Teachers' Attitudes towards the Use of Information Communication Technology (ICT) as a Pedagogical Tool in Secondary Schools in Tanzania: The Case of Kondoa District

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Abstract
This paper presents the findings on teachers' attitudes towards the use of ICT as a pedagogical tool in secondary schools in Tanzania. Within this broad aim, the paper provides a better understanding of ICT as a pedagogical tool. The development of this study was influenced by various concerns of educational stakeholders about the level of teachers' competence on the use of ICT as a pedagogical tool. The data collection methods involved questionnaire and interview. A total of 80 teachers, through random sampling in 10 schools were involved in this study at the first phase of data collection and 10 teachers were obtained through purposive sampling from 2 schools at the second phase. It was found that teachers have positive attitudes towards the use of ICT as a pedagogical tool but they did not integrate it in their teaching effectively. Also, low familiarity with ICT use as a pedagogical tool among teachers was found to be a problem. The use of ICT as a pedagogical tool in Tanzania seems to be a critical situation among teachers. The paper recommends further in-depth investigation on teachers' willingness, confidence, motivation, feeling, thinking, belief and the actual practices through classroom observations including larger samples. On the whole, the study's findings are seen to be of particular relevance to both teachers and the educational policy-makers in Tanzania.

Key Words: ICT, Pedagogy, Pedagogical tool

Background to the Research Problem
The purpose of this study was to provide a deep understanding about ICT as a pedagogical tool. Within this broad aim, the study intended to explore teachers' attitudes on the use of ICT as a pedagogical tool. The study was triggered by various concerns from educational stakeholders that teachers are not aware of the potentials that technology offers in pedagogy (Mselle, 2012). The use of modern technological tools such as computers and internet is still in its infancy stage in most developing countries including Tanzania. I would argue that less has been done to integrate it in education. Most developing countries are currently developing ICT policies (Hare, 2007; Moonen, 2008; Tilya, 2008) which in most educational practices, their impacts are found to be insignificant (Ottevanger, Van den Akker & Feiter, 2007). These policies seem to place a great deal of emphasis on providing ICT infrastructure to secondary and primary schools (Gaible and Burns, 2005) rather than their use in pedagogy (Unwin, 2005).

In the light of the discussion about stakeholders concerns, ICT refers to the applications found on most thin client computers, internet and other electronic delivery systems such as radios, digital

televisions, and projectors among others, that secondary school teachers can use as pedagogical tools. ICT as a pedagogical tool is regarded as the use of ICT facilities in teaching and learning process which involves the use of software application to solve problems, to provoke student capabilities, to create products or communicate and share their perspectives with each other (Jonassen, Howland, Marra, & Crismond, 2008). In the context of the present study, it is the ability of teachers to access information, create solutions, analyze and apply knowledge in teaching and learning process.

A number of international studies have shown that secondary school teachers lack competencies on the use of ICT as a pedagogical tool in teaching and learning process (Nihuka & Voogt, 2011; Bingmlas, 2009). In many schools, students are still being taught what students were taught in the 1950's and in the same ways because of ineffective use of ICT as a pedagogical tool (Tapscott, 1998; Knight et al. 2006). Even though there is a dramatic impact and growth of ICT in the society, many classrooms, staffrooms, schools and colleges look like and operate in a remarkably similar ways to those of two decades.

The study by Condie and Livingston (2007) found that while some teachers continue to display a reluctance to engage with new technology, others remain fearful of trying new approaches which they perceive might have a negative impact on examination results. Making use of technology to support learning and teaching and using more constructivist approaches appear to be perceived as risky strategies for some teachers and they prefer to stick with tried and tested methods which they believe enable them to predict and control outcomes more easily.

The research study by Mlambo (2007) on ICT in A-level physics teaching and learning at secondary schools in Manicaland Zimbabwe found the absence of good examples of the best practice in the use of ICT in teaching physics as there were few teachers even remembered to when they typed notes for students or searched for old examination papers. He found physics teachers using traditional instructional methods mainly the lecture method and note dictation. This implies that ICT is not effectively used as a pedagogical tool in teaching. In the other study by Wong et al (2008) on insights into innovative classroom practices with ICT in China, it was found that ICT was not a critical tool to transform teaching and learning. It should be noted that ICT as pedagogical tool involves the use of software application to solve problems, to extend student capabilities, to create products or communicate and share their perspectives with each other (Jonnassen et al., 2008).

There are various evidences which indicate that some teacher in secondary schools use ICT as a pedagogical tool while others are reluctant to use it. The study by Almadhour (2010) on the integration of ICT in pedagogy by secondary school teachers in teaching in NewZealand, identified tools such as Internet, Digital Cameras, video, video cameras and video players as pedagogical tools. The study found that these tools were used in teaching but the most tool used was the Internet. Cameras were used only to make photo and video of researched activities. The study by Afamasaga-Wright (2008) on teacher perceptions of ICT in secondary school in Samoa reveals the similar findings that the internet was mostly used by teachers to search information for teaching. The study shows that videos were used too as a history teacher used it to present "conflict of the world".

A study in Singapore by Teo (2006), on the observations of ICT-mediated lessons identified several barriers to teacher ICT-integration in the classroom. These barriers involves inadequate appointment of technical support staff, inadequate appointment and training of student ICT helpers, lack of sufficient time for teachers to prepare for ICT-mediated lessons, insufficient collaboration among teachers in preparing ICT-mediated lessons, lack of support provided by school leaders in addressing teachers' ICT concerns, and insufficient training and demonstrations or advice for

teachers on how to incorporate ICT into classroom instruction. The study does not show the realities on teachers' attitudes towards the use of ICT as a pedagogical tool.

The study in Cyprus by Dirckinck-Holmfeld, Hodgson, Jones, de Laat, McConnell and Ryberg Dirckinck-Holmfeld (2010) shows that curriculum and school manuals do not include ICT integration; there is lack of supporting materials for each learning unit. Teachers, therefore, need to spend excessive amounts of time to find, assess, revise and adjust learning materials, activities and tools to fit to the needs of their students and the curriculum. Peeraer and Van Petegem (2009), assert that important barriers to use of ICT in teaching and learning are the teacher educators' computer skills and confidence in using ICT. However lack of exposure to lessons fully-designed with ICT tools, lack of opportunities to try ICT, the need to practice in a technology laboratory, lack of educational technology teachers, an exam-driven educational system and studying to learn only what is to be tested were some of the underlying reasons for the prospective teachers' negative perceptions of ICT use in the teaching process (Hismanoglu, 2012).

Even though many countries are struggling to embrace ICT in teaching, in the developing countries, there are no enough evidences of how successful this integration is. The available studies show poor applications of ICT as a pedagogical tool among secondary school teachers. For instance, the study in Tanzania by Nyarusy (2006) focused on the application of ICT in teaching and learning in private secondary schools. It was found that lack of financial resources was the major problem facing most of these schools. The problem was found to have caused a series of other problems in schools such as inadequate IT facilities, lack of IT teachers, lack of internet connectivity and unsatisfactory teachers' remuneration. It was further found that power fluctuation, uncompleted syllabi and some schools using old syllabi were the problems that hindered IT effectiveness in schools.

Mselle (2012) outlines some obstacles which need to be addressed in order to initiate a meaningful move towards the use of ICT in teaching in Tanzania. These obstacles include inadequate national ICT and electricity infrastructure especially in the rural areas. The telecommunication network is limited to the main cities and internet access costs are still high; making it difficult for schools to access and afford. However, the ministry of education and vocational training in Tanzania (MoEVT) has limited capacity to integrate and use ICT effectively. These capacity constraints include lack of coordination of ICT activities, limited information sharing, limited skills for integration of ICT; lack of scheme of services for ICT trained personnel and ineffective organizational structures (Ibid). These obstacles affect teachers' training as well as the use of ICT as a pedagogical tool in the classroom by teachers.

The development and growth of technology integration in education in Tanzania started as early as 1980s, when the science and technology policy of Tanzania was formulated. This was followed by the formation of the Tanzania Commission for Science and Technology (COSTECH) in 1986 and the formation of the Ministry of Science, Technology and Higher Education (MSTHE) in 1990. There was also the development of ICT national policy in 2003 which mentioned education as one of the areas of its focus, but it was too vague to address specific components of ICT integration in education (Kafyulilo, 2010).

In 2007, the ICT policy for basic education was formulated. It considers issues of ICT infrastructure; curriculum and content; training and capacity development; planning; procurement and administration. It also pays attention on the management, support, sustainability, and monitoring and evaluation (Hare, 2007; URT, 2007). The policy states that ICT is to be taught as a subject, and integrated as a pedagogical tool for teaching and learning in other subject areas in primary and secondary schools (URT, 2007). It is further stated that the use of ICT requires adjustments to more learner-centred and interactive teaching methods, thus redefining the role of

the teacher as a facilitator. It is a decade now since the introduction of ICT policy; yet it seems that what is stated (on the paper in fact) has not been achieved since the level of competence of teachers on the use of ICT as a pedagogical tool has been criticized by many scholars. In this regards, it makes sense to state that the use of ICT as a pedagogical tool in Tanzania is not a common practice in many secondary schools.

Statement of the Problem

Although there is ICT policy for basic education in Tanzania little, could be seen in the use of ICT as a pedagogical tool in teaching. It is said that less than 2% of the country's population is connected to the national power grid. Less than 1% of the country is covered by physical data lines (Mselle, 2012). These factors indicate that Tanzania faces unreliable power and physical data networks which make ICT policy to be poorly implemented. With these limitations, teachers find it difficult to integrate ICT in teaching and sometimes have negative attitudes towards ICT. The study by Kambagha (2008) which focused on teachers' perceptions and attitudes towards integration of ICT in education in secondary schools in Dar es Salaam region-Tanzania found that the majority of teachers were aware of ICT facilities and ICT integration but they were not integrating ICT in their teaching. It was also observed that the knowledge and the extent of competence in using ICT facilities in the teaching and learning process were insignificant.

Another study on the teachers' conceptions on the use of ICT in Tanzania conducted by Mwalongo (2011) found that the most commonly reported use of ICT for teaching included preparation for notes, teaching learning resources and examinations. Such level of ICT use does not enable teachers to radically change their pedagogical practices and beliefs. However, to some teachers, the use of ICT was a problem as they complained that when they use computers in teaching, students tend to concentrate much on computers without listening it is time consuming. It could be noted that teachers lack pedagogical skills in handling issues related to the use of ICT in the classroom due to poor classroom environment.

While there are no official estimates on the use of ICT on teaching in Tanzania, there appears to be a very small number of secondary schools with ICT facilities and the government initiative to provide them for schools seems to be very minimal. It is said that, those schools with ICT facilities have either benefited from parents' contributions or donations from non-governmental organizations and some private sector companies. Consequently, it remains unclear how many and what types of ICT may be used for teaching in secondary schools. It has, however, been reported that the number of secondary schools in Tanzania with computers and internet access is limited. Even though the access is limited, it is evident that very few teachers in secondary schools use ICT as a pedagogical tool in Tanzania. The reasons for the limited access and poor use of ICT as a pedagogical tool for teaching are not well established through research; hence the present research was needed.

The gap between those who have access to, and control technology and those who do not, is still there. This implies that the introduction and integration of ICTs at different levels of education is the most challenging undertaking in Tanzania. For instance, out of 4,367 secondary schools in Tanzania, only 887 schools have computers. Out of 10189 available computers, only 9070 (89%) are functional of which 5817 (64.1%) are used for training purpose (URT, 2011).

However, many secondary school teachers in Tanzania are not yet to get up to speed on the best use of ICT as a pedagogical tool. Unfortunately, constrains for the ineffective use of ICT as a pedagogical tool have not been given attention through research. It is on this concern, a researcher investigated the problem.

Significance of the Study
This study is of significance to the field of education and technology as it expands the ICT knowledge base. The concept of ICT as a pedagogical tool is new to most teachers and students in secondary schools in Tanzania. The findings of this research study have the following benefits: Firstly, the study investigated teachers' use of ICT as pedagogical tool in secondary schools, looking at the attitudes. The findings impacted the way ICT is used as a pedagogical tool in schools in Tanzania. Therefore, the study is significant to educators who want to learn more about the use of ICT. Secondly, the findings of the present study are expected to create awareness among teachers on the importance ICT as a pedagogical tool and change their attitudes and practices by improving their professional practices in teaching. Thirdly, the findings add new knowledge to the existing literature in Tanzania since there are little ICT related researches. Fourthly, the findings may serve as reference points for educational stakeholders in other parts of the world that would lead to improvement of provisions of education among secondary school teachers.

Theoretical Context
The current study was inspired by the 'globalization theory' which implies that there is the stretch of social, political and economic activities across frontiers such that events, decisions and activities in one region of the world can come to have significance for individuals and communities in distant regions of the globe (Held, McGrew, Goldblatt and Perraton, 1999). It makes sense to say that globalization is a form of internationalization of some aspects of education such as sharing of educational materials and pedagogical techniques. Tools such as blogs, discussion forums, and chat rooms are quite familiar to most teachers and may be used to offer great potential for online collaboration among them (Godwin-Jones, 2003). These new ICT tools provide a channel through which teachers can enrich their global awareness, which, in turn, strengthens teachers' design of effective learning environments (Smith & Doyle, 2002).

To meet the challenges of globalization, it would appear necessary to prepare teachers for a workplace where responsibilities are constantly changing. Therefore, education must help teachers to perform tasks for which they were not originally trained, to prepare for a non-linear career path, to improve their team skills, to use information independently, to develop their capacity for improvisation as well as their creativity, and finally to lay the basis of complex thinking linked to the harsh realities of practical life. As for teaching through ICT as a pedagogical tool, this theory can empower teachers beyond traditional teaching because technology provides adaptable and flexible teaching and learning. Through ICT, teachers are able to find information more easily through websites, create information through word processing software and communicate through instant messaging and web based classroom. That is to say, the productivity of education can be significantly improved by upgrading the skills and knowledge of teachers to apply ICT skills in the classroom.

Research Questions
The study was guided by the following research questions;
    a. What are the teachers' attitudes towards the use of ICT as a pedagogical tool in teaching?
    b. To what extent do teachers use ICT as a pedagogical tool in teaching?

Methodological Solutions and Procedures
This study was conducted in Kondoa District of Dodoma region-Tanzania. The study adopted the mixed method approach which considers both quantitative and qualitative as the methodological

solutions. According to Cresswell (2009), a mixed method approach is an approach to inquiry that combines or associates both qualitative and quantitative forms. This approach assists the researcher to come up with the findings that are more comprehensive, holistic and integrates various aspects of the problem investigated.

There has been a number of controversial issues and debates about the acceptance and use of this approach in research. This discussion seeks to set an understanding of a clear picture of the strengths on the use of a mixed approach. The development of mixed approach emerges as researchers found that there is no clear dividing line between qualitative and quantitative methods. Niglas (2004) conducted a systematic analysis of 48 research papers with regard to different features commonly used in qualitative and quantitative approaches. The findings showed that more than a third of all studies combined qualitative and quantitative aspects. In the similar vein, Binde (2010) claims that even the authors of studies who claim to follow a qualitative or quantitative approach show no clear point where a line can be drawn to separate the approaches.

Although the proponents of mixed methods research have suggested areas in which a mixed methods approach is potentially superior to a single method approach. There has been intense debate regarding the suitability of qualitative approach or quantitative approach. For instance, Gergen and Gergen (2000) argue that qualitative methods are more faithful to the social world than quantitative ones as they allow for data to emerge more freely from context. In recent years, it seems that even some of the strongest supporters of qualitative research, such as Becker (1970), Erickson (2007) and Hammersley (1992), have supported the inclusion of numerical data in qualitative research practices and reports. This could be viewed that both qualitative and quantitative approaches have more features in common. The researcher's view is consistent with the researchers who suggest that a mixed method can answer a broader and more complete range of research questions because the researcher is not confined to a single method or approach (Bryman 2001; Onwuegbuzie & Leech, 2006; Migiro & Magangi, 2011).

The study sample included 80 teachers at the first phase of data collection and 10 teachers at the second one. In the first phase, simple random sampling was used to select teachers who responded to the closed-ended questionnaires. In the second phase, purposive sampling was used to select 10 teachers from 2 schools who responded to the interview questions at the second phase of data collection.

The following criteria were used: Firstly, simple random sampling was used in the selection of 80 teachers from 10 schools who were involved in responding to questionnaire as they were knowledgeable with pedagogical techniques in teaching. However, teachers are key implementers of curriculum through classroom practices and are responsible to develop their own teaching skills and methods by being exposed to ICT tools. The second consideration was based on the prior knowledge on the use of ICT. It was considered as important source of information regarding their attitudes towards the use of ICT as pedagogical tool. Finally, the consideration was based on teachers who participated in the second phase of data collection in which few teachers were purposively selected to participate in the interview. The information from the questionnaires provided the experiences of teachers that allowed the researcher to decide on respondents to participate in the interview. The participants in the interview had good knowledge and experiences about ICT skills in teaching. The reasons for using the same respondents in the second phase was for ensuring the continuity and it is the way of data triangulation and serves for complentarity reasons.

The data were analysed by using the Statistical Package for Social Sciences (SPSS) programme, version 16. The data obtained were calculated in means and standard deviations for easy

interpretation of the information. The responses from interviews were recorded and transcribed under headings and then were organized in themes and categories that emerged.

Summary of Results by Research Questions and Discussion

1. What are the teachers' attitudes towards the use of ICT as a pedagogical tool in teaching? The data related to this question were tabulated in terms of elements of teachers' attitudes towards the use of ICT as a pedagogical tool in teaching. Mean and Standard Deviation were calculated as shown in Table 1.0 below.

Table 1.0 Descriptive Statistics (n=80) on Teachers' Attitudes towards the use of ICT as a pedagogical tool

Items	N	Minimum	Maximum	Mean	Std. Deviation
I am encouraged to make use of ICT in my teaching.	80	1.00	4.00	2.6250	1.21567
I am encouraged to use e-mails in creation of more information between I and my students.	80	1.00	4.00	2.1750	.92470
I enjoy using ICT in teaching.	80	1.00	4.00	3.0625	1.03537
I know that ICT can help me to learn many new things.	80	1.00	4.00	3.1000	.92230
I believe that ICT makes the subject more interesting and more systematic.	80	1.00	4.00	2.8875	1.04329
I believe that ICT can really improve my teaching practice.	80	1.00	4.00	3.2875	.82973
I feel very confident when it comes to working with technology in the class.	80	1.00	4.00	2.3000	.94668
The use of ICT in teaching requires high administrative support and time.	80	1.00	4.00	3.1000	1.15397
The use of ICT in teaching leads to greater student involvement in the teaching and learning process.	80	1.00	4.00	2.6625	1.10171
I feel confident in working with my students in the digital environment.	80	1.00	4.00	3.3500	.85832
Valid N (listwise)	80				

Mean: 1=Strongly Disagree, 2=Disagree, 3=Agree, 4=Strongly Agree

The results in table 1.0 indicate that teachers have positive attitudes towards the use of ICT as a pedagogical tool since most respondents felt confident in working with students in the digital environment and believed that ICT can improve their teaching practice at the mean of 3.35 and 3.28 respectively. None of the item was confirmed as strongly disagree. This confirms that teachers were ready to use ICT as a pedagogical tool in teaching. From the interview, it was explained that teachers were interested in using technology as part of pedagogy but they lacked high quality resources and well-designed ICT infrastructures which resulted into difficulties in successful use of ICT as a pedagogical tool. In explaining the reasons for ineffective use of ICT as a pedagogical tool, one teacher said:

> *"It is true that we enjoy using computers and other digital tools in our teaching, but the available digital tools are not enough to accommodate our needs. At our school, we have one computer room which is open to both students and teachers; you may find teachers scrambling to get computers when there is internet connectivity".*

Another teacher was quoted saying:

> *"Sometimes I ask my students to send their assignments to my email address; some manage to do so and the majority fail due to poor internet connectivity at our school and there no any initiative brought forward by the head of our school to improve that situation. We are ready to use ICT even in sharing the information and creating solutions but the infrastructures are not ready to support the usage".*

To explore further about teachers' attitudes towards the use of ICT as a pedagogical tool, it was stated that some teachers enjoy using ICT as a pedagogical tool but students are not ready for that. A teacher from school X commented:

> "*When we allow our students to get into the computer room to search for materials that are relevant to their subjects, they become more reluctant. You will find some of them watching pornographic pictures and others charting with their friends in facebook. Funny enough, many students are using the internet at our school to spread rumours and even discuss issues related to politics and love affairs. Much is to be done to assist our students to understand the importance of ICT in learning*".

One female teacher who was responding to the researcher about her feelings towards the use of ICT as a pedagogical tool in her school was quoted saying:

> *"In my opinion, ICT is not used as a pedagogical tool at our school. We have enough computers, digital cameras, LCD projectors and TV rooms but most of us don't use them since we don't have sufficient training about them. I remember last year there was training at our school in which most of us participated but it focused on equipping basic ICT skills instead of pedagogical competence. Some of us are even afraid to use projectors in the classroom because we are not able to prepare digital presentations".*

The above findings confirm that teachers believe that ICT could be used as a pedagogical tool in improving their teaching when there are adequate resources and infrastructures. This means that if these barriers are resolved, ICT could be used as a pedagogical tool. The current findings concur with the research findings by Teo (2008) who found that teachers were more positive about their attitude towards computers and intention to use computer than their perceptions of the usefulness of the computer and their control of the computer. In the similar way, Cubukcuoglu (2013) found that in order to create an environment where technology is used frequently and effectively, it is important to support the needs of teachers in using technology in teaching and learning. In other words, it is important to attempt to remove the possible barriers that hinder frequent technology use and to identify the enablers that promote it. The enabling factors would help teachers to be motivated and enthusiastic users of ICT as a pedagogical tool.

The present findings are however, contrary to the research findings by Buabeng-Andoh and Totimeh (2012) who found that teachers with more years of teaching experience seem to use ICT more frequently to transform their teaching than those with few years of teaching experience. Russell, Bebell, O'Dwyer, and O'Connor, (2003) found that novice teachers who were highly skilled with technology more than experienced teachers did not incorporate ICT in their teaching. The researchers cited two reasons: new teachers focus could be on how to use ICT instead of how to incorporate ICT in their teaching. Secondly, new teachers could experience some challenges in their first few years of teaching and spend most of their time in familiarizing themselves with school's

curriculum and classroom management. Unlike the present study, the findings show that both new and older teachers believed that ICT could be used as a pedagogical tool if there is conducive learning environment.

The study by Palak and Walls (2009) investigated whether teachers who frequently integrate technology and work in technology-rich schools shift their beliefs and practices towards a student-centered paradigm. The results showed that teachers' attitudes towards technology significantly predict teachers' ability to use technology and a variety of instructional strategies. Unlike the present findings, it was found that teachers had positive attitudes towards the use of ICT as a pedagogical tool but they did not integrate it in their teaching. Having positive attitudes, does not confirm that a teacher will use ICT in teaching. This depends on the level of understanding, willingness, confidence, motivation and the perceived usefulness of ICT as a pedagogical tool (ChanLin, Hong, Chang & Chu, 2006; Mumtaz, 2000). It is logical to argue that the level of teachers' pedagogical skills is also likely to enhance the teacher in using ICT in teaching. On this ground, teachers need adequate pedagogical training so as to be able to use ICT in their teaching.

2.   To what extent do teachers use ICT as a pedagogical tool in teaching?

The data related to this question were tabulated in terms of elements of teachers' use of ICT as a pedagogical tool in teaching. Mean and Standard Deviation were calculated as shown in Table 2.0 below.

Table 2.0 Descriptive Statistics (n=80) on Teachers' use of ICT as a pedagogical tool

Items	N	Minimum	Maximum	Mean	Std. Deviation
I can create visual presentation, graphics, charts, drawings and type assignments for students by using ICT.	80	1.00	4.00	1.7250	.72871
I can download teaching materials regarding my subject.	80	1.00	4.00	3.2625	.80730
I can use computer based programs in developing the scheme of work and lesson plan.	80	1.00	3.00	1.7250	.61572
I use email to ask and send assignments to my students if possible.	80	1.00	3.00	1.5750	.72522
I am able to search for files on computer system and organize them into folders.	80	2.00	4.00	3.3625	.69799
I am able to use a learning management system (example, WebCT) to support teaching.	80	1.00	4.00	1.7375	.79147
I can connect the computer to its peripherals.	80	1.00	4.00	2.9125	.93041
I can access and share information on CD/DVD/flash disc.	80	1.00	4.00	3.2500	.73777
I can create a basic presentation package and print to various networked printers.	80	1.00	4.00	3.1000	.89443
I can set up and use Liquid Crystal Display (LCD) or Multimedia Projector for classroom delivery.	80	1.00	3.00	2.0500	.54888
Valid N (listwise)	80				

Mean: 1=Strongly Disagree, 2=Disagree, 3=Agree, 4=Strongly Agree

The results in table 2.0 indicate that few teachers use ICT as a pedagogical tool since most of the items were confirmed as strongly disagree at the mean of 1.73, 1.72 and 1.57. The most disagreed item was the use of email to ask and share assignments with students. This confirms that teachers do

not use digital learning tasks to facilitate their teaching and improve their pedagogy. From the interview, the findings continue to reveal that the use of ICT as a pedagogical tool is the most challenging situation among teachers and it is given a very little attention. One female teacher was quoted saying:

> *"Dear researcher, don't expect someone teaching language subjects to ask students to send their assignment through the email, that task is for teachers who are teaching ICT subject. To be honest as a language teacher, I have never asked my students to do so".*

Another male teacher said:

> *"........ I don't have even the email address, so how will I ask my students to send their assignment through emails?. This is impossible in my class due to the big number of students attending my subject. I'm the only chemistry teacher at this school teaching all the streams of which it is impossible to prepare digital materials for all students".*

Again, the researcher was interested in knowing how teachers use the digital multimedia in their classroom presentations. The findings from the interview revealed that most of them thought that the use of ICT in teaching has something to do with the use of MS Power Point only. One biology teacher was quoted saying:

> *".....we are blessed at our school we have two projectors but I'm the only one who sometimes use them in presentations. As you can see, other teachers are too old that they are not conversant with power point presentations. I can say that with power point presentations, I'm using ICT in presenting the subject matter".*

When the same teacher was asked on how he uses his laptop to share information and design teaching materials, he responded that:

> *"I real don't know anything about designing the teaching materials with my laptop. What I know is just preparing notes in power point and sometimes present them to my students. In fact, we had a one day workshop at our school on instructional media design but I did not understand due to limited time and other teacher who attended ended up with nothing about designing".*

Another teacher responded saying:

> *"When talking about the use of computers in my teaching, I can say that we have the computer lab with no internet connectivity and I use them in typing students' exams when needed for submission to the academic master and any other activity I do with the computer........ remember, I'm too old, dealing with computer at this age is time wastage. After all, I was not trained to use computers during my teacher education, even the ICT workshops we get at our school don't give us enough skills to enable us integrate ICT in pedagogy"*

The above findings imply that teachers in secondary schools in Tanzania have low familiarity on using ICT as a pedagogical tool. This is said to be resulted from insufficient training from their teacher education colleges. The findings are in line with those by Nyarusy (2006) and Mwalongo (2011) who found that the most commonly reported use of ICT for teaching among teachers in

Tanzania included preparation for notes, teaching and learning resources and examinations. Such level of ICT use does not enable teachers to use it as a pedagogical tool in teaching and learning. In the similar vein, Kambagha (2008), found that teachers in Dar es Salaam-Tanzania had positive perceptions towards the use of ICT in teaching but they do not use it in pedagogy due to lack of technical support and insufficient training.

As it can be noted from the findings, teachers receive insufficient training and the focus is mainly on basic ICT skills rather than pedagogical skills. This is consistent with the suggestion by (Cubukcuoglu, 2013) who stresses that the training among teachers should not only include basic technology skills but also provide training on improving pedagogical use of technology. This kind of training will help teachers feel confident and competent while using ICT at the right time and opportunity. In my view, the above discussion sends a very strong message to educational stakeholders in Tanzania that teachers need sufficient pedagogical training about ICT.

In a research report conducted by the British Educational Communications and Technology Agency (BECTA) in 2004, it is indicated that many teachers who are unskilled in ICT are not prepared to use them in the classroom or in front of students who might probably be more familiar than them. It is further argued that lack of competence in the use of ICT accounts for the inconsistency between training and usage. The report further addresses the issue with a view that most teachers, even if they have received training in the use of ICT, fail to integrate it into the teaching and learning process. In addition, BECTA (2004) indicates that lack of confidence is linked to other barriers affecting the use of ICT in education. Such barriers include: limited technical assistance, lack of competence and the quality of training received. A number of strategies can be put in place to assist teachers to do things that might not be possible within the traditional classroom by using ICT as a pedagogical tool.

Concluding thoughts and Recommendations

The use of ICT as a pedagogical tool in improving the quality of teaching seems to be a critical situation among teachers in Tanzania. In my view, there is little evidence on how ICT as a pedagogical tool has been successful in schools. Equally important, the problem is compounded by the fact that there are no clear ICT educational strategies put in place to improve the pedagogical skills for teachers. In this regards, the educational policy makers have to put into considerations various concerns from educational stakeholders so that they bring workable strategies that would serve as lessons for improvement of educational practices. However, there is a need for teachers to have their personal initiatives towards the available digital learning tools so as to enhance the teaching and learning process and their professional development. This important concept 'ICT as a pedagogical tool' needs an in-depth investigation by looking on teachers' willingness, confidence, motivation, feeling, thinking, belief and the actual practices through classroom observations including larger samples. It is against this background that I find it important to investigate further about the problem.

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