The American Journal of Social Science and Education Innovations
ISSN 2689-100X Volume 07 - 2025

The Influence of Technology on Educational Practices in Government Colleges in Fako - Cameroon: The case of Bilingual Grammar School Molyko

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Received: 20th Nov 2025 | Received Revised Version: 30th Nov 2025 | Accepted: 05th Dec 2025 | Published: 11th Dec 2025

Volume 07 Issue 12 2025 | Crossref DOI: 10.37547/tajssei/Volume07Issue12-03

Abstract

For a long time now traditional classroom approach has been complemented by a variety of technological innovations. In Cameroon, the Presidential decree of 2009 initiating the construction of multimedia resource centers in Government Secondary Schools could be regarded as initial steps toward including technological innovations in the teaching-learning process. Ideally one would expect technological innovations to positively influence Educational practices. In this paper, we examine the influence of technology on educational practices in government colleges in Fako: The case of Bilingual Grammar School Molyko.

This paper investigated what influence technology has on educational practices in government secondary schools in Fako, with a case study of the Bilingual Grammar School Molyko (180 students and 150 teachers). 330 respondents were chosen to participate in our interview guide, and focus group discussions. In order to investigate the perceptions of students and teachers on the influence of technology on educational practices, a thematic analysis was carried out on the focused group data collected from the students. Similarly, SPSS was used and a chi-square test was run to reveal if there are significant relationships between the introduction of technology in the teaching-learning process and educational practices among teachers. Our hypothesis was that Learner's and teachers' perceptions will reveal that there is a significant influence of technologies on the educational practices at the Bilingual Grammar School, Molyko Buea. We recommend that the Bilingual Grammar School should organize termly workshops on adopting technological innovations in the teaching-learning process to keep both learners and teachers abreast with changing technologies relevant to the teaching-learning process. We also recommend that the multimedia resource centres be maintained regularly for practice using recent technological models.

Keywords: Influence, Technology, Educational Practices, Instructional Technology.

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Cite This Article: Zenabuin Florence, Rosemary M Shafack, & Fidelis L Alemnge. (2025). The Influence of Technology on Educational Practices in Government Colleges in Fako - Cameroon: The case of Bilingual Grammar School Molyko. The American Journal of Social Science and Education Innovations, 7(12), 13–21. https://doi.org/10.37547/tajssei/Volume07Issue12-03

1. Introduction

Ever since the president of the Republic of Cameroon launched the creation of multimedia centers in secondary

schools in Cameroon in 2009, the influence of technology on educational practices in these secondary schools became a topic of interest. There became a rising interest among stakeholders of secondary education, therefore, wanting to know what this new innovation could possibly influence. Cameroon is among the sub-Saharan African countries that are making enormous progress in the use of information and communications technologies (ICTs) in her different developmental areas, including education. Private schools in Cameroon introduced ICTs into their curricula in the 1990s, but there was no specific policy guiding the teaching or use of ICTs in education, which led to each private school applying its own teaching method or program. ICTs were officially introduced into education in 2001 by the president. The Cyber Education project launched since then by the government targeted secondary and tertiary education. Primary schools were not yet concerned but were later included. The project started slowly but has now gained speed. The French government played a great role in the implementation and is a major partner both financially and technically. Major achievements include establishing multimedia resources centres (MRCs) in universities, professional and technological schools, and some government secondary schools; training monitors to manage MRCs; creating learning platforms; interconnecting the six state universities, and establishing training units in professional schools and universities, some of which are now operational.

Government Bilingual Grammar School Molyko (BGS), Buea is one of those pilot schools that benefitted from the multimedia resource centre project and the Cyber Education Project. BGS Molyko was created in 1961 and is about 61 years old today. It has been a training ground for many Cameroonians for over 60 years. It is the first Bilingual secondary school in Cameroon that runs both the French and the English section of education with a special bilingual series (SBS). Our paper focuses on the English general education section of the institution.

Bilingual Grammar School has a population of about 5,000 students and approximately 230 teaching and administrative staff.

To present this paper, we will organize the work into different sections. From the introduction, we will look at a review of literature where we examine the works of other researchers in relation to our topic. We will look at methodology where we present our methods and tools used in carrying out the research. We then present the findings, the discussions of our findings, recommendations, and conclusion.

2. Statement Of The Problem

With the introduction of MRCs in government Secondary Schools, the rise in internet services, and other technological innovations, ideally one should expect an improvement in educational practices in these secondary schools. However, this is not always the case for a myriad of reasons. In this paper, we examine the influence of technology on educational practices in government secondary schools in Cameroon with a case study of Bilingual Grammar School Molyko. We will critically investigate the areas in which technology has made its mark in the government secondary school setting and examine how these various forms of technological innovations have affected educational practices among students and teachers in the teaching and learning process.

Research Objectives

1. In what ways has technology been involved in educational practices

2. To what extent has technology affected educational practices

3. Review Of Related Literature

In their paper “The use of ICTs in the Cameroonian school system: A case study of some primary and secondary schools in Yaoundé”, Abass Ngoungouo presents the results of a study carried out on some primary and secondary schools of Yaoundé. The study aimed at analyzing and evaluating the use of ICTs by teachers in the Cameroonian school system. More precisely, it sought to identify the types of ICTs used by teachers, to evaluate the state of equipment of those schools, and the state of training of the teachers in the use of ICTs in teaching. Moreover, it sought to bring out the different uses of ICTs in and during teaching, the results of their use, the difficulties encountered by the teachers in the field, and, considering their multiple advantages, to propose the measures for their promotion in the Cameroonian school system.

In their findings, they discovered that calculators, telephones, computers, and data storage tools are the most used by the teachers, while projectors are the least used. Interactive whiteboards are concerned, they are unavailable and thus, not used by the informants.

State of teachers' training and school equipment

State of teachers' training

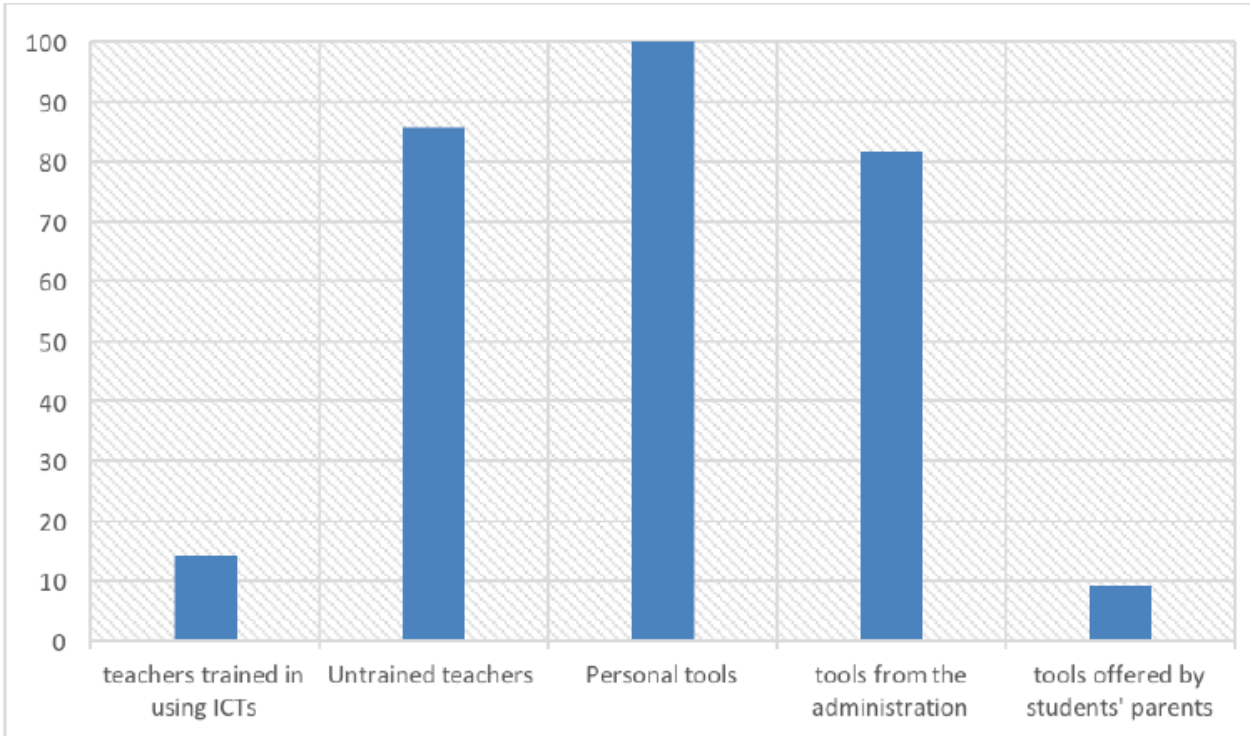


Figure 1: Graphical representation of trained teachers and rate of usage of ICT tools.

ICTs are so varied that each of them should be well studied and mastered for good use and for positive results on the learners' performance. This study also sought to know whether teachers are trained in using ICTs for teaching purposes. The results revealed that only 14.28% of the informants are trained, while 85.75% are not. More precisely, only 3 out of 21 teachers in this study are trained in using ICTs for teaching. The three teachers had received training on internet-based research, online learning platforms, course projections, and the use of computers from their own initiatives.

In their work on the Integration of ICTs into the curriculum of Cameroon secondary schools, a review of the current status, barriers, and proposed strategies for effective Integration, Ngajie Berty Nsolly and Ngo Mback Marie Charlotte carried out a study that focused on the current status of ICTs in Cameroon primary and secondary schools. They give a brief description of the country's education system and review major initiatives that have been carried out so far in the integration of ICTs in primary and secondary schools. They further identify and analyzes some barriers that cause ICT integration in the to curriculum be ineffective. However they like other researchers who have carried out related studies did not examine how integrating technology into the educational system has affected educational practices, which we now examine.

4. Methodology

To carry out this research on the Influence of Technology on educational practices in government secondary we carry out a focus group discussion and interviews. The choice of these instruments was because our work is qualitative research and a case study on a small scale.

To get a good representative of the entire school our sample space included students from form one to upper sixth, grouped randomly from these classes. Teachers were interviewed from science, art, and general subjects and across all the classes of form one to upper sixth. A number of students and teachers from the bilingual series were also interviewed to ensure a good representation of the school system. A total of 180 students and 150 teachers participated. Making a total sample space of 330 participants which is in agreement with the estimated

sample size formula of Morgan and Krejcie. In each group, the data collector was the moderator. Sometimes there was a co-moderator. Two master's students volunteered for this activity.

The data were analyzed using an inductive approach to thematic analysis, the interviews were coded and grouped in numbers to permit us to use the statistic package for social sciences to analyze the correlation between the use of technology and the extent of influence on educational practices.

5. Findings

Research question one: In what ways has technology been involved in educational practices.

To examine this question, we examine how the different technologies both hardware (such as computers. Television, Laptops, projectors, mobile phones, and ipads) and software such as (Zoom, Google search engine, google classroom, WhatsApp, Youtube, and the MINESEC website) have been involved in students studies at home and in school, in such aspects as searching for material to do assignments, submission of homework, researching on new topics, following lessons from home and comparing notes with other students.

From our findings all 34% of the total participants did not use any technology at all in school in any of their educational practices. In fact this number said they had never been to the computer lab of the school. Some even said they thought it was against the school regulations to go to the computer lab. However, about 90% of these 34% agreed to use computers and phones at home to assist them to do their assignment on Google platforms or WhatsApp to compare assignments with their friends.

65% of the respondent used computers at school to do practical and research on assignments while 96% of them used computers and/or phones at home to do their assignments and other research work relating to learning.

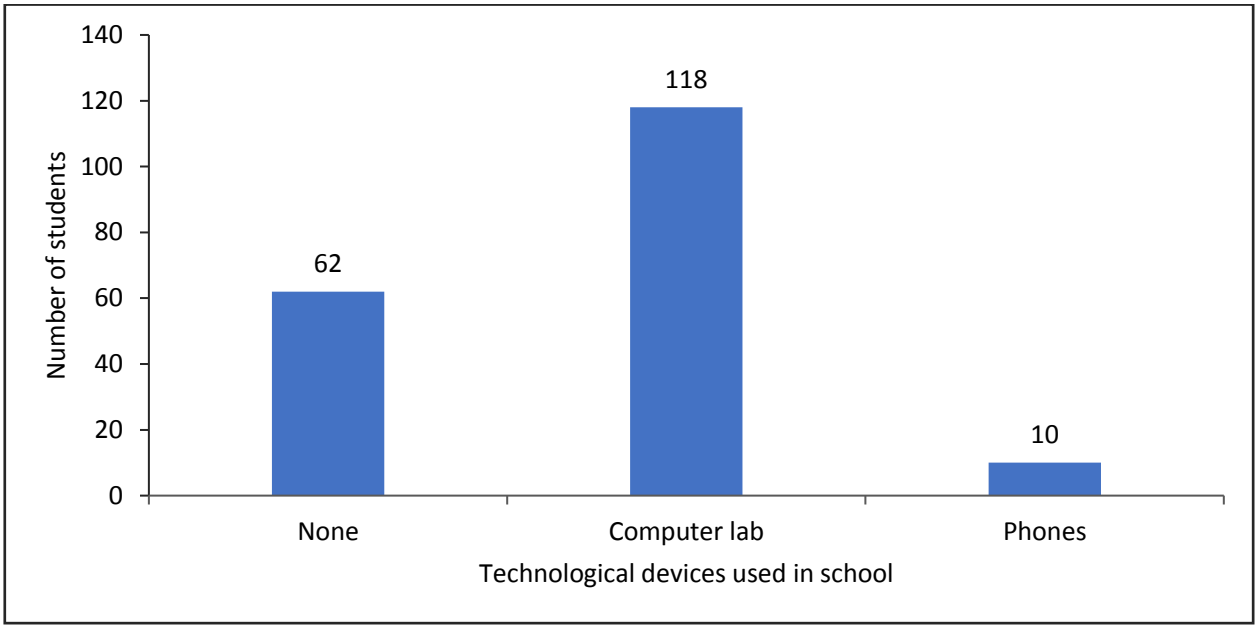
Only 22.2% were able to follow the lessons from the Ministry of secondary education website or on YouTube. In the focus group discussions, about 80% were not even aware that there are lessons going on.

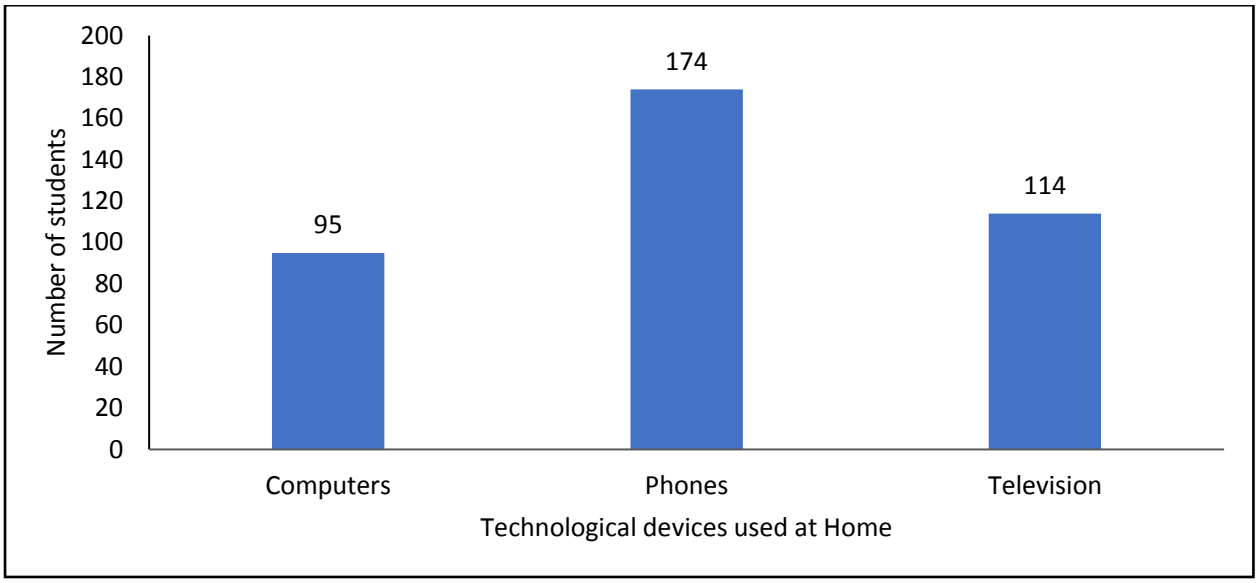
63.3% of the participants agreed to follow lessons on TV. However, during their discussion, about 70% of them had no idea when the lessons will pass on TV but rather just stumble on them or get notified by family members who just randomly stumbled on the lessons.

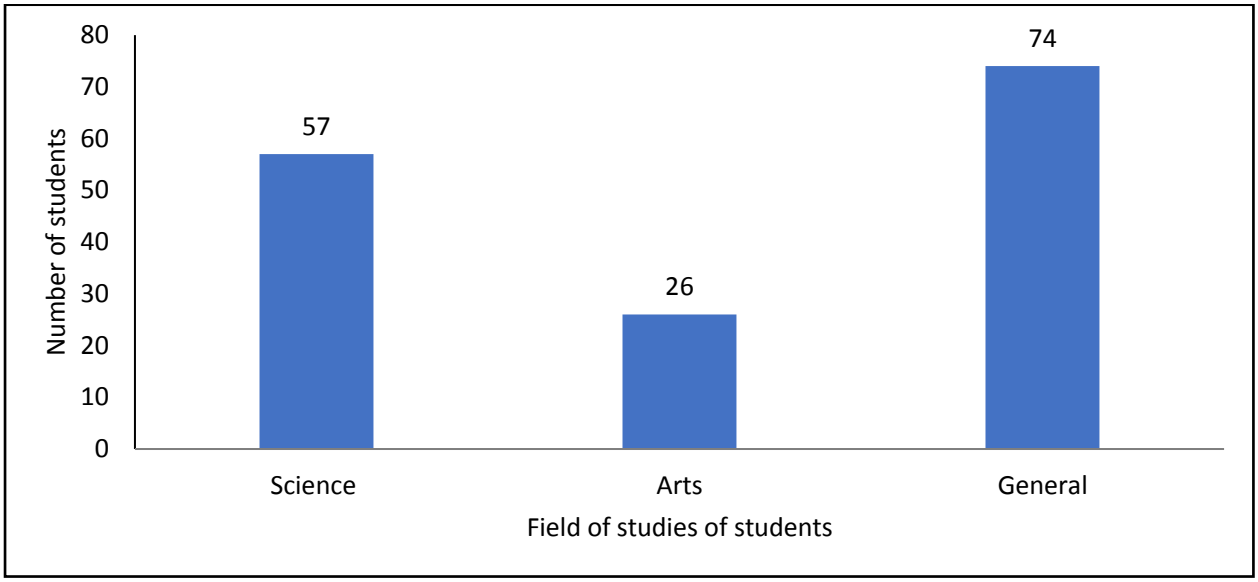
Only 03% of the students have used zoom and another remote learning platform for learning.

	Form 1	Form 2	Form 3	Form 4	Form 5	Lower sixth	Upper sixth	Total
Number of Students	31	9	34	23	9	17	57	180
Boys	12	5	24	11	3	7	35	97
Girls	19	4	10	12	6	10	22	83
Age Range	13 to 15 years	13 to 15 years	12 to 17 years	14 to 18 years	14 to 18 years	15 to 19 years	17 to 23 years	13 to 23 years
Field of studies								
Science	-	-	-	15	9	9	39	57
Arts	-	-	-	8	-	8	18	26
General	31	9	34	-	-	-	-	74
Technological Devices Used in School								
None	25	-	24	13	-	-	-	62
Computer Lab	6	9	10	10	9	17	57	118
Phones	-	-	-	-	-	-	10	10
Technological Devices Used at Home								

Computers	31	9	8	23	-	10	14	95
Phones	25	9	34	23	9	17	57	174
Television	15	-	20	23	8	8	40	114
Zoom or other remote learning platform	00	00	00	00	00	00	06	06
Platforms Used to Study								
None	6	-	-	-	-	-	-	6
Google	25	9	34	23	9	17	57	174
WhatsApp	25	9	34	23	9	17	57	174
Youtube lessons	06	00	07	09	02	05	10	40
Platforms use to do assignments								
Text books	6	-	-	-	-	-	-	6
Google	25	9	34	23	9	17	57	174
WhatsApp	25	9	34	23	9	17	57	174
Effect on Learning When Using ICT	improved	improved	improved	improved	improved	improved	improved	-
How Long	1 to 3 years	1 year	2 to 9 years	1 to 3 years	1 to 3 years	2 to 5 years	3 to 5 years	1 to 9 years





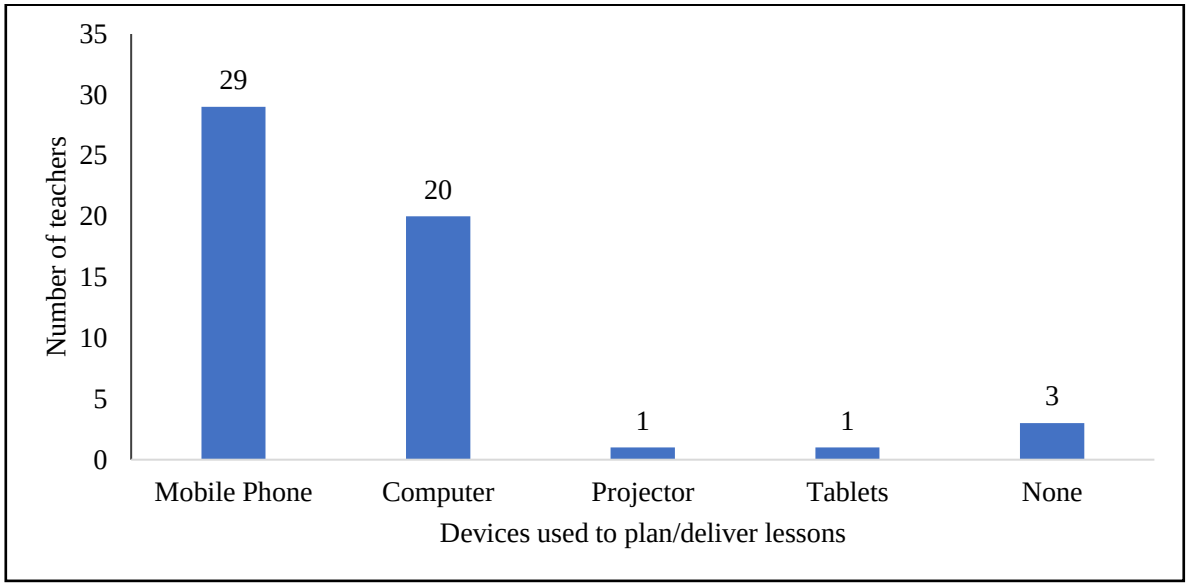


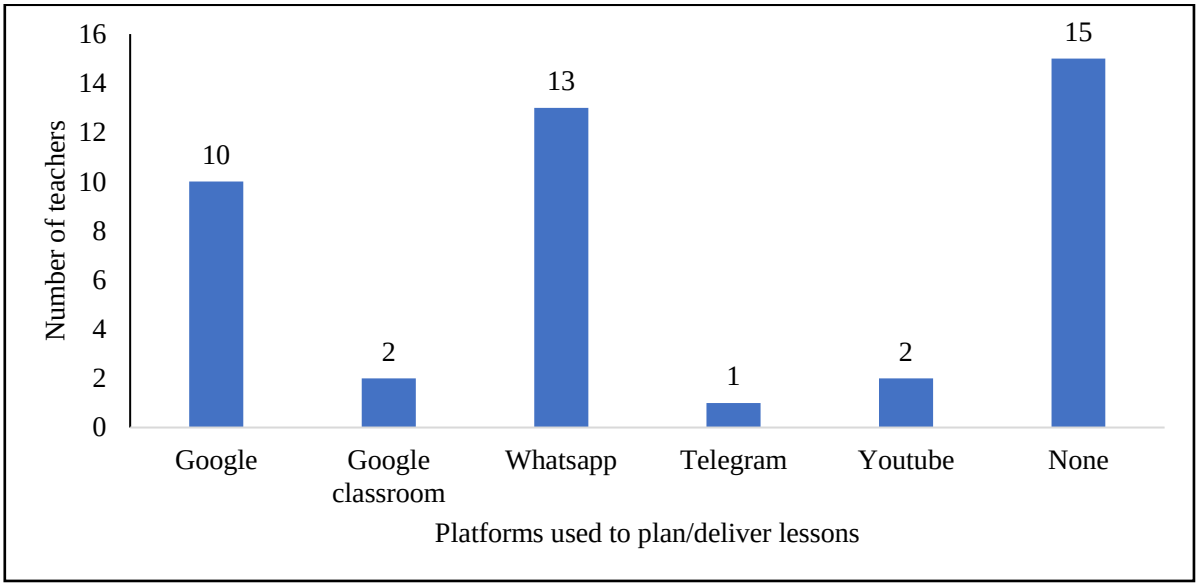
The least number of students who used technology in learning was from the art classes. Only 14% of them used technology in learning both at home and in school.

Research question two: To what extent has technology affected educational practices?

To discuss this question we examine the rate at which usage of the different technologies both hardware (such as computers. Television, Laptops, projectors, mobile phones, and ipads) and software such as (Zoom, Google search engine, Google classroom, WhatsApp, Youtube, and the MINESEC website) have affected students lesson preparation and delivery by teachers and students studies both at home and in school. The aspects considered include searching for material to do assignments, submission of homework, researching new topics, following lessons from home, and comparing notes with other teachers.

	Number of Devices	Frequency	Percent	Cumulative Percent
Number of devices used to plan/deliver lessons	0	3	9.1	9.1
	1	11	33.3	42.4
	2	17	51.5	93.9
	3	2	6.1	100.0
	Total	33	100.0	





Spearman's rho correlation

		Devices for lessons	Platforms used of lessons	Improvement on lesson planning	Improvement on lesson delivery	Teaching experience	Years of using platform/device	age
Devices for lessons	Correlation Coefficient	1.000	0.323	0.150	-0.117	-0.022	-0.031	0.042
	Sig. (2-tailed)		0.066	0.438	0.569	0.905	0.870	0.816
Platforms used of lessons	Correlation Coefficient	0.323	1.000	0.042	-0.125	0.102	0.182	0.085
	Sig. (2-tailed)	0.066		0.827	0.542	0.570	0.336	0.639
Improvement on lesson planning	Correlation Coefficient	0.150	0.042	1.000	.486*	-0.129	0.200	-0.014
	Sig. (2-tailed)	0.438	0.827		0.012	0.504	0.306	0.942
Improvement on lesson delivery	Correlation Coefficient	-0.117	-0.125	.486*	1.000	-0.165	0.102	-0.030
	Sig. (2-tailed)	0.569	0.542	0.012		0.421	0.629	0.884
Teaching experience	Correlation Coefficient	-0.022	0.102	-0.129	-0.165	1.000	.680**	.842**
	Sig. (2-tailed)	0.905	0.570	0.504	0.421		0.000	0.000
Years of using platform/device	Correlation Coefficient	-0.031	0.182	0.200	0.102	.680**	1.000	.626**
	Sig. (2-tailed)	0.870	0.336	0.306	0.629	0.000		0.000
age	Correlation Coefficient	0.042	0.085	-0.014	-0.030	.842**	.626**	1.000
	Sig. (2-tailed)	0.816	0.639	0.942	0.884	0.000	0.000	

*. Correlation is significant at the 0.05 level (2-tailed). **. Correlation is significant at the 0.01 level (2-tailed).

6. Discussion, Conclusion, And Recommendations

The investigations revealed that after all these years of introducing technology, building multimedia resource centers, and even adding YouTube links and television lessons to the educational system in Cameroon, Technology has indeed influenced educational practices, howbeit to a very minimal extent. The rate and level of usage of technology are still highly dependent on the individual initiative and personal resources and exposure of the teacher or student concerned. This may be due to no official policy for the implementation of educational practices that involves technology and the obvious lack of resources observed in the schools. Many teachers and students were not even aware of the links for lessons from the ministry website nor the TV schedule for the lessons on CRTV. Thus making Google the most popular technology platform on which students and teachers so regular search for material to prepare lessons and WhatsApp to share notes as the case may be. Remote learning platforms like zoom and Google classroom among others are still far-fetched.

Issues raised relating to incorporating technologies in educational practice

Teachers raised several issues that made using current technologies in teaching difficult. These

included the lack of training, the insufficiency of equipment, and the unfavorable working conditions. Although the number of teachers graduating from the training schools is increasing, their training lack specific training on how to integrate technologies in lesson preparation and delivery. Even those trained in teaching computer science do not necessarily have the needed pedagogic skill to incorporate rising technologies into the whole teaching-learning process. This means that those teaching without particular training are significant in numbers, which affects students' performance.

As far as the insufficiency of tools is concerned, the statistics show that teachers use mostly their personal tools. The case of the BGS justifies this claim. At the

moment this study was being carried on the ratio of students to a computer was about 1:18.

As far as the inadequate working conditions are concerned, classes have too many students. For example, having a practical class with a form one class of about 100 students will need about 5lab assistants who are not available. There are many difficulties to manage and satisfy given that access to laboratories is barely effective in these situations. In the same vein, there is a lack of maintenance of existing tools, some of which do not work or are outdated.

Finally lack of information as to when lessons are released on youtube and on CRTV and the links to access the lessons.

7. Recommendations

These difficulties have necessitated some recommendations for incorporating technologies in educational practices for government colleges and precisely BGS Molyko. Namely:

More seminars and conferences for training teachers and students on the use of technologies in education to equip both teachers and students. More seriously a compulsory course could be introduced at the teachers' training schools to educate teachers on current trends in technologies and their incorporation in education.

Drawing up a written policy that obliges teachers to make use of available technologies in lesson preparation and delivery. Establishing Television centers at strategic locations and making available all related resources and drawing up a schedule for the TV sessions in correspondence to the students' timetable for the day. This is because the average home in most communities may not be able to afford a TV set let alone the cable bills to pay.

Regular maintenance of computers in the MRCs and computer labs. Purchase of tools like projectors and computers with more reliable specifications. Purchase zoom platforms and other platforms for use during unfavorable conditions like the covid 19 restriction periods and other types of crises that may not necessitate face-to-face contact.

Strategic means of communication should be employed to release the links, websites, and TV schedules for remote learning classes. Teachers should be encouraged to intentionally make it a regular habit of visiting the Ministry website for information while the site should be regularly updated.

From the findings, it was concluded that the government having MRCs and computer laboratories has indeed exposed the educational system to technological practices but these practices get abandoned once the labs are not maintained or improved upon to meet the increasing number of students. For example, the student to computer ratio is still approximately 1:18. Overall there is a significant relationship between technology and educational practices. The use of computers, phones, Google search engines, the TV, Websites, and Youtube channels have improved educational practices like lesson delivery, access to information, research, and comparing of notes. However, the influence could have been better with a more intentional release of policies guiding the use of technology in education, training of teachers and students, maintenance of technological tools, and installation of learning television sites among other recommended strategies.

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