economic growth and as a means of achieving their vision 2035 goal. In line with this, the implementation of ICT curriculum has been placed at the center of all levels in schools to achieving the vision (République du Cameroun, 2007). As such, the government holds that the implementation of ICT in education will play a major role in disseminating skills in society and creating positive impact in the economy. Hence, a key step in bridging the digital divide. To guarantee effective implementation of ICT curriculum in schools, the government has partnered with international organizations, private sectors and other stakeholders and has put in place many initiatives to enhance its implementation in primary education in order to promote the acquisition of 21st century competences as well as preparing the learners to competitively participate in knowledge-based economy (Nkwenti, 2011; Karsenti et al., 2012). Despite this, the review of related studies done in Cameroon have shown that the implementation of ICT curriculum in public primary schools is ineffective, consequently most pupils leave primary schools without mastering the basic concepts and skills in ICT (Mbangwana, 2008; Nkwenti, 2010; Ngajie & Ngo, 2016). In support of this, Educational Research Network for West and Central Africa (ERNWACA) Cameroon (2010) argues that even though 96.23 per cent of public primary schools' pupils are taught ICT lessons and a 100 per cent of Teacher Training Colleges teaching ICTs to student teachers does not automatically lead to effective implementation of ICT curriculum in schools unless certain specific factors influencing implementation are identified and addressed. This study sought to find out the influence of teachers' level of training on the implementation of ICT curriculum in some public primary schools in Mezam Division, North West Region of Cameroon.

Research Question

The study answers the question: What is the influence of teachers' level of training on ICT on the implementation of ICT curriculum in some public primary schools in Mezam Division?

LITERATURE REVIEW

Teachers being the key agents in the implementation process require ICT knowledge and skills to use in teaching and learning in today's classroom. Equally, understanding the implementation issues of technology well enough help them to make sound decisions for ICT policy and programme. The Organization for Economic Cooperation and Development (OECD) (2004) posits that the availability of trained teachers has been globally considered as a key strategy for advancement of the new technological innovation in the curriculum. Thus, the implementation of ICT curriculum in schools required skilled human resources that are knowledgeable about the potential that ICT presents during the planning of activities in schools (Peeraer & Petergem, 2011). Therefore, to develop complex evolutionary and responsive approaches considering ICT curriculum, teachers must be adequately trained to embrace its implementation in the classroom.

Teacher Training on ICT

Mizell and Forward (2010) defined teacher training as the training which provide teachers with many types of educational experiences to learn and apply to new knowledge, skills and expertise that will improve their performance on the job among other characteristics of an effective teaching. In an emerging country like Cameroon, teachers in primary, secondary and tertiary levels are being trained in the use of ICTs in education with varying degree and scope. Consequently, the length of training is critical in planning a teacher training programme. So, if a course is too short, how can teachers be expected to have developed the knowledge and skills sufficient for confident classroom application? This necessitates training programmes that go beyond the basics and cover the integrated use of ICT and pedagogy, as well as applications of teaching and learning principles on instructional design and development. Despite the numerous plans and the objectives of the teacher training course, teachers have received little training in this area in their teacher education programs (Varsidas & McIsaac, 2001). Equally, in Cameroon, the deficiency of proper trained teachers and low degree in ICT knowledge and skills in teachers has posed as prominent hindrance in the implementation of ICT curriculum in schools (Nkwenti, 2010).

Nevertheless, Becta (2004) posit that the issue of training is certainly complex because it involves several components to ensure the effectiveness of training. These were: pre-service and in-service training and pedagogical and technological competences acquired through training on ICT use. So identifying the possible obstacles in teacher training on ICT that influence the implementation of ICT curriculum in schools would be an important step in improving the quality of teaching and learning ICT. The Information Programmes and Services (IPS) (2003) maintained that the number of countries providing ICT training at both pre-service and in-service levels is growing. As such, training programmes should always start with an introduction of the rationale and purpose of using ICT in teaching and learning, the role of teachers in the new ICT environment and how they can benefit from the use of ICT, even before the technical aspect is given. For this reason, if teachers are not motivated during training, they might not bring back what they have learned into classroom application. So, teacher education, both pre-service and in-service, needs to address the issue of capacity building of teachers; for an effective implementation of ICT curriculum in classroom.

Pre-service Training

Pre-service training describes the education that occurs prior to a practitioner acquiring the specified knowledge, skills and competences to meet the requirements for a professional field,

obtaining a college degree and entering the workforce with the aim of transforming education. Jha and Naaz (2021) defined pre-service teachers as professionals who learn teaching methodologies, different approaches, and technical knowledge during the teacher training program to deal with the learners in future. Thus, introducing ICT during the teacher training program provides exposure to learning digital devices and skillful teachers in the society. Twidle et al. (2006) found that student teachers in the UK feel relatively unprepared to use ICT for pedagogical practices. One of the reasons for this was the students' lack of operational skills. Thus, the beginning teachers in this case learn from their practice, culture and norms of the unique school settings where they have been placed (Sooraj, 2013). Training teachers at the initial level on the implementation of ICT enables teachers to match what subject content and pedagogy with suitable application software. This is because teachers tend to teach the way they were taught. That is, if they are given time to practice, they can learn how to share and collaborate with colleagues, and it is likely that they will apply technology in their teaching upon graduation. Makori and Onderi (2013) observed that although training teachers at the pre-service level can be helpful, certain factors, such as space available in teacher education institutions, limited duration for training, the high cost and operation limit the existing pre-service teacher training programs. However, doubts may be casted on the effectiveness of the knowledge and skills they receive. As such, there is need for in-service training to upgrade and update teachers' ICT knowledge and skills needed for effective ICT curriculum implementation.

In-service Training

According to Djoyou (2011), beside the basic training of schoolteachers, in-service teachers can be provided with professional development through the design and development of teaching and learning resources. Bullullough (2009) defined in-service training as the training designed to develop skills of people who are already working in a particular profession. According to this author, in-service training, modes, contents and methodologies have to go on changing, so that trainees may be more deeply implicated in the definition and organization of their training achievements. Some of the in-service teachers' approaches that may be used for ICT training are: workshops, conferences, refresher courses and seminars where teachers may spend the middle two days of the workshop creating and modifying a learner-centred activity that uses ICT. This can help teachers develop basic, intermediate, and advanced ICT skills and provide them with competencies on how to incorporate ICT tools in their respective teaching and learning in the classroom environment (Gaible et al., 2011). However, available research reveals that very little or no training has been carried out for in-service teachers to initiate them in the use of ICTs or to improve their skills and knowledge since its introduction in schools in 2001 (Inspectorate of Pedagogy in charge of ICTs, annual reports, 2019, 2020, 2021). In this light, since many public primary schools teachers do not frequently for in-service training, they usually lack confidence, feel frustrated and discouraged when they meet the least challenges and this makes the teacher to be unqualified for ICT implementation in the classroom. Based on this, one wonders whether primary school teachers in Cameroon are qualified to effectively implement the ICT curriculum in classrooms. The lack of qualified teaching staff is closely linked to the lack of ICT competence to effectively implement of ICT curriculum in the classroom.

ICT Competence

Mishra and Koehler (2007) noted that through pre-service and in-service training, teachers gain technological experience, content and pedagogical knowledge through lessons that require them to define, design and solve learning problems in classroom scenarios. UNESCO ICT Competency Framework for Teachers (2018) focuses on skills that teachers require to bring about three different levels of human capacity development: technology literacy, knowledge deepening, and knowledge creation (Roblyer & Doering, 2013). Hence, appraising the UNESCO ICT competency standard for teachers while taking into account local realities in Cameroon might be an opening move to aid teachers to be more confident and prepared in the implementation of ICT curriculum in the classrooms. Suárez-Rodríguez et al. (2018) defined ICT competencies as the knowledge, skills and expertise that teachers need to acquire to integrate technology resources into their teaching practices, which have been brought to attention in the ICT literature. Kirschner and Davis (2003) identified the following competence required by teachers for effective implementation of ICT curriculum in schools. These include: competence to make personal use of ICT in instruction, competence to master a range of educational paradigms that make use of ICT in instruction, sufficient competence to make use of ICTs as mind tools, competence to make use of ICT in instruction as a tool for teaching, competence in mastering a range of assessment paradigms which make use of ICT in instruction, competence in understanding the policy dimensions of ICT use in instruction for teaching and learning.

The acquisition of ICT competencies help teachers to effectively plan, present, use varieties of teaching and learning material, experiences, strategies, and evaluation and even integrate ICT content in lessons plans in other subject area. However, Ngajie and Ngo (2016) posit that most primary school teachers in Cameroon still lack ICT competences to teaching ICT due to inadequate training. Therefore, teachers' competencies on ICT in the 21st century require a regular update on knowledge and skills to be in tandem with the technology dynamic to implement it in classroom instruction (Bariu, Chun & Boudouaia, 2022). Thus, training of teachers on ICT should be relevant so that teachers can be well equipped with both technological and pedagogical competences that will enable them to teach with a lot of ease. As such, the lack of teacher training on ICT may leads to lack of competence on how to the implement the ICT curriculum in schools. Therefore, there remains the need to find out the extent to which teachers are prepared and ready to implement ICT in primary school based on their training.

Implementation of ICT Curriculum

Mokgadi (2015) defined the implementation of ICT curriculum as the putting into practice or execution of ICT policies, plans, designs, ideas and models to enhance teaching and learning as well as to attain the goals and objectives of education. In this paper, the focus is on how ICT curriculum can be put into practices taking into consideration the curriculum development guiding principles such as objectives, content, teaching and learning materials, teaching and learning experiences, teaching and learning strategies, evaluation strategies, citizen participation and adaptability that enable any school system to provide the right exposure to emerging technologies. The implementation of ICT curriculum is perceived to be the solution towards issues related to social, political and economic demands facing Cameroon as a state (Nangue, 2011). Worthy of the fact is that, if the ICT curriculum is effectively and efficiently implemented, it will aim at building capabilities of teachers and pupils, not only to use technologies comfortably, but also employ them

judiciously to improve and increase the quality, accessibility and productivity of the delivery of instruction to learners in schools. Equally, the learners will be able to demonstrate during and after effective ICT curriculum implementation the understanding of the 21st century skills: collaboration, creativity, problem solving and critical thinking for effective lifelong learning (Curriculum for Cameroon Primary School English subsystem, 2018). However, Wallet and Beatriz (2015) observed that this zeal is yet to be successful due to common barriers such as the absence of a clear vision and planned strategy for ICT integration in education, inadequate ICT infrastructures, lack of training and attitudes of teachers and parents. This was supported by Nangue (2013) who ascertains that it is in a few private schools that pupils can learn the basics about computer while in most public primary schools little or no computer lessons are offered and this may be due to lack of trained staff. Therefore, the above issues should be addressed for effective implementation of the ICT curriculum to take place in schools.

According to UNESCO (2002), a continuum of approaches to ICT development Model developed by Fluck in 2003 identifies four broad approaches through which educational systems and individual schools can proceed in their implementation of ICT. These four approaches, termed: emerging (focuses on learning basic ICT skills and identifying ICT components), applying (focuses on the use of ICT in different subject area and applying specific software in teaching), infusing project (teachers are integrating ICT in all aspects of their professional lives to improve their learning as well as the learning of their pupils) and transforming (ICTs are fully integrated in all regular classroom learning activities), represent a continuum. Apparently, this model is used to measure the level of ICT integration in education at all levels of an education system. Thus, they are primarily to achieve change in the ICT integration regarding technology uses into pedagogy. However, the authors posit that progression through these stages is time taking and the transformation of pedagogical practice requires more than ICT skills training for teachers.

For teachers to effectively implement ICT curriculum, it is expected that they will be able to apply the right pedagogical methodologies, understand the pedagogical content, involve the learners fully like in the use of the teaching learning resources available, have a good understanding of computer hardware and software to teach students using good pedagogical practices, apply and use ICT in the teaching and learning process effectively (Jones, 2002). Reports have shown some of the ways in which ICT need to be effectively implemented by teachers, they should be able to design instruction according to the intended objective of ICT curriculum, adapt content materials to suit pupils needs, to search and manage information and select various learning experiences based on the learners' interest and needs, process of designing instructions, selection of materials and tools to design and implement a design, evaluations of designs, effectiveness of team work and use of technology in support of the development and delivery of instructions (Farrell & Isaacs, 2007; Tondeur et al., 2008). Thus, effective and efficient implementation of ICT curriculum hinges on the competences of teachers to organize their learning environment based on the intended objectives and learners' interest and needs which consequently requires the need for adequate and continuous training.

METHODOLOGY

The research method for this study is the mixed one wherein both quantitative and qualitative techniques were used to manage the data collected for the study. Both quantitative and qualitative research methods were applied not only because of the nature of the study but also because the

generalizability of findings can be increased and more insights can be generated than when only a single approach is applied. The study employed the cross sectional survey and an interpretive phenomenology design.

The instrument used was a closed ended questionnaire to collect data from teachers and head teachers alongside an interview guide for Regional Pedagogic Inspector for ICT. The sample was made up of 375 teachers, 72 head teachers in public primary schools and 3 Regional Pedagogic Inspector for ICT bringing it into a total of 447 respondents who were randomly selected from 509 schools in four sub divisions (Bamenda I, Bamenda II, Bamenda III and Tubah) in Mezam Division. Teachers were targeted in this study because they are the major agents of ICT curriculum implementation in teaching and learning process and the study intended to use only public primary school teachers in general. As for the, Head teachers and Regional Pedagogic Inspectors for ICT, they were seen as useful respondents as they are the coordinators and managers of the learning activities in schools. Equally, most of the respondents had several years of teaching and learning ICT and therefore they are in the best position to furnish the researcher with the information needed to answer the research questions of the study.

These techniques of sampling were engaged because of the nature of the study which is primary data approach and its simplicity in data collection and analysis. Since teachers' level of training was the independent variable, it was further operationalized as constituting teachers' pre-service training, teachers' in-service training and teachers' competence on ICT.

FINDINGS AND DISCUSSIONS

The findings of the study are presented based on the specific research question that guided the study.

Table 1: Teachers' opinion on the influence of teachers' level of training on ICT on the implementation of ICT curriculum

Items	Stretched			Collapsed		
	Strongly Agree	Agree	Disagree	Strongly Disagree	SA/A	D/SD
I have undergone through initial training on ICT in teacher training colleges	23 (8.2%)	77 (27.6%)	130 (46.6%)	49 (17.6%)	100 (35.8%)	179 (64.2%)
The period given for practical during initial training is proportionate to the period spent in class to acquire theory	12 (4.3%)	30 (10.8%)	101 (36.2%)	134 (48.4%)	42 (15.1%)	235 (84.2%)
I frequently attend ICT seminars	16 (5.8%)	118 (42.4%)	116 (41.7%)	28 (10.1%)	134 (48.2%)	144 (51.8%)

After seminars my head teacher often organize demonstration lessons that help me develop basic ICT skills	20 (7.2%)	79 (28.3%)	141 (50.5%)	39 (14.0%)	99 (35.5%)	180 (64.5%)
I use knowledge and skills acquired during training to incorporate ICTs in their teaching and learning processes.	18 (6.5%)	93 (33.3%)	111 (39.8%)	57 (20.4%)	111 (39.8%)	168 (60.2%)
I often use software applications in planning and teaching my lessons in other subjects	26 (9.3%)	67 (24.0%)	97 (34.8%)	89 (31.9%)	93 (33.3%)	186 (66.7%)
Multiple Responses Set (MRS)	115 (6.9%)	464 (27.8%)	696 (41.7%)	396 (23.7%)	579 (34.7%)	1092 (65.3%)

***Items with coding reversed during calculation of MRS*

Source: Field Survey 2022

Based on teachers' opinion on their level of training on ICT, findings show that a majority of them, 64.2% (179) indicates they have not undergone appropriate initial training on ICT in teacher training colleges while 35.8% (100) opposed. Also, a majority of teachers 84.2% (235) indicate that the period given for practical during initial training is not proportionate to the period spent in class to acquire theory. Also, while 48.2% (134) of teachers agreed to frequently attend ICT seminars, 51.8% (144) of them disagreed. Also, a majority of teachers 64.5% (180) indicate that after seminars their head teacher do not often organize demonstration lessons that help them to develop basic, intermediate and advanced ICT skills. Furthermore, 60.2% (168) of teachers indicate that they do not use knowledge and skills acquired during training to incorporate ICTs in their teaching and learning processes while 39.8% (111) of them apply such knowledge. Finally, while 33.3% (93) of teachers indicate that they often use software applications in planning and teaching their lessons, a majority of them 66.7% (186) do not. In aggregate, findings show that 34.7% of teachers agreed to have acquired ICT skills from their training while a majority of teachers 65.3% disagreed.

Table 2: Head Teachers' opinion on the influence of teachers' level of training on ICT on the implementation of ICT curriculum

Items	Stretched			Collapsed		
	Strongly Agree	Agree	Disagree	Strongly Disagree	SA/A	D/SD
My teachers have undergone appropriate initial training on ICT in teacher training colleges	5 (7.8%)	8 (12.5%)	38 (59.4%)	13 (20.3%)	13 (20.3%)	51 (79.7%)
The period given for practical during initial training is proportionate to the period spent in class to acquire theory	3 (4.7%)	3 (4.7%)	23 (35.9%)	35 (54.7%)	6 (9.4%)	58 (90.6%)
My teachers frequently attend ICT seminars	5 (7.8%)	36 (56.3%)	19 (29.7%)	4 (6.3%)	41 (64.1%)	23 (35.9%)
After seminars I often organize demonstration lessons that help my teachers develop basic, intermediate and advanced ICT skills	3 (4.7%)	27 (42.2%)	27 (42.2%)	7 (10.9%)	30 (46.9%)	34 (53.1%)
My teachers use simulation regularly to incorporate ICTs in their teaching and learning processes.	6 (9.4%)	4 (6.3%)	41 (64.1%)	13 (20.3%)	10 (15.6%)	54 (84.4%)
My teachers often use software applications in planning and teaching their lessons in other subjects	3 (4.7%)	7 (10.9%)	26 (40.6%)	28 (43.8%)	10 (15.6%)	54 (84.4%)
Multiple Responses Set (MRS)	25 (6.5%)	85 (22.1%)	174 (45.3%)	100 (26.0%)	110 (28.6%)	274 (71.4%)

***Items with coding reversed during calculation of MRS*

Source: Field Survey 2022

Based on the head teacher's opinion on their teachers level of training on ICT, findings on table 2 shows that 20.3% (13) of head teachers indicate that their teachers have undergone appropriate initial training on ICT in teacher training colleges while 79.7% (51) disagreed. Also, a majority of head teachers 90.6% (58) indicate that the period given for practical during initial training is not proportionate to the period spent in class to acquire theory. About 64.1% (41) of head teachers

indicate that their teachers frequently attend ICT seminars while 35.9% (23) disagreed. 46.9% (30) of head teachers also opine that after seminars, they often organize demonstration lessons that help their teachers develop basic, intermediate and advanced ICT skills while 53.1% (34) of them do not. A majority of head teachers 84.4% (54) also indicate that their teachers do not use simulation regularly to incorporate ICTs in their teaching and learning processes. Finally, another 84.4% (54) of head teachers indicate that their teachers do not often use software applications in planning and teaching their lessons in other subjects. In aggregate, 28.6% of head teachers indicate that their teachers acquire some ICT skills during training while a majority of them 71.4% disagreed.

Regional Pedagogic Inspectors' Opinion on the influence of teachers' level of training on ICT on the implementation of ICT curriculum

Theme: Teachers' level of training on ICT and implementation of ICT curriculum

Sub-theme 1: In your opinion have teachers in Mezam Division undergone appropriate initial training on ICT in teacher training colleges? How can you explain this?

"Most of the teachers have not undergone appropriate initial training on ICT in teacher training courses. This is because most teachers training courses focusing on ICT theory than practical".

"I disagree. This is because public primary schools have a low purchasing power thus are unable to purchase for ICT resources"

Is the period given for practical during initial training proportionate to the period spent in class to acquire theory? Give a reason for your answer

"The period given for practical during initial training is not proportionate to the period spent in class to acquire theory. This is because teacher training periods are too short as such they turn to focus more on theory"

"The period given for practical during initial training is not proportionate to the period spent in class to acquire theory because teacher training colleges training periods are too short as such they turn to focus more on theory"

Sub-theme 2: How frequent do you often organize ICT seminars for teachers?

"Once in a term"

"Once in a term"

Given that technology is evolving rapidly do you think the frequency is significant?

"The frequency is absolutely insignificant"

"The frequency is absolutely insignificant"

Comment on teachers' attendance to in-service trainings

"Poor attendance"

"Poor attendance"

After seminars do you often organize demonstration lessons that help teachers to develop basic, intermediate, and advanced ICT skills?

“I do organize demonstration lessons, but it is not all that effective because lack of adequate resources for demonstration”

“I do organize demonstration lessons, but it is not all that effective because lack of adequate resources for demonstration”

Sub-theme 3: Do teachers have ICT skills that enable them to regularly incorporate ICTs in their teaching and learning processes? Explain

“Teachers do not have appropriate ICT skills because teacher training courses focusing on basic computer operations rather than advanced computer skills”

“Teachers do not have appropriate ICT skills because teacher training courses focusing on basic computer operations rather than subject-specific pedagogical applications”

Do teachers often use software applications in planning and teaching their lessons in other subjects?

“Teachers do not often use software applications because of lack of ICT skills.

“Teachers do not often use software applications because of outdated hardware and lack of appropriate software”

Sub-theme 4: How would you rate the quality of teachers’ level of training on ICT in Mezam Division?

“Low”

“Low”

How would you rate the attainment of pupils’ training on ICT in Mezam Division?

“Low”

“Low”

Based on the pedagogic inspectors’ opinion on teachers’ level of training on ICT, first, they said teachers’ training on ICT is very necessary because it helps teachers to focus on the teaching process by interacting with the subject matter, curriculum content, pedagogical creativity, and socio-cultural aspects of education. However, the pedagogic inspectors state that most of the teachers have not undergone appropriate initial training on ICT in teacher training courses because most teachers training courses are focusing on ICT theory than practical. Also, the pedagogic inspectors said that the period given for practical during is not proportionate to the period spent in class to acquire theory.

The findings of the pedagogic inspectors also show that teachers do not frequently attend seminars on ICT. Furthermore, for pedagogic inspectors that do organize ICT seminars, they said it is not effective because adequate resources are lacking. The findings indicate that the pedagogic inspectors during seminars they often organize demonstration lessons that help teachers to develop basic, intermediate and advanced ICT skills. To elucidate, finding out from the pedagogic inspectors if teachers have ICT skills that enable them to regularly incorporate ICTs in their

teaching and learning processes, the pedagogic inspectors said teachers do not have appropriate ICT skills because teacher training courses focusing on basic computer operations rather than advanced computer skills and subject-specific pedagogical applications.

Furthermore, asking the pedagogic inspectors of teachers use software application in planning their lessons, the pedagogic inspectors said teachers do not often use software applications because of lack of ICT skills, outdated hardware and lack of appropriate software. Finally, the pedagogic inspectors rate teachers' level of training on ICT low and attainment of pupils' training on ICT low as well.

DISCUSSION OF FINDINGS

The findings revealed that teachers' level of training on ICT has a significant influence on the implementation of ICT curriculum. This implied that teachers are more likely to implement ICT curriculum when they are adequately trained. This finding is in congruence with the findings of Omaribae (2016) that revealed there was lack of proper training in the use of ICTs and that preparedness in integration of ICT was at an infant stage. Also, tutors faced several challenges in an attempt to integrate ICTs into the curriculum such as inadequate facilities, lack of competence, knowledge and skills, lack of support from the college administration and the government and lack of ICT policies on integration of ICT in PTTCs. Jegede (2009) who argued that more than half of the educators had been exposed to one form of ICT training or the other but they still do not effectively implement ICT curriculum in the teaching and learning practices because they are not adequately trainings on the use of ICT in instruction.

Equally, the findings further showed that teachers have not undergone appropriate initial training on ICT in teacher training colleges. The findings indicated that the period given for practical during initial training is not proportionate to the period spent in class to acquire theory. This is because most teachers training courses are focusing on ICT theory than practical. This finding is at variance with the findings of with Katerina and Caroline (2010) findings which suggest that although student teachers and teacher trainers have generally good access to equipment and an adequate level of technical skills, they lack competencies in the pedagogical use of ICT. This is because, many student teachers are critical of the lack of training and experience regarding pedagogical uses of technology in the classroom. Wanjala, Khaemba and Mukwa (2011) and Kiwonde (2018) confirmed that there were no significant methods of learning how to use ICTs and training was done with less practical components.

Moreover, the findings showed that teachers do not frequently attend ICT seminars because they are not frequently organizing seminars due to inadequate resources. The findings designated that after seminars demonstration lessons that help teachers to develop basic, intermediate and advanced ICT skills are not often organized. This finding is in congruence with Charalambous and Karagiorgi (2002) whose study indicate that the majority of teachers are shown to lack an ICT training background while the approach to training appears piecemeal, focused mostly on off-site training and oriented towards the acquisition of basic computer skills. However, teachers report that they prefer school-based courses, as well as courses that focus on the pedagogical dimension of ICT integration. Daidai (2014) confirmed that teacher educators were neither given ICT in-service courses nor indoor training at college levels. UNESCO (2010) reiterates that capacity development in curriculum execution has been and still continues to pose a great obstacle in the education sector. There are no frequent arranged in-service and induction exercises to continuing

accelerating the teachers capacity in integration and enactment of the curriculum successful. Hence, it was recorded that there was disorganized coordination for the in-service programs offered by the various players.

Finally, the findings specified that teachers do not use knowledge and skills acquired during training to incorporate ICTs in their teaching and learning processes. Also, the findings stipulated that teacher do not often use software applications in planning and teaching their lessons because they have not acquired appropriate ICT skills from their training, outdated hardware and lack of appropriate software. The use of software applications in planning and teaching their lessons enables teachers to match what subject content and pedagogy with suitable application software. This study in congruence with Opie and Oko-Ngaji (2021) who found out that the level of ICT competence among the science teachers was significantly below the expected minimum competency level and majority of the teachers were not competent in ICT. Apanpa and Lawal (2009) recommended that teachers' capacity training in ICT competencies should be provided. This is because ICT competence is one of the most important factors needed to perform various tasks in education especially in the process of searching for new information, teaching and learning in the classroom environment (Asubioju & Ajayi, 2017).

CONCLUSION

From the findings of the study, it can be concluded that a good number of teachers did not receive adequate and appropriate training on how to implement ICT curriculum in the classroom. However, this is due to inadequate and inappropriate pre-service training, lack of orientation and frequent seminars, workshops and conferences for public primary schools' teachers and lack of appropriate ICT competences to effectively implement ICT curriculum in schools. Hence, teachers' level of training on ICT influences the implementation of ICT curriculum in public primary schools in Mezam Division.

RECOMMENDATIONS

Based on the findings, the study recommended that Teacher Trainers should ensure that during pre-service training of teachers both the theory and practice should be conducted proportionately with the focus on equipping teachers with ICT knowledge and skills on the implementation of ICT curriculum in the classroom. Also, the Ministry of Education as well as the Regional Pedagogic Inspectors for ICT should organize regular and practical in-service training (that is seminars, workshop and conferences) with demonstration lessons that will help teachers develop basic, intermediate and advanced ICT skills. Having these ICT skills will help teachers to change their teaching practices and serve as essential element for effective implementation of ICT curriculum into the classroom. Again, the government should ensure that teachers prove their ICT competencies before they are recruited to teach in Cameroonian public primary schools. This will improve their job performance, enhance their learners' attainment in ICT skills and remedy the frustration that they may face because of their lack of knowledge and skills thus, effective implementation of ICT curriculum into the classroom.

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