INTEGRATING TECHNOLOGY (ICT TOOLS) IN TEACHING AND LEARNING - A CASE STUDY OF OFFINSO COLLEGE OF EDUCATION, OFINSO, GHANA

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Abstract:

Teaching and learning can easily be influenced with the use of technological tools. The quality of teaching and learning is actually enhanced and improved through the use of technology integration. There is the need to encourage teachers to adopt and integrate ICT tools and techniques in teaching and learning to help ensures that the grounds for which it is implemented is realized to its potentials. The research aims at encouraging teachers in OFCE in integrating technology (ICT tools) in teaching and learning environment to improve the teaching and learning process. The researcher adopted the use of observations, questionnaires and interviews to collect data on the grounds that teachers exhibit lack of interest and a lot of challenges in the use of ICT tools for teaching and learning which renders the teaching and learning process boring and less effective. Teachers were exposed to the various guidelines, skills and techniques for designing, the preparation and the application of technology integration in education through workshops and hand-on activities on how to design and use interactive multimedia and software simulation for lesson delivery. The various interventions proved very constructive as teachers enjoyed using ICT tools for lesson preparation and delivery. However, teachers who had always thought of computers as serving but only one purpose, that is, for entertainment realized that to be a dreadful misconception. Hence, Training should be specifically organized to help keep teachers well abreast with the modern dynamics of the approaches, technologies, techniques and strategies for teaching and learning using the various ICT tool equip teachers with the necessary ICT skills, knowledge and expertise to apply to the teaching and learning process.

Keywords: information and communications technology (ICT), teaching and learning materials (TLMs), ICT tools, Offinso College of Education (OFCE), teaching and learning

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1. Introduction

The purpose of education and training is to acquire knowledge, skills, and attitudes. Learners can do this independently, but most often they need an assistance through diverse ways.

Learners learn better when they have interest in what they have being taught. Learning takes place when one has understood a new concept and can apply such a concept in a real life situation. It is a core mandate of every teacher to present his/her lessons in a logically and systematic manner and periodically changes their instructional materials, methods, strategies to enhance lesson delivery and also to motivate learners to have interest and participate actively during lesson delivery.

It is now competitive and risky among countries to fall further behind the potential benefits that instructional material brings and allows technological tools to widen between them since it has a great influence on the way students learn, how teaching, learning and apprenticeship is generally conducted and a country's development at large.

"*The sweetness of a cake is in the eating*" the effectiveness and efficiency of media in teaching and learning in educational setting is in the context of instruction. It is therefore essential to know what instruction and learning in order to use media effectively and efficiently in the classroom situation to improve and enhance the quality of teaching and learning.

According to (George Afeti, Principal Ho polytechnic, 3rd September, 2003.) "*Change and innovation are twin bed fellows, at the driving wheel of change and innovation is intellectual effort that included new ways of doing things*". Education systems are believed to play a major role in the information age and there is the need to embark on significant reform that recognizes ICT as a valuable tool to enhance teaching and learning process. This has really endangered the recent upsurge in the application of ICT to education. The way and manner how every country employ ICT depends solely on the countries' ICT readiness in the areas of teachers' competency, ICT in education policy, infrastructure and the pedagogical use when integrating ICT tools into the classroom (Siribodhi, 2004).

According to UNESCO (2011), ICT involves the various sets of technological tools and resources such as computers, radio, the Internet, television, storage devices, satellite among others that are mainly used to create, store and transmit information. ICT is also made up of different set of technological tools, materials and resources that are used to create, store, manage and communicate information. The potentials of each technological tool varies based on how it is being used. There are general ICT tools used for teaching and learning such as computers (laptops, desktop, tablet, palmtop etc), projectors, printers that are suitable for learners and teachers at large.

Generally, technological tool (ICT tools) has a great influence on how teaching and learning is conducted as well as the way and manner how students learn. Technology integration helps to improve and enhances the quality of teaching and learning basically also brings about effective and efficient management. The focus of

students has stemmed from a confidence that schools and classrooms are the foundation of any educational intervention. Therefore, it is crystal clear that the introduction and provision of ICT to schools and classrooms does not improve teaching and learning automatically, somewhat, outcomes depends on how ICT is implemented and utilized. Hence, Teachers are to be encouraged and trained to adopt and integrate ICT tools and techniques in teaching and learning to help ensures that the grounds for which it is implemented is realized to its potentials.

One of the best ways to involve students in lesson presentation is through the use of ICT tools as an alternative pedagogy to enhance effective and efficient teaching and learning in the classroom. Practice makes perfection and students generally learn by doing. The teaching and learning environment can be made more lively and interactive through the application and integration of ICT tools. The major concern is a situation where teachers fail to integrate or use appropriate and relevant ICT tools and techniques in the various processes involved in teaching and learning. OFCE Teachers only engaged with computers and other technological tools when it meets a particular need which has personal meaning to them.

Also, they showed little or no interest in the use of ICT tools for teaching and learning and even those who used computers as an ICT tool only thought of it as a system designed for entertainment purposes such as for playing games, playing music and for watching movies since they were ignorant of the numerous benefits of ICT tools for teaching and learning. Moreover, most of the teachers complained of the challenges faced in the use of ICT tools and techniques such as how to interact with the system, how to use some application programs due to inadequate skills and knowledge of the use of ICT tools for teaching and learning. Hence, the records of teachers in CoE shows that they lack the basic skills of integrating technology into teaching and learning. Hence, teachers faced a lot of challenges in the design, preparation and presentation of teaching and learning resources by using ICT tools which greatly affects their lesson delivery.

Moreover, it is essential to ensure that spending on technology contributes positively to educational outcomes in an era where ICT is mainly considered an instrumental tool for economic development. However, ICT tools highly contributes to high quality education as well as effective and efficient lesson delivery since they have the potential to arouse and increase students' motivation, link students to different sources of information, support learners active participation during lessons which leads to logical, sequential and systematic lesson presentation by the teacher. However, ICT tools encourages individual students to learn at their own pace, have quick and easy access to large amount of information, increases their understanding and retention of learned materials and finally gives both teachers and learners the opportunities to change roles, hence teaching and learning becomes very interesting

2. Review of Related Literature

Information and Communications Technology (ICT) is now the most important single new development tool that has come along in our present generation.

ICT is so important in the world today that, it makes it imperative for every person to be competent in the use of ICT tools. ICT is a terminology that emphasize on the role of unified communications and the integration of computers, telephone lines, wireless signals, software, storage and audio-visual systems which help users to create, access, store, transmit, and manipulate information. In other words, ICT consists of IT as well as telecommunication, broadcast media and all types of audio and video processing and transmission and network based control and monitoring functions. Thus, the tools that help to produce, manipulate, store, communicate, and/or disseminate information. According to (Williams and Sawyer, 2005), the expression was first used in 1997 in a report by Dennis Stevenson to the UK government and promoted by the New National Curriculum Document, UK in 2000.

According to the United Nations Economic Commissions for Africa, ICT covers information technology equipment and services, provision of internet services, networked based information providers, media and broadcasting, telecommunication equipment and services, documentation and libraries, providers of commercial information and other information and communications related activities.

However, it has now become an indisputable fact that, ICT has launched the entire globe into an electronic world which makes communication across the globe much more easier. It therefore focuses basically on technologies such as internet, computers, radio, television, cell phones, wireless networks and other mediums.

2.1 Teaching and Learning Materials

Teaching and learning materials (TLMs) are the materials or tools such as flashcards, videos, games, posters, computers etc. that teachers used in supporting teaching and learning in the classroom based on specific lesson objectives, strategies and techniques.
Basically, they are used by teachers to help learners to learn concept with ease and efficiency during lesson delivery. According to Onasanya, S.A., ph.d., 1 june 2004 teaching and learning materials are all forms of information carriers which can be used to record, store, preserve, transmit, or retrieve information for purposes of teaching and learning. They are materials used by practicing and trainee teachers to present, illustrate, and elucidate teaching posits

They are also known as instructional media, instructional resources, teaching aids or learning aids in various contexts in several educational materials or documents (Omane-Akuamoah et al, 2004).

According to Zyl (2012), learning material is any object in the learning environment that complements or facilitates understanding. Traditionally, teaching and learning is conducted mostly in abstract and or by seeing of hearing. According to Nkuuhe, 1995 as cited in (Anini, 2011), modern trend of teaching and learning emphasizes the use of all the senses – hearing, seeing, and smelling, tasting and

touching since every person learns by receiving information through the sense organs such as the ears, eyes, nose, tongue and skin. Teaching and learning materials used in the classroom should there give both teachers and learners the opportunity to teach and learn by using all or some of the five senses.

It is important and appropriate for every teacher to plan effectively towards an instruction. Teachers are required to select a variety of resources which appeal to other senses and must be familiar and conversant with the materials, resources and their application before they consider using them in lesson delivery. Teachers will however be able to select appropriate materials to be used by selecting an appropriate lesson, objectives, methods and strategies to ensure effective and efficient lesson delivery. To ensure effective and efficient lesson delivery, teaching and learning materials are needed to create an appropriate teaching and learning environment.

According to Valarmathi. K.E., 2014 teaching and learning materials are grouped into, visual, audio visual. Basically, some teaching and learning materials operate electronically such as television, radio, film, slide motion; computer whiles materials such as chalk board, charts, burners, and models are classified as non-electronic.

1. audio aids includes human voice, telephone conversation, audio disc/tape/cassettes, records, radio broadcast etc
2. visual aids: it includes
   a. visual (verbal) print such as handouts, newspaper, poster, magazines, digest, journals, bulletins
   b. visual (pictorial-non projected)
   - non-projected two dimensional – which is in the form of an image or picture e.g. diagrams, blackboard writing and cartoons, drawing, charts, posters, maps, graphs, photographs etc.
   - non-projected three-dimensional which includes three dimensional representation of the real object or phenomenon such as models, mock-up, globe
   - visual (projected but still) – images or pictures are displayed on a screen which is nearer to reality than visual non-projected ones e.g. slide, filmstrips, etc.
3. audio visual tlms are the projected aids, which use both auditory and visual senses to enhance learning e.g. motion picture film, television, video discs/cassettes, slide – tape presentations, multimedia, computer.

Similarly, Borich et al (2003) as cited in (Rafaqat A A. and Ahsan A. N.), also categorized teaching and learning materials into seven different groupings, namely:
- print media such as handouts, newspaper, poster, magazines, digest, journals, bulletins, , etc.
- graphic media which includes overhead transparencies, charts, graphs models, maps, globes.
- photographic media, examples include still pictures, slides, filmstrips, motion pictures, multi-images.

- audio media such as audiotape, audio-cassettes, records, radio, telecommunication, etc.
- television/video including broadcast television, cable television, videotape video cassettes, videodiscs, teletext, videotext.
- computers
- simulations and games including board, written, human games and interaction.

Teaching and learning materials are purposefully used in lesson delivery since it makes the lesson real and practical provided they are used appropriately. It really helps to explain the topic under discussion more perfectly and understandable learners rather than not to learn in abstract.

According to(Rafaqat A. A. and Ahsan A. N.), "*the use of variety of teaching aids has successfully transformed most classrooms from traditional setup, where teachers do most of the talking and students are passive listeners, into participatory learning centers facilitating productive learning*". Also, (Abimbola, 1999), explains that the primary purpose of instructional materials is to make learning more effective and also facilitate it.

However, teachers can use teaching and learning materials to appeal to his/her students sight and hearing. It is therefore appropriate for all teachers at all levels of education especially College Tutors and Teacher Trainees in the Colleges of Education, Ghana to adopt the use of technological tools in teaching and learning in order to enhance and ensure effective teaching and learning since its usage in practice teaching makes instruction more interesting and enjoyable.

Hence, it is appropriate that all tutors and teacher trainees d1evelop the skills of developing and using TLMs to ensure efficient and effective teaching and learning.

2.2 Teachers and ICT in education

Teachers' attitudes towards ICT in education have a significant influence on ICT adoption and implementation behaviors in the classroom. Teachers in general agree that computers constitute a valuable tool and they are positive about students' attainment of ICT knowledge and skills. In many cases, they perceive ICT as a new subject matter in education rather than a new way of teaching and interaction between learners and knowledge (Williams et al. 2000).

It appears that, even though they recognize the importance of introducing ICT in education, teachers tend to be less positive about its extensive use in the classroom and far less convinced about its potential to improve teaching. Although teachers show great interest in and motivation to learn about ICT, their use of ICT tools is limited and focused on a narrow range of applications, mainly for personal purposes. Most of them continue to use computers for low-level supplemental tasks such as word processing or getting information from the Internet (Waite, 2004). Relatively few teachers routinely use ICT for instructional purposes and even fewer are integrating ICT into subject teaching in a way that motivates pupils, enriches learning and stimulates higher-level thinking and reasoning (Becta, 2004a).

Research also indicates that many teachers have positive attitudes toward technology but they do not consider themselves qualified to effectively integrate ICT

into their instruction. Lack of adequate training and experience is also considered one of the main reasons why teachers have negative attitudes toward computers and do not use technology in their teaching (Yildirim, 2000). On the other hand, most findings suggest that teachers with ICT knowledge have a more positive attitude toward the potential of computers in education.

However, a series of independent studies indicate that both teachers' personal theories and perceptions about teaching and learning processes and their level of competence with ICT play a major role in how they implement ICT and how they motivate themselves to use ICT tools in the classroom (Sime & Priestly, 2005).

The growing consensus that teachers are the primary agents for school change and the final judges of classroom practice (Cochran-Smith, M., 2004); (Townsend, T., and Bates, R., 2007) places them in central position to the integration of ICT across educational systems. Although they may have little choice over whether or not to use ICT, they retain a fundamental role in deciding how and when to use ICT in the classroom (Sabieh, C., March 12-14, 2001). Therefore any attempt to compel them into implementing plans against their own beliefs might inspire a negative response. As put by (Tyack, D. B., & Cubin, L., 2011) regulations and mandates can "*compel responses but the results may be compliance of a kind that actually dampens excellence*".

Although, it is well established that teachers are currently important for students' achievements (Cochran-Smith, M., 2004); Spellings, 2005) adequate and appropriate professional development to improve the competence of teachers have been largely neglected. The recognition of teachers' pivotal role in the integration of ICT has led to agitations as to what it takes to ensure their competence and preparedness to handle ICT enhanced learning process (Zhao, 2003). For these reasons, preparation of teachers is seen as central in enabling them to utilize ICT in their instruction and in enabling them to participate in the success of the overall application of ICT. However, it is difficult to define what skills teachers would master in order to be called competent in utilizing ICT for the school context (Rudd, 2002).

2.3 Impact of ICT tools on teaching and learning

Many computer applications provide tools that support students in completing lower-level tasks so that they can get sufficient time to focus on the main activity. ICT tools such as word processors, graphics, database packages, spreadsheets and others support the performance of students and boost their interest in using ICT. The claim has been that students can use these tools to solve problems that may have previously been considered too difficult for them. Other studies have also shown that students often learn more in less time, when they use computers properly.

The unique characteristics of computers that make them appropriate for instructional delivery need further exploration. There are four distinct characteristics of computers in the classroom: demonstration, interactive control, graphics and audio output, and information processing. There are many ways in which these characteristics have proved to be helpful in improving learning outcomes. As (Brasely, 2006) explains "*the degree to which each of these should be applied depends on a variety of variables including*

the developmental age and personal characteristics of students. This points out that the characteristics of the learning environment affect the impact of ICT on teaching and learning".

In most classroom settings, it is difficult to allow students to be sufficiently active as participants. Usually treating students as passive make them spend a lot of time listening or reading. With ICT tools, students become more likely to be interested and attentive which will go a long way to improve their performance. Their engagement with the curriculum and active participation will increase as they are afforded opportunities to create their own information and represent their own ideas. In all these cases the student has more influence on the learning processes. The activities become more responsive to the needs of the student which better facilitates the development of conceptual frameworks by students and assist in deeper levels of learning. The use of online systems to support active learning has been shown to promote greater depth of explanations by students of varying abilities.

The application of ICT tools such as word processors and graphics are increasingly recognized as providing learning experiences when and where they are required in the classroom. This means that they provide students with greater independence not only in terms of when and where they learn but also what they learn. It is not necessary for all students to do the same thing at the same time. Teachers may provide access to software to allow students to select different learning experiences. The class does not have to be treated as one group with equal degree of comprehension. There are individual differences and as such individuals or group of students may consider learning things independently. This is often discussed in terms of learner-driven or project-based learning.

2.4 Teachers belief and attitude towards ICT

Educational systems around the world, in both developing and developed countries are under increasing pressure to adopt ICT in teaching students the various skills and knowledge needed for the near future knowledge generation. Since 1990s, a large number of research and educational policies have been geared towards technology integration in schools. Various approaches have been tried and the most prominent among them is the development of technology infrastructure in the various schools and secondly, the inclusion and production in schools of sophisticated technology-based tools for teaching and learning. ICT inclusion in schools should bring about significant educational and pedagogical outcomes that will be beneficial in general to both students and teachers. Moreover, the real impact of the technology (ICT) integration into everyday classroom practices constitutes an important question.

Granger et al. (2002) further explains that "*A large amount of research has shown that the use of ICT in education can increase students' motivation and understanding, promote active, collaborative and lifelong learning, provides shared working resources and better access to information, and help them to think and communicates creatively*".
Moreover, ICT generally affects or change the nature of teaching and learning. With the new emerging technologies, much emphasis should be place on the teacher-centered

instruction to student-centered, interactive learning environments in the teaching profession.

Cuban (2001) and Ofsted (2004) explains that established curricula and teaching approaches still remain essentially unchanged, while technology is usually under used and not properly integrated or included into the classroom. According to (Ofsted, 2004), the outcomes of the various initiatives are more proved in pupils' achievement in ICT capability more than in applying their knowledge and skills to other subjects areas across the curriculum. Although ICT access in the home has rapidly growing both for teachers and students, and in the schools (internet connectivity, computer labs, educational programs) has also over the years improved substantially but teachers seems not to make good and effective use of ICT tools in their instruction.

It however seems that teachers attitude and skill level remains still an obstacle to enable them adopt and make good and effective use of ICT tools. During recent years a large number of initiatives, coming from both the research community and educational policy authorities, have been directed towards the preparation of teachers in order to enable them to integrate ICT in their everyday educational practice.

2.5 Teachers competence in the use of ICT tools

According to Mathew et al., 2002, ICT skills are quite different from the skills required to implement ICT effectively in the classroom. Gillingham et al also claims that teachers' competence in the application of ICT can be described according to the use technology for personal and professional productivity; acquiring both the content and academic understanding needed to use computer-based technologies; and understanding the impact of technology on schools and society. There are two levels of engaging teachers with ICT: learning ICT skills- when technology is the focus of what enables teachers to use these tools, and the intrusive use of ICT- when technology is used to support the teaching and learning.

According to Granger et al. (2002), the execution of ICT requires not only the encoding of information during programmes and workshops, but also empowering teachers with a level of independence and confidence in using ICT tools for lesson delivery. Zhao 2003 recommends three categories of ICT skills required for teachers to perform effectively in classrooms. He suggests that they need a deep understanding of technology so that they can maneuver it in different innovative ways to aid teaching and learning. Willis (1994) refers to a fourth category as "managerial skills" to be harnessed by teachers as they use computers to perform administrative duties. He asserts that such use can ease the pressure on teachers so that they can find more time for teaching.

Teachers need a significant level of ICT skills in order to be able to utilize ICT tools in their instructions and for other administrative purposes. Having limited skills in this area will, of course, diminish teachers' performance in this field, which may lead to reluctance towards it use. (Li, 2002). However, the issues of what ICT skill is required by teachers remain a problem.

The above explanations points to the fact that, despite the necessity of ICT skills for teachers, such skills alone is not adequate for the valuable deployment of ICT for instruction. While it may be relatively simple to teach how to use technology, it is not the case when it comes to teaching how to use technology as a tool for instruction. Indeed teachers need ICT skills, but they also need knowledge and skills that will enable them to use ICT in the classroom.

More often than not, ICT professional development for teachers focuses on teaching technical skills without showing teachers how to integrate these skills into their specific subjects. However, it is necessary to train teachers how to incorporate what they learn into their teaching strategies and activities. (Somekh, B., & Davis, N. (Eds.)., 1997), warned of much time spent on specific technical skills which are not transferable to the teaching environment. Teacher professional learning in the form of isolated skills on hardware and software can have limited impact on teacher practice. According to Granger et al (2002), isolated skills required during workshops/seminars/conferences do not guarantee their use by teachers when they return to their classrooms. Thus, attention should be given to the transferability of the acquired skills into the classroom.

2.6 Teachers Adoption of ICT Tools

The universal uptake of technology to support administrative processes, sending emails, and searching on the internet, and lesson preparation has widely been observed (Kopye, 2006). The observation suggests that the use of technology in the teaching and learning process has been limited to a small percentage of teaching staff (Selwyn, 2002). The adoption of ICT by academic staff for administrative and lesson preparation purposes yield a positive result. Examples of this are the exponential growth of email (Messing, 2002) and the extensive use of Microsoft PowerPoint for presentation purposes.

The use of technology when personally meaningful is more consistent with living systems and complexity theory than with mechanistic models, which would suggest that teachers use it because they have been directed to use it.

The growing consensus that teachers are the primary agents for school change and the final judges of classroom practice (Cochran-Smith, M., 2004); (Townsend, T., and Bates, R., 2007) places them in central position to the integration of ICT across educational systems. Although they may have little choice over whether or not to use ICT, they retain a fundamental role in deciding how and when to use ICT in the classroom. Therefore any attempt to compel them into implementing plans against their own beliefs might inspire negative responses. As put by Tyack and Cuban (2005) regulations and mandates can "*compel responses to but the results may be compliance of a kind that actually dampens excellence.*"

3. Methodology

This work adopted the use of both qualitative and quantitative research approaches. The instruments used in this research includes observation, interviews and questionnaire.

As part of the researcher's effort to obtain a fair representation of the size of the study and ensure equitable, reliable and accurate information, the population for the study covers all the teachers of Offinso College of Education. The teaching staff has a population of fifty-six (56), the total number of males was forty-six (46) and ten (10) females as at the time of the survey.

In all, thirty (30) teachers were randomly selected from different departments among the fifty-six (56) teaching staff in the Offinso College of Education based on their availability and willingness to engage in the research since cognizance was given to the subject taught.

4. Results and Discussion

The purpose of the study is to arouse and sustains teachers' interest in the use of ICT tools to enhance lesson delivery.

This section presents the results, discusses and analyses responses based on the data collected. The data collection instruments used: observation, interviews, questionnaires and assessment.

The instrument sought evidences and causes for teachers little or no interest in the use of ICT tools for teaching and learning. An attempt to devise innovative and sustainable solution for them to cultivate interest in the use ICT tools was carried out. The result of the findings from both teacher-trainees and teachers are provided in the tables and graphical representations in charts categorized under the following headings:

4.1 How often teachers use computers and what they use computers for

Table 1: Teachers response on how often they use computers

Response	Frequency	Percentage (%)
At least once a week	24	80
At least once a month/year	6	20
Total	**30**	**100**

(Field Survey, 2018)

The above table indicates that, 80% of teachers use computers regularly while the other 20% do not use computers regularly. This describes teachers who use computers daily or at least once a week. The 20% represents a fraction of those teachers who do not own computers and have to visit the internet café once a while to check their mails or surf the net.

Table 2: Response on what teachers use computers for

Response	Frequency	Percentage (%)
For accessing the internet/checking mails	6	20
For playing games, music and watching movies	21	70
For teaching	2	7
For administrative purposes	1	3
Total	**30**	**100**

(Field Survey, 2018)

From table 2, out of the 30% teachers surveyed, 70% used computers for playing games, music and watching movies. As pointed out earlier on most teachers tend to use their computers for entertainment purposes. This could be attributed to such reasons as inadequate knowledge on the uses of computers, lack of internet access at home or lack of interest in the use of computers for other purposes.

4.2 The use of computers in teaching and learning

Table 3: Response on whether teachers think ICT tools
can be used to make teaching and learning more effective

Response	Number of Teachers	Percentage (%)
Yes	29	96.67
No	1	33.33
Total	30	100

(Field Survey, 2018)

Teacher's response on whether they think ICT tools can be used to make teaching and learning more effective, 97% of the teachers said YES. They believe that the world has come to a point that everything could be made easier and more effective through the use of technology and teaching is no exception.

Table 4: Response on what hinders the use of ICT tools in teaching

Reason	Frequency
Inadequate ICT tools (computers, projectors etc)	9
Poor internet connectivity	2
ICT tools (computers, projectors etc) in poor working conditions	7
Not enough time available for lessons	1
Large class size	5
Inadequate computer knowledge/skills of teachers	5
Difficulty in changing teaching styles	1
Total	**30**

(Field Survey, 2018)

Since almost all the teachers agreed that ICT could be used to make teaching and learning more effective, we went on to find out why teachers do not employ ICT tools for teaching and learning. Here, the researcher tried to include as many reasons as possible so as to understand the key underlying problems teachers face. The teachers

cited reasons such as inadequate ICT tools such as computers and projectors, ICT tools (computers, projectors etc) in poor working conditions, large class size, as well as inadequate computer knowledge/skills as the major issues hindering the use of ICT tools for teaching. Others include poor internet connectivity, not enough time available for lessons and difficulty in varying teaching styles to use technology.

4.3 Methods of teaching

Table 5: Response on teachers' method of teaching

Response	Frequency	Percentage (%)
Lecture	12	40
Presentation	6	20
Brainstorming	11	33
Demonstration	2	7
Total	**30**	**100**

(Field Survey, 2018)

Table 5 indicates teachers' response on their teaching methods. Surprising enough, over 70% of the teachers surveyed employ the lecture and brainstorming methods for teaching. Presentation and demonstration constitute 20% and 7% respectively. Since the lecture and brainstorming methods do not involve students actively, teachers are therefore advised to select and vary their teaching methods so as to be able to engage technology in their teaching and learning process. I argue that, although there is not a single method of teaching but if teachers desire to achieve a better goal, they need to vary their methods of teaching to suit the content and students needs.

4.4 The use of ICT tools in teaching and learning

Table 6: Response on whether the use of ICT tools can help arouse and
sustain teachers' interest in lesson delivery and assessment

Response	Number of Teachers	Percentage (%)
Yes	25	83.33
No	5	16.77
Total	**30**	**100**

(Field Survey, 2018)

The above indicates that 83% of the sampled teachers strongly believe that the use of ICT tools for lesson presentation and assessment can help make teaching and learning more effective and interesting. According to them, it seems very new an innovation, especially when using animation, video and audio simulations, it draws students' attention. Only 17% of them still think that apart from the knowledge gained in using computers, ICT tools would not have anything to add to teaching and learning. This may be due to their strong dislike for the use of ICT tools and its associated discomfort.

4.5 The use of workshops and hands-on activities

Table 7: Response regarding whether workshops and hands-on activities
can help arouse and sustain teachers' interest in the use of ICT tools

Response	Frequency	Percentage (%)
Workshops/In-service training	5	17
Hands-on practice	4	13
Both	21	70
Total	**30**	**100**

(Field Survey, 2018)

Workshops and in-service training, equip teachers with the knowledge in the applications of ICT tools to teaching and learning. Hands-on practice helps build teachers skills and confidence in the use of technology. In-service training and given more practice made a positive impact on the teachers' perception. Through workshops and seminars, teachers' get sensitized on the importance of using ICT tools and gain skills in using them. Also, teachers' professional competence is improved. This gives them confidence to use the computers to boost the teaching and learning process.

4.6 How technology integration helped to improve the teaching and learning process

Since most teachers enjoyed using the ICT tools in lesson delivery and assessment, teachers were asked to rate 6 opinions of how computers helped to improve the teaching and learning process. The results are shown in Table 8. On a five-point Liked scale, with five (5) being "strongly agree" and one(1) being "strongly disagree", it was found that the two most important points were that, ICT, "facilitates teaching in terms of time and workload" and "enhances lesson preparation and delivery" . Their mean scores were 4.60 and 4.52. They also claim that the use of ICT tools enables students to collaborate and interact with others during lessons.

Table 8: The mean score and their standard deviations
(How computers helped to improve the teaching and learning process)

Factor	Mean	Std Dev
Makes teaching and learning easier, interactive and more interesting	4.25	0.83
Facilitates teaching in terms of time and workload	4.60	0.58
Enhances lesson preparation/planning and delivery	4.52	0.90
Enables students to collaborate/interact with others	4.32	0.91
Stimulates innovation and flexibility	4.20	1.00
Enhances teachers skills	4.08	0.59

(Field Survey, 2018)

Also their opinion of what authorities can do to promote the integration of technology into teaching and learning is indicated below;

Table 9: Response on what authorities can do to improve
the use of ICT for teaching and learning

Factor	Mean	Std Dev
Organize in-service training for teachers	4.72	0.68
Motivate teachers to use computers	4.64	0.70
Reduce class size	4.48	0.51
Improve conditions of computers in lab	4.36	0.70
Increase teaching hours	3.32	1.18
Buy laptops and projectors for lesson delivery	2.90	0.99

(Field Survey, 2018)

The result indicates that, workshops and in-service training aimed at improving teachers' professional competence and builds their confidence in the use of ICT tools can help a lot.

Also aside getting teachers to understand that ICT tools really helps in their day-to-day activities, they need to be motivated to use the ICT tools. It can be in the form of rewards and awards for teachers who use computers for teaching and its related purposes. Others include reducing the class sizes and improving the conditions of computers in the school.

5. Recommendations

Considering the usefulness of information technology to education, here are a few commendations to teachers, schools authorities, Ghana Education Service and the Government. The Government, through the Ghana Education Service, should make in-service training part of the teacher's professional development. Training should be specifically organized to equip teachers with the necessary skills and knowledge to use computers and ICT tools for teaching and learning. There should also be a national policy aimed at making ICT a general course, practical and examined in all levels of education especially in Senior High Schools and Colleges of Educations to equip both students and teachers with the necessary ICT skills, knowledge and expertise to apply to the teaching and learning process.

Authorities of the Colleges of Educations should furnish their computer laboratories with well functioning accessories like adequate computers, internet facilities, projectors etc to facilitate teaching and learning. This would also serve as a source of motivation to both teachers and students who want to employ their ICT skills to teaching and learning. As part of this attempt, authorities should employ technicians to be in charge of the maintenance of the computers and other accessories at the laboratories.

The researcher suggest further research to be conducted on the use of interactive multimedia in teaching and learning, developing and conducting examinations using interactive multimedia applications as well as online tutoring, video conferencing and online assessment for the Colleges of Education and Senior High Schools.

6. Conclusion

The research was conducted to arouse and sustain teachers' interest in the use of ICT tools to boost the teaching and learning process. The need for the study was established on the evidence that teachers at OFCE showed little or no interest in using ICT tools (computers, projectors etc) for lesson delivery. It was clear that teachers were ignorant of the numerous benefits of adopting computers and ICT tools for teaching and learning. Those who used computers only thought of it as a system designed for entertainment and research purposes.

Techniques such as observation, interviews, and questionnaires were used to collect data on why teachers have little or no interest in the use of ICT tools (computers, projectors etc) in teaching and learning. After following lines of investigations, a solution to eventually remedy the solution was produced. The researcher organized workshops for the college teachers on the need to integrate technology (ICT tools) into their day-to-day activities. As part of the attempt to avert the situation, teachers were trained on how to use Microsoft office for presentation and lesson delivery. This helped to arouse and sustain teachers' interest in the use of ICT tools (computers, projectors etc).

The various interventions proved very constructive. Teachers enjoyed using ICT tools for lesson preparation and delivery. Teachers who had always thought of computers as serving but only few purposes, such as, for entertainment and other personal activities; later realized that to be a dreadful misconception. Most of the teachers who used computers for playing games, watching movies and playing music later went to that same system as a resort for their professional needs.

The intervention proved somehow challenging since a lot was needed to be done within limited time. With the help of the other ICT instructors and the schools authorities, the objective of implementing certain measures (workshops, hands-on activities, provision of basic ICT tools) was achieved and there has been a tremendous improvement in the way teachers in OFCE behave towards computers and ICT tools in general.

However, organizing in-service training, workshops, hands-on activities, provision of basic ICT tools to motivate teachers as well as to improve their competence in the use of ICT tools can serve as a very laudable pursuit to sustain their interest and continues use of ICT tools to enhance lesson delivery to ensure quality teaching and learning.

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