

Enhancing Effective Teaching and Learning of ICT in the Schools for the Blind in Ghana: The Role of Assistive Technology

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ABSTRACT

The paper examines the role of Information and Communication Technology (ICT) in special education in Ghana. Taking the relevant literature as the guiding principle, the paper addresses the opportunities, barriers, and challenges posed by the integration of assistive technologies devices in schools for the blind and visually impaired in the teaching and learning process. The paper shows that inadequacies of teachers' knowledge and skills in assistive technologies coupled with lack of these technologies are some of the greatest hindrances to effective teaching in the schools for the blind in Ghana. Educators and policymakers acknowledge Evidence-Based Teaching (EBT) as one of the most effective strategies for teaching the blind and the visually impaired. The paper highlights that effective integration of assistive technologies into schools will help bridge the digital gap between the blind and the sighted in Ghana.

KEYWORDS

21st Century Education, Disability, Evidenced-Based Teaching, ICT Education Policy, ICT for All, Implementation, Integration, Special Needs Children, Technology

INTRODUCTION

Empirical evidence shows that most of the individuals who are completely blind and those who are visually impaired –those with visual acuity lower than 6/60 display normal behaviour patterns without exhibiting any cognitive, emotional and behavioural disorders (Falci & Pasqualotto, 2013). It has been established that the Blind and the Visually Impaired (B &VI) persons exhibit an equal level of astuteness and skills of sighted people (Vidhya & Kumari, 2015) and that there is no link between the Intelligent Quotient (I.Q) of the B&VI persons and their impairment. On the contrary, the B&VI persons acquire high cognitive, affective and psychomotor skills associated with the improvement of learning abilities. In the absence of visual input, the B&VI individuals extend the use of auditory, tactile, olfactory and kinesthetic senses so that they can live independently in a satisfactory manner. It is plausible to argue that the B&VI individuals can perform better than sighted individuals when it comes to attentiveness and spatial localization tasks (Wan, Wood, Reutens, & Wilson, 2010).

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Furthermore, the blind and the visually impaired individuals exhibit exceptional mnemonic encoding, a technique that enables B&VI to recall a large amount of information (Faldi & Pasqualotto, 2013). In fact, they are able to store about twice as many words in their right order of sequence more than what the sighted can (Zohar, Noga, Davidson, Kantor, & Fredman, 2007). Given equal opportunity, the B&VI individuals can perform better in the learning process and subsequently, excel in their educational endeavours. Indeed, visually impaired students are capable of using computers in handling a wider range of learning activities independently (Pradhan & Samanta, 2018; Smith & Kelley, 2007). Various researchers have shown that Information and Communication Technologies (ICTs) can improve the quality of learning experience of the B&VI connecting theory with real-world applications when the right Assistive Technology (AT) Devices are used (Istemic Starcic & Bagon, 2014; Lowther, Inan, Daniel Strahl, & Ross, 2008; Zubov, 2018). It has also been established that effective utilization of AT devices such as the smartphones, iPads, braille, magnifiers and software such as Job Access With Speech (JAWS), Non-Visual Desktop Access (NVDA) enable the B & VI persons to attain the maximum independence in their lives (Al-Busaidi & Tuzlukova, 2018; Patty, Koopmanschap, & Holtzer-Goor, 2018). Notwithstanding, general budget support for education in developing countries like Ghana has “flat” or “regressive” funding distribution patterns that ignore the need for additional funding in schools for special education needs (Ametepee & Anastasiou, 2015). Inadequate funding support leads to challenges which primarily include, but not limited to, lack of proper infrastructure, lack of trained personnel, unreliable relevant equipment, internet connectivity and absence of technical support (Dündar & Akçayır, 2014) (Ametepee & Anastasiou, 2015); and (Dadzie-Bonney, 2015).

The researchers aim to review the teaching and learning of ICT in the schools for the B&VI in Ghana taking into consideration the role of Web Based Learning (WBL) and Assistive Technologies (ATs). This research became necessary following recent calls in the media waves on the low performance¹ of the B&VI in the Basic Education Certificate Examination (BECE) results in ICT, coupled with the Chief Examiner of West African Examination Council’s (WAEC) reports² which indicate that the B&VI students’ performance in ICT over the past years has not been encouraging. The West African Examination Council (WAEC) is an international body responsible for conducting all qualifying examinations in Anglophone countries of West Africa sub-region.

Although issues related to disability in general and blindness in particular were regarded as a taboo in African culture, recent research works done found a significant improvement on this subject matter (Ametepee & Anastasiou, 2015; COUNTY, 2015). The Ghanaian society over the past decade has shown keen interest in the education of the B&VI persons hence more parents continue to seek better education for their children with this handicap as schools enrolment keep on increasing³.

The paper is structured as follows: The background describes the present state of Blindness and Visual Impairments from a global and local perspective. This is followed by the evolution of B&VI education in Ghana. The third section examines the recommended pedagogical approaches for teaching the B&VI. The fourth emphasizes on the Web Based Learning (WBL) in the schools for the B&VI in Ghana. The fifth section is devoted to Assistive Technologies (ATs), the sixth section examines the challenges of effective teaching and learning of ICT in the schools for the B&VI and the seventh section is conclusion and recommendations.

Background

The Blind and the Visually Impaired from the Global Perspective

The data of persons with visual impairment and blindness is increasing around the globe in spite of the fight against this disability. The World Health Organization (WHO) (2018) update, indicates that 1.3 billion people have some form of visual impairment out of which 39 million are blind. Out of this number, 19 million are children of whom two-thirds live in middle and low-income countries. Twelve million school children are suffering from visual impairment due to refractive errors, an impairment

which can be easily treated whiles 1.4 million children have permanent visual damaged. Generally, WHO classified visual impairment based on the degree of acuity of the sight of the individual either as mild, moderate, severe or blindness as explained below.

- Mild impairment – this refers to a person with visual acuity below 6/12
- Moderate impairment – this refers to a person with visual acuity below 6/18
- Severe impairment – presenting a person with visual acuity below 6/60
- Blindness – this is the highest form of visual impairment presenting visual acuity lower than 3/60 (Fricke et al., 2018). The WHO has as its global objective of working hard to decrease the prevalence rate of preventable visual loss from the rate of 3.18% in 2010 to 2.37% in 2019, thus 25% reduction by 2019. Globally, it is estimated that approximately 1% of children below the age of 14 have some form of visual impairments ranging from mild to blindness (IAPB) Report (2016), (Aghaji, Okoye, & Bowman, 2015; Kemmanu et al., 2016).

The continent of Africa has approximately 7.1 million blind people⁴ out of the world's blind population of 1.3 billion which includes 4 million children (Bourne et al., 2017). Given the insufficiency of data and the various methodologies used for estimations, researchers know this figure is most likely higher. Currently, the childhood blindness prevalence rate in Africa is between 0.5% and 1.1% with Malawi having the highest percentage (Kemmanu et al., 2016). A report on the maiden national survey in 2016 on blindness in Ghana shows that the prevalence rate is approximately between 0.74% - 1.07%. Presently, there are two residential basic schools for the Blind and the Visually Impaired, one in the southern sector and the other in the northern sector of Ghana. Each of these school has the following departments: Kindergarten, Primary school, Junior High school, Vocation/Technical and Adult Literacy. The total number of B & VI learners in these schools is 624; 370 are boys and 254 are girls with 79 teachers⁵. However, in all, there are about 8000 blind and visually impaired children in Ghana (Ampratwum, Offei, & Ntoaduro, 2016; Huh, 2016).

Over ten years after the implementation of the ICT policy document, not much has been done to achieve its intended objectives in the schools for the Blind and the visually impaired as compared to other basic schools within the same community. This fact results from the review of the influential articles on issues regarding visually impaired education in Ghana and in Africa (Ametepee & Anastasiou, 2015; Dadzie-Bonney, 2015; Mfum-Mensah, 2004).

Choosing The Best Pedagogy For The Visually Impaired

Teaching the Blind and the Visually Impaired is a very difficult task than teaching normal children. Approaching this task with a clear understanding of what teaching is all about as well choosing the best pedagogy will enable teachers to overcome their challenges when handling the B&VI learners. Teaching is a collaborated action of sharing information and experiences for the development of an individual (Muraina, 2015). Other Authorities in education view teaching as the transmission of knowledge from the teacher to the learner and creation knowledge by the learner facilitated by the teacher (Bruner, 1966; Impedovo & Iaquina, 2013). Weisman opined that teaching is the science and art of imparting knowledge; it is science because it follows systemic principles and theories and as an art, because it requires creativity and skills (Weisman, 2012). To achieve this goal, teaching must be approached from the viewpoints of scientific principles, creative skills and the use of appropriate Assistive technology devices (Weisman, 2012).

On the contrary, Killian, posited that what matters in teaching is the approach used and therefore recommended Evidenced-Based Teaching (EBT) technique for teachers in special education because it considers the student's background information for designing a lesson. (Killian, 2013). The researcher proposed ten strategies for implementing Evidence-Based Teaching in the classroom as outlined in Table 1 (Killian, 2013).

Table 1. Top ten Evidence-Based Teaching Strategies

	EVIDENCE BASED TEACHING STRATEGIES
1	<i>Set a Clear Goal:</i> Be clear of what you want your students to learn
2	<i>Show and Tell:</i> Tell your students what to learn & show them what they need to do
3	<i>Vary your Questions:</i> Use questions to check your students understanding
4	<i>Summarize Lesson Graphically</i> Have your student's summaries information in a graphical way
5	<i>Allow Time for Practice</i> Give your student more time to practice how to use a device
6	<i>Feedback</i> Provide your students feedback so they can refine their efforts
7	<i>Be Flexible</i> Be flexible with your students; it takes a long time to learn
8	<i>Team Work</i> Provide an opportunity for students to work together in a productive way
9	<i>What and How</i> Teach your student the Strategies and not just the Content
10	<i>Nurture Cognition</i> Allow students to come up with their own strategies

Source: (Killian, 2013)

Considering the positions of the various authors given, this research however, conceptualized a Contextual Teaching and Learning (CTL) approach for teaching the B&VI learners. The approach is deemed useful particular for the B&VI learners because of its flexibility for teachers to connect what happens in the classroom to real life situation. CTL approach emphasizes more on the learner; thus it considers the 'who', 'where', 'how' and 'what' components of the lesson(Rowntree, 2015; Sears, 2002).

In applying CTL approach in the classroom of B&VI, teachers must first consider *who* their learners are. The interest of the learners must be given a priority. Therefore taking time to know more about their health background, their strength and weakness and planning the lesson to meet their needs makes the teaching and learning much more meaningful and collaborative. The teaching becomes learner-centered empowering learners to transform their mental abilities into academic skills(Zimmerman, Schunk, & DiBenedetto, 2015).

The second step of the CTL approach is considering your context or *where* lessons are to take place. Creating a conducive learning environment includes choosing the best place to have your lessons. Teachers must not confine their learners to only the classroom but expose them to other parts of the school, community and even once a while to a new environment. The third step is your methodology or *how* the lesson is to be carried out. The success of every lesson depends to a large extent the type of methodology adopted. Teachers must decide whether to use group method, project based, problem solving or discussion for a particular lesson. Varying your teaching methods heightens learners' curiosity and keep them focused throughout the lesson especially activity based methods (Natia & Al-hassan, 2015). The fourth step is the effective use of the right ATs or *what* aspect of the lesson. Teaching the B&VI learners with the right ATs is very important because these learners depend largely on their senses of hearing, touching and feeling to compensate their sight(Rony, 2017).

Teaching And Learning Of Ict In The Schools For The Blind And Visually Impaired In Ghana

Teaching ICT to the B&VI is aimed at equipping pupils with basic it skills to bridge the digital gap between B&VI and the sighted. Teachers in the B&VI schools in Ghana follow the general ict syllabus by Ghana Education Service (GES) for all basic schools. Even though ict is not an elective subject, it is taught twice a week for 70 minutes each per lesson. The lessons are often held in the ict laboratory for pupils to have a taste of the computers and other available ats. Some of the topics in the syllabus are; an introduction to personal computers, keyboard and mouse skills, keyboard shortcut, introduction ms office word, the internet and the world wide web (www), information retrieval among others(<http://www.asbghana.education>), (ampratwum et al., 2016). Where the number of students exceeds the available computers, the learners sit in pairs for the lesson. Currently, both schools for the B&VI have a 20 capacity ict laboratory donated by Ghana Investment Fund for Electronic Communication (GIFEC) and other Non-Governmental Organizations (NGOs). Some of the devices in these ict laboratories are desktop computers, electronic braille machine, an embosser and a language translating software. The computers are installed with Job Access With Speech (JAWS) and Non-Visual Desktop Access (NVDA) software⁶.

Web-Based Learning And The Visually Impaired Education In Ghana

Globally, Web Based Learning (WBL) has gained much popularity among B&VI learners in recent years. This is because the internet is one of the best ATs which has enhanced the teaching and learning process (Agangiba, Nketiah, & Agangiba, 2017b; Cook, 2007; Lynch & Lynch, 2003). Cook (2007) opined that WBL is helpful for an educational mediation done via the internet. Though WBL is seen as challenging reality for the B&VI learners, however, it is considered as the best learner-centered approach because it has ease information accessibility as well as removed the boundaries of time and distance from education pursuits(Cook, 2007; Lynch & Lynch, 2003). Due to accessibility and compliance issues, this technology is still not yet fully utilized by the B&VI learners in Ghana (Agangiba, Nketiah, & Agangiba, 2017a). In related recent research, it was found out that the normal WBL was not accessible for the B&VI learners but rather the higher educational institutions in Africa (Azeta, Inam, & Daramola, 2017).

The World Wide Consortium (W3C)⁷ whose main role is to provide standards for web applications and guidelines for privacy and security, has as one of its core mandate to ensure that everyone has easy access to the web connectivity without any prejudice to culture, level of educational or physical challenges(Istemic Starcic & Bagon, 2014). However, none of the schools for the B&VI in Ghana are using WBL program due to challenges such as lack of internet connectivity and the ban on the use of smartphones by students in all first and second cycle schools in Ghana by the Ministry of Education and Ghana Education Service (Baah, 2018). However, in Sub-Saharan Africa, Smartphones are the main devices for internet connectivity enabling users to link up with one another (Baah, 2018; Kende & Quast, 2016).

Assistive Technologies For Educating The Blind Students

The Convention on the Right of People with Disabilities (CRPD) alternatively defined Assistive Technologies (ATs) as devices designed or adapted to improve the learning performance of the people with educational needs (Hakobyan, Lumsden, O'Sullivan, & Bartlett, 2013). Other researchers argued that that the definition of Assistive Technology should take into consideration which class it belongs to (Hersh & Johnson, 2010). They classified all the Assistive Technology devices into three groups namely: a) Low –Tech b) Medium – Tech and c) High-Tech. Low –Tech Assistive Technologies are the non-electronic devices which are widely available and easy to use with little or no training. This equipment normally require little or no maintenance and repairs. Low –Tech Assistive Technologies include pencils of all types, grips, highlighters tapes, pens, cane, slate, a large print measuring tools, adapted furniture just to name a few. Medium –Tech Assistive Technologies (ATs), on the

Table 2. Classification of Assistive Technologies

AT FOR ACADEMIC CURRICULUM				AT FOR EXPANDED CURRICULUM		
COMPUTER ACCESS	READING	WRITING	MATHS	PICTORIAL	NOTE TAKING	MOBILITY
Color Scheme	Glasses/Lens	Contrast Pen/pencil	Large print Measuring Tools	Enlarged Pictures	Slate & Stylus	Cane
Large O/S	Colour Filter	Word Processing	Large Keys Calculator	CCTV	Digital Recording Device	Talking Compass
Magnifying Device	Slant Board	Typing with Audio support	Abacus	Models or Objects	Computer Base Recording Software	Electronic Travel Device
Magnification with Screen Reader	Large Print	Typing with braille support	Tactile Braille	Tactile Graphics	Electronic Braille Notes Taker	GPS Device
Screen Reader	Optical Magnifier	Electronic Braille Notes Taker	Talking Calculator			
Screen Reader with Braille Device	Electronic Magnifier	3Dgeometric Shapes	Tactile Audio Graphics			
	CCTV Camera	Voice Recognition Device				
	Audio Text					

Source: modified from (Wiazowski, 2014)

other hand, is the easy to handle electronic devices, easy to operate and require little maintenance. Medium –Technology ATs are usually commercially available at a moderate price. They include the keyboard, calculator tape recorders, cameras, electronic dictionaries, magnifiers etc. High-Tech Assistive Technologies (ATs), are the complex electronic devices in a form of computer devices or microcomputer devices capable of storing and retrieving data. They are usually relatively expensive and required frequent servicing and training to be able to handle them effectively. Commonly used ones in the classroom are Word Prediction Software, Talking Calculators, and CCTV etc.

It is believed that yesterday's High Tech is tomorrow's Low Tech, therefore it is important to acknowledge that these categorization and descriptions given to assistive technology may change with time (Sankalpani et al., 2018). Table 2 shows the various ATs and the level at which each device is recommended in teaching for effective learning. The table has two columns for the main categories; Assistive Technologies for Academic Curriculum taught in the classroom and those used outside the classroom herein referred to as the Expanded Curriculum. The first category has four subgroupings and the second has three main groupings arranged from Low -Tech ATs and progress to High-Tech devices.

He proposed that teachers must always start their lesson with Low-tech ATs and advanced to High –Tech devices. That is beginning each lesson from known to the unknown in a Top-down arrangement with arrows showing the hierarchy in each category. The Low –Tech AT devices are on the topmost part of the table and the High-Tech devices are those found at the bottom of the table. For effectiveness of Assistive Technology usage, (Wiazowski, 2014) suggested a guide for teachers to follow when preparing for a lesson which involves the use of ATs. This guide in the form of questions will enable them to select the best devices that will meet the needs of the Visually Impaired child. These questions among others are as follows:

- § What Subject do you plan to teach? English, Mathematics or ICT?
- § Which Level are your learners? Early Childhood, Primary, or College?
- § Are your students able to Read Regular Print?
- § What are the students' Reading Media? Braille, Print or onscreen?
- § Can the students understand Pictorial information?
- § Are your students able to type?
- § Will your students able to use computers?
- § Are students Extremely Sensitive to Light? (Photophobic)?
- § Will the students take part in Outdoor activities?
- § Which Motor Challenges do the students have?

Answers to these questions will inform the teacher exactly what kind of AT devices that are needed to make the lesson an effective and beneficial to the learners.

On the contrary, Dalton categories Assistive Technology (AT) devices (aids for the people with disabilities) differently taking into consideration the functional needs of students with disabilities. His classification includes i) academic and learning aids, 2) aids for daily living, 3) listening and environmental aids, 4) communication aids, 5) computer access and instruction, 6) environmental control aids, 7) mobility aids, 8) pre-vocational and vocational aids, 9) recreation and leisure aids, and 10) seating and positioning aids (Dalton, 2015).

CHALLENGES OF EFFECTIVE TEACHING AND LEARNING OF ICT IN THE BLIND AND VISUALLY IMPAIRED SCHOOLS IN GHANA

Lack of Technical Knowledge on Assistive Technology

Studies have found that even though schools for B&VI worldwide have well qualified teachers in special Education, they still exhibit insufficient technical knowledge in the use of High-Tech ATs. This is a challenge is attributed to the kind of training they had on the use of these devices (Rony, 2017; Wong & Cohen, 2011). Earlier research on teachers AT usage pointed out that inadequate training for ICT teachers is one of the serious challenges facing the effective teaching and handling of ATs in the B&VI schools in Africa (Mwakyjeja, 2013). This assertion is supported by other researchers (Agangiba et al., 2017a; Yeboah, 2016). Aside, inadequate training for teachers, in this ever changing technological world, “yesterday’s High-Tech device will be tomorrow’s Low-Tech devices”. These challenges are not limited only to teachers in the developing countries alone but also in some the schools in the developed countries such as the United States and Singapore (Wong & Cohen, 2011). A survey in the schools for the B&VI in Singapore revealed that teachers did not have the mastery of all the devices available (Felicia, Sharif, Wong, & Marriappan, 2014; Wong & Cohen, 2011). They argued that ICT teachers are more comfortable with the use of Low-Tech Assistive Technologies than Hi-Tech ATs. In support of the findings above, (Rony, 2017) showed that 75% of ICT teachers in the visually impaired schools in Bangladesh asserted that the use of the right Assistive Technology devices in the classroom has been their main challenge in teaching. Another challenge affecting the continuous use of AT devices is the lack of “culture of maintenance” which happens to be a common practice in many schools in Africa (Ajuwon, Meeks, Griffin-Shirley, & Okungu, 2016). The above challenges confirm that of (Opoku, Mprah, & 2017) who posited that teachers in the schools the Blind require the assistance of skilled personnel to enhance their work.

Inadequate Supply of Assistive Technologies in the B&VI schools in Ghana

The supply of educational materials and facilities to institutions in Ghana is skewed against the schools for the B&VI (Opoku et al., 2017). For instance, in 2013, the government of Ghana provided computer laboratories and internet access to 459 schools but none of these provisions went to any

of the schools for the blind and the visually impaired⁸. It could be argued that the B&VI persons learn best through concrete experiences and learning by doing such as hearing and touching. Failure to use AT devices, therefore, implies that the lesson not well taught (Kirk et al., 2015). The above views are not different from (Ampratwum et al., 2016) who reported that 95% of some selected final year students in the schools for Blind in Ghana complained being weak in keyboard skills and Job Access With Speech (JAWS) application because most of these ATs were not functioning effectively.

The findings of (Ampratwum et al., 2016) agree with (Mprah, Edusei, Owusu, & Dahamani, 2016) that lack of teaching and learning materials are the major barriers hampering effective work output in the schools for the Blind in Ghana. The above literature point out one key fact, that there is an inadequate supply of appropriate teaching and learning material (Assistive Technologies).

Lack of Internet Facilities and Regular Electricity Supply

The internet continue to link billions of users worldwide to form a global village. According to the African Policy Review report 2017, there is about 3.2 billion people globally who are using the internet to in diverse ways⁹. However, there is still over 60% of the world population who are not connected to the internet and most of them are in Sub-Saharan Africa¹⁰. Internet users in Africa are just around 28%; much lower than global average range of 45% (Kende & Quast, 2016). Among the two main challenges given for this low patronage on the internet were lack of accessibility and lack of knowledge on how to use it (Kende & Quast, 2016). Irregular electricity supply and lack of internet connectivity are some of the major challenges impeding the effective teaching and learning of ICT as well as the use of WBL in most West African sub-region (Azeta et al., 2017; Dadzie-Bonney, 2015; Kende & Quast, 2016; Peprah, 2016). The Alliance for the Affordable Internet (A4AI) 2017 Report scored Ghana a higher mark of 50.01% in the Affordable Drivers Index (ADI) placing 26th out of the 58 countries surveyed in African, Latin America, and Asia. The report suggests that Ghana has improved upon her internet connectivity and accessibility performance over the previous 45.1% in 2014 ADI ranking¹¹. In spite of this achievement, none of the schools for the B&VI in Ghana has internet connectivity (Agangiba et al., 2017a). Lack of internet connectivity will continue to widen the digital gap between the developed and the developing nation and affect the performance of ICT teaching and learning in the schools for the B&VI if immediate steps are not taken to curtail this challenge.

CONCLUSION

The Blind and the Visually Impaired (B&VI) learners form a significant number of children with special education needs in Ghana. The B&VI persons are capable of performing better academically just as their sighted counterparts if given the needed support. There are many blind and visually impaired persons in Ghana who have excelled and distinguished themselves in the various positions such as government ministers, lawyers, teachers, musicians just to name but a few. Since the schools for the blind are state funded institutions, they depend heavily on the support from the government and donations from Non-Governmental Organizations (NGOs), philanthropist and local Parent-Teacher Associations (PTAs). Unfortunately, these schools do not have large ICT laboratories, enough computers and relevant software such as Dragon for changing voice to text, iTalk Recorders and Evernote for reminding users what has been done or said earlier. Other Assistive Technology devices such as CCTV, the Big Calculators for Low vision (BigCAL) and Big Key for Low Vision keyboard (BigKey) for effective teaching and learning. In addition, teachers do not have the brailled version of ICT textbooks in their schools. Students therefore depend on the teaching notes given to them by their teachers. The research will make a lot of contribution to the body of knowledge if further studies could be done on the working efficiency of various ATs in enhancing students' effectiveness. The research shows that teachers in the Schools for the blind in Ghana are well educated and are conversant with the use most of the ATs as well as the appropriate teaching methods however, what is impeding their output are the amount of workload on them coupled with inadequate learning materials.

For instance, there are only two ICT teachers in each of the schools for the B&VI in Ghana handling over 350 learners. The paucity of studies in these areas argues for innovative and sustained research.

It is the view of the researchers that Contextual Teaching Learning (CTL) approach and Web Based Learning (WBL) program are introduced into the schools for the blind and the visually impaired in Ghana to enable the B&VI learners maximize their potentials.

The Challenges facing the B&VI schools in Ghana include lack of skills on the use of the Assistive Technology (AT) devices, limited supply of the required ATs, lack of regular maintenance and support services of these technologies, the use of inappropriate teaching methodologies, poor electricity and internet connectivity and the ban of smartphones in all basic and secondary schools.

RECOMMENDATIONS

The paper recommends that the government gives the B&VI education a priority through regular supply and maintenance of Assistive Technology device and the right software applications.

More teachers must be trained to augment the number of trained personnel who can effectively handle ATs in the schools for the blind in Ghana. Again, courses run at the various Universities for special education teachers must be reviewed to include the studies of modern ATs, Evidence –Based Teaching (EBT) and Contextual Teaching and Learning (CTL) approaches to ensure effective teaching and learning. The schools for the B&VI must be connected to the internet to enable them to use computers and High -Tech ATs as well as WBL. Lastly, Policy makers in Education should revisit their decision on the ban of mobile phones usage in schools for the B&VI in the country. The GES should come out with rules and regulations on mobile phone usage in schools to help students in general and the B&VI students in particular to derive the full benefit from this all important device.

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ENDNOTES

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