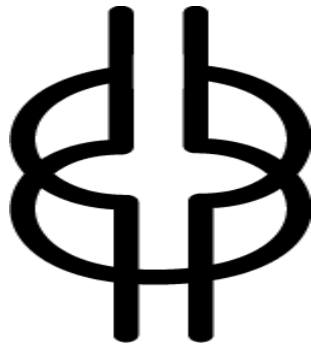


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NYANSAPO – "Wisdom Knot"

Symbol of wisdom, ingenuity, intelligence and patience

Basic School Teachers' Attitude and Confidence level in teaching the new Standards-Based Computing Curriculum in Ghana

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Abstract

This study assessed the attitude and level of confidence of Basic 1-6 teachers in Ghana in implementing the new standard-based computing curriculum. The study employed the survey design. Simple random sampling and stratified sampling were used to select 127 teachers from five regions in Ghana. Frequencies, percentages and Pearson correlation statistics were used to analyse the data collected. The findings showed that most of the teachers have high confidence in handling the revised computing curriculum. In addition, most teachers have positive attitude towards using ICT tools for teaching and learning. Availability of ICT resources in basic schools in Ghana remains a challenge. The findings further indicated that some basic school teachers had taken academic courses to improve their academic qualifications within the last three years. However, most teachers said they had not attended any ICT-based workshop in the last one year. The study recommended more in-service training for teachers who teach computing to bring them up to speed on the computing curriculum.

Key words: Computing, Competencies, Attitudes, Standards-Based Curriculum, KG-B6, Ghana.

Introduction

Information and Communication Technologies (ICTs) are commonly believed to inspire teachers and learners, encourage improvement, and facilitate the development of 21st century skills. The 21st century skills include; critical thinking, communication skills, information skills, digital skills, collaboration, leadership among others. (van Laar, van Deursen, van Dijk, & de Haan, 2020). ICTs are regarded as important tools for developing and managing all the 21st

101 *Basic School Teachers' Attitude and Confidence level in teaching century skills in the students.* (Valtonen, et al., 2019). The 21st century skills are explicitly elaborated in the new standard-based curriculum as core competencies. These core competencies as stated in the computing curriculum for primary school are: critical thinking and problem solving, creativity and collaboration, communication and collaboration, cultural identity and global citizenship, personal development and leadership and digital literacy (NaCCA, Ministry of Education, 2019).

It is widely accepted that ICTs can be used to enhance teaching and learning quality at any educational level. In the age of information technology, the scale and rapid growth of ICT has turned human society into the literacy age (Galbreath, 2000). ICT is becoming a natural part of a person's daily life; thus, its use in education by teachers and students is becoming a necessity (Ikwuka & Adigwe, 2017). It is therefore imperative for teachers not only to use ICTs for teaching, but also, to become comfortable and competent in their use for their personal development. Teachers at all levels of education engage in teaching and research, with auxiliary administrative assignments.

ICT offers several opportunities in education. First, it can be used as a means of preparing the current generation of students for future work by providing tools for tomorrow's practices. 21st century students live in a global knowledge-based age (Chu, Reynolds, Tavares, Notari, & Lee, 2016) and they deserve teachers whose practice embraces the best that technology can bring to learning. Teachers will need to use ICT to equip employees and customers of tomorrow with the necessary skills and knowledge to utilise ICT in their work (Atuahene & Owusu-Ansah, 2013). Secondly, ICT will make the school more effective and competitive using a variety of resources to help and promote the professional activities of teachers. Finally, ICT is seen as a way of improving and innovating teaching to encourage learners to learn in a productive and autonomous manner and/or in partnership with others. Integrating ICT in school systems is a big move for creativity (Nikolopoulou, 2018). Quality education will therefore require sufficient teachers who are well-trained and motivated professionals with requisite knowledge and skills in the use of ICT. Mereku, Yidana, Hordzi, Tete-Mensah, Tete-Mensah, and Williams (2009), however, noted that teachers at pre-tertiary stage have little training on the use of ICT for teaching and learning.

During a master training for basic school teachers on the new computing curriculum in 2019, the authors of this paper observed that there was a lot of apprehension by teachers about the new additions to the computing curriculum. The introduction of the new computing curriculum may perhaps, pose some challenges to basic school ICT teachers. Topics which hitherto were taught in upper primary (Basic 4, 5 and 6) are now being taught at Basic One. New sub-strands like Introduction to MS-Publisher, Introduction to databases, Algorithm and Programming and Introduction to programming languages have been added to the Computing curriculum. These changes are likely to pose a challenge to especially, teachers who do not have a strong computing background. Others also raised concern about the lack of ICT tools to enable them teach effectively.

Even though many teachers at the basic level have the required certification and have been teaching for a relatively longer period, not much is known about their attitudes and confidence level in teaching computing, especially with regard to the new strands and sub-strands that have been added in the new curriculum. This study sought to measure the attitudes and confidence level of B1-B6 teachers in teaching the computing curriculum. It also looked into other factors that influence teacher-confidence such as the availability of ICT resources, skills of the teacher and attitude of the teacher towards using ICT tools in Ghana.

Literature Review

Theoretical Framework

Diffusion of Innovations Theory

Diffusion of Innovations Theory (Rogers, 2003) seeks to explain the process through which technological innovations are implemented and adopted by users. Rogers (2003) suggests that diffusion is the mechanism by which the participants in a social network express a novelty or invention over time. He opines that four factors affect the dissemination of a new idea: innovation itself, means of communication, time and social structure. His theory is heavily dependent on human resources (the inventory of behaviours, expertise, social and characteristic qualities expressed in labour capacity to generate economic value). The innovation must be generally accepted

103 *Basic School Teachers' Attitude and Confidence level in teaching* to sustain itself. Within the adoption rate, an innovation reaches critical mass (a sufficient number of innovation adopters). Diffusion of Innovation Theory places emphasis on describing the way in which new concepts and ideas achieve large-scale implementation. The Theory posits that there are five categories of people as far as the adoption of an innovation is concerned. These are innovators, early adopters, early majority, late majority, and laggards.

Innovators are ready to take risks, have the highest social standing, have financial liquidity, are social, have the closest interaction with science sources and communicate with other innovators. Their risk tolerance allows them to implement potentially unsuccessful technologies. Such deficiencies are supported by financial capital (Rogers, 2003). Early Adopters are the most highly respected people in the groups of adopters. Early Adopters have a higher status, financial liquidity, advanced education, and are more socially advanced than late adopters. Their adoption choices are more discrete than innovators. They use sensible adoption options to help them retain a central communication role.

Early Majority supports creativity after the average user. They approach innovation with a high degree of skepticism and following the adoption of innovation by the majority of society. In general, Late Majority are skeptical of innovation, have a social status below average, low financial liquidity and little opinion leadership. Laggards are late innovation adopters.

Teachers can be categorised into innovators, early adaptors, early majority, late majority or laggards based on their attitudes towards ICT innovations (and tools for teaching) and their adaptability to the new curriculum. Positive attitudes are expected to translate into higher confidence level.

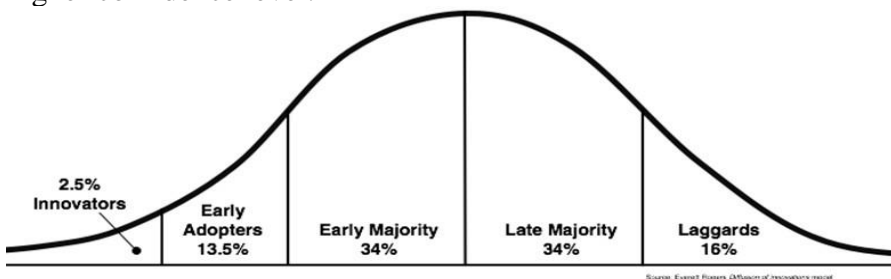


Figure 1: Diffusion of innovation theory

ICT Educational policies in Ghana

The Government of Ghana has shown commitment in the integration of ICT into teaching and learning at all levels of education; from the Basic School to the Tertiary level. Several policies have been put in place as part of efforts to integrate ICTs into teaching and learning, such as the ICT for Accelerated Development Policy (ICT4AD) in 2003. One of ICT4AD's objectives is to enhance the quality of life in Ghana by improving its physical, economic and cultural well-being, and rapidly develop and modernise the economy and society by using ICTs as the key motor for rapid and sustainable economic and social growth (Ministry of Trade, Industry and PSI, 2003).

The government of Ghana reiterated its commitment to the use of ICT in the educational sector in the Educational Reforms of 2007. The government indicated that “special attention will be given to the training of teachers in Technical, Vocational, Agricultural, Special Needs Education, Guidance and Counselling, ICT and French” (Ministry of Education, Science and Sports, 2007, p. 4). One of the main requirements of the 2007 reform is for all pre-tertiary school students in Ghana to learn basic ICT (including internet) literacy skills and to apply these to their studies and various ways of their daily life operation (Ministry of Education, 2008).

Subsequently, the government introduced ICT in Education Policy (2015) which was derived from the ICT4AD Policy. The Policy was intended to serve as a platform to launch a systematic ICT in Education delivery at all levels of education in Ghana. The Policy gives directions on how ICT will be deployed to support teaching and learning from primary to tertiary level of education in Ghana. The Policy further envisaged to achieve greater results with a view to access, equity and quality while also accelerating the economy's growth by “enhancing access to education and improve the quality of education delivery on equitable basis” (Ministry of Education, 2015, p. 9).

A new Basic Education curriculum implemented in August, 2019 has repackaged the subject, ICT as Computing. Computing is incorporated in the KG curriculum. In the new Basic Education Curriculum, Computing is taught as part of Our World, Our People from Basic 1-3 and as a stand-alone subject from B4-B6. It continues as a subject in the Common Core Programme from B7-B10. Learners

105 *Basic School Teachers' Attitude and Confidence level in teaching* in the Basic Education curriculum will therefore have computing lessons for 12 years.

Importance of ICT in education

Kuyoro, Awodele and Okolie (2012) note that ICT tools contribute to the enhancement of learning since they can play a role in reforming education systems. ICT also increases access to pedagogical resources, improving learning outcomes, improving retention of learned content by students. Furthermore, ICT improves the management of education and enhancing pedagogical techniques.

The effective incorporation of ICT into the education system, according to Tinio (2003), is an intricate multi-faceted procedure involving not only ICT, but also curriculum and pedagogy, schools preparation, teaching expertise and permanent funding. The integration of ICT into teaching and learning goes beyond making computers available to teachers and students but supporting teachers to reach the point where they are confident to incorporate ICT tools into their day-to-day professional activities (Mukuna, 2013). The existence of ICT tools and the resourcing of teachers to be abreast with the use of ICT is an area that appears minimal in Ghanaian schools. Buabeng-Andoh and Yidana (2015) report that if teachers were provided with sufficient ICT resources as well as administrative support, they would be motivated to use ICT in their teaching.

Support for ICT Education in Ghana

There are several NGOs seeking to provide support in the education sector of which some aim at encouraging the integration of ICT into teaching and learning and improving the quality of teaching and learning in general in Ghanaian schools. Examples include *Transforming Teacher Education and Learning* (T-TEL), a six-year UK-Aid-supported government programme for Ghana that offers high-quality motivational teaching and learning in schools. They are also collaborating with the Ministry of Education, its regulatory agencies and all 46 public educational colleges in Ghana to boost the quality of pre-service teacher education and promote the introduction of a Bachelor's degree in colleges of education in Ghana.

Other NGOs like *IT for Children*, a Sweden-based NGO whose main activities are in Ghana aims to provide free and daily access to computers, the internet and ICT education for students in Ghana. In

2016, it began operation in a small coastal village of Busua, in the Western Region of Ghana, where children were unfamiliar with computers. The beneficiaries have since learned to check for information online as well as run variant computer programs. As a result of the activities of the NGO, the world of information and communication is within the reach of these children. The IT for Children's outreaches have opened a door to children and young people from their first click on a computer to a wide world of technology and communication.

A team of volunteers created *Africa ICT Right (AIR)*, ICT-oriented NGO in 2007. It was formed to use ICT resources to address critical national issues in Ghana concerning education, gender, youth empowerment and health. It was developed on the assumption that in the midst of a profound technological transition the digital world plays a vital position for computers, cell phones and the Internet. However, there are significant gaps in the delivery of these resources that not only harm underserved communities but also society. The NGO collaborates with donors, governmental and private organisations, NGOs, and local communities to resolve this disadvantage. This is done through coordinated development programmes that include technological solutions and funding for educational and health facilities, particularly in less privileged areas where the digital divide is highest.

Computers for Schools Ghana is another organisation that seeks to provide computing education to school children in Ghana. Since 2016, this NGO envisions that “*All students in Ghana can obtain 21st century skills*. Information technology is fundamentally changing the world and the job market thus will be a key factor for the development in the ECOWAS region, and Ghana. Students should be prepared for the job market of the 21st century, with 21st century skills like creativity, independent thinking, teamwork and cross-cultural communication. Digital literacy and the ability to apply ICT in problem solving will be fundamental for survival in the 21st century. Ghanaian children must have the opportunity to take part in these changes, by having access to internet and to computers (Computers4Schools Ghana, 2020). In order to see *the dream of Ghanaian child*, with the core competencies listed above, teachers’ level of confidence in handling the standard-based curriculum is paramount. This study sought to find the confidence level

107 *Basic School Teachers' Attitude and Confidence level in teaching of B1-B6 teachers in teaching the standards-based computing curriculum.*

Research Questions

The following questions guided the study:

1. To what extent are B1-B6 teachers confident in teaching the sub-strands of the computing curriculum?
2. What are the attitudes of B1-B6 teachers towards the use of ICT tools?
3. What resources are available for teaching and learning of computing in the basic schools?
4. What requisite training do B1-B6 teachers have to teach the new computing curriculum?

Research Hypotheses

The research was guided by the following hypotheses:

H₁: There is a relationship between the attitude of teachers towards the use of ICT tools in teaching and their confidence level in teaching the new computing curriculum.

H₁: There is a relationship between availability of ICT tools, and the confidence of the teachers in teaching the new computing curriculum

Methodology

The survey design was used for the study. This design was chosen because the research was essentially to solicit information from B1-B6 teachers on how confident they are to teach the sub-strands of the computing curriculum, their attitudes towards the use of ICT tools in teaching, availability of ICT tools for teaching computing in their schools and the extent to which they have undertaken professional development within the last 3 years.

The population was B1-B6 teachers in Ghana. The link to participate in the study was sent to all 10 regions in the country. However, only five regions participated in the study. Simple random sampling and stratified random sampling were used to select respondents at various stages of the research. First, the population was

stratified into five regions; Central, Volta, Northern, Greater Accra and Ashanti. Simple random sampling was used to select 127 teachers from the regions. The regional distribution of teachers were as follows; Central (24), Volta (25), Northern (20), Greater Accra (31) and Ashanti (27). The 127 teachers sampled were made up of 107 male teachers and 20 female teachers. The majority of the teachers (97%) are First degree holders.

Self-developed structured questionnaire was used for data collection. The questionnaire was made up of five sections: Section A consisted of seven questions and it focused on demographic information of the teachers. Section B focused on the Confidence Level of teachers to teach the various sub-strands in the Computing Curriculum. This section contained 21 items on a five-point Likert scale. Section C of the questionnaire which contained 12 items addressed the issue of Teachers' Attitude towards using ICT tools. Section D contained 11 items and was designed to enquire about the availability of ICT resources and Section E (three items) enquired about the professional development of teachers. One hundred and forty questionnaires were distributed to teachers who were selected as Metropolitan and District Master trainers for the new computing curriculum. Out of the 140 questionnaires distributed, 127 of the questionnaires were returned, giving a response rate of 93%. The questionnaires were made available to an expert in ICT Education to assess its face and construct validity. The reliability of the subscales of the questionnaire were tested using Cronbach's coefficient alpha and it yielded a value of 0.783 for confidence level, 0.771 for attitude towards ICT, 0.766 for availability of ICT tools and resources and 0.810 for Professional Development. The data collected was analysed using means, standard deviation and correlation.

Results and Discussions

The data collected to answer research questions 1 to 4 is presented in Tables 1, 2, 3 and 4.

109 *Basic School Teachers' Attitude and Confidence level in teaching*
**B1-B6 teachers' confidence in teaching the sub-strands of the
 computing curriculum**

The research question sought to find out the confidence level of the teachers in relation to the new curriculum and the result is presented Table 1.

Table 1: B1-B6 teachers' confidence in teaching sub-strands of the computer curriculum

I am confident in teaching:		Mean	Std. Deviation
1	Generation of computers and parts of a computer and other gadgets.	4.6378	.58648
2	Introduction to MS windows Interface.	4.2756	.78353
3	Data source and data usage.	4.3071	.74014
4	Technology in the community.	4.3150	.66310
5	Introduction to MS Power Point.	4.1496	.79760
6	Introduction to word processing.	4.2047	.80018
7	Introduction to Publisher	3.8268	.78775
8	Introduction to database, algorithm and programming.	3.3622	.78345
9	Introduction to Program language, MS Excel, Scratch, VB, dot.net.	3.2756	.91441
10	Introduction to electronic spreadsheet	3.8740	.94274
11	Network Overview	3.7480	.96748
12	Web browser and web page.	4.1260	.95943
13	Surfing the world wide web.	3.9134	1.06177
14	Favorite places and search engines.	4.1102	.91918
15	Using online forms	4.0787	.86928

<i>K. Ayebi-Arthur, I. B. Abdulai & D. P. Korsah</i>			110
16	Customizing your browser.	3.6772	.96676
17	Electronic Email.	4.2126	.86950
18	Internet of Things (IoT).	3.9291	.88355
19	Digital literacy.	4.1024	.83414
20	Network etiquette.	4.0551	.91119
21	Health and Safety in using ICT tools	4.5512	.63881
Total		4.0349	0.33686

From Table 1, the sub-strand with the highest mean is sub-strand 1 (Generation of computers and parts of a computer and other gadgets) with a mean of 4.6378 followed by sub-strand 21 (Health and Safety in using ICT tools) which had a mean of 4.5512. The mid value means are 3.6772 and 3.7480 which were for sub-strand 16 (customising your browser) sub-strand 11(Network overview) respectively. The sub-strands with low mean values are sub-strands 9 (Introduction to Program language, MS Excel, Scratch, VB, dot.net.) with a mean of 3.2756 and sub-strand 8 (Introduction to database, algorithm and programming) with a mean of 3.3622. The total mean score of the responses was 4.0349 which indicate a high confident level of the teachers to teach the sub-strands in the new computing curriculum. This result is good for the implementation of the new computing curriculum since it suggests that a majority of the teachers showed high confidence in teaching the new computing curriculum. The high confidence level indicates most basic school teachers fit into the description of early adopters of the innovation diffusion theory.

Attitudes of B1-B6 teachers towards the use of ICT tools

The attitude of B1-B6 teachers towards the use of ICT tools is shown in Table 2.

Table 2: Attitude of teachers towards the use of ICT in teaching

S/N	Attitude	Mean	Std. Deviation
1.	ICT provides better learning experiences	4.7165	.48628
2.	I could work harder if I could use ICT	4.7008	.71620
3.	ICT is useful for the dissemination of Information	4.8504	.37961
4.	CT makes course more interesting	4.8110	.39304
5.	ICT enhances students learning	4.7874	.46513
6.	I won't have anything to do with ICT	1.4762	.97746
7.	I have Phobia for ICT equipment	1.5906	1.04163
8.	ICT can't address the needs of the school System	1.6772	1.10469
9.	The state of facilities discourages me from the use of ICT	2.9291	1.40397
10.	I enjoy lessons on the computer	4.5512	.73148
11.	Knowing how to use a computer is a worthwhile skill	4.6929	.67273
12.	I have a lot of confidence when it comes to working without computers	2.9843	1.36849
Total mean		3.6473	1.41567

From Table 2, the two high means were 4.8504 and 4.8110 which indicate that most of the teachers believe that ICT is useful for disseminating information and also ICT makes teaching a course more interesting. Again, Table 2 indicates two low means of 1.4762 and 1.5906. The other low mean value of 1.5906 shows that some teachers have a phobia for ICT equipment. The average mean attitude of basic schoolteachers towards the use of ICT is 3.6473. This indicates that the basic schoolteachers have positive attitude towards the use ICT. These findings affirm the research findings that reported positive attitude regarding the use of technology by teachers in several countries

(Nishta, 2012; Teo, 2008; Ng & Gunstone, 2003; Hong & Koh, 2002) that teachers were more positive about their attitude towards computers and intention to use computers. This result will likely influence the teachers’ use of ICT tools in their teaching as posited by Sadik (2006). Associating the result with the diffusion of innovation theory, confirm that early adopters of technology are more “socially forward” than early majority, late majority and laggards.

Resources availability for teaching and learning of computing in the basic schools

The results collected on the availability of resources for teaching and learning computing in basic school is indicated in Table 3.

Table 3: Availability of ICT tools and resources

S/N	ICT tools/resources	Available	Not available	Total
1	Desktop/laptops for personal use	37(29.1%)	90(70.9%)	127(100)
2	Printer	13(10.2%)	114(89.8%)	127(100)
3	Digital Cameras	16(12.6%)	111(87.4%)	127(100)
4	School Internet	8(6.3%)	119(93.7%)	127(100)
5	Digital Projector	12(9.4%)	115(90.6%)	127(100)
6	Computer for use in the Classroom	19(15.0%)	108(85.0%)	127(100)
7	Computer lab	15(11.8%)	112(88.2%)	127(100)
8	Laptop computers for the students use	6(4.7%)	121(95.3%)	127(100)
9	Interactive whiteboards	21(16.5%)	106(83.5%)	127(100)
10	Personal Email Accounts	88(69.3%)	39(30.7%)	127(100)
11	Cooperate Email Account	12(9.4%)	115(90.6%)	127(100)

113 *Basic School Teachers' Attitude and Confidence level in teaching*

Data in Table 3 gives an indication that ICT tools and resources are not available in the schools. Out of the 11 ICT tools and resources listed, only e-mail had a high availability rate of 69.3%. Almost all the tools listed had low ICT tools and resources available. This suggests that most of the ICT tools and resources are not available for use by basic schoolteachers. This result resonates with a research by Savannah Signatures (2010) which suggests that the majority of basic schools in the northern part of Ghana lack ICT tools. Swarts and Wachira (2010) also give credence to the results by indicating that only a small number of basic schools have ICT facilities which affect its availability to teachers. Even though the confidence level and attitude of teachers are high, the unavailability of ICT tools may affect the teaching and learning of the computing curriculum in a negative way. It is important that NGOs and other stakeholders who support education in the basic schools increase their support in providing ICT tools to improve teaching and learning.

Requisite training of B1-B6 teachers to teach the new computing curriculum

The research question 4 sought to find out whether B1-B6 teachers have the requisite training to teach the new computing curriculum through professional development. The results is displayed in Table 4.

Table 4: Professional development training of respondents

S/N		Agree	Disagree	Total
1	I have taken an academic course to improve upon my qualifications in the last three years	83(65.4%)	44(34.6%)	127(100)
2	I take active role in PLCs (Professional Learning Communities)	89(70.1%)	38(29.9%)	127(100)
3	I have attended an ICT-based workshop in the last one year	44(34.6%)	83(65.5%)	127(100)

Table 4 shows that 65.4% of the respondents indicated that they have taken academic courses to improve their qualifications in the last three years. Also, 70.1% of the teachers agreed to take active role in the Professional Learning Communities. Data in Table 4 indicate that a 65.5% of teachers have not attended any ICT-based workshop in the last one year. This result supports the assertion by Mereku, Yidana, Hordzi, Tete-Mensah, Tete-Mensah, and Williams (2009) that teachers at pre-tertiary stage are not given any training on the use ICT for teaching and learning. This may have justified teachers’ apprehension towards the new computing curriculum because of the new additions that have been made. This is likely to affect the teachers’ use of ICT in teaching new computing curricula as well as using ICT as tool to teach other subjects.

Relationship between the attitude of teachers towards the use of ICT tools in teaching and their confidence level in teaching the new computing curriculum

Table 5 shows the correlation between teachers’ attitude and confidence level of teachers in teaching the new computing curriculum.

Table 5: Correlation between teachers’ attitude and confidence level of teacher in teaching the new computing curriculum.

Correlation	Confidence	Attitude
	Pearson Correlation	1
	Sig. (2-tailed)	.494
Confidence	N	127
	Pearson Correlation	.103
	Sig. (2-tailed)	.494
Attitude	N	127
	Pearson Correlation	1
	Sig. (2-tailed)	.103
	N	127

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

The result in Table 5 shows that there is a positive correlation between teachers’ attitude and confidence level of teachers in teaching the new computing curriculum. According to a general guideline provided by Cohen (1988) the value 0.494 indicates a moderate positive correlation but the p value of 0.103 is greater than 0.05. This suggests that the relationship is not statistically significant. Using the

115 *Basic School Teachers' Attitude and Confidence level in teaching*
 R^2 value of 0.244, it can be posited that about 24% of the variability of teachers' attitude can be explained by their relationship with the confidence level of teachers in teaching the new standard based computing curriculum. However, the result affirms Gardner, Dukes, and Discenza's (1993) finding that computer confidence positively affected computer attitudes even though the relationship is moderate.

Relationship between availability of ICT tools, and the confidence of the teachers in teaching the new computing curriculum

Table 6 shows the correlation between availability of ICT tool and confidence.

Table 6: Correlation between Availability of ICT tool and confidence

		Availability of ICT	Confidence Level
Availability of ICT	Pearson Correlation	1	.385
	Sig. (2-tailed)		.306
	N	127	127
Confidence Level	Pearson Correlation	.385	1
	Sig. (2-tailed)	.306	
	N	127	127

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

The results in Table 6 suggest a positive correlation between the availability of ICT and the confidence of teachers to teach the new computing curriculum at 0.385. Using the general guidelines provided by Cohen (1988), the value of 0.385 indicates a moderate positive correlation. With the p value of 0.306 which is more than 0.05 shows that the relationship is not statistically significant. Nevertheless, this result corroborates several research findings which suggest a positive correlation between access to ICT tools and confidence level of teachers (Cox, Preston & Cox, 2009; Becta, 2003; Guha, 2000; Ross, Hogaboam-Gray & Hannay, 2009).

Conclusion and Recommendations

The study established that most teachers can confidently teach the content of the new computing B1-B6 curriculum. Most of them also have positive attitude towards using ICT tools. However, TLMs used to support the teaching of ICT lessons are inadequate in most of the schools. The attitude of teachers in using ICT tools had a moderate positive relation on their confidence level. Finally, the study found that inadequate ICT tools at the basic schools had a moderate positive relation with the confidence level of B1-B6 teachers.

The following recommendations are made based on the findings:

1. Even though the confidence level of basic schoolteachers in teaching the sub-strands in the new computing curriculum is generally high, more should be done to improve it by way of organising in-service training and ICT workshops to further boost their confidence level. The GES, NGOs and other stakeholders should take a lead in this.
2. Government of Ghana and NGOs and other stakeholders should step-up efforts at building computer laboratories, ICT resource centres and providing other ICT resources at the basic schools.
3. Basic school ICT teachers should be innovative in acquiring ICT resources.
4. The government should make computers (laptops and projectors) affordable to teachers so that most teachers can have access to computers for their professional practice.

The government of Ghana should initiate a programme where computer hardware from higher educational institutions and government agencies which are no longer in use could be sent to basic schools to be used as teaching and learning materials.

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- 119 *Basic School Teachers' Attitude and Confidence level in teaching*
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