

Basic School Ghanaian Language Teachers' Perspectives on the Integration of ICTs in Teaching and Learning

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Abstract

This study sought to explore Basic School Ghanaian Language teachers' perceptions of ICT integration in Ghanaian language teaching. The study employed the explanatory sequential mixed method design. Stratified random sampling was used to obtain data from 205 teachers in the Bono, Bono East and Ahafo region of Ghana. Analysis of data collected through a self-developed questionnaire and a semi-structured interview guide reveals that Ghanaian language teachers exhibit a positive perception of ICT integration in education. However, in practice, they tend to integrate ICT into their instruction on an occasional basis. Also, it was revealed that lack of financial support for ICT resources and lack of in-service training are factors that militated against ICT integration in Ghanaian language teaching. Finally, the study revealed a statistically significant difference between degree and diploma holders' perceptions of ICT integration in teaching and learning

Keywords: Information and Communication Technology, Ghanaian Language, Basic School, Teachers, integration, language teaching.

1. Introduction

“Eii!! Na Twi nso yede laptop na erebkyere?” (wow!! Are we going to use a Laptop in a Twi lesson?).

I [Ernest Nyamekye] was amazed by this comment from one student-teacher during my first class as a Ghanaian language (GHL) tutor for the Institute of Education (IOE) outreach program at the Offinso University College of Education. This comment passed by the student teacher upon seeing me with a laptop is a clear indication that using technologies in teaching Ghanaian languages happens to be a weird experience in her perspective. In reality, it appears that the

integration of Information and Communication Technology (ICT) in teaching and learning is a weird experience for most GHL teachers. This, therefore, necessitates a study of this nature.

1.1 ICT Integration in Ghana

ICT is gaining more relevance in education in both developed and developing countries (Law, Pelgrum, & Plomp, 2008). Research, (Liebenberg, Chetty, & Prinsloo, 2012, Waluyo, 2019; Hong, 2016) has shown that it is a predictor of quality education. Nevertheless, scholars have raised concerns about the low level of ICT integration in teaching and learning in Ghana. For instance, Edumadze (2015) states that Ghana seems to be performing below the threshold in terms of provision and use of ICT resources at various levels of education, especially at the college level. Thus, it was recommended that the Ghanaian government, in partnership with NGOs, make ICT resources available in schools to improve ICT integration. According to Adarkwah (2020, p.1666), as stated in the Education Sector Performance Report (2010), “The Ministry of Education of Ghana introduced the ‘one laptop, one student’ policy where 1,000 laptops were dispensed to 30 schools (three schools in each region) across the country” as part of their effort to “meet economic, social, and political global demands” of the country.

Furthermore, the Education Sector Performance Report (2012) states that 6000 laptops were distributed to Junior High Schools across Ghana to ensure that ICT integration in education is possible. Despite this, studies (Agyemang & Dadzie, 2010; Antwi, Bansah, & Franklin, 2018) report that implementing ICT-mediated instruction seems to fall below the expected standard. One of the reasons given for the lack of implementation of ICT-mediated instruction in most schools (especially at the early stages of education) has to do with the unequal allocation of ICT resources. Most of these resources are distributed to reputable schools (usually labelled as category A schools) and schools in the cities at the expense of schools located in the rural areas (David, 2009). This problem seems to affect the rate of ICT integration, especially at the basic levels of education.

Though there seems to be limited literature to show the state of ICT integration in Ghanaian language teaching, substantial literature suggest a low implementation rate in other fields of study. For instance, Adjei and Vogt (2011) report that ICT integration in teaching mathematics is not up to expectation. Factors such as limited knowledge on ICT use was identified as a challenge. A similar challenge was identified as a hindrance to e-learning during the COVID 19 period (Adarkwah, 2020). Despite these issues, little is known on the state of

ICT-mediated instruction among Ghanaian language teachers in the literature, hence the need for this study.

1.2 Technology and Language Teaching

One of the inevitable factors in human life is language. It is a medium through which people interact and share their thoughts. Consequently, it is crucial to emphasize language education in various academic institutions. According to Ahmadi (2017), the success of learning a language in a formal setting is contingent on the pedagogical approaches used by teachers to facilitate instruction. Various language teaching methods such as Grammar Translation, Audiolingual, and Silent method has been widely used in most educational systems, for which Ghana is no exception.

Nevertheless, since the advent of computers and other forms of technologies, there appears to be a paradigm shift concerning the strategies adopted by teachers in teaching language. Pourhose in Gilakjani (2017) asserts that language teaching has taken a new direction in academia due to the pertinent role of technologies. He further adds that with the advent of technologies, students learn based on their interests. This is because, through technologies, learning becomes appealing to learners' auditory and visual senses. Similarly, Pourhose in Gilakjani and Sabouri (2017) posit that technology gives learners academic independence because it provides learners with much information that teachers may not provide them in the traditional teaching environment. This, therefore, means that with technology, learner centredness in language learning is fully assured.

Also, according to Becker (2000), one of the necessary aids of teaching language is technology. His assertion is based on the fact that teachers regard the use of technologies in learning as a necessary factor in ensuring quality education. Technologies provide a wide range of instructional resources that ensure the effective delivery of language lessons. For this reason, Genç İter (2015) opines that in most cases, teachers must motivate their students to integrate computer technologies in most of their academic activities if they wish to be successful in language learning.

Given the impact of ICT in ensuring effective teaching and learning, GHL teachers must shift from traditional teaching approaches and embrace ICT integration in this technological age. However, from a close observation of the instructional practices of most basic schoolteachers in the Bono region of Ghana, it seems that GHL teachers are reluctant to incorporate ICT into their instructional practices. Nonetheless, research on ICT integration in

GHL teaching in basic schools, in particular, is scarce. As a backdrop, this study seeks to explore the use of ICTs in the teaching and learning of Ghanaian languages. Specifically, the following research questions and hypotheses have been set to guide the study.

1.3 Research Questions/Hypotheses

- i. To what extent do teachers use ICT in teaching GHL at the basic school level?
- ii. What are the perceptions of GHL teachers on the integration of ICT in teaching and learning at the basic school level?
- iii. What challenges do teachers face in the integration of ICT in teaching GHL at the basic school level?
- iv. H₀: There is no statistically significant difference between teachers' perception of ICT integration based on educational qualification?

The remaining sections of the paper are a detailed review of relevant literature, considering the theoretical framework, a brief conceptualization of ICT, and some empirical studies on the topic under review. Also, section 3 of the research addresses the research methodology, while section 4, 5 and 6 deal with the presentation and discussion of findings, conclusions, and recommendations respectively.

2. Literature Review

2.1 Theoretical Framework

Unified Theory of Acceptance and Use of Technology

This study is rooted in the Unified Theory of Acceptance and Use of Technology (UTAUT) developed by Venkatesh, Morris, Davis and Davis (2003). As illustrated in figure 1, the theory is characterized by various variables, including Use Behaviour (UB), Behavioural Intention (BI), Facilitating Conditions (FC), Effort Expectancy (EE), and Social Influence (SI). Luhanya et al. (2017) state that UB, as the main variable in the model, is influenced by BI. UB refers to the extent to which technology is accepted and used by people in a given organization. On the other hand, BI is conceptualized as the intensity of one's willingness to perform a given behavior. Another factor explained in this model is FC; it relates to an individual's perception of the availability of required facilities in an organization. Figure 1 shows the interaction between the various components of the UTAUT model.

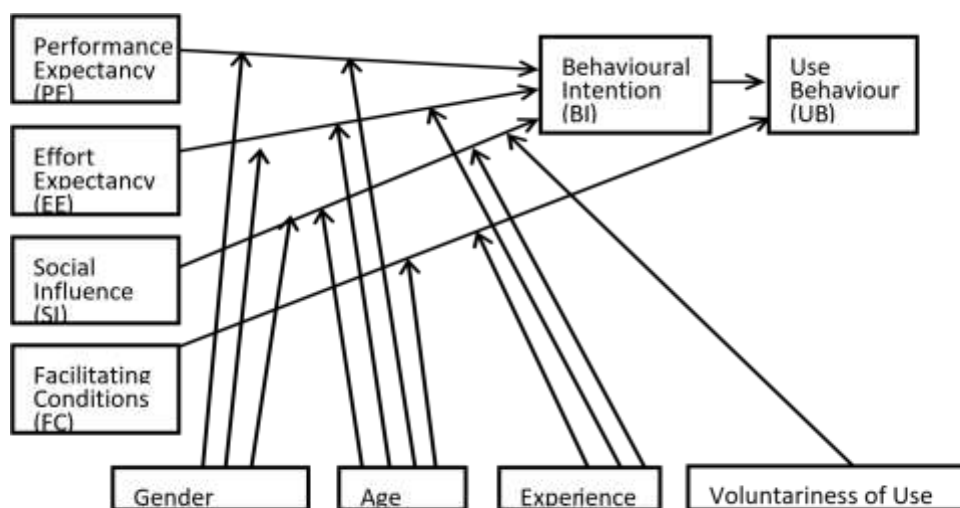


Figure 1: *The Unified Theory of Acceptance and Use of Technology (UTAUT) Model* Source: Venkatesh et al. (2003), page 447, Figure 3.

Variables such as performance expectancy (PE; one's perception that technology can improve job performance), effort expectancy (EE; the degree of ease as influenced by technology use) and social influence (SI; one's belief in the extent to which other people recommend him/her to use technology) tend to have an influence on the BI. Luhanya et al. (2017, p.31) state that "BI is moderated by gender and age while that of EE on BI is moderated by gender, age and experience of the individual. Experience is the expertise one has as a result of using a particular technology. The influence of SI on BI is moderated by gender, age, experience and voluntariness of use". The concept of voluntariness of use relates to one's perception that using technology is out of his willingness. As shown in figure 1, the voluntariness of use interacts with SI.

One of the most relevant aspects of this model that seems to reflect this current study has to do with FC, which influences the use behavior. The relevance of using this model for the current research is that it backs the argument that ICT integration in teaching and learning is contingent and influenced by factors such as resource availability. Therefore, based on this theoretical framework, it is hypothesized that Ghanaian language teachers' perceptions and practices concerning the implementation of ICT-mediated instruction may be influenced by the interplay between their behavioral intentions and factors such as PE, EE, SI. Moreover, these factors may be moderated by variables such as gender, experience, and age.

2.2 Conceptualizing Information and Communication Technology Integration

According to Nikolopoulou (2018, p.89), using ICT in singular terms "...is inadequate to describe the range of technologies and a wide variety of settings and interventions in which they

are used". Tondeur et al. (2018) assert that ICT integration could be conceptualized in diverse ways. In view of Ratheeswari (2018), ICT has to do with technologies that provide access to information through telecommunication. Comprehensively, UNESCO (2002) conceptualizes ICT as "a scientific, technological and engineering discipline and management technique used in handling information, its application and association with social, economic and cultural matters."

According to Ananiadou and Claro (2009), ICT competencies generally refer to one's ability to use ICT resources, i.e., functional use of digital literacy. Thus, ICT integration could be conceptualized as the use of any available digital resource to enhance teaching and learning. In other words, teachers who can facilitate teaching with technologies are said to have competencies in integrating ICTs in their instruction. Isman (cited in Ahmadi and Reza 2018), defines ICT integration as "...the practical use of knowledge particularly in a specific area and is a way of doing a task especially using technical processes, methods, or knowledge." In simple terms, using technology to improve the educational environment is what we conceptualize as integrating technology (Dockstader, 2008). Pourhosein Gilakjani (2017) concurs with Dockstader as he posits that ICT integration has to do with how teachers effectively use technologies in accomplishing an educational task.

2.3 Significance of Technology Integration in Language Teaching

There appears to be limited or no literature on the benefits of incorporating ICTs in teaching Ghanaian languages. However, concerning other African languages, various studies have revealed the crucial role of integrating ICTs in language teaching. This section of the paper revisits some of the findings of related literature.

ICT has an essential role to play in ensuring the effectiveness of language learning. Therefore, language teachers must cultivate the habit of using technologies to support the Ghanaian language curriculum implementation. According to Costley (2014), this enables learners to appreciate the use of technologies in developing their language skills. Also, Keser, Huseyin and Ozdamli (2011) add that learners' classroom cooperation would increase significantly by using technologies.

Alaba (2014) highlighted the efficiency of Computer Assisted Language Learning (CALL) among elementary schools in Osun State of Nigeria in pronunciation, reading and understanding skills in English. Students involved in this study were split into two groups: category one was trained using ordinary classroom instruction, whereas category two was taught

using English language software (CALL). In comparison, students taught using CALL performed better than pupils taught using conventional teaching approaches. It was also found that the use of CALL often increases children's understanding of the English language. Finally, they concluded that CALL in Nigerian primary institutions ensures quality education.

Conversely, Ahinda et al. (2014) revealed that using ICT tools to facilitate instruction has a negative impact on the academic achievement and language acquisition of pupils in lower primary in Vihiga County, Kenya. According to these authors, the negative impact resulted from the mismatch between the lessons taught and the choice of ICT resources used. Thus, it was recommended that teachers be actively involved in selecting appropriate ICT tools to teach pupils in lower primary classrooms.

2.4 ICT Integration in Teaching African Languages: Challenges and Perception of Teachers

Research on ICT integration in teaching indigenous languages in most African countries has shown that most teachers and students are not used to this experience. Though there appears to be a paucity of research in Ghana to vindicate this position, literature abound in many African countries. Miima et al. (2013) posit that Kiswahili language instructors have not embraced the adoption of ICT in language teaching despite the interventions of the Kenyan government in providing the necessary ICT tools to aid instruction. As indicated in the findings of their study that aimed at exploring the perceptions of secondary school teachers, teachers are yet to realize the benefits associated with ICT-mediated teaching and learning. This has led to a low level of implementation of ICT-mediated instruction. Besides, it was found that teachers encounter challenges such as limited knowledge in executing ICT-mediated instruction, insufficient software, and unwillingness to shift from the traditional paradigm of teaching. Moreover, it was revealed that Kiswahili teachers perceived ICT-mediated instruction as a practice for the sciences; they, therefore, felt reluctant to incorporate ICT in teaching language topics.

Mudasiru and Modupe (2011) revealed that most Chegutu District West Region teachers in Zimbabwe could not effectively use technologies to facilitate instruction. They further add that teachers in this region reported that their level of technological competence falls below average. Also, it was revealed in this same study that the teachers' incompetence regarding executing technology-mediated instruction was because they had no in-service training on the use of technologies to facilitate teaching and learning. The findings of this study do not differ significantly from the study conducted by Banju (2014). Banju's research aimed at investigating the use of technology in teaching and learning in Nairobi, Kenya. Out of his

assessment, it was revealed that most teachers encounter difficult situations in incorporating technologies in teaching and learning. According to Banju (Ibid), the challenge in implementing technology-mediated learning among teachers in Nairobi could be attributed to lack of technology education, unwillingness on the part of teachers to spent time on using the internet to search for digital resources to assist teaching, unfamiliarity with the use of internet etc.

Also, Amuko et al. (2012) explored challenges influencing ICT integration in teaching and learning mathematics in secondary schools in Nairobi County. This study revealed that teachers were faced with challenges of inadequate teacher training on the use of ICTs. It also, identified unavailability of the requisite ICT resources to support teachers as one of the contributing factors that militated against ICT adoption.

In the context of EFL teaching in Africa, Gilakjani et al. (2015) opine that instructors have always faced challenges in using ICT to aid their classroom practices. According to these authors, several factors that deter EFL teachers from using ICT in teaching and learning are inadequate computer literacy, lack of financial support, and inadequate numbers of computers to use for teaching and learning.

2.5 Studies on ICT integration in Ghana

Many studies in Ghana have explored teacher's perception of ICT integration in other disciplines. For instance, Buabeng-Andoh (2012a) explored teachers' perception of ICT use in teaching and learning. Not only did this study explore teachers' perceptions, but it also looked at teachers' skills and practices in Second-Cycle Schools in Ghana. The study revealed that teachers had a positive perception of ICT integration. Nevertheless, it was found that the ICT skills of teachers were very low. Hence, despite the introduction of ICT in the Ghanaian educational system, teachers subscribed to the traditional teacher-centered method of education. This implies that ICT introduction has had no relevant impact on teachers' practices.

The reluctance on the part of teachers in adopting ICTs in assisting instruction in the Ghanaian educational system has been attributed to several factors. Buabeng-Andoh (2012b), in a review of factors influencing teachers' use of ICT as a teaching and learning aid, outlined factors such as lack of confidence on the part of teachers, lack of in-service training on ICT pedagogical approaches, inadequate ICT resources, among others as a major hindrance to ICT adoption in teaching and learning.

Agyei and Voogt (2011) conducted a study on ICT integration in the teaching of mathematics in Ghana. This study also revealed that teachers rarely integrated ICT into their

teaching practices. They also identified low knowledge of teachers in ICT integration as one of the factors hindering ICT-mediated instruction. Similarly, Acquah's (2012) study sought to ascertain the extent to which the ICT curriculum was being implemented at the basic school level. Like that of Buabeng-Andoh (2012b), this study found that there were inadequate ICT facilities at the basic level of education in Ghana to support the implementation of the ICT curriculum. Though teachers appeared to be knowledgeable in ICT use, their efforts to implement the ICT curriculum remained a problem because of resource scarcity.

Availability of ICT resources seems to be a general problem in Ghanaian schools. As the outbreak of COVID 19 pandemic demanded the need to use ICT as a major means of education, reports by researchers like Adarkwah (2020) indicate that students complained of not getting the needed ICT resources to facilitate e-learning. There were also concerns about funding and technical problems like unstable internet connections and electricity supply. Beyond the problem of availability was another one that seems to permeate through all levels of education in Ghana; this has to do with resistance to change and the preference of most students for traditional teaching methods over technology-mediated instruction, as in the case of e-learning. This may be due to the ineffectiveness of ICT-mediated instruction in Ghana.

3. Research Methods

We adopted the sequential explanatory mixed-methods approach in our study. This design was considered appropriate because after analyzing quantitative data there was the need to collect qualitative data to substantiate some of the quantitative findings.

Given the nature of the population involved, stratified random sampling was used to select participants from 3 regions (Bono, Bono East, and Ahafo) in Ghana. In all, a total of 205 participants were involved in the data collection. For the interview, six teachers were selected through a purposive sampling technique to be probed further on some relevant issues

The study used a self-developed questionnaire and a semi-structured interview guide. The self-developed questionnaire comprises three sections (A, B, C, and D). Section A elicited data on the demographic characteristics of respondents. Section B was allocated for obtaining data on the extent to which teachers use technologies to facilitate instruction, while section C obtained data on the general perception of teachers on the implementation of ICT-mediated teaching and learning. The final section (D) set out to obtain data on possible challenges that may hinder ICT use in teaching Ghanaian languages. Twenty-five respondents, making 10% of the sample, were considered in the pilot testing. According to Baker (1994), a sample size of 10

to 20% of the total population is considered appropriate for pilot testing. After data collection, the Statistical Package for Social Sciences (SPSS) was used to process and analyze the data. Cronbach's Alpha was calculated to assess the reliability coefficient. This helped to test the internal accuracy of the questionnaire objects. According to Fraenkel and Wallen (2000), a reliability coefficient of .7 or higher is appropriate. The Alpha value derived was .784 (29 items) and was therefore deemed accurate and suitable for collecting valuable data for the analysis. On the other hand, the semi-structured interview guide was developed based on the findings of the quantitative analysis. It sought to elicit data on the teachers' perception of ICT use and some challenges that hampered their intention to use ICT to support learning.

The study was analyzed using descriptive and inferential statistics. Specifically, the means and standard deviation of the Likert scale items were computed to answer research questions I, II, and III. Concerning the research hypotheses, the Mann-Whitney U test was used to examine the difference in teachers' perception of ICT integration in GHL instruction based on educational qualification. On the other hand, the interview data were transcribed, sorted, and analyzed with the thematic analysis approach.

4. Presentation and Discussion of Findings

This section of the study is composed of 2 sub-sections. The first sub-section deals with the demographic characteristics of the respondents, while the second sub-section presents and discusses the findings of the study based on the research questions and hypothesis.

4.1 Demographic Characteristics of Respondents

Table 1: Background Data of the Respondents

Perceived ICT proficiency	Gender		Total	Percentage
	Male	Female		
Excellent	20	3	23	11.2%
Very Good	48	19	67	32.7%
Good	37	15	52	25.4%
Average	23	24	47	22.9%
Poor	8	3	11	5.4%

Very Poor	4	1	5	2.4%
Total	140	65	205	100.0%

Table 1 gives an overview of the background characteristics of the respondents who took part in this survey. A total of 205 teachers participated in the study. Out of this, 140 participants were male instructors and 65, female. With regards to ICT proficiency, only 23(11%) perceived themselves as “excellent” in ICT proficiency. A majority (32%) of the total respondents reported that they are very good in terms of ICT proficiency, while 25% of them perceived themselves as “good.” Teachers who felt they have “average” ICT proficiency were made up 22.9% of the entire population, while 11(5.4%) and 5(2.4%) believe they were “poor” in terms of ICT proficiency

4.2 Findings

4.2.1 To what extent do teachers use ICTs in teaching and learning?

This research question sought to elicit response on the frequency of ICT integration practices of GHJL teachers in the classroom. To achieve this, responses were elicited through a five-point Likert Scale. Table 2 interprets the mean values of the response.

Table 2: Interpretation of the Mean Scores Likert Scale Items

Mean Score	Frequency
1.0 -1.9	Never
2.0– 2.9	Rarely
3.0 – 3.9	Occasionally
4.0– 4.9	Often
5.0	Always

In line with Table 2, a Mean value ranging from 1.0-1.9 means “Never”, 2.0-2.9 means “Rarely”, 3.0-3.9 means “Occasionally”, 4.0-4.9 means “Often”, while 5.0 means “Always”. Data concerning teachers’ use of ICTs in teaching GHJL has been captured in table 3

Table 3: Perceived frequency of ICT integration in GHL teaching.

Statement	M	SD	Frequency
I use ICT resources to prepare lesson plan	2.97	1.10	Rarely
I use ICT resources to project slides for students	2.27	1.21	Rarely
I use the internet to obtain more information on a topic	3.84	1.08	Occasionally
I encourage my students to make effective use of the internet during and after lessons	3.69	1.02	Occasionally
I use ICT resources for record-keeping	3.42	1.20	Occasionally
I encourage my students to use the internet to seek more information on GHL topics	3.67	0.93	Occasionally
I use ICT resources as a Teaching and learning material (TLM) during GHL lessons	3.20	1.19	Occasionally
Average Mean	3.29	0.78	Occasionally

Source: Field data, 2021

Based on the overall mean score (3.29) of the data in table 3, it appears that GHL teachers occasionally use ICTs to facilitate teaching and learning. However, it appears that using the internet to obtain more information on a topic, encouraging students to make effective use of the internet during and after lessons, and encouraging students to seek more information on GHL topics were the frequent practices of GHL teachers because these variables recorded the highest mean score of 3.84, 3.69, and 3.67 respectively. Using ICT resources to prepare lesson plans (2.97) and project slides (2.27) for students appears to be rarely practiced among GHL teachers in their teaching profession.

4.3 What is the perception of teachers concerning ICT integration in GHL teaching?

The objective of this research question was to ascertain the perspectives of teachers concerning ICT integration in teaching GHL. Specifically, it aimed at finding whether or not ICT integration in GHL teaching and learning is imperative. Data were analyzed by computing the mean values of Likert scale items. Table 4 below interprets the Likert scale items.

Table 4: Interpretation of the Mean Scores of the Likert Scale Items

Mean Score	Level of Agreement
1.0 -2.9	Disagreement
3.0-4.9	Agreement

Table 5: Perception of ICT in GHL teaching

Statement	M	SD	Agreement
ICT integration in teaching GHL can make teaching easier	4.50	0.69	Agree
ICT integration in teaching GHL can make teaching more effective	4.47	0.73	Agree
ICT use in teaching GHL will make communication with my students easier	4.39	0.58	Agree
I think using ICTs in teaching would make me more productive as a GHL teacher.	4.52	0.61	Agree
With the use of ICTs, I can diversify my GHL teaching techniques	4.40	0.65	Agree
ICTs increase the interest of students in learning Ghanaian languages	4.40	0.64	Agree
With ICT, preparation of course materials is very easy	4.21	0.80	Agree
Students need to use ICT because of the expansive use of technologies in the teaching of language	3.97	0.92	Agree
Average Mean	4.36	0.51	Agree

Source: Field Data, 2021

Table 5 summarises the overall perceptions of GHL teachers concerning the integration of ICTs in teaching GHL. Based on the overall mean value (4.36) of the Likert scale items, it appears that GHL teachers agree that ICT integration in teaching GHL is a good practice. The results imply that teachers have a positive perception about using ICT resources to facilitate the teaching and learning of GHL.

Some teachers indicated the relevance of using ICT in Ghanaian language teaching for certain practices in the Ghanaian culture that are no longer common. Hence, to give learners a feel of how such practices are done practically, lessons could be facilitated through video evidence.

Commenting on this issue, a teacher posited that,

I think that with the use of ICT resources like a computer or maybe a mobile phone, teaching certain topics like libation performance will be easy. These days most students do not have access to certain cultural practices because they are not common, but there are video clips of such practices that have been uploaded online or on YouTube. When you get such videos to show them, teaching can be easier. So, I think using a computer or any ICT resource for teaching will be very helpful

Another teacher added that,

In fact, computer as a teaching aid is very interesting to the student. I am saying this because I once brought my Laptop into the classroom to show students how puberty rite among the Krobo people is performed. Since then, the students always wish they could get a visual sense of whatever I teach them. So I believe students will appreciate it when technologies are used to aid the instruction of the Ghanaian language, especially topics that demand the use of visual aids

The comments imply that despite teachers' occasional use of ICT resources to facilitate the teaching and learning of Ghanaian languages at the basic level of education in Ghana, they seem to exhibit great interest in such practice.

4.4 What challenges do teachers face in ICT integration in GHL teaching?

This research question particularly sought to find factors that could impede ICT integration in the teaching and learning of GHL among teachers in Ghanaian Basic schools. To achieve this, the means and standard deviation of the Likert Scale items were computed. Table 6 below gives a summary of the results.

Table 6: Factors hindering ICT integration in GHL teaching

Statement	M	SD	
I think ICTs are incompatible with GHL teaching	2.78	1.07	Disagree
My computer literacy is very low for me to use ICTs in teaching Ghanaian	2.81	1.23	Disagree
There hasn't been enough training on the use of ICTs in teaching Ghanaian languages for teachers.	4.13	1.07	Agree
All ICTs resources are written in English which makes access to information difficult.	3.98	1.10	Agree

I have no interest in using ICTs in Teaching Ghanaian languages	2.41	1.14	Disagree
ICT resources are not available in my school	3.94	1.13	Agree
School administrators would not allow ICT resources to be used for teaching GHL in my School.	2.36	1.10	Disagree
It is hard for me to explain the use of computer applications for my students	2.80	1.16	Disagree
Using ICTs may be frustrating because of limited accessibility to GHL fonts	3.58	1.05	Agree
Students are not allowed to use ICT resources in School.	2.64	1.23	Disagree
Students may use ICT resources for unacademic activities such as chatting, watching pornography etc	3.52	1.14	Agree
There is no financial support for GHL teachers to get access to ICT resources	4.25	0.89	Agree
I have limited knowledge on the best way to integrate ICTs in GHL teaching	3.06	1.22	Agree
Because of technical issues, ICT can disrupt the flow of GHL lesson Delivery	3.29	1.15	Agree

Source: Field Data, 2021

Based on the results captured in table 6, it could be said that Ghanaian language teachers at the basic school level of education perceive the following as factors that tend to hinder them from integrating ICTs into their instructional practices. They agree that lack of enough training on the use of ICTs in teaching ($M=4.13$, $SD=1.07$), unavailability of ICT resources ($M=3.94$, $SD=1.13$), lack of adequate training for teachers on how best they can integrate ICTs in language teaching ($M=4.13$), and lack of financial support for GHL teachers to get access to ICT resources ($M=4.25$, $SD=1.14$) hamper the implementation of ICT-mediated instruction at the basic level of education. That been said, they also concur that using ICT to assist Ghanaian language teaching may be a frustrating task because of limited accessibility to Ghanaian language fonts ($M=3.58$, $SD=1.05$). They also believe that students may use ICT resources for unacademic activities such as chatting, watching pornography etc. ($M=3.52$, $SD=0.89$). Also, they believe that another factor that tends to hamper technology-assisted instruction may be technical problems ($M=3.29$, $SD=1.15$) that disrupts the flow of lesson delivery

Further, evidence from the interviews substantiated some of the quantitative analysis. With regards to lack of enough training as a challenge in the successful implementation of ICT-mediated instruction, a teacher expounded that:

In my opinion, I will blame how we were trained during our time in the college. All the courses being offered focused mainly on equipping us with the content knowledge without focusing on courses that could enlighten us on how to teach using technologies

Another teacher supported this claim with the view that even upon completion of teacher education, little opportunities are given to them to enhance their education in terms of ICT integration. This is how he puts it,

In the Ghanaian language field of study, there is always limited attention on in-service training for those who were not born during the computer era. For instance, even if you teach me how to operate a laptop, I will forget a few minutes later. At my age, there is no need to stress myself so much on learning things I will not understand easily.

This, therefore, indicates that apart from not getting the required training, there is also resistance to change as this teacher believes that technology is for young teachers born in the era of technological advancement. There also seem to be others who do not see the need to use ICT in teaching Ghanaian languages with the notion that ICT is a thing for other fields of study.

For instance, one teacher asserts in a local dialect (Asante Twi) that,

Twi nso deε woamfa computa ankyere a deεn na εbeba? Subject a εho nneεma biara nhyε da nni intanete so deε wode computa ka w'adekyere ho koraa a brε na wobεbrε

Authors' translation

What would you loose if you don't use a computer to aid a Twi lesson? There are limited materials on the internet, so if you bother using computers to aid instruction, it would rather impede your efficiency.

For this teacher, using the traditional approach to teaching Twi (one of the Ghanaian languages) is rather effective than using ICT-mediated instruction. It is believed that using ICT may be irrelevant considering the fact that most information, especially those published online, are all English related, accessing information on Ghanaian languages would rather lower the teacher's efficiency

Beside the issues already discussed, other challenges that were probed further are resource availability and difficulties associated with the use of ICT resources to facilitate GHIL instruction. A teacher who taught in a remote area said this,

I do not think it will be possible for me to use a computer or even my phone as a teaching aid. I can say that I have the knowledge to illustrate examples with the use of laptops. The problem here is that there is no electricity even to power the laptops that the government has provided us in this community. And because of that, I can't even use my phone too to get any relevant information because there is limited mobile network access. Therefore, everything must be on the blackboard to make teaching easier

This extract implies that there may be instances where ICT resources may be available, but technical problems can hinder its use. This accords with Adarkwah's (2020) findings that unstable electricity power supply affected e-learning during the COVID 19 pandemic

4.5 *H₀: There is no significant difference between teachers' perception of ICT integration in Ghanaian language teaching based on educational qualification?*

This research hypothesis examined the difference between teachers' perception of ICT integration in GHL teaching based on educational qualification. The rationale for this research hypothesis was to examine whether or not teachers' perception of ICT-assisted instruction differ based on educational qualification. It was meant to compare the perception of Ghanaian teachers who hold the diploma in education certificate and teachers with Bachelor's degree from the university.

A Mann-Whitney U test was conducted to test the hypothesis. The test results indicate that the median (M=4.87) teachers with First Degree is statistically higher than the median (M=4.37) of teachers with Diploma in Basic education at U= 2040.00, p=0.018 (2tailed). As such, the null hypothesis cannot be retained. With this test result, it could be inferred that teachers with a more advanced level of education exhibit a more positive perception of the integration of ICT in teaching the Ghanaian language than those with lower educational qualification

4.6 Discussion of Results

Based on the first findings, it could be argued that Ghanaian language teachers in Basic schools believe that ICT plays a pertinent role in enhancing the success of lesson delivery. More specifically, the revealed perspectives of teachers show that ICT could be a major determinant of successful student learning in the Ghanaian language discipline. However, it appears that, in practical terms, GHL teachers have not developed the habit of incorporating ICT in their lesson delivery since the overall mean of the first research question depicts that teachers use ICT to

facilitate GHL instruction only on an occasional basis. The findings of this study appear to substantiate the findings of Miima et al. (2013) and Mudasiru and Modupe (201) in that most African language teachers exhibit a positive perception toward ICT integration in teaching. Despite this, they are yet to operationalize this positive perception in the classroom setting fully.

In an attempt to unearth factors that hinder the integration of ICTs in GHL lesson delivery, it was revealed that the most prominent factor is the lack of in-service training for Basic school teachers on how to use ICTs to facilitate GHL teaching. Also, teachers believe that there has not been adequate financial support to help them access ICT resources to help them execute their function as teachers effectively. This appears to align with Banju (2014), Amuko et al. (2012), and Gilakjani et al. (2015), who reveal that the lack of proper implementation of ICT-mediated instruction is a direct result of the problem of inadequate training on the use of technologies and inadequate provision of funds. It is also in line with Buabeng-Andoh (2012b), whose research highlights that Ghanaian teachers in other disciplines face similar challenges in integrating ICTs in language teaching.

5. Conclusion

This study aimed at exploring the use of ICT in teaching GHL among Basic school teachers. Specifically, it sought to ascertain teachers' perception of ICTs in teaching GHL and certain challenges that may have been an impediment to ICT integration in GHL teaching. Also, it looked at differences that may exist in teachers' perceptions based on their educational qualifications.

Based on the study's findings, it could be concluded that, in general, GHL teachers exhibit positive attitudes towards the use of ICTs to facilitate instruction. Their perception of ICT integration could be influenced by effort expectancy and performance expectancy as hypothesized in the Unified Theory of Acceptance and Use of Technology model. Despite this, there seems to be a gap between teachers' perceptions and what they put into practice concerning ICT use in teaching GHL. The reason being that GHL teachers at the Basic level of education tend to use ICTs on an occasional basis.

Regarding the third research question, this paper concludes that the most prominent factors that seem to deter GHL teachers from incorporating ICTs into their classroom practice more frequently have to do with limited accessibility to ICTs materials in schools. The problem of limited accessibility, from the perspectives of GHL, stemmed from a lack of financial support from concerned stakeholders. Additionally, another problem associated with teachers'

reluctance to integrate ICTs in teaching GHL is inadequate proficiency in using ICT resources as pedagogical tools to facilitate GHL teaching and learning. This, according to Basic school teachers, is due to a lack of in-service training on the best ways to use ICTs in facilitating instruction.

Finally, the study concludes that teachers' perception of ICT as a teaching tool may be hinged on their educational qualification since there appears to be a significant difference between the perception of degree holders and diploma holders. Thus, degree holders tend to exhibit a more positive perception of ICT integration than diploma holders.

6. Recommendation

Since Basic school GHL teachers tend to exhibit positive attitudes toward ICT use in teaching and learning, it is recommended that school administrators and concerned stakeholders prioritize the provision of the necessary ICT resources to stimulate teachers' interest in using available ICT resources to facilitate learning. Also, the Ghana Education Service (GES) must see the need to provide in-service training for GHL teachers and teachers in other disciplines on contemporary teaching strategies that give priority to ICT integration in instruction. Teachers must also develop an intrinsic habit of using any available ICT resource (such as smartphones, laptops, etc.) to help students learn effectively and ease the work.

Author contribution:

- Ernest Nyamekye was responsible for the general research idea and write-up.
- Daniel Baffour-Koduah assisted in crafting the research instrument and also administered the questionnaire.
- Esther Asare collected and analyzed the qualitative data.

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