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The Digital Impact: Investigating the Use of ICTs in the Teaching of English Language in Some Secondary Schools in Cameroon

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Abstract. This study seeks to find out if secondary school teachers in Cameroon incorporate ICTs in English Language teaching, and how they do it, if it is done. The study also seeks to identify the contribution of ICTs to the teaching and learning of English Language, determine the major impediments to the development of English teaching and learning programmes through ICTs, and search for solutions to the problems regarding the application of ICTs in English Language teaching and learning in secondary schools in Cameroon. The theoretical framework of analysis for this study is the TPACK propounded by Mishra and Koehler (2006). TPACK stands for the technological pedagogical content knowledge which has implications for the types of professional development which could be provided for teachers integrating ICTs into their teaching. According to this theory, teachers need to combine three different types of knowledge in order to use technology effectively for teaching: technological knowledge (TK), pedagogical knowledge (PK) and content knowledge (CK). Teachers need to be able to combine TK and PK into TPK. They also need to be helped to develop TCK. Equipping teachers with these types of knowledge would allow the intersection of all three to form TPACK, which will allow teachers to use appropriate technologies and combine these with appropriate pedagogical strategies to effectively teach the English language. To carry out this investigation, the researcher administered questionnaires to 45 principals, 219 teachers and 571 students in some randomly selected secondary schools in Cameroon. Formal interviews with principals, teachers, students, textbook writers and software developers were also conducted. Classroom observation was equally used to complement the interviews. Data analysis was done by simply converting the responses obtained from our target population into percentages. The findings obtained demonstrate that teachers attain over 90% of their set objectives for each lesson when they incorporate new technology into their teaching, given the interactive potentials of these ICT tools. In addition, more than 70% of the 832 respondents were found to be aware of the use of ICTs in English language teaching, and they have positive attitudes towards the integration of e-devices in classroom teaching and learning. However, the lack of available resources, lack of power supply, lack of internet facilities, economic problems and lack of sound theoretical and practical knowledge in e-learning were found to be some of the challenges in the use of ICTs in secondary schools in Cameroon.

1. INTRODUCTION

Mishra and Khoeler (2006) stated that the advent of digital technology has dramatically changed routines and practices in most arenas of human work. Advocates of technology in

education often envisage similar dramatic changes in the process of teaching and learning. Simply introducing technology to the educational process is not enough. The question of what teachers need to know in order to appropriately incorporate technology into their teaching has already received a great deal of attention elsewhere (U.S. Congress Office of Technology Assessment 1995; National Council for Accreditation of Teacher Education 1997; International Society for Technology in Education 2000; U.S. Department of Education 2000; Zhao 2003). Wims and Lawler (2007), added that the incorporation of Information and Communication Technologies (ICT) into the educational curriculum has been promoted as a key step in bridging the digital divide in Kenya. They maintained that, despite considerable growth in the number of computers acquired by schools in Kenya in recent years and the financial sacrifices made to buy these computers, there has been little evaluation of their effectiveness. Later, Eid Alharbi (2014) said that the presence of ICT in the interactive educational environment helps develop thinking skills and can make classrooms an environment for educational growth. In Cameroon, very little has been done to promote the integration of these ICTs into English Language teaching.

Advantages if ICT in English Language Teaching And Learning

The use of ICT has positive effects on foreign and second language teaching and learning.

Below are some of the advantages:

1. A major benefit of the use of ICT in blended language learning classrooms is the opportunity that ICT-based tools give to language teachers so that they can tutor their learners more effectively. With the help of ICT-based tools and the constantly growing number of available educational resources language teachers are able to give individual and personalized guidance to the learners and books. Books have a fixed presentation, unlike computers, which can combine both 4. Computer programs are more learner- friendly. 5. Computers provide a fast feedback to students` answers through error correction. It not only spots the mistake but also corrects it, sometimes even giving the 6. English lessons that incorporate multimedia applications can exert powerful motivation and provide bored students with exciting new ways to learn. 7. First and foremost, benefit is that ICT provides language learners with the opportunity to use the language that they are learning in meaningful ways in accurate contexts. 8. Real life learning; reality of virtuality. There is little doubt that, language teachers, need to focus on the use of language, and ICT make it easy for us to do so, especially after the use of internet as a didactic tool. Bringing a sense of reality also contributes to facilitate learners be less dependent, fostering their autonomy. Of course, this has created an intense demand on the teacher to be selective (to tell the trees from the forest) and to adapt the wide variety of resources at hand to the variety of students. 9. With ICT pictorial description is available with listening materials, text with graphics and pictures

Motivation for this study

The above statements motivated this study, in addition to some personal experiences the researcher had. This happened when the researcher taught at a language teaching center as a part-time teacher. In this center, students learn with the use of Information and Communication Technologies (ICTs). Lessons are taught using interactive whiteboards, TV and radios sets, and PowerPoint projectors. Students do their homework on laptops, personal computers and smartphones, while others do theirs online, using several other gadgets. These students, from my observation were more than enthused to do their work, and their results were excellent. The class participation was far above 85% because students were incorporated at lesson planning and dispensation. These were the same students who had been taught English language in their various secondary schools and did not acquire the

necessary English Language skills. They then came to the language center because they had a special need for the English Language, and also because English Language program was tailored to fit particular needs of individual students, and the tools used to accompany the teaching were interesting. One could deduce from this change of results that the students may not have been enjoying their lessons while they were in their secondary schools, probably because the English Language classes were boring, thus making the students passive, or the teaching methods were obsolete, or there were no teaching aids to make the students motivated to learn the language.

The next motivational factor for this research is the enrollment of this researcher into the Internet Society (ISOC), and when he became the secretary general of "Information and Communication Technologies Sans Frontiers" (ICTSF) in 2015. As a member of both groups, he is challenged with the task of bringing Africans closer to the information superhighway (internet space). This is why he was motivated to bring it into the Cameroonian classroom given that he is a teacher and a Cameroonian. In the course of this research, another factor came in which was a booster for the researcher's motivation for this work. It is the outbreak of the Coronavirus in Cameroon on February 24th, 2020. When schools were locked down on March 16th, 2020, almost all the schools in the major cities in Cameroon went digital, as far as examination classes were concerned. Some schools hurriedly created WhatsApp study groups, Telegram exchange groups and a majority used the ZOOM Mobile application for physical and live teaching. The Ministry of Secondary Education arranged revision lessons through private TV stations like the HI-TV in the South West Region of Cameroon. They hired teachers to teach these students live on radio and television. The Cameroon Radio and Television (CRTV) queued in on Saturday, April 11th, 2020.

It is true that the effectiveness of these online or radio and TV classes can be questioned, but to the best of our knowledge, these students were all engaged, especially because it came after about two weeks of boredom and idleness at home, so it was a huge relief to them. During this time many software engineers appeared with online packages. Three of these will be presented in Chapter Three of this work. These applications and platforms came to take over from the traditional classrooms because schools were shutdown. It was a huge challenge to those who were not used to the new technologies, but had to grapple with it at the end. This is when every Cameroonian saw the importance of incorporating ICTs in the school program.

Statement of the research problem

Cameroonian children and young adults cannot compete with their peers in other parts of the world as far ICT use in English language learning is concerned, and this is not good for them. It is not good because later in life when these young people go abroad to study, or to do any other business, they are far behind their class or school mates and other business partners, and this becomes a subject of mockery or ridicule for them which creates in them a kind of inferiority complex. This is a problem which needs to be solved now in our country, Cameroon. There is very little use of ICTs in the teaching of English language in Cameroonian secondary schools, whereas ICTs should have been well exploited. Language learning centers like the American Language Center in Bastos, Yaoundé, and the British Language Institute in Yaoundé that use ICTs always have outstanding results.

Many students and teachers have new technological gadgets, but they do not use them for English Language teaching and learning. As a consequence, students instead use them to play games, surf and spend a lot of time on social media sites. This time should have been used for the learning of the language, if their teachers had introduced ICTs in their teaching process. ICT

tools have come to stay in this everchanging modern world. Many countries, especially in the developed world, use ICTs even in primary schools. Cameroon should not be left behind.

Research questions

Given the above-mentioned problem, the following main research question guided the investigation: Why are ICTs not fully included in the teaching of English Language in Cameroonian secondary schools? This main question provoked the following sub-questions:

1. How ICT-literate are English Language teachers?
2. Is the prescribed English Language textbook compatible with ICT teaching methods?
3. What are the principals' and teachers' attitudes towards the use of computers in teaching and learning?
4. Which are the factors that would encourage the use of ICTs in English Language teaching and learning in Cameroon secondary schools?

Hypothesis

In searching for answers to the research questions above, we shall consider the following tentative possibilities or assumptions:

- Cameroonian English language teachers are not sufficiently trained and skilled in computer knowledge.
- The authors of the prescribed textbook did not envisage the incorporation of ICTs in their content.
- Principals and teachers may be hesitant to incorporate ICT tools in English Language teaching, probably because most of them do not have a mastery of these tools.
- Training of English Language teachers in the use of computer software and other ICT tools, classroom environments appropriate to ICT learning, and ownership of the necessary gadgets by every learner are some of the factors that would encourage the use of ICTs in Language teaching and learning.

Objective of the study

The main objective of this research is to introduce both the teacher and learner to the importance of integrating technology in English Language teaching and learning. Technology has helped people to solve very complicated and sophisticated problems. Cameroon is a country where pedagogy is constantly evolving. Therefore, introducing this new technology would give added value to the teaching and learning of the English Language. It also aims at describing ICT as a concept, and explaining the benefits of integrating it in English Language teaching. The work will also investigate the impact of using ICT in the classroom on the teaching and learning process, determine the major impediments to the development of English teaching and learning programs through ICT, and searching for some solutions to the problems regarding the application of ICT in teaching English in secondary schools in Cameroon.

Scope of the research

The scope of this research covers 53 secondary schools within the Cameroonian national territory, 219 English Language teachers in Cameroon, 45 principals of English-speaking schools in Cameroon and one authorized English Language textbook series author - Mastering English Language Series - use for the teaching and learning of English in Cameroon.

2. THE FRAMEWORK OF ANALYSIS

The Technological Pedagogical Content Knowledge (TPACK) model proposed by Mishra and Koehler (2006) is used as a framework for analysis of the data for this research. This framework aids the teacher to understand and describe the kinds of knowledge needed by a teacher for effective pedagogical practice in a technology enhanced learning environment. The basis of our framework is the understanding that teaching is a highly complex activity that draws on many kinds of knowledge. Teaching is a complex practice that requires an interweaving of many kinds of specialized knowledge. (Leinhardt & Greeno, 1986) that requires them constantly to shift and evolve their understanding. Thus, effective teaching depends on flexible access to rich, well-organized and integrated knowledge from different domains. (Glaser,1984; Putman and Boko. 2000, Shulman, 1986, 1987). There are clearly many knowledge systems that are fundamental to teaching, including knowledge of student thinking and learning, and knowledge of subject matter. Actually, one of the first pioneers of the integrated knowledge of teachers to deliver better learning outcomes was Shulman (1986) who focused on the importance of treating pedagogy and content knowledge as basic requirements for teacher training. Shulman traced literature as far back as 1870, when pedagogy was ignored and attention was paid on content, and further in 1980 when it was conspicuously absent. He had the following proposition to make as far as content knowledge and pedagogy are concerned: I propose that we look back even further than those 1875 tests for teachers and examine the history of the university as an institution to discern the sources for this distinction between content knowledge and pedagogical method (Shulman 1986: 6). Since the presentation of the idea of pedagogical and content knowledge as basis for teachers' competencies necessary for the delivery of the required learning outcomes, there was no reaction from scholars until the early 1990s when the idea of technology started to be introduced in schools. Mishra and Koehler added technology to Lee Shulman's Pedagogical Content Knowledge (PCK) construct. They suggest that in order to ensure the most suitable framework for technology integration in the curriculum, content knowledge, pedagogical knowledge and technology knowledge must be tackled concomitantly. They suggest that teachers' use of technology be guided by the dynamic relationship between teachers' technological, pedagogical and content knowledge. The analyses of the interview, questionnaire and observation data will hopefully provide a better understanding of how the different types of knowledge interact and influence teachers' use of ICT in teaching English to L2 learners A basic understanding of some elements and relationships are important in the framework we propose. Effective technology integration for pedagogy around a specific subject matter requires developing sensitivity to the dynamic, transactional relationship between these components of knowledge situated in unique contexts. Individual teachers, grade-level, school specific factors, demographics, culture, and other factors ensure that every situation is unique, and no single combination of content, technology, and pedagogy will apply for every teacher, every course, or every view of teaching.

It can be observed that at the heart of the framework, is the complex interplay of three primary forms of knowledge: Content (CK), Pedagogy (PK), and Technology (TK). The approach goes beyond seeing these three knowledge bases in isolation. The TPACK framework goes further by emphasizing the kinds of knowledge that lie at the intersections between three primary forms: Pedagogical Content Knowledge (PCK), Technological Content Knowledge (TCK), Technological Pedagogical Knowledge (TPK), and Technological Pedagogical Content Knowledge (TPACK). There are some potential consequences of the TPCK framework for practicing teachers, teacher educators, and educational researchers. In particular, we focus our attention on how TPCK may be

developed and how this development may be studied. It is often argued that a serious consideration of this framework suggests a possible restructuring of professional development experiences for teachers so that they might develop the kind of nuanced understandings called for in the TPCK framework. It cannot be argued that this TPCK approach is completely new. Other scholars have argued that knowledge about technology cannot be treated as context-free and that good teaching requires an understanding of how technology relates to the pedagogy and content (Hughes, 2005; Keating & Evans, 2001; Lundeberg, Bergland, Klyczek, & Hoffman, 2003; Margerum-Leys & Marx, 2002; Neiss, 2005; Zhao, 2003). What sets this approach apart is the specificity of the articulation of these relationships between content, pedagogy, and technology. In practical terms, this means that apart from looking at each of these components in isolation, we also need to look at them in pairs: pedagogical content knowledge (PCK), technological content knowledge (TCK), technological pedagogical knowledge (TPK), and all three taken together as technological pedagogical content knowledge (TPCK). This is similar to the move made by Shulman, in which he considered the relationship between content and pedagogy and labeled it pedagogical content knowledge. In our case, a similar consideration leads us to three pairs of knowledge intersection and one triad. One of the pairs, pedagogical content knowledge, was introduced and articulated by Shulman, but two new pairs and one new triumvirate were introduced.

Relevance of the TPACK theory to the present research

Thus, this model of technology integration in teaching and learning argues that developing good content requires a thoughtful interweaving of all three key sources of knowledge: technology, pedagogy, and content. The core of this argument is that there is no single technological solution that applies for every teacher, every course, or every view of teaching. Quality teaching requires developing a nuanced understanding of the complex relationships between technology, content, and pedagogy, and using this understanding to develop appropriate context, specific strategies and representations. Productive technology integration in teaching needs to consider all three issues not in isolation, but rather within the complex relationships in the system defined by the three key elements.

Review of Literature on Ict in Language Teaching Around the World

Chai et al. (2018) carried out a study in Malaysia where they proposed the new conceptualization of technological pedagogical content knowledge (TPACK) that focuses exclusively on the intersection of technology, pedagogy and content, specifically for selected dimensions of 21st century learning. In addition, teachers' design beliefs were investigated with the teachers' TPACK. Given the conceptualization, Chai et al. designed and validated a new instrument. An associated intervention program to enhance the pre-service teachers' TPACK was designed and the pre- and post-course surveys were conducted. To unpack the relationships between teachers' design beliefs and their TPACK, structural equation models were constructed and validated. The findings indicate that the instrument possesses good construct, discriminant and convergence validity, and reliabilities. The intervention enhanced the teachers' TPACK efficacies and their design beliefs significantly, and the structural equation models indicate that the teachers' design beliefs are significant predictors of the teachers' TPACK. The implications of this study suggest that TPACK may be conceived differently and this may promote new intervention programs to foster pre-service teachers' TPACK and design beliefs.

Imhonopi et al (2017) state that today, Information and Communication Technologies (ICTs) have redefined the way communication is carried out and further pushed the envelope with regard to the way information is disseminated, creating more channels of interaction

between stakeholders in the society. Studies are ongoing on how ICTs can be useful in language teaching and learning in tertiary institutions today. The impact ICTs have had in improving governance, agriculture, medicine, banking and commerce, education, inter alia, so far, is being predicted to have the same impact when utilized for language teaching and learning. Thus, ICT tools like PowerPoint, e-conferencing, compact disks (CDs, VCDs and DVDs), technology-aided distance learning, among others, are instruments that can facilitate knowledge acquisition, language teaching and learning in tertiary institutions. Through ICTs, the teacher-student interaction in the learning process is situated within a dynamic pedagogical context that could go beyond the four walls of a traditional classroom. This situation forebodes better days for teachers and students alike as more channels of interaction are created, thus enhancing language teaching and learning. It now challenges teachers and students to take advantage of these technologies in furthering knowledge acquisition with regard to language teaching and learning. Among other things, in this paper, the authors have critically appraised the use of ICTs in language teaching and learning in tertiary institutions in Nigeria, identified the various limitations to this process and made recommendations that can be useful to policy makers and stakeholders involved in tertiary education.

Dang (2016) believes that there has been a large volume of published studies describing the attitudes of teachers and students towards ICT usage to study English in Vietnam, but limited research has been conducted to examine the use of ICTs in terms of frequency of use, purposes, perceptions, and expectations among EFL students. Thus, the purpose of Dang's study was to address the research problem of the frequency of use of ICTs in language Teaching. The research used a convenience sample of 149 English major students who were invited to respond to the questionnaire survey. The findings indicated that the participants spent more time using ICT for private purposes than for English learning purposes. However, when questioned about their attitude towards using ICTs for language teaching and learning, most of them were positive and expressed the desire that ICT should be used more frequently in the classroom in order to maximize language learning and teaching. Gaining an understanding of the way the learners employ ICT for their non-educational purposes may help "shed light on how best to determine their educational uses" (Fujimoto 2012: 165)

Following some authors who have dealt with the subject of the use of ICT in language teaching in Cameroon, Ndongfack, M. (2015a) states that as numerous ICTs penetrate various facets of life, teachers are underutilising it in the teaching and learning process. With the introduction of ICTs in the Cameroon primary school curriculum, teachers have been receiving training on computer skills and yet many are unable to adopt the tools in instructional processes. To ensure that teacher-training programmes effectively assist them in integrating technology in instructional processes, Ndongfack, M. (2015a) initiated a study to determine additional set of skills that they need to adopt the tool in their classrooms. His study employed a quantitative survey methodology in the collection of data towards the determination of additional skills needed by primary school teachers. A total of 400 teachers were selected using the stratified random sampling technique from primary schools across all the 10 Regions of Cameroon. The data were analyzed using mean and standard deviation. The findings of the survey indicated that teacher-participants reported a better mastery of content knowledge (CK), pedagogy knowledge (PK), pedagogical content knowledge (PCK) and technological content knowledge (TCK). On the other hand, they reported weaknesses in three other constructs, notably: technology knowledge (TK), technological pedagogical knowledge (TPK), and technological pedagogical content knowledge (TPACK). The researcher concluded that teacher-participants performed better in the CK, PK and PCK because these constructs constitute the basis for teacher education in Cameroon. Similarly, they performed well in the TCK construct because their professional development program is

focused on fostering their computer knowledge as a separate skill. Their poor performance in the TK, TPK and TPACK stems from the fact that the training programs do not lay emphasis on these constructs. To provide a sustainable teacher professional development programme on technology adoption, it was therefore recommended that stakeholders involved in the sector design training packages that focus on the TPACK constructs. This would foster teachers' adoption of the tool for instructional purposes.

Kopinska (2013) states that it is important that the students learn how to make use of the technologies in the classroom, in order to develop their digital skills and abilities, and how to learn through them. Attitudes towards the use of ICT in English as Foreign Language (EFL) classroom may affect students' learning process, as attitudes, with their 'behavioural implications' are considered an influential factor by many scholars in the field of Second Language Acquisition (SLA). His study focused on the analysis of learners' attitudes towards the use of new technologies, such as the Internet, as a basis for a Foreign Language (FL) classroom learning activities. The methodology of the study was based on the ICT and attitudes. Questionnaire were used. The respondents involved a sample of 27 public post compulsory secondary students from Vitoria, Spain, engaged in an experimental project of ICT use in EFL classes. The tentative analysis of the data showed students' general positive attitude towards technologies, as they considered them useful in the language learning process; however, scarce opportunities to learn through technologies in EFL classroom were revealed. She analyzed Spanish EFL learners' attitudes to the use of technology after the implementation of an experimental project of ICT in the classroom setting. The findings indicated that the students were fully aware of the usefulness of ICT to their English language learning, but they also said that they had little exposure to new technologies for the learning process.

The World Bank's (2012) short country report presents the result of larger Information for Development Program (infoDev)-supported survey of the Information and Communication Technologies (ICT) in education in Africa. This report provides a general overview of current activities and issues related to ICT use in education in the Tunisia. Tunisia has committed to the institutionalization of ICT in all aspects of the economy and has played a leading role on the global level by hosting the second phase of the world summit on the information system. To introduce and sustain the integration of ICT in education, Tunisia has implemented a multidimensional strategy based on modernizing its infrastructure. Education is an important sector affected by this policy where a major restructuring took place and reforms have taken into consideration the integration of ICT. Training and professional development of teachers and administrators were also considered as keys to successfully implementing ICT at all stages of the teaching-learning process. Distance education opens new horizons and constitutes a rich field of research, innovation, and creation that still needs to be reinforced and further developed

Yang (2008) in a case study 'Examining university students and academic understanding of ICT in higher education at Curtin University of technology' reported that university teachers who received support from administrators had a high commitment to the adoption of ICT for teaching and learning. Data in the study suggested that the adoption of ICT in teaching and learning would be promoted by greater support of the change at the management level of the University. A crucial factor contributing to the promotion of the innovation is the availability of infrastructure resources: hardware, in terms of the number of computers in the school available for students and teachers for educational purposes, and the quality and functioning of equipment (speed of processors, peripherals and access to the internet) as well as available software. However, availability of ICT alone is insufficient and must be accompanied by technical as well as pedagogical support. He also reported that lack of technical support as

one of the major barriers that resulted in computers being underutilized in the classes. Teachers do not use computers in teaching when they are not sure where to turn for help in case something goes wrong.

Hennessey et al. (2007) studied on 'Teacher perspectives on integrating ICT into subject teaching, commitments, constraints, and caution and change'. They examined pedagogical approaches to use ICT tools such as multimedia simulations, data logging tools, and interactive whiteboards, and the means by which they may be adapted to the cognitive and structuring resources available in the classroom setting. The researchers found that teachers were moving away from only using practical experiments towards "What if" explorations where the outcomes of ICT-based experiments can be immediately accessed; for example, through the use of simulations to demonstrate scientific concepts and physical processes; thereby bridging the gap between scientific and students' informal knowledge. ICT was also integrated with other practical activities to support incremental knowledge building, consolidation, and application.

UNESCO (2005) reported that teachers, professors, technical and administrative staff must be given training that enables them to integrate new information and communication technologies into their teaching programs. The lack of technical skills of maintaining the functionality of computers confused teachers to integrate ICT in the classroom.

We just discussed the theoretical framework used for this research also reviewed some literature relevant to the work. Authors from continents other than Africa who have published research on the use ICTs in language teaching and learning have been reviewed; authors from African countries apart from Cameroon have been reviewed; and finally, Cameroonian authors who have published their research on ICTs in Cameroon educational systems have been examined. Thus a wide range of studies have been reviewed, and each of these works has thrown some light on a few traits in the area of ICTs and language teaching and learning. These works are both national and international. They all talk about the possibilities and the advantages of using ICTs in the process of language teaching and learning. However, none has investigated the use of ICTs in secondary schools in Cameroon, especially during the corona virus era. Therefore, the main objective of this study remains valid and pertinent, that is, scrutinizing the degree of exploitation and integration of ICTs in the teaching and learning of English language in secondary schools in Cameroon.

3. METHODOLOGY

In this research, a triangulation is methods is used: questionnaires, interviews and classroom observation. The questionnaires were administered to secondary school principals, English language teachers and students. Oral interviews were conducted with secondary school principals, English language teachers and students. English language lessons were observed to see how ITCs are integrated in the English Language classroom and finally, some of the authors who wrote the *Mastering English Series* are interviewed. All the data collected from these respondents were analyzed, taking into consideration the theoretical framework used as basis for this research and also following the guiding questions for this research.

Data collection instruments

The question of what instruments to use in a research project is often answered by the nature of the data required, its location and accessibility (Hunston, 2002:26). To begin with, data collection is a methodical process of gathering and analyzing specific information to proffer solutions to relevant questions and evaluate the results. It focuses on finding out all there is to a particular subject matter. Data is collected to be further subjected to hypothesis testing which seeks to explain a phenomenon. Hypothesis testing eliminates assumptions

while making a proposition from the basis of reason. For collectors of data, there is a range of outcomes for which the data is collected. But the key purpose for which data is collected is to put a researcher in a vantage position to make predictions about future probabilities and trends. The core forms in which data can be collected are primary and secondary data. While the former is collected by a researcher through first-hand sources, the latter is collected by an individual other than the user. In order to achieve the objectives set out in this study, appropriate instruments for the measurement of variables were set. Primary and secondary methods of data collection were used. Instruments for the collection of data for this research included: students', teachers' and principals' questionnaires, the course materials meant for English Language teaching and learning. Direct and indirect observations will also be used to complement information gathered from the questionnaires.

The sample for this present study consisted of 45 secondary school principals, 216 English language teachers and 571 secondary school students in Cameroon. It further included the authors of the official English Language textbook in the program in Cameroon.

A-Questionnaires

The questionnaires were given out in two shifts. Before the coronavirus outbreak, the questionnaires were distributed by the researcher and some were sent to colleagues in the other regions to print and distribute; then they were collected and sent back through travel agencies. With all the measures put in place by the government and various school heads after the coronavirus lockdown, the researcher had to transform the questionnaire into a Google form in order to easily send them through the numerous WhatsApp and telegram groups that were created to facilitate online teaching during the nationwide confinement. It was also sent to various teacher platforms on Facebook and this media increased the number of respondents tremendously. It is difficult here to mention those who saw and did not fill in, and those who filled in but did not submit. We can only analyze the questionnaires filled in and sent back.

Table 3: Distribution of Questionnaires before the corona virus lockdown

Population Sample	Distributed Questionnaires	Returned Questionnaires	Percentage Returned	Number Unreturned	% Unreturned	Total
Principals	15	12	80.13%	3	19.87	100%
Teachers	58	40	68.97%	18	31.03	100%
Students	120	112	93.33%	88	6.67	100%

Table 4: Distribution of Questionnaires after the corona virus lockdown

Population Sample	Returned Questionnaires
Principals	33
Teachers	176
Students	459

Table 5: Total questionnaires to be analyzed

Population Sample	Returned Questionnaires
Principals	45 (12 + 33)
Teachers	216 (40 + 176)
Students	571 (112 + 459)
TOTAL	832 (45 +216+571)

B-Course material

Course material means any written materials which can be used for education as course content used in normal teaching or instruction of a regularly scheduled course. These course materials do not necessarily have to be published textbooks; they may include excerpts of things like newspaper cuttings, pictures of people travelling in bus stations, pictures which are illustrations for interpretations, and so on. Such materials, whether printed, digital, Internet based, CD/DVD-based, audio- or video-based are all important course materials. It is important to note that if certain possible course materials have copyrights of authorship, before using them, permission should be duly sought and obtained. Some of these course materials have been examined in the course of this present research.

C-Classroom Observation

For the purposes of this study, the lessons of ten ESL teachers from seven different schools were observed and each teacher participated in a stimulated recall interview after each lesson. The data was analyzed to answer the research question: How do ESL teachers integrate ICT in teaching English literature? The age range of the students involved in the study is 13-17 years. The textbook they used is the prescribed lone textbook in the Cameroonian program by the Cameroon Ministry of Secondary Education: *Mastering English*. While the lesson was in progress, in some cases, I took down notes following my observation checklist. In small sized classes, the teacher could easily notice my presence, but in larger classes, the teacher knew I was coming at first, and then I did not inform them I was coming the next time. This is because when they know I am coming; they will prepare the lesson perfectly and the real results will be adulterated; and the real picture can be seen only in an indirect observation The duration of interview with each participant was no longer than 45 minutes. The interview was recorded and subsequently transcribed and coded using NVivo software. The total number of lessons observed was eighteen and each lesson lasted between 45 minutes and an hour.

The check list for classroom observation was:

- General objectives
- Lesson objectives
- Blackboard management
- Use of ICT tools
- Enrolment
- Attendance
- Class control
- Class organization
- Teaching methods
- Teaching aids
- Supplementary course materials
- Student-teacher interaction
- Teacher’s mobility
- Course book usage
- Classroom’s adaptability to ICT integration

The observation exercise was to complement information gotten from other sources such as questionnaires, course materials and interviews. The principal focus was to find out some of the techniques employed during the teaching and learning process involved the digital tools that could enhance or deter students' linguistic and communicative competencies. It was also aimed at finding out if the students are using the prescribed course material by the government. Due to time and financial constraints only twenty-two lessons were observed in sixteen schools from four regions. The total number of sixteen lessons were observed in the different schools

4. DATA ANALYSIS

Both qualitative and quantitative methods were used in the data analyses. In qualitative data, responses were coded, summarized and reported in relation to the specific research objectives as provided by the different groups of respondents. In most cases, percentages were indicated for visibility of the responses for comparative purposes. Pertinent information from qualitative data was reported directly. Quantitative data were analyzed statistically in terms of frequencies, percentages using the Statistical Package for Social Sciences (SPSS). Appropriate tables, histograms, and pie charts to reflect respondents' responses to each item of the different objectives of the survey instruments were provided.

Discussion of findings

The purpose of this study was to investigate the integration of ICTs in the process of English Language teaching and learning in secondary schools in Cameroon. It was framed to particularly investigate whether the government, principals, teachers and students in secondary schools in Cameroon incorporate ICTs in the teaching and learning of English Language; investigate the problems undermining the use of ICTs in English Language teaching and learning, explore possible ways of improving the use se of ICTs in English language teaching and learning in some secondary schools in Cameroon. The research findings from questionnaires reveal a number of issues, as discussed below following the research questions. Most of the students in the secondary school range between the ages 8-21. These are the years when language and skills could be acquired naturally and not learnt. This means that children can easily acquire the skill of ICT tools manipulation that would be used in turn to facilitate learning English Language in the classroom. This age range is known as the Critical Period Hypothesis. At this age, if the students are not fully groomed in the integration of ICTs into language learning, it might be very difficult when they get to the university. The human resource needed for teaching the English Language using ICTs, is somewhat inadequate in varying degrees, as many teachers of English are barely computer literate. They simply know how to manipulate their cellular phones and laptops for basic utilities as phone calls, WhatsApp messages, and social media in general. Yet, there is a strong need for proper drilling on the use of ICTs for English Language teaching. Teachers can be trained for this through in-service training and refresher courses. This finding goes a long to answer the question, on how ICT literate the teachers are.

From this research, too, it was found that students study computer skills or computer sciences only in the first three years of secondary education, that is, in the schools where this is taught. It is not compulsory in higher classes. In addition, only computer science teachers engage their students in ICT-related activities (typing of assignments and presenting in hard or soft copies, and internet research). Some students, especially those from rich backgrounds, engage themselves in independent English Language activities in specialized language centers in metropolitan cities. This limitation is a great concern as it plays on the attitude of students. By this I mean, since ICT is not given maximum importance, the students might think it is not important and thus, their attitude might just be passive. This will be a respond

to the research question on what are the principals', teachers' and students' attitudes towards the use of computers in teaching and learning?

Out of 45 Principals of schools interviewed, 6 said that their schools did not have multimedia centers, while 39 had. 153 English Language teachers affirmed the existence of these multimedia/services in their schools, as against 66 who did not have. As for students, out of a total of 571 from the different case studies, 423 confirmed the availability of multimedia centers in their schools, while 148 infirmed it. The fact that 220 out of 832 making 26.4402% of the respondents do not have multimedia centers and computer rooms in their institutions is a call for concern in this twenty-first century. The attitude of the principal plays a major role in the integration of ICTs into language learning. If the principal likes the idea, he or she can persuade the PTA or the proprietor of the school.

The findings of the study also show that more than 70% of the 832 respondents are found to be aware of the use of ICTs in English Language teaching and learning, and they have positive attitudes in the integration of e-devices in classroom teaching and learning. As evidences, over 75% of them said that they would like to integrate the technologies in the classes, over 80% of them are found to be familiar with technological means, over 70% positively accepted that they integrate ICTs in their classes from time to time and their classes should be supported by the gadgets like computer, e-mail, internet and multimedia, almost all of them perceived that an innovative teacher should integrate ICT in their class and e-learning helps in developing language skills, 76.2% of the teachers were of the view that ICTs help them to be satisfied. We will be looking back at the question, which are the factors that would encourage the use of ICTs in English Language teaching and learning in Cameroon secondary schools?

Amongst all the 18 classes observed, the most interesting classes were the two classes on ICT in module 5. The teacher who brought the gadgets from his house used them very well, as he showed the students how they could use each of them to learn English Language and by extension other subjects. However, at the end of the lesson, the students had stolen his eight gigabytes USB memory stick. It was difficult to retrieve the stolen USB because of the size of the class. In the same vein, the teacher who asked the students to bring gadgets from their houses was in problems even before the lesson had begun, as two parents came to school to get the gadgets that the students had taken from the house without permission and one student had misplaced the tablet that she had brought from home.

The most challenging issue was the classrooms' adaptability to ICT integration. Just two of the classrooms had sockets at all four corners of the classroom where an electronic devise could be plugged in. In two other classes, the teachers had to get electricity from the class next door, using extension cables. From figure 62, we noticed that 77.7% of the campuses had electricity on campus and even in classrooms, while 32.3 had electricity on campus but not in the classroom. This means that those who conceived the plan of the schools had no intension of taking technology to the classroom. Even among these classrooms that had electricity, some of them were just for the lightbulbs.

Interviews

It is no news that a lot is being done today through social media handles or platforms, so teaching and learning cannot be kept aside. It was clear that during the Covid-19 confinement period, over 71.66% of the respondents used social media platforms to continue teaching because schools were shut down during the coronavirus lockdown (See Figures 31, 47 and 61). Social media networks are widely used in Cameroon as well as worldwide. According to participants, social media has its own impact on them for learning English in Cameroon. In

that respect, 62.3% of the participants (See Figure 55) mentioned the fact that it improves interaction amongst students and English language teachers with using the target language (English language). As mentioned before, Hashemi and Aziznezhad (2011) talked about the role of Oovoo and Skype that students can use as a communication and interaction environment to try out their English language skills. Today we have a handful of these sites and applications that students can exploit, amongst which are: WhatsApp, Facebook, Wikipedia, Telegram, Twitter, Instagram, and LinkedIn.

Assessment of MINESEC's Distance Learning Program

The vision of the Distance Learning program was to make lesson content across the entirety of Cameroon's secondary education programs available in three forms: video, audio and print. Although originally conceived as a response to the educational challenges imposed by the COVID-19 pandemic, the center now seeks to develop content for students to use in concurrence with in-person learning.

The Distance Learning Scheme of work

Before lesson production begins, national pedagogic inspectors for the different subjects produce distance learning schemes of work, which are meant to take into account the exigencies of the program, as opposed to regular, in-person classes. These schemes lay out the general and specific objectives per subject and class, and break down the annual hourly workload into 30-minute presentations. Modules, sub-topics and lesson titles are elaborated to fit within this scheduling, such that a distance learning lesson (which is basically a presentation scheduled to run for at most 30 minutes) falls within a sub-topic and a module. The number of expected lessons therefore varies by class and subject.

Details from the Distance Learning website

English Language received the least attention in this Distance learning by MINESEC. As of February 22, 2022, Form One English has one English Language lesson posted on 26th April, 2021. Form Two English Language has five lessons, all posted between October 12 and December 16, 2021. There are five lessons for Form Three English, uploaded between 6th April, 2021 and 16th December, 2021. In fact, from 7th April to 15th December 2021, no lesson was uploaded to the website, then on 16th December, four lessons were uploaded simultaneously. Form Four carries four English Language lessons: one posted on the 6th of April, 2021 and then three uploaded on the 16th of December 2021. Form Five has five English Language lessons; one uploaded on 4th April, 2021 and four posted on 16th December, 2021. Lower sixth did not have any English language lessons uploaded until the 10th of October, 2021 and as of the 22nd of February, 2022, there were only nine lessons. Upper sixth has no English Language video uploaded as of the 22nd of February, 2022.

It should be noted that English Language has been given the least consideration on this website. This platform was launched in the year 2020, but it was only until April 2021 that MINESEC started uploading English language lessons on the website. The situation is not very different with Literature in English. Form One has two lessons, posted on October 12 and December 16, 2021; Form Two and Form Three have no uploaded lessons; Form Four has one lesson, uploaded on October 10, 2021; Form Five has seven lessons, uploaded between October 12, 2021 and December 16, 2021; Lower sixth has two lessons, both uploaded on April 26, 2021; Upper sixth has fourteen lessons, uploaded between April 3, 2021 and October 12, 2021. Besides, most subjects have more lessons on MINESEC's distance learning YouTube page than on its website, and recorded Zoom lessons are available only on YouTube. On the YouTube page, English language has the least number of lesson on the MINESEC website.

Challenges facing distance learning in Cameroon by MINESEC

To begin with, the high cost of information and communication infrastructure, and the dearth of technical expertise are the first challenges in distance learning in sub-Saharan Africa. Furthermore, the lack of appropriate business models and educational models makes the study material or open contents developed difficult to follow, thus reducing the enthusiasm of learners in their respective studies. The timeframes of the publication of the Zoom sessions in Cameroon are always so near to the time they will be hosted; so near the scheduled time that students and parents are not able to plan well ahead of time. Besides, some Zoom lessons are taught at the same time that students are supposed to be in school as opposed to hosting it on the weekend and mostly Sundays. Similarly, the time discrepancy between the recording of a lesson and the uploading of it to the website is too long. The number of English Language and Literature in English lessons uploaded to the website as at February 25, 2022 is, for example, far smaller than the number of lessons recorded.

There's also the lack of any clear quality assurance mechanism, which may result in unclear standards and by consequence, poor quality of distance education. The production center for distance education does not have up to date equipment, so the quality of the lessons produced are not the best, compared to what we watch from other countries. Since the center is operated by the government, it is difficult to question these aspects.

Technology can be used as a tool and it must be utilized only to remove the barriers and challenges present in the distance-learning settings. ICT can provide opportunities to complement on the job training and continuing education for students in a convenient and flexible manner. Use of ICTs in distance education requires major shifts in the way content is designed and delivered. New technologies should not be imposed without enabling teachers and students to understand these fundamental shifts. Given the busy nature of Cameroonian students, with inherent challenges in having to take time off work and to be away from their home commitments, it will not be easy for them to attend taught courses that require them to be present online while at home, especially as most of them get back home with so many assignments to do. Weekends are thus the most appropriate days for Zoom classes. Alternatively, many lessons should be uploaded as often as possible.

In Cameroon, distance-learning marginalizes some students. For example, visually and auditory impaired students are disadvantaged as they are further excluded from distance learning practices when ICT is used. During the conception and production of these lessons, the above-mentioned handicaps are not considered; something needs to be done to resolve that lacuna. These students are also often unable to use ICTs due to institutional failures to comply with legal and technical requirements for impaired students.

Data from textbooks

The head of the team of authors who wrote the lone textbook for Anglo-Saxon schools, *Mastering English*, was interviewed. The course materials were examined following Litz's (2005) wide variety of relevant and contextually appropriate criteria for the evaluation of the textbooks.

One of the most valuable beginning stages in any textbook evaluation is an investigation of the author's and publisher's qualifications (Litz (2005). The authors of the *Mastering English* series (from Form 1 to Form 5 and the High School) are Egbe Besong Elvis, the head of the team, Ngwessa Queentha, Mispa Bessem, Epitime Mesei Mary, Ndikum Harriet, Akwi Margaret, Asongkeng Felix Ndungna, Etta Josephine Bessem, Afuh Didachos Mbeng and Akongoh Rudolf Ngwa. The publisher is NMI Education/Cambridge Publishers. The series is published in Yaoundé. Adequate data about the distributing organization, the contact address

and phone numbers, for example, can be found within the title page; however, no information about the authors' formal education or longevity of service as teachers is provided. This makes it hard to investigate whether the authors have a renowned experience in the field or are knowledgeable for delivering innovative materials.

One fascinating component of the embellishments bundle that is deserving of a closer assessment is the website (www.nmieducation.org) that has been intended to go with the reading material. The reconciliation of the computer and data innovation to language learning is getting progressively typical in numerous organizations and it appears just as the authors and publishers of the mastering English series are very much aware of this developing phenomenon. In this specific case the publishers have built up a handy site that educators can use to discover Internet joins to proficient articles and that students can use to increase extra practice with the material canvassed in the course book, write to email friends through correspondence, or find connects to exercises, tests, data and so on. While this site may, in the correct conditions, be utilized as a helpful teaching and learning apparatus, it likewise furnishes teachers with assistance in professional development and furnishes students with a chance to turn out to be progressively independent and along these lines less teacher dependent.

5. DISCUSSION OF FINDINGS

Findings of this research show that the TPACK theory was flouted when it came to the provision of basic ICTs in the teaching of English in secondary schools in Cameroon. In addition, it was discovered during classroom observations that the classroom environment in most schools did not favour the use of ICTs. A majority of classrooms of our secondary schools in Cameroon are not equipped with ICT facilities and installations that can permit the teaching and learning of the English Language using the new pedagogic approach. They were not even built with the intention of subsequent adaptability to host ICTs. For example, lack of sockets in classroom walls was a major handicap. This responds to the question, what are the principals' and teachers' attitudes towards the use of computers in teaching and learning? The findings from interviews indicated that some learners used ICTs to foster their learning process mostly out of the classroom. These learners do not use these tools for long, as they are always tempted to go and spend time on social media platforms. The learners have this attitudes because they do not master the benefits of integrating these ICTs in English language learning.

The English Language textbooks examined include some amount of the use of ICT in their lessons. The student workbooks, on their part, provide review exercises and a variety of practice exercises that assist with the development of students' proficiency with grammar, reading, writing, spelling, vocabulary, and speaking. These exercises have enormous potential for classroom use and for take-home assignments, tasks and projects. However, it is only from Book Three to Book Five that assignments which need the use of ICTs are found. These textbooks and workbooks are not accompanied by CD or DVD that can be used for classroom or individual study. CDs and DVDs are material to be used with ICTs. They are conspicuously absent. This would have been a particularly progressive, useful, and cost-effective feature of the book and it is something that would have seemed to set it apart from all other publications that still sell these types of items separately. This answers the research question if the prescribed English Language textbook is compatible with ICT teaching methods.

As far as distance learning is concerned, most the respondents in this research showed interest in online or e-learning. However, the distance education in secondary schools in Cameroon needs an overhaul, as it needs to be properly coordinated by MINESEC. It was

first used because of the lockdown caused by the corona virus spread. Since things became lax as far as lockdowns are concerned in the country, there has not been any serious online e-learning going on. Furthermore, from the website and the YouTube channel of MINESEC, the English language has been discriminated upon to a greater extend.

CONCLUSION

The purpose of this study has been to investigate the integration of ICTs in the process of English Language teaching and learning in secondary schools in Cameroon. It was framed to particularly investigate whether the government, principals, teachers and students in secondary schools in Cameroon incorporate ICTs in the teaching and learning of English Language; investigate the problems undermining the use of ICTs in English Language teaching and learning; and explore possible ways of improving the use se of ICTs in English language teaching and learning. The chapters in this thesis have clearly elaborately explored these concerns. As a conclusion to the work, three main issues will now be discussed: implications of this research, recommendation to stakeholders, and suggestions for further research.

Implication of this research

First of all, the theoretical framework on which this research is based is the TPACK framework which states that teachers need to combine three types of knowledge in order to use technology effectively for teaching. This research discovered that all the teachers involved as respondents in this research had the content knowledge. However, not all had the pedagogical knowledge, especially because not all of them had undergone formal teacher training. As for technological knowledge, not up to 25% of the respondents had it. This means that ICT use in English language teaching has been minimal. In addition, TPACK has not been fully implemented. This is similar to the research findings of some of the authors cited in the literature review chapter. Examples are Olakulein and Olugbenga (2006) in Nigeria, and Shafika (2007) in Madagascar. Indeed, many developing countries are still struggling to come to grips with the use of ICTs in their secondary educational systems.

In Cameroon, teachers trained before the year 2000 graduated with CK and PK, without TK. Those who graduated after this year had TCK, as they were introduced to computer science, in general, though they were not taught how to use new technologies in pedagogy. Of recent, teachers in training in the government training colleges are taught how to use ICT gadgets found in their country, which are mostly computers, printers and mobile phones. Other gadgets like interactive whiteboards, IPads, projectors and the like are note available in their environment. This brings us to recommendations to stakeholders in Cameroon.

The government should endeavour to redefine the education system's curriculum by reshaping the pedagogical process, to suite the changing times. If we incorporate the theoretical framework used in this research, our curriculum will meet recent times. Schools should be effectively equipped with modern technological innovations or subventions should be given to schools to enable them purchase these tools and teachers should be equipped too to use these innovations.

ICT is a form of advanced science and technology that its function must be optimized especially in the implementation of English Language teaching. ICT provides opportunities for students in the era of global competition and it needs to obtain adequate supplies. Through innovative ICT-based learning, teachers can provide vast opportunities for students to whet and promote competence on an international scale. On the other hand, mental attitude and selfreliance in accessing any information necessary for learning independently influences the value of teaching student’s character and does not always depend on others. Mastering

current tick is a necessity for every human being's age. As well as in education, innovative learning, especially learning can be done by using the Internet to generate device-based in learning ICT. In Cameroon, there exist so many textbooks with electronic aided excerpts especially listening exercises and homework but all their authors are Americans and Europeans but for *Far ahead* authored by Simo Bobda. This book is an example of what this research postulates, though it is used only in lower and upper sixth.

Stakeholders need to organize refresher courses for teachers who are not ICT literate, and before recruiting any new staff member, make sure he/she is ICT literate, so that the eventual integration of ICTs to the teaching and learning of English Language will not be problematic.

While there is no ready-made formula for the successful implementation of ICTs in language teaching and learning in every institution, education professionals can take into account certain administrative considerations that are discussed in this subsection. The initial decisions taken by a school, college, or adult education institution about the type of ICTs that they will invest in and the areas in which ICTs will be implemented can be crucial to the success or failure of such an initiative (Kumar S. and Tammelin M, 2000:19). Some important points for consideration are presented below under the following.

Teachers of our secondary schools should develop positive attitudes and beliefs about the use of ICTs in language teaching. Cuban (2001) has maintained that teachers will use technology only if they perceive it to enhance instruction. Studies in this direction have concluded that if teachers perceive technology as adding value to curriculum goals, motivating learners, or augmenting learning, they are more willing to teach with technology.

Quality assurance

Despite the fact that most secondary schools in Cameroon as of now make very little use of ICTs in process of English Language teaching and learning, it is still important for the education administration to assure quality of education they shall offer both to the teachers and the learners. This quality depends on issues like learning effectiveness, cost-effectiveness, access, teacher satisfaction and student satisfaction. Learner satisfaction, for example, is measured in ICTs enhanced language teaching and learning through testing or other forms of evaluation. Evaluation can take the form of single end-of-course exam, smaller tests during the course (as it is the case with the sequence tests system used by the Ministries or Basic and Higher Education), and courses without any tests. In the latter case, the assessment of learner effectiveness is based on continuous evaluation of the coursework completed during the course.

Parents should supply what is necessary as ICT equipment for the children to fully participate when their language teachers use ICTs in their teaching process. This means being able to do their assignments at home. Parents should also try to supervise or watch over their children as they use their gadgets. This to make sure they do not spend too much time on things which do not relate to their lessons. At night, parents could sometimes visit their children's rooms to be sure they are sleeping, not watching adult movies and the like. It would be very detrimental to the health of students if they do not get enough sleep in the night simply because they were on social media or listening to music and doing other unnecessary things with their ICT gadgets.

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