



¹henry.blankson@cpoly.edu.gh

Blankson, H. (2015) Establishing the level of Awareness of ICT in Second Cycle Institutions. In: Mojekwu, J.N., Ogunsumi, L.O., Ojigi, L. M. Atepor, L., Thwala, D.W., Sackey, S. Awere E., and Bamfo-Agyei, E. (Eds) African Journal of Applied Research .(AJAR) Journal, Vol.1,No.1 ISSN 2408-7920 January 2015, Cape Coast, Ghana. 273-285

ESTABLISHING THE LEVEL OF AWARENESS OF ICT IN SECOND CYCLE INSTITUTIONS

Blankson, H.

Department of Statistics, Cape Coast Polytechnic, Ghana

ABSTRACT

The purpose of the study was to find out how ICT was being used in the teaching and learning process in the senior high schools in the Cape Coast Metropolitan area. The study was a descriptive survey. Two sets of questionnaires were prepared respectively, and an observation checklist was used to collect the data from 6 randomly selected schools in the Cape Coast Metropolitan area. A total of 340 respondents in these schools, comprising 250 students and 90 teachers filled out the questionnaire. The return rates for the questionnaires were 92.2% for teachers and 98% for students. The study revealed that most of the senior high schools had only one computer laboratory and the number of computers was not sufficient, taking the population of the schools into consideration. Also, most of the computer laboratories were not connected to the Internet but most schools had the Encater programme on their computers which enabled the students to access information. ICT was being used for most of the important jobs in the schools, such as maintaining students' records. Furthermore, application software such as Word, Excel, Power Point and Internet were taught in all the schools. Majority of teachers (68%) and students (75%) could make use of the computer and its accessories. However, most of the teachers did not use ICT in the actual teaching process. Based on the findings of the study, it was recommended that the senior high schools should increase the number of computers in the laboratories. They should also pool resources and pay for their laboratories to be connected to the Internet by one service provider.

Keywords: Awareness; ICT; Education; Teachers; Students

INTRODUCTION

The last decade in the global arena has witnessed a tremendous growth in the area of information technology. Rapid advances in the technologies for communication media like television, computer, internet, printing and publishing have enabled us to get prompt access to required information. The computer is the most versatile machine that man has ever made. The use of computers at work has become very common. Now almost all the government departments and commercial organizations have accepted the computer as a major tool to renovate their functions. Computers are being used in multiple areas to solve intricate scientific problems.

More and more manual and cognitive activities have been taken over by computers and other ICT applications. A new balance is being evolved between men and machine in the area of



¹henry.blankson@cpoly.edu.gh

Blankson, H. (2015) Establishing the level of Awareness of ICT in Second Cycle Institutions. In: Mojekwu, J.N., Ogunsumi, L.O., Ojigi, L. M. Atepor, L., Thwala, D.W., Sackey, S. Awere E., and Bamfo-Agyei, E. (Eds) African Journal of Applied Research .(AJAR) Journal, Vol.1,No.1 ISSN 2408-7920 January 2015, Cape Coast, Ghana. 273-285

information retrieval and information processing. Knowledge is no longer knowing facts and theories by heart and being able to reproduce them when necessary, but knowledge has become the ability to find relevant data and to derive meaning or information from it (Aviram and Richardson, 2004).

In many developing countries, the conditions for ICT are either non-existent or if they exist, the infrastructure are often dilapidated or are concentrated in the more affluent urban areas while those in the rural areas have little or no access to them. Ghana in line with its mission to achieve a middle-income status by the year 2020 and the role ICT would play in this endeavor, has adopted the Africa Information Society Initiative (AISII, 2004), with the basic objective “to end Africa’s information and information technology gap by bringing it into the information age” (Economic Commission for Africa, 2000). ICT is bringing people together and bringing decision makers new tools for development but at the same time the gap between information “dos and don’ts” is widening bringing a real danger that the world’s poor will be excluded from the emerging knowledge based global economy (Annan, 2002).

The key purpose of a nation’s school system is to train and educate the pupils or students to acquire skills and attitudes which will assist them to make informed choices and to adjust to suit the dynamics of the world. Students who come out from substandard school systems are mostly inadequately educated and face limited prospect in term of economic, social and political empowerment. Students with special talents are unlikely to receive the shaping they need to achieve for their outstanding potential, the overall effect is on their wider communities never benefiting from this individuals latent capacity for leadership (Annan, 2002).

In Ghana there is support and interest across the whole education sector for the development and integration of ICT into education policy, curriculum and practice. There is a clear consensus that the introduction and use of ICT in schools should be grounded in a clear understanding of the purpose, practice and social context of the country’s school. There is a growing recognition of the many different ways that ICT can contribute to, or transform, the activities, roles and relationship experienced by youth and adults in the education settings.

Problem Statement

A lot of effort and numerous resolutions have been made by policy makers concerning Information and Communication Technology (ICT) to make teaching and learning easier. For example, in the Anamuah-Mensah Committees Report (Government of Ghana, 2004) it is stated that, “it is important for students in the senior high schools to be exposed to ICT through the use of computers and that ICT should be introduced into the country’s education system starting from the junior high school and upward”. The committee recommended that ICT should be integrated into the curriculum and should be used in the teaching and learning process. In view of this some schools have managed to acquire their own computers through their Parent Teacher



¹henry.blankson@cpoly.edu.gh

Blankson, H. (2015) Establishing the level of Awareness of ICT in Second Cycle Institutions. In: Mojekwu, J.N., Ogunsumi, L.O., Ojigi, L. M. Atepor, L., Thwala, D.W., Sackey, S. Awere E., and Bamfo-Agyei, E. (Eds) African Journal of Applied Research .(AJAR) Journal, Vol.1,No.1 ISSN 2408-7920 January 2015, Cape Coast, Ghana. 273-285

Associations (PTA) and old boys and girls associations. The majority of senior high schools which do not have computer laboratories were urged to arrange with private computer companies to install computers in their schools.

Most senior high schools in the Cape Coast Metropolis have computer laboratories. In spite of the numerous efforts and resolutions put up by policy makers concerning ICT use to make teaching and learning easier, interviews with two teachers in senior high schools under the Cape Coast Metropolitan area revealed that each class has a lesson on ICT once a week and that the laboratories are not made accessible to them. The question now is, are the teachers and learners making proper use of these computer laboratories to enhance teaching and learning in the schools? There is the need now to study how teachers and students in the senior high schools, particularly those in the Cape Coast Metropolis, are using ICT to enhance effective and efficient teaching and learning.

Aim of the Study

The aim of the study is to investigate the level of awareness of ICT in Second Cycle Institutions.

Objectives of the Study

The objectives are:

- i. To find out the students and teachers awareness of ICT resources and the extent to which they utilize them
- ii. To identify the factors influencing the use of ICT in the Senior High Schools in the Cape Coast Metropolis.
- iii. To identify the challenges involved in the usage of ICT facilities.

RATIONALE FOR ICT USE IN SCHOOLS

Education and training are fundamental to achieving priorities for a country's economy in the Twenty-first Century. A country needs to be "enterprising, innovative, adaptable and socially responsible participants in the information economy" and will be at a serious disadvantage in the global knowledge economy if it fails to produce workers, professionals and managers with the skills to work in the online environment (NFIE, 2001).

Adequately qualified ICT students and ICT-rich learning surroundings will intensify students learning across the curriculum and this has given rise to the need for ICT competent teachers. Three main rationales bring up the use of ICT in schools. One is concerned with the organizational productivity of the school. The second is also concerned with technology literacy and the third is concerned with support for learning ICT (DEST, 2002).

Over the past few decades there have been major transformations occurring in the formal education sector, as well as in other areas that are important for enabling people to develop new



¹henry.blankson@cpoly.edu.gh

Blankson, H. (2015) Establishing the level of Awareness of ICT in Second Cycle Institutions. In: Mojekwu, J.N., Ogunsumi, L.O., Ojigi, L. M. Atepor, L., Thwala, D.W., Sackey, S. Awere E., and Bamfo-Agyei, E. (Eds) African Journal of Applied Research .(AJAR) Journal, Vol.1,No.1 ISSN 2408-7920 January 2015, Cape Coast, Ghana. 273-285

capabilities necessary for the knowledge/information. These changes are partly due to the development of ICTs, as well as the forms of networking, knowledge sharing, and interactive learning that ICTs facilitate (Happell, 2000). Haddad and Draxler (2002) noted that change is required of schools (and education systems more broadly) which were originally developed in the context of the industrial age and which now must meet the educational needs of the current global knowledge environment.

Becker (2000) cited the need for computers to be used to solve regular curriculum problems that occurs. This implies that the computers being problem solving machines could be used to solve typical school problems especially those problems concerning student learning, teacher's instruction and school administration. Becker (2000) suggested that for the implementation of the curriculum, educational technology should be selected. This is on the basis, that it has the best characteristics and this is to be used effectively and efficiently.

Lankershear and Snyder (2002) also argue that students learning would be made more effective and there will be an increase in their output if a teacher selects the most appropriate, educational technology. If part of the curriculum is not completed as a result of technology, then the outcome of that learning situation will be zero (yielding no productivity). There are situations where certain technology should be used because it solves major problems in teaching and learning but Lankershear and Snyder (2002) also bring out that while it is important to consider educational productivity, it should not be the only consideration in deciding to choose a technology. The use of some technologies are expensive than others, the procurement, installation, maintaining and support users of ICT are relatively more expensive and this must be compared with the potential outcomes.

The information age has brought with it a new context in which schools must function. As such, Haddad and Draxler (2002), state that ICT enable learning to be moved from a school building into a knowledge infrastructure (schools, laboratories, radio, television, internet, museums), from classrooms to individual learners, from a teacher (as provider of knowledge) to a teacher (as a tutor and facilitator) and from a set of textbooks and some audiovisual aids to multimedia materials (print, audio, video and digital).

The computers support communication beyond the classroom walls and enable schools and communities to provide an environment for co-operative learning (high order thinking skills and solving complex problems). School administrators use computers to access and manage information, it is a major tool used in society without which job opportunities is limited and organizations within society use them to work more efficiently and effectively. McKenzie (1997) is of the view that, it is important to question the kind of information being accessed, how that information is presented, what is being done with it and when it becomes too much.



¹henry.blankson@cpoly.edu.gh

Blankson, H. (2015) Establishing the level of Awareness of ICT in Second Cycle Institutions. In: Mojekwu, J.N., Ogunsumi, L.O., Ojigi, L. M. Atepor, L., Thwala, D.W., Sackey, S. Awere E., and Bamfo-Agyei, E. (Eds) African Journal of Applied Research .(AJAR) Journal, Vol.1,No.1 ISSN 2408-7920 January 2015, Cape Coast, Ghana. 273-285

From the literature reviewed on the rationale for the use of ICT in schools, it can be deduced that although integrating ICT into education has a number of positive effect, in deciding to choose a technology for a school, issues such as procurement, installation, maintaining and support users of ICT are to be considered since they are relatively expensive.

Accessibility of ICT Facilities

Butcher (2003) noted that many early development projects in the area of ICT set out to ensure that as many people as possible had a computer within walking distance, often using tele-centres or other means of shared community access for delivery. However, it is only more recently that studies into the complexity of access which includes use and value of the technology have been done. A recent example is a study done by Bridges.org on real access. This study showed that real access criteria should include the following categories: physical access, appropriate technology, affordability, capacity, relevant content, integration into daily routines, socio-cultural factors, trust, legal and regulatory framework, local economic environment, macro-economic environment, and political will (Bridges, 2002).

Becker (2000) cited figures from the United States of America which show that only about one third of the teachers use computers on regular basis, although majority has a computer in their classroom. The physical infrastructure is but one aspect to be considered. The same applies in the context of education. Physical access to computers is a fundamental starting point, but alone will not lead to computer use or enhanced learning outcomes. Teacher training is one essential requirement for successful use of ICT in education (Haddad and Draxler, 2002).

Again Wood and Trinidad (2001) pointed out that Sevenoaks communication system involves an innovative ICT infrastructure that connects two hundred desktop computers and provide a wireless network for laptops. There is a computer to student ratio of 1:2 and every staff member is provided with a laptop computer. There is also a teacher librarian/webmaster which is responsible for the library and web administration as well as staff profession development and online curriculum development.

Integrating ICT in Education

There is now strong focus on the development of ICT policy and integration of ICT in curriculum and practice across the whole education sector. ICT has become an important concept in primary, secondary and tertiary education. Smeets (2005) noted that in most developing countries, policy and curriculum support for the development and integration of ICT in schools have lagged behind but the situation is beginning to change as researchers, academics and practitioners have aim to support the integration to enable the users to make well informed



¹henry.blankson@cpoly.edu.gh

Blankson, H. (2015) Establishing the level of Awareness of ICT in Second Cycle Institutions. In: Mojekwu, J.N., Ogunsumi, L.O., Ojigi, L. M. Atepor, L., Thwala, D.W., Sackey, S. Awere E., and Bamfo-Agyei, E. (Eds) African Journal of Applied Research .(AJAR) Journal, Vol.1,No.1 ISSN 2408-7920 January 2015, Cape Coast, Ghana. 273-285

decision and choices. There is therefore no doubt that individual's ability to access and process information is said to become the determining factor in their integration of ICT not only into the working environment but also into their social culture environment (Delores, 1996).

Smith, Hardman and Higgins (2006) are of the view that the delay attentions to ICT in education present some advantage for the sector. The growth and development of ICT in the schools have sometimes been driven by the desire to get more technology and technological infrastructure into schools without sufficient attention given to the pedagogical purposes for introducing the technology or the supporting conditions and resources that might enable the technologies to contribute towards better teaching and learning experiences.

While Smith *et al.* (2006) and many writers are of the view that ICT can help pupils to learn and teachers to teach more effectively, Cuban and Kirkpatrick (2002) also said that research has uncovered many examples in which wide spread rollout of ICT in schools has not helped teaching practice or students learning experience in any meaningful way. They go on to say that simply providing ICT equipment to schools or teachers and putting ICT in the curriculum will not necessarily make a difference, what makes the difference is the way in which these equipment and other resources are used.

According to Kozma (2005), educational reforms including the integration and implementation of ICT at best, need to be systematic in nature and focus on the overall changes resulting from technology intensive interventions.

Technologies such as radio, projections and televisions have had little effect on the experiences of students and teachers in schools over the last decade where large amount of money has been spent on these resources). It is important therefore that our scarce resources to support learning in school are not wasted. There is therefore the need to take care in choosing the use of computer to support learning Nutsukpui (2006).

Educational technology should be developed with the objectives to solve problems, improve standard of living and to crease productivity. This has been the historical aim of technology. It is of sound judgment therefore that educational technology is to develop to meet these aims or objectives, thereby increasing productivity in teaching and learning.

From the reviewed literature on integrating ICT into education, it could be seen that, while some are of the view that ICT should be implemented now, some say that the delay intensions is an advantage to the sector. Again, some say that ICT has helped in teaching and learning whilst



¹henry.blankson@cpoly.edu.gh

Blankson, H. (2015) Establishing the level of Awareness of ICT in Second Cycle Institutions. In: Mojekwu, J.N., Ogunsumi, L.O., Ojigi, L. M. Atepor, L., Thwala, D.W., Sackey, S. Awere E., and Bamfo-Agyei, E. (Eds) African Journal of Applied Research .(AJAR) Journal, Vol.1,No.1 ISSN 2408-7920 January 2015, Cape Coast, Ghana. 273-285

others say it has not. The import of these is that care should be taken when choosing ICT to support teaching and learning, considering our scarce resource.

The extent to which ICT is used to enhance Teaching and Learning This section discusses ICT and the curriculum, ICT and student, ICT and learning, ICT and the role of teachers and ICT and the learning environment.

ICT and the Curriculum

The Chamber's Dictionary (Chamber Harrap, 2006) explains curriculum as a course of study at a school, college, university etc. Curriculum means to run a racecourse or as a series of planned instruction that is co-ordinate and articulated in a manner designed to result in the achievement by students of specific knowledge and skills. Curriculum in education is a combination of the learning outcomes pedagogy and content that students are to address. It has been argued that the curriculum and ICT co-exist where ICT helps in transmitting the curriculum and at the same time assists in changing the content of the curriculum.

According to Pelgrum and Law (2003), three distinctive roles are generally differentiated for ICT in the curriculum: learning about ICT, which refers to ICT as a subject of learning in school curriculum such as computer (or ICT) literacy, computer science and information literacy; learning with ICT, which refers to use of ICT, including multimedia, the Internet or the web, as a medium to enhance instruction or as a replacement for other media without changing the beliefs about the approaches to and the methods of teaching and learning; and learning through ICT, which refers to the integration of ICT as essential tool into a course/curriculum, such that the teaching and learning of that course/curriculum is no longer possible without it.

Becta (2002) supports the fact that the effect would be glaring in almost all disciplines of learning but there will be a substantive degree of variation between the disciplines. There have been large effects of ICT on mathematics and science. "...dynamic model in interactive multimedia that provides visualization and analytic tools are profoundly changing the nature of inquiry in mathematics and science. These changes affect the kinds of phenomena that can be considered and the nature of argumentation and acceptable evidence (Becta, 2002).

Many educators have recommended the outcomes-based curriculum as requiring assessment processes associated with students profiling through records of achievement (Cuban, 2001). This permits assessment to come out naturally from the task but not being an additional feature of the curriculum. A range of assessment tools are encouraged to be used which could give a more vivid and accurate picture of a learner bringing out the formative and summative values. Cuban (2001) said that use of a range of assessment implies the use of some sort of maintenance of



¹henry.blankson@cpoly.edu.gh

Blankson, H. (2015) Establishing the level of Awareness of ICT in Second Cycle Institutions. In: Mojekwu, J.N., Ogunsumi, L.O., Ojigi, L. M. Atepor, L., Thwala, D.W., Sackey, S. Awere E., and Bamfo-Agyei, E. (Eds) African Journal of Applied Research .(AJAR) Journal, Vol.1,No.1 ISSN 2408-7920 January 2015, Cape Coast, Ghana. 273-285

learner activities, and portfolios. This brings out the need to help teachers to do this with computer support to adequately implement the profiling through records of achievement.

RESEARCH METHOD

The study is a descriptive survey. The descriptive sample survey is used to assess the frequency of the use of ICT by students and teachers in the Cape Coast Metropolis. The population of the students and teachers from the eleven schools were 13392 and 585 respectively. The sample size consisted of 250 students and 90 teachers selected from six schools that were randomly selected. Descriptive statistics were used, providing the opportunity to make precise statement and described things in an objective manner. Mean perceived level of ICT use by students and teachers and standard deviations were computed. Frequency distribution tables were used to present the distribution of respondents' view.

RESULTS AND DISCUSSION

Table 1. Availability of Computers in the Schools as reported by Teachers and Students

Computer availability	Teacher		Students	
	Frequency	%	Frequency	%
1-100 computers	58	69.9	206	84.1
101-200 computers	25	30.1	39	15.9
Total	83	100	245	100
	Mean = 81	SD = 8	Mean = 66	SD = 5.5

Source: Field Survey, 2014

On the issue of the availability of computers to the schools, Table 1 shows that 58 (69.9%) of the teacher respondents said the schools had between 1-100 computers, while 25 teachers (30.1%) indicated that the school had 101-200 computers. On the part of the students, 206 (84.1%) indicated that the school had 1-100 computers while 39 (15.9%) indicated that the schools had 101-200 computers. In the opinion of the teachers, on the average, there were 81 computers with a standard deviation of 8 computers. In other words, each school in the Cape Coast Metropolis sampled had 81 computers, give or take 8 computers, suggesting a minimum of 73 computers and a maximum of 89 computers, on the average. On the other hand students sampled felt that on the average, the sampled schools had 66 computers give or take 6 computers, suggesting that a minimum of 60 computers and a maximum of 72 computers.

The findings of the present study suggest that, out of the 35000 senior high schools in Ghana only 500 had computers, depicting that 1.43% of the schools having computers, is no longer the case. Warkins and Biggs (1996) pointed out that many ICT policies published in recent years



¹henry.blankson@cpoly.edu.gh

Blankson, H. (2015) Establishing the level of Awareness of ICT in Second Cycle Institutions. In: Mojekwu, J.N., Ogunsumi, L.O., Ojigi, L. M. Atepor, L., Thwala, D.W., Sackey, S. Awere E., and Bamfo-Agyei, E. (Eds) African Journal of Applied Research .(AJAR) Journal, Vol.1,No.1 ISSN 2408-7920 January 2015, Cape Coast, Ghana. 273-285

include strategies to increase the availability and access to electronic learning resources for schools. Ghana’s policy on ICT has this important element. One can therefore say that, ICT in Ghana has changed positively since the Isaac’s report.

Table 2: Respondent’s Views on Internet Connectivity

Status	Yes	No
Teachers	31	52
Students	85	160
Total	116	212

$X^2=0.176$ $df=1,$ $p>.05$

Source: Field Survey, 2014

Table 2 indicated that both teachers and students responded that most of their computers are not hooked to the internet. In other words 52 teachers responded that the computer laboratories were not accessible to the internet. Similarly 160 of the students indicated the same.

On the contrary 31 of the teachers indicated that the computer laboratories were accessible to the internet. Again, 85 of the students also responded that the computer laboratories were accessible to the internet.

The analysis shows that most of the Senior High Schools in the Cape Coast Metropolis did not have access to the internet. This may be as a result of cost related issues. On this William(2000) asserted that the use of internet technologies for education in particular requires explicit tariff structures and long term infrastructure investment commitments that are not forthcoming in most countries. Murphy *et al.* (2002) also point out that the issue of most schools not having access to the internet could be resolved through government regulations requiring service providers, public or private, to subsidize cost or reduce tariffs for educational institutions.



¹henry.blankson@cpoly.edu.gh

Blankson, H. (2015) Establishing the level of Awareness of ICT in Second Cycle Institutions. In: Mojekwu, J.N., Ogunsumi, L.O., Ojigi, L. M. Atepor, L., Thwala, D.W., Sackey, S. Awere E., and Bamfo-Agyei, E. (Eds) African Journal of Applied Research .(AJAR) Journal, Vol.1,No.1 ISSN 2408-7920 January 2015, Cape Coast, Ghana. 273-285

Table 3: Teacher Respondents' View on the Barriers to the Use of ICT

NO	Barriers to the use of ICT	SD (1)	D (2)	N (3)	A (4)	SA (5)	Total	MEAN
1	ICT integration is associated with uncertainty	9(9)	20 (40)	3(9)	40(160)	11(55)	273	3.29
2	ICT integration is hindered by force of habit	6(6)	28(56)	0(0)	26(104)	23(115)	281	3.39
3	Inadequacy support network is a barrier to ICT integration	2(2)	7(14)	0	37(148)	37(185)	349	4.20
4	Inadequate follow up support hinders integration	2(2)	4(8)	7(21)	43(172)	27(135)	338	4.07

Source: Field Survey, 2014

From the findings amongst the 4 barriers of the use of ICT the majority of the respondents agreed that Inadequacy support network is a barrier to ICT integration with a mean of 4.20.

CONCLUSION AND RECOMMENDATION

The study revealed that most of the respondents (95.2%) had some experience on the use of ICT. This was an indication that both teachers and student in the catchment area had some experience in the use of ICT.

On the issue of the availability, adequacy, location and accessibility of ICT facilities, majority of the teacher respondents 58 (69.9%) and students respondents 206 (84.1%) indicated that the schools had between 1-100 computers and the types of computers were Dell, IBM, HP, Compaq and Toshiba. The computers were installed in laboratories and, in a few cases, the head's office and the general office. Most of the computer laboratories were not connected to the internet. This was confirmed by more than 60% of the respondents. But most schools had the encater programme on the computers which students access for information. Most teachers 70 (84.3%) and students 204 (83.3%) said they had access to ICT facilities but on the average, the computers were used only once a week by students and twice a week by teachers.

Concerning the purpose of the use of computers in the senior high school, teachers and students unanimously indicated that they used the computer for recording information, teaching and



¹henry.blankson@cpoly.edu.gh

Blankson, H. (2015) Establishing the level of Awareness of ICT in Second Cycle Institutions. In: Mojekwu, J.N., Ogunsumi, L.O., Ojigi, L. M. Atepor, L., Thwala, D.W., Sackey, S. Awere E., and Bamfo-Agyei, E. (Eds) African Journal of Applied Research .(AJAR) Journal, Vol.1,No.1 ISSN 2408-7920 January 2015, Cape Coast, Ghana. 273-285

learning, maintain records and financial management, assisting in communication and for making information access easy, suggesting that the senior high schools are making some efforts in their use of ICT for other purposes aside the teaching and learning.

The majority teachers 65 (78.3%) indicated that they used the computers for recording information, teaching and learning as well as for maintaining records and for financial management. Students and teachers also said that computer was used in communication and as a support service in the school library. However, it observed that only one of the sampled schools had computers in the library annex and even so students only went there to practice. The computers were not being used to support school library's operations.

On the issue of proficiency in computer use, it was observed that word, excel, power point, and internet were the application software taught in the schools. Again it was seen from the analysis that both teachers and students could use the application software mentioned above. It also came to light that teachers as well as students had knowledge on the use of the computer and its accessories.

Only few, probably the ICT teachers, used ICT to present lessons, give and receive assignments, and in providing basic computer skills. This means that in the actual teaching, teachers were not using ICT to enhance the process. However, it was also revealed that the general attitude of teachers toward the use of ICT was encouraging.

Moreover, the study revealed that inadequate support network is a barrier to the integration of ICT. Furthermore, it was observed that most schools were not connected to the Internet, making the use of ICT difficult. Inadequate follow- up support was also seen to be a hindrance to the integration of ICT in the teaching and learning process. On the part of the students, there was agreement on all the issues raised here as being the barriers to the integration of ICT.

Recommendation

Barriers that have and are still hindering the integration of ICT in the curriculum should be tackled by policy implementers. In this regard, as teachers are unwilling to change from the traditional methods of teaching to using information and communication technologies, they should be encouraged policy makers and sensitized from time to time to understand the good side of technology.

School authorities should consult internet providers for connectivity at subsidised rates to enable teachers and students to access information from the various search engines as this will broaden the scope of the sources of information in the learning and teaching process using ICT.



¹henry.blankson@cpoly.edu.gh

Blankson, H. (2015) Establishing the level of Awareness of ICT in Second Cycle Institutions. In: Mojekwu, J.N., Ogunsumi, L.O., Ojigi, L. M. Atepor, L., Thwala, D.W., Sackey, S. Awere E., and Bamfo-Agyei, E. (Eds) African Journal of Applied Research .(AJAR) Journal, Vol.1,No.1 ISSN 2408-7920 January 2015, Cape Coast, Ghana. 273-285

Acknowledgement

Author is particularly grateful to Mr. Emmanuel Dua Dodd– a Business Administration degree holder from the Kwame Nkrumah University of Science and Technology. Mr. Dodd enormously assisted in the preparation of this paper.

REFERENCES

- Annan, K. (2002).Connect-UNESCO International science, technology and environment education. *News Letter*, xxxiii, 3 - 4.
- Aviram, A.,and Richardson, J. (2004) (Eds.), *Upon what does the turtle stand?* Netherlands: Kluwer Academic Publishers.
- Becker, H. J. (2000). Findings from the teaching, learning, and computing survey: Is Larry Cuban right?*Revision of a paper written for the January 2000 School Leadership Conference of the Council of Chief Officers*, Washington.
- Becta (2002).The impact of information and communication technologies on pupils’ learning and attainment.*ICT in Schools Research and Evaluation Series* (No.7). London: DFES
- Butcher, N. (2003). New information and learning technologies in South Africa: Pitfalls and Possibilities. In Stilwell, C., Leach, A and Burton, S. (Eds). *Knowledge, information and development: An African perspective of Human and Social Studies* (p. 224 - 240). Pietermaritzburg: University of Natal.
- Cuban, L.,and Kirkpatrick, M. (2002).*High-tech, low-teach, teaching*. Cambridge Mass: Harvard University Press.
- Cuban, L. (2001). *Oversold and underused: Computers in the classroom*. Cambridge, Mass: Harvard University Press.
- Delores, J. (1996). *Learning: The treasure within*. Report to UNESCO of the International Commission of Education for the Twenty First century. Paris: UNESCO.
- DEST (2002).*Raising the standards: A proposal for the development of an ICT competency framework for teacher*.Canberra: Department of Education Science and Training.
- Economic Commission for Africa (2000).*Interregional expert group meeting on public- private partnerships in infrastructure development*.Retrieved July 20, 2008, from www.unecap.org/ttdw/ppp.
- Government of Ghana (2004).*Meeting the challenges of education in the 21st century*. Accra: Adwinsa publications.
- Haddad, W. D.,andDraxler, A. (2002).*Technologies for education*. Paris: UNESCO and the Academy for Educational Development.



¹henry.blankson@cpoly.edu.gh

Blankson, H. (2015) Establishing the level of Awareness of ICT in Second Cycle Institutions. In: Mojekwu, J.N., Ogunsumi, L.O., Ojigi, L. M. Atepor, L., Thwala, D.W., Sackey, S. Awere E., and Bamfo-Agyei, E. (Eds) African Journal of Applied Research .(AJAR) Journal, Vol.1,No.1 ISSN 2408-7920 January 2015, Cape Coast, Ghana. 273-285

-
- Kozma, R. B. (2005). National policies that connect ICT-based education reform to economic and social development. *Human Technology, 1*,117-156.
- Lankshear, C.,and Snyder, I. (2002).*Teacher and technolitracy at St. Leonard's*. New South Wales: Allen and Union.
- Mckenzie, J. (1997). Deep thinking and deep reading in an info-Glut, infor-Garbage, info-Glitz and info-Glimmer.*The Educational Technology Journal, 6* (6),88-94.
- Murphy, C. A., Coover, D.,and Owen, S. V. (2002). Development and validity of the computer self-efficacy scale.*Educational and Psychological Measurement, 49*, 893-899.
- NFIE (2001).*ISTE Home Page Project: Read Ahead (Project Based Learning)*. Retrieved August 20, 2008, from <http://www.iste.org/research/cfm>.
- Pelgrum, W. J.,and Law, N. (2003).*ICT in education around the world: trends, problems and prospect*. Marco Grcifico: UNESCO.
- Smeets, E. (2005). Does ICT contribute to powerful learning environment in primary Education? *Computers and Education, 44*, 343 - 355.
- Smith, F., Hardman, F. and Higgins, S. (2006). Impact of interactive whiteboard on teacher-student interaction in the national literacy and numeracy strategies.*British Education Research Journal, 23*, 443-457.
- Van den Akker, J.J.H. (1998). *De uitbeelding van het curriculum (Representing*
- Warkins, D. A.,and Biggs, J. B. (1996) (Eds), *The Chinese learner: Cultural, psychological and contextual influence*. Hong Kong: CERC and ACER.
- William, T. (2000).*A guide to monitoring an evaluating reproductive health programmes*. Coralina: Family Health International.
- Wood, D.,and Trinidad, S. (2001). *Transforming learning for the 21st century in Western Australia*.Taiwan: National Central University.