Teachers Attitude and Barriers towards The Use of Information Communication Technology in Classrooms in The Motheo district Bloemfontein South africa

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ABSTRACT

Teachers role in Information Communication Technology integration in schools are very important and teachers' attitude must be considered as well as barriers that hindered ICT integration. This study investigates teachers' attitude towards the use of ICT in classrooms in the Motheo district, Bloemfontein South Africa. The study sample consists of 30 teachers in randomly selected schools in Bloemfontein. A mixed method approach is used to gather data. The findings reveal that teachers have a positive attitude towards the use of ICT and are positive to integrate ICT in the classroom, but that are barriers the hindered them to use ICT. One of the biggest concerns is training and the lack of resources.

Keywords: Information and communication technology; attitudes; barriers; teachers.

Introduction

ICT is important to shape the global economy and produce rapid change in the society.ICT has fundamentally change the way people communicate and do business and thus has given rise to new educational needs and as well as teaching methods and strategies which teachers must not resist to be part of (Oladosu 2012).

According to Tiba, Condy and Tunjera (2016) the widespread use of technology has led to teachers being pressured into adopting and using ICT in their teaching. The aforementioned authors state that, despite the South African government expenditure on ICT equipment, there seems to be a slow rate of adoption and use of ICT in the classroom.

Jaffer, Ngami, Czerniewicz (2011) suggest that the use of ICT should be a priority for teaching and learning in the future of education. Michael, Leigh and Peter (2011) note that the important measure for success of any educational reform is the extent to which it is adopted by teachers. If there is resistance to adopt ICT, then the potential will not be realised.

According to Yusaf (2011) to have ICT in schools will not guarantee their effective use because teachers must have competence and the right attitude towards ICT if the gains of ICT would be realised.

According to Light (2009) if ICT is integrated into a high quality learning environment it can deepen knowledge and thinking skills, but ICT alone cannot create this kind of teaching and learning environment if teachers do not have the right attitude and skills.

LITERATURE REVIEW

Teachers' attitude as a barrier towards the use of ICT:

A study by Govender and Maharaj (2005) has shown that the successful implementation of educational technologies depends largely on the attitudes of educators, who eventually determine how they are used in the classroom. Govender (2005) found that teachers' attitudes are a major factor in the adoption of technology. Educators who have a positive attitude towards technology, feel more comfortable with using it, and usually incorporate it into teaching. A positive attitude is the key factor, not for only enhancing ICT integration, but also for avoiding teachers' resistance to computer use.

A study conducted by Jantjies and Joy (2016) finds that teachers are generally enthusiastic about the potential of ICT. However, they have been unable to integrate ICT to support the teaching and learning process. According to these researchers, these problems can be attributed to a number of factors, which include teachers' attitude and the lack of

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appropriate technology and infrastructure.

According to Wario (2014), the challenges faced with regard to the integration of ICT in South African classrooms include different factors such as teachers' attitudes which are viewed as a priority at this stage. The successful integration and implementation of ICT largely depend on the attitudes of teachers, who eventually determine how it is used in the classroom.

Studies have shown that the introduction of ICT in some schools did not improve the quality of education or raise learners attainment as Michael, Leigh and Peter (2011) noted. The important measure of the success of any educational reform is the extent to which ICT is adopted by teachers, if there is resistance to adopt ICT then the potential will not be realised.

There is apathy and resistance to change, as well as lack of motivation to change in relation to the introduction of ICT to facilitate education in educational institutions. Despite the increasing popularity of ICT, some of the African educational institutions are still battling with resistance to change by their teachers, staff and students. In particular, teachers and lecturers in educational and training institutions for various reasons (lack of incentive, motivations etc.) are slow to embrace technology to support teaching and program delivery. The bulk of the teachers and lecturers, still deliver their courses in the traditional mode using chalk and blackboard, with only a few venturing into using PowerPoint or other presentation tools to deliver courses(Dzidonu, 2010).

According to Yusuf (2011) to have ICTs in schools will no guarantee their effective use if teachers are negative. He further stated that teachers must have the competence and the right attitude towards ICT if the gains of ICT would be realised. In addition, attitude refers to one's positive or negative judgement about a concrete subject. People's attitudes are determined by the analysis of the information regarding the result of an action and by the positive or negative evaluation of these results. This means that there is always a positive relationship between teachers' attitude and their use of ICT. More attitudes towards the computer were associated with a higher level of computer experience. Yusuf (2011) stated in his study that male and female teachers have the same attitude. Khalid (2009) observed in his study that negative attitudes are because of a lack of confidence to use ICT in the classroom. According to a study done by Chigona and Davids (2014), they note teachers' must have a sense of achievement as a motivation. Teachers who are enthusiastic to learn how to use and incorporate ICT in their classrooms have a sense of achievement. Teachers see the use of ICT when teaching as a wonderful way of teaching, because learners learn more than when they use traditional ways of teaching. The sense of achievement when using ICT is a motivation and changes teachers' attitude positive.

According to Yasmin (2008) teachers that stock up with traditional beliefs need gradual re-orientation and one on one practical interaction with the ICTs for concrete understanding of the potential of ICTS. Teachers' attitudes towards using knowledge outside their talent and desire tend to be a factor impeding ICT integration, and successful integration of ICT requires competencies and skills essential for teaching.

According to Lui (2011) each teacher enters the teaching profession with their own personal theories about teaching and learning and may perceive teaching situations differently based on their beliefs. They make judgements and decisions on how to act, which strategies to implement, and which materials to use. The decision to use ICT in the classroom depends on the teachers' beliefs about teaching and learning and the role of ICT (Nkula & Krauss, 2014).

A study by Ang'ondi, (2013) in Kenya, shows that several factors have been pointed out in literature as barriers to ICT integration in teaching and learning. The research found that teachers are already burdened people, and when they are confronted with integration of ICT they tend to avoid integration all together. The successful implementation of ICT depends on staff competence and attitude. Some Teachers believe that ICTs have the ability to improve classroom learning and most teachers find it difficult to understand the benefits or how it can be used so as to achieve maximum results. Some teachers are reluctant to abandon their existing pedagogy. In this study by Ang'ondi (2013) many teachers kept on thinking that they are not knowledgeable enough to use ICTs competently and they lack skills to manage an ICT integrated class sufficiently. ICT champions were motivated to use ICTs, but they felt that it was an additional huge burden. Teachers who were willing to integrate ICTs would be discouraged because of the lack of commitment from the administration.

Barriers that prevent teachers from using ICT in the classroom:

In order to increase and improve the use of ICT in schools, a range of obstacles that prevent teachers from using ICT

effectively need to be overcome (Kipsoi, Chang'ach, Sang 2012). Where policy makers continue to introduce strategies for ICT, with the intention of increasing its use in schools, such strategies are likely to have an effect on the school level barriers.

George and Ogunniyi (2016) mention that a lack of teaching experience with ICT, as well as that of on-site support for teachers using ICT, time required to successfully integrate technology into the curriculum, and financial support might have contributed to the low usage of ICT resources in schools.

Nkula and Krauss (2014) noted that there is a lack of access to resources. According to these researchers access to ICT refers to the correct amount and type of ICT in places where teachers and students can use them, in order to ensure that ICT is integrated into lessons. If there is limited hardware and software in schools it limited chances to integrate ICT in teaching and learning. Contrastively, if there is an increase it does not mean it will increase integration of ICT.

According to Dzidonu (2010) one of the barriers to use ICT in schools is poor and limited communication infrastructure. ICT plays an important role in the delivery of educational services and the poor state of ICT infrastructure is a major barrier to expanding educational and training opportunities.

As pointed out by Nkula and Krauss (2014) in the study in South Africa, a high percentage of schools did not have access to computers and some schools had no internet access and only very few South African teachers have access to technical support.

Chigona and Chigona (2011) pointed out that during the Khanya Schools project in the Western Cape; teachers who used the laboratories in the Khanya schools did not have sufficient technical support regarding the use of ICT for teaching. Teachers complained that the technical support was not readily available and it negatively affecting their use of technology for teaching. The lack of technical support discourages teachers to effectively use ICT for their teaching.

According to Ramorola (2014), there is a remarkable improvement in access to ICT tools in schools, but there is a decline in the use and integration of ICT to enhance learning. Ramorola (2014) noted that many teachers face several challenges when trying to integrate ICT into their classroom instruction. Teachers lack skills and expertise in using ICT and a lack of pedagogical knowledge in using ICT appropriately. Based on these, it is evident that the introduction of ICT in teaching and learning has not brought any change in the delivery of education in school and teachers have not shifted from teacher-centred instruction to student-centred instruction.

According to Kipsoi et al (2012) one of the barriers that prevent teachers from using ICT effectively is lack of time for training. Bingimlas (2009) noted that several studies indicate that teachers don't have the competence and confidence to use ICT in their classroom because they don't have enough time.

Cassim and Obono (2011) identified the lack of training and skills as one of the barriers to the use of ICT in the classroom. According to these researchers, indicated that most teachers make use of their acquired skills in some way after training and some re-invent the way to use their acquired skills. According to this study, the integration of ICT in teaching is still difficult for some teachers and these teachers require more training and practice. Du Plesis and Webb (2012) emphasise that teachers need multiple types of training where technology and pedagogical needs are addressed because teachers' ability to use ICT affects their willingness to integrate them in the classroom. Nkula and Krauss (2014) noted that teachers received training on ICT use and they have the knowledge on integration, they may still not integrated ICT in their teaching. The training of teachers to use ICT should be conducted in the same manner that the teachers are expected to integrate it and support must be provided for teachers to prepare ICT. According to Ndawi, Thomas and Nyaruwata (2013), teachers who used ICT extensively in their classrooms still indicated high training and support needs.

Theoretical Framework

According to Wilson-Strydom and Thomson (2005) supported by Jantjies and Joy (2016), most teachers in South African schools are not on a level where they can confidently use ICT to enhance teaching and learning.

There is apathy and resistance to change, as well as lack of motivation to change in relation to the introduction of ICT to facilitate education in educational institutions. Despite the increasing popularity of ICT, some of the African educational institutions are still battling with resistance to change by their teachers, staff and students. In particular, teachers and

lecturers in educational and training institutions for various reasons (lack of incentive, motivations etc.) are slow to embrace technology to support teaching and program delivery. The bulk of the teachers and lecturers, still deliver their courses in the traditional mode using chalk and blackboard, with only a few venturing into using PowerPoint or other presentation tools to deliver courses (Dzidonu, 2010).

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The theoretical framework chosen for this research is that of constructivism. Constructivism is one of the frameworks that are commonly used to answer questions about the impact of ICT in teaching and learning.

What is constructivism?

Constructivist according to Brooks and Brooks (1999) is philosophy of learning that is founded on the premises that by reflecting on our experiences, we construct our own understanding of the world we live in because of the influence of the constructivist learning movement the theory of constructive learning emphasises the teacher central role in academic curricula and suggest improvement according to the teachers' needs and interest (Gredler, 2000; in Woolfolk, 2006).

Constructivism have a common theme which is knowledge is considered dynamic and constantly changing. Learning is an active process which involves the learners personal interpretations created through experience (Neo, 2007).Vygotsky (1978) arguing that social interaction plays a key role in the development of cognitive function and higher order thinking results from relationships between individuals and emphasises the social contexts of learning and knowledge is mutually build and constructed. Vygotsky believed that this life long process of development was dependent on social interaction and that social learning actually leads to cognitive development.

Bruner (1960) emphasized four characteristics for effective instruction which emerged from his theoretical constructs:

- **Personalized**: instruction should relate to learners predisposition ,and facilitate interest towards learning,
- **Content** Structure: content should be structured so it can be most easily grasped by the learner
- **Sequencing**: sequencing is an important aspect for presentation of material
- **Reinforcement**: rewards and punishment should be selected and paced appropriately.

According to Bruner (1960) learners engage in discovering learning obtaining knowledge by themselves. They select and transform information, construct hypotheses, and make decisions, relying on a cognitive structure to do so. In order for discovery to occur, learners require background preparation in the form of a cognitive structure that provides meaning and organization to experiences and allows the individual to go beyond the information given.

According to Weiten (2000) learning happens when experience leads to a constant change in the individuals' knowledge or manner. The strengths of constructivism lie in its emphasis on learning as a process of personal understanding and the development of meaning where learning is viewed as the construction of meaning rather than as the memorization of facts. Learning approaches using contemporary ICT provide many opportunities for constructivist learning their student- centred environments based on their context (Oliver, 2002).

In recent years, it has been recognized that e-Learning is not merely another medium for transmission of knowledge but that it changes the relationship between the teacher or trainer and learner. It requires new skills, competencies and attitudes amongst those planners, managers, teachers and trainers who are going to design and develop materials and support learners online (Gray, Ryan, Coulan 2003). Taken together, it has been recognized that behaviourist models do not fit with constructivist approach and constructivist theory that focuses on the design environment and places emphasis on instructional sequence is often more challenging to practice in computer-based learning environments (Young, 2003).

Blazquez and Diaz, (2006) are of the view that there is no doubt that ICTs are seen as central to education in 21st century so the design for training of ICT should be based on the constructivist theory where knowledge is acquired through the active involvement of students where there is collaboration and negotiation of meaning.

Aim of the study

The aim of the study is to explore teacher's attitude towards the use of ICT in the classroom and the barriers who hinders the use of ICT. The main questions to be asked are:

1. What are teachers' attitudes towards the use of ICT in the classroom?
2. What are the barriers that hindered teachers to use ICT in the classroom?

Problem Statement

Teachers' attitude and barriers can make or break the implementation of an innovation and must be aligned to the spirit of the innovation. We need a better understanding of the attitudes of teacher and barriers that influence them not to use ICT for instruction and problems can emerge when these factors are ignored because these are the driving factors for teachers to use ICT in their classroom.

According to Syed Noor-Ul-Amin (2013), conventional teaching has emphasised content for years and such content has been written around textbooks. The integration of ICT could help to revitalise teachers as well as students. Matthew, Joro and Manasseh (2015) state that ICT helps to advance Western counties, while African countries still experience a lag in its implementation due to barriers preventing teachers from using ICT.

According to Mooketsi and Chigona (2016), despite the noble intentions and efforts driving the implementation of Information and Communication Technology (ICT) in education, the integration of ICT into teaching and learning has been fraught with challenges.

The problem is: What are teachers attitude towards ICT use and what barriers hindered ICT use?

METHODOLOGY

Research Design

In this study the researcher used a mixed method approach in the data collection and analysis process. To answer the research questions the study used questionnaires and interviews to investigate teachers' attitude towards the use of ICT and barriers that hindered the use of ICT in the classroom. The researcher made used of these tools to enable the researcher to validate study results to make it more reliable.

A mixed-methods approach was used to realise the purpose of this study. This section explains the research design and instrumentation, as well as the research sampling techniques that were used in this study.

Questionnaires and semi-structured interviews were the main devices used to gather the opinions of teachers regarding the use of ICT in the classroom. The data collection tools used in this study were both quantitative and qualitative in nature.

Participants and setting

The research focuses on high schools teachers in the Motheo district, Free State. The population for the study was thirty high school teachers. The sample was three teachers from ten schools which were randomly selected.

Data collection and procedure

Quantitative data was collected, using a questionnaire. The questionnaire is a well-established tool within social science research for acquiring information on participants' social behaviour or attitudes, as well as their beliefs and reasons for action with respect to the topic under investigation. The questionnaires were delivered in person to each selected teacher. At total of 30 questionnaires were distributed and collected in person, and the response rate was 100%.

Semi-structured interviews were conducted in order to examine the views and opinions of teachers with regard to the integration of ICT in teaching and learning in schools. Face to face interviews were conducted in order to generate information on the views and opinions of teachers. A set of predetermined, open-ended questions was developed to guide the researcher during the interviews. The participants were guided and encouraged to share their experiences, views and their attitudes on the use of ICT in the classroom. However, the questioning and responses from the participants maintained flexibility and consistency. The researcher used phrases such as: “”Could you elaborate more on that point?

The researcher analysed the data from the interviews in order to become familiar with the information. The researcher analysed the interview transcripts to form a clearer understanding of the information. The researcher coded the data,

conducted a content analysis by looking for specific words for which themes were identified (Terre Blanche & Kelly, 2002). After all the data had been coded with the assistance of an external coder, researcher qualified the data from the interviews and compare it with the data from the questionnaires, and interpreting them.

Data Analysis

Data gathered from questionnaires were analyzed using MS Excel spreadsheet. The data was coded and prepared for analysis. The qualitative responses were analyzed by means of content analysis. Data reduction was used to classify and organized the data under the pre-identified categories and themes.

Results

Questionnaire results

Demographic Data

The demographic data described the demographics of the participants. Most of the respondents omitted the open-ended question in this section of the questionnaire. Table 1 shows the demographic data of the participants according to gender, age, educational qualification and ICT training.

Table 1: Demographic data of the participants

Item		Frequency	Percentage
Gender	Male	16	53%
	Female	14	47%
Age	Below 30	6	20%
	31-40	6	20%
	41-50	12	40%
	51-60	6	20%
Educational level: Qualification	Diploma	3	10%
	Bachelor's degree	26	86.7%
	Master's degree	1	3.3%
ICT training	No training	2	6.7%
	Informal training	20	66.7%
	Formal training with certificate	8	26.6%

Participants were asked to indicate their gender, i.e. male or female. All 30 participants (100%) responded to this question. Sixteen of the participants (53.3%) were male, and fourteen (46.7%) were female. In terms of age, the results show that more (40%) were between the ages of 41 and 50. The rest of the teachers (20%) happened to be either below the age of 30, or between the ages of 31 and 40, and 51 and 60. As far as their level of education was concerned, the results revealed that most of the participants had a bachelor's degree, followed by those who had a diploma (10%) and one (3.3%) who had a master's degree. With regard to ICT training, twenty of the participants (66.7%) revealed that they had received informal training, while eight (26.6%) had obtained formal training with a certificate, and two (6.7%) indicated that they had not attended ICT training.

Findings from the demographic data

From the data, it emerged that 40% of the respondents were between the ages of 41 and 50, and that 87.7% of the respondents had a bachelor's degree and only3.3% had a master's degree. It was concluded that most of the respondents were university graduates who could appreciate the use of ICT in the classroom because of their high level of education. However, the data also indicated that high levels of the respondents (66.7%) had received formal training in ICT, which could have an impact on the use of ICT in the classroom.

This section deals with the responses of teachers.

1. To answer question 1 **"**What are teachers' attitudes towards the use of ICT in the classroom?" the data from the findings are presented in table 2

	ITEM	Strongly Agree	Agree	Not sure	Disagree	Strongly Disagree
1	It is very important for me to work with a computer.	**60%**	**33.3%**	**0%**	**6.6%**	**0%**
2	I use a computer because I am very interested.	**36.6%**	**60%**	**0%**	**3.3%**	**0%**
3	I feel comfortable using ICT as a teaching tool.	**46.6%**	**43.3%**	**3.3%**	**6.6%**	**53.3%**
4	The use of computers stresses me out.	**3.3%**	**0%**	**0%**	**46.6%**	**13%**
5	If something goes wrong I will not know how to fix it.	**3.3%**	**33.3%**	**16.6%**	**33.3%**	**0%**
6	The use of ICT in teaching and learning excites me.	**43.3%**	**46.6%**	**6.6%**	**3.3%**	**0%**
7	ICT use in teaching and learning impacts positively on learners motivation and achievement	**43.3%**	**46.6%**	**10%**	**0%**	**0%**
8	The computer is a valuable tool for teachers.	**56.6%**	**40%**	**3.3%**	**0%**	**0%**
9	ICT use in teaching and learning impacts positively on learners motivation and achievement	**53.3%**	**33.3%**	**13%**	**0%**	**10%**
10	The computer will change the way students learn in my classes.	**46.6%**	**30%**	**23.3%**	**0%**	**3.3%**
11	The use of ICT is not conducive to student learning because it is not easy to use.	**6.6%**	**0%**	**10%**	**73.3%**	**20%**
12	For ICT to be fully exploited for teaching and learning, radical changes in schools are needed.	**33.3%**	**40%**	**6.6%**	**20%**	**3.3%**
13	I believe that the use of computer and other electronic devices will take over my profession from me.	**10%**	**3.3%**	**6.6%**	**60%**	**0%**
14	For ICT to be fully exploited for teaching and learning, teachers must change their attitudes	**43.3%**	**30%**	**6.6%**	**16.6%**	**3.3%**
15	Teachers should receive extensive training in the use of ICT	**40%**	**50%**	**6.6%**	**6.6%**	**3.3%**
16	The abusive use of computers and ICT tools has negatively affected my attitude towards ICT as tools for teaching and learning.	**13%**	**10%**	**20%**	**43.3%**	**13.3%**

The first question relate directly to the teachers questionnaire. From the findings of the data, teachers reflect a general positive attitude towards the use of ICT in the classroom. The results in table 2 indicate that teachers have positive attitudes towards the use of ICT in the classroom and it confirms those teachers are ready to use ICT in their teaching. The analysis revealed that the participants in this study had significantly more positive attitudes towards ICT and with (31%) strongly agreeing and (31%) agreeing.

The study indicated that the participants were positive to integrate ICT in their teaching. The participants in this study have significantly positive attitudes towards the use of ICT and one can assume that once they are provided with the necessary training and infrastructure; the teachers will benefit from ICT applications in their classrooms.

With 60% of the participants strongly agree and 33.3% agree that it is important to work with a computer, 56.6% believe that the computer is a valuable tool for teachers. 43.3% of the respondents strongly agree and 46.6% agree that the use of ICT in teaching and learning excites them. The study found that 53.3% of the participants strongly agree and 33.3% agree that ICT were effective educational tool and can impact positively on learners' motivation and achievement.

It can be concluded that teachers in this study have a strong motivation to adopt ICT in the classroom once they are given the opportunity and are formally trained. 46.6 % of the respondents believed that the computer will change the way

students learn in their classes. 73.3% of the respondents disagree that the use of ICT is not conducive to student learning because it is not easy to use. While 33.3% strongly agree and 40% agree that for ICT to be fully exploited for teaching and learning, radical changes in schools are needed. As the perception is that computers and other devices will take over the teaching profession 60% of the participants' disagree and 43.3 % strongly agree with 45.6% agree that the use of ICT in teaching and learning excites them.43.3% of the respondents strongly agree and 30% agree that for ICT to be fully exploited for teaching and learning, teachers must change their attitudes. The responses demonstrated that 40% of participants strongly agree and 50% agree that teachers should receive extensive training in the use of ICT. 43.3% of the respondents disagree and 13.3% strongly disagree and 20% were not sure that the abusive use of computers and ICT tools has negatively affected their attitude towards ICT as tools for teaching and learning.

Results from interviews:

The qualitative data were obtained from interviews with twenty-five teachers. A large number of respondents to this question feel that teachers must use ICT to teach. It must be noted that teachers feel that ICT is an important tool for administrative duties of teachers.

Teacher 2: Yes in today's modern society learners know a lot about knowledge and communication. Learners in the school I teach are very active on social media, if learners would be more interested in the lessons, learners will become active participants in the predictions of knowledge rather than passive listeners in the classroom. Teachers will have to have the necessary skills and knowledge to have an active classroom. I therefore think that it is a must for teachers to be ICT literate.

Research question 2

1. What are the barriers that hindered teachers to use ICT in the classroom?

Table 3 Barriers that prevent teachers not to use ICT in the classroom

	ITEM	Strongly Agree	Agree	Not sure	Disagree	Strongly Disagree
1	ICT tools are changing too fast.	**13.3%**	**33.3%**	**16.6%**	**36.6%**	**0**
2	I spend too much time integrating ICT in my lessons.	**0**	**3.3%**	**13.3%**	**80%**	**3.3%**
3	I had no time to get quality training programs.	**0**	**10%**	**26.6%**	**63.3%**	**0**
4	There is no long term staff development programs to support the integration of technology into instruction	**16.6%**	**50%**	**13.3%**	**20%**	**0**
5	Some of my peers have failed to integrate ICT tools in their teaching.	**10%**	**56.6%**	**13.3%**	**13.3%**	**6.6%**
6	There is no technical support available at my school.	**16.6%**	**26.6%**	**0**	**53.3%**	**3.3%**
7	The software available at my school is difficult to learn and use.	**3.3%**	**16.6%**	**10%**	**63.3%**	**6.6%**
8	There are no training programs (seminars and workshops) available to encourage ICT supported teaching.	**10%**	**26.6%**	**10%**	**50%**	**3.3%**
9	It is difficult to change from my current teaching practice to integrate ICT in my teaching.	**0**	**16.6%**	**10%**	**60%**	**10%**
10	Lack of pedagogical models on how to use ICT for learning.	**3.3%**	**46.6%**	**23.3%**	**26.6%**	**0**
11	Pressure to prepare learners for exams and test influences the use of ICT.	**10%**	**30%**	**30%**	**30%**	**0**
12	Most teachers are not in favour of the use of ICT in class.	**3.3%**	**53.3%**	**33.3%**	**10%**	**0**
13	Using ICT in teaching and learning is not a goal in our school.	**6.6%**	**43.3%**	**13.3%**	**30%**	**6.6%**
14	The cost of ICT tools is too high.	**30%**	**43.3%**	**6.6%**	**20%**	**0**

2. 5= Strongly Agree, 4=Agree, 3= Not Sure, 2= Disagree, 1= Strongly Disagree

Table 3 shows the results of barriers that prevent teachers from using ICT in the classroom. The findings of the research are presented here. 36.6% of teachers disagree that ICT tools are changing too fast while 13.3% strongly agree and 33.3% agree. As shown in table 3 there is no long term staff development programs and 15 (50%) of the respondents feel that there is no staff development to integrate technology into instruction in the classroom. Respondents noted that their peers failed to integrate (56.6%) to integrate ICT tools in their teaching. From the results it seems that, there is a relationship between some of the barriers such as lack of pedagogical models (46.6%) and the fact that 53.3% of the respondents feel that teachers are not in favour of the use of ICT, because the cost of ICT is too high, whilst 43.3% noted that ICT is not a goal in their schools.

Results from interviews

A large number of respondents to this question feel that teachers must use ICT to teach. It must be noted that teachers feel that ICT is an important tool for administrative duties of teachers.

It is evident from the findings that participants feel that it is necessary for teachers to be ICT literate but most of them lack the basic ICT skills. They could do basic operations on a computer but they can't integrate ICT in their lessons. The following excerpts from interviews attested to this:

Teacher 2: Yes in today's modern society learners know a lot about knowledge and communication. Learners in the school I teach are very active on social media, if learners would be more interested in the lessons, learners will become active participants in the predictions of knowledge rather than passive listeners in the classroom. Teachers will have to have the necessary skills and knowledge to have an active classroom. I therefore think that it is a must for teachers to be ICT literate.

According to findings, teachers can use ICT to enhance teaching and learning, enabling planning and preparation for teaching to be more efficient. In some of the schools, ICT is available like computers but it is not connected to the internet and the teachers cannot access the computers,which makes it difficult for teachers to keep up with new knowledge via the internet. The following excerpts from interviews attested to this:

T2: The resources are kept away from teachers, I think management purposefully kept away from ICT teacher. Some teachers have access to these resources, whilst other teachers are excluded. Teachers have to get hold of resources at an expense. This creates and negative culture and de-motivates teachers who are ICT literate to try and develop new skills.

T3. There are no funds to promote ICT effectively by training teachers.

T18: The internet itself is technically an ocean of knowledge. Teachers should have the skill to understand how it works to help find useful information for the learners.

How to work with computers etc.?

How to use or integrate mobile devices in your lessons?

Discussion

Teachers attitude towards the use of ICT

In spite of teachers' lack of training (40%) on the use of ICT, they are positive about the potential impact of ICT (40%) and the advantages of using ICT. This describes that the use of ICT in the classroom can change the way teachers teach and the impact thereof on learning. A study by Govender et al (2005) in the KwaZulu-Natal Province also found that teachers have positive attitudes towards ICT. According to these researchers, participants seem to have totally accepted the rationale for introducing ICT into schools and are able to base their judgements on understandable reasons. The majority of the respondents in that study (90%) consider computers as a viable tool that has the potential to bring about different improvements to their schools and classroom.

It is evident that teachers believe that ICT is conducive to student learning. The data indicated that the abusive use of computers and ICT tools do not affect their attitude towards ICT as tools for teaching and learning and those teachers must

change their attitude to fully exploit ICT for teaching and learning. Respondents believed that integrating ICT tools in teaching and learning will impact positively on learners and motivate them to achieve.

Respondents also identified weaknesses to integrate ICT. They feel comfortable to use ICT, but if something goes wrong they will not know how to fix it.

From the interviews the following questions were group together to find out what is the attitude of teachers on the use of ICT in the classroom: *Do you feel it is necessary for teachers to be ICT literate and teachers' personal view on ICT use in the classroom.* Enforcing these results, interviews yielded some interesting facts. Teachers are very positive to use ICT in the classroom to teach and use the internet as a teaching tool. The study indicated that teachers recognized and appreciated the usefulness of ICT in teaching and learning. Data showed that teachers recognized other benefits of ICT; they can use it in their administrative activities to ease the burden.

The study further indicates that teachers are positive on the fact that ICT can raise the standard of education and that it can be use in teaching to raise the level of attention and to motivate learners.

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.

What are the barriers that hinder teachers to use ICT in the classroom?

The results of this section, 50% of respondents indicated that the some barriers found in this research are that there are no long term staff development programs of the respondents, there is a lack of pedagogical models on how to use ICT for teaching. Providing pedagogical training for teachers, rather than simply training them to use ICT tools, is an important issue (Becta, 2004). 30% of the respondents feel that there is pressure to prepare learners for exams and tests and it influence the use of ICT. 43% of the respondents noted that using ICT in teaching and learning is not a goal in their schools and that the cost of ICT is too high (43%).

It is evident from the findings that 60% of teachers noted that it is not difficult for them to change from their current teaching practice to integrate ICT in their teaching but it is not a goal in their schools. Balanskat, Blamire, Kefala (2006) have shown that that many teachers in Denmark still choose not to use ICT in teaching situations because of their lack of ICT skills rather than for pedagogical reasons. From the results, it seems that there is a relation between the barriers and teachers cannot use ICT tools appropriately in the classroom. From the interviews it seems that there are barriers that prevent teachers from using ICT because of a lack of training and a lack of ICT equipment and resources. Another hampering factor is the attitude of role-players towards the use of ICT in the classroom. It is noted from the findings that teachers receive insufficient training and the focus is mainly on basic ICT skills rather than on how to integrate ICT in teaching and learning. Cubukcuoglu (2013), stressed that the training among teachers should not only include basic technology skills but also provide training on improving pedagogical use of technology. A study by Kipsoi et al (2012) in Kenya found that teachers were not adequately trained on ICT integration in teaching and learning. The study concluded that teachers needed to be trained on how to use ICT infrastructure on a regular basis and training to be done at school level.

One can conclude that teachers do not use ICT in the classroom because they were poorly trained and lack ICT resources. From the demographic data it proves the statement; because out of the 30 participants, only 8 of the participants received formal training with a certificate (27%).

Conclusion

The use of ICT in schools poses challenges to teachers and the DoE for the successful integration of ICT into teaching and learning. It is important that teachers' insight into training and development of ICT is noted in order to integrate ICT successfully in schools

Recommendations

The use of ICT as an educational tool seems to be a critical tool for teachers in Motheo district, but they fail to utilise it

in the classroom, there is little evidence that they use in the classroom. Teachers have positive attitudes and value the role that ICT can play in enhancing teaching and learning, but there are no clear strategies in place to train and equip teachers for this enormous task.

Most of the teachers in the study have informal training on ICT use and indicated that they are willing to learn. The DoE must provide frequent training on how to use ICT in the classroom for educational purposes and not just for administrative duties of teachers. Teachers need to be given training on how to use ICT and it must not be a once-off training but it must be continuous process. The training that is provided should be well structured on the basis of the subject content that the teachers offer in class. This can be achieved with in-service training at schools that is compulsory for all teachers but the workload of teachers be adjusted in order for teachers to attend training sessions. The DoE can use a direct approach by giving guidance to schools and giving training courses through private companies and that every school should have its own ICT policy.

One of the failing factors of governments' policies on ICT is the lack of implementation. To achieve government's' objective is to put clear targets of implementation in place and measure the performance of schools that use ICT.

One of the most effective ways of embedding ICT in schools is to deliver a programme of training and education on entry to the teaching profession and it must be a standalone subject for all teacher training institutions as part of their subject didactics.

All role-players must be informed that ICT equipment is available to all teachers across subjects and not just certain teachers. In order to use ICT in schools, it is important that teachers must receive full time technical support.

The suggestion is to train some teachers on technical support in order to help their peers in school.

Schools should form partnership with private companies to get the necessary support and provide ICT tools because some of the teachers complained about the high cost of ICT tools. Schools must be equipped with new and up to- date technologies to keep track of learners and to be able to cope with the rapid evolution of technology.

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