

The Challenges on the Use of Mobile Phone as a Tool for Enhancing Teaching and Learning in Ten Selected Secondary School in Kinondoni Municipality

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Abstract

The study determined the challenges of using mobile phones in teaching and learning in secondary schools in Kinondoni Municipality, Dar es Salaam Region. An exploratory research design was employed with qualitative and quantitative approaches respectively. Out of 224 participants employed in the study, there were teachers (n=101), school heads (n=10), students (n=110), Quality Assurers (n=2) and District Secondary Education Officer (n=1). Both simple random and purposive sampling techniques were used. Data were collected through questionnaires and interview and analysed by using Statistical Package for the Social Sciences (SPSS) version 20.0 and content analysis respectively. The study findings revealed a myriad of challenges in the category of students' behaviour, teachers' attitude and technology-based. To improve the provision of quality education, stakeholders should play their party in enhancing the effective use of mobile phone in teaching and learning in secondary schools. Students and teachers should have access to the use of mobile phones. Educational authorities should ensure that schools have the effective and reliable information and communication technology (ICT) infrastructure to enhance effective use of the mobile phone in teaching and learning.

Keywords: ICT, Mobile phone, Teaching and learning

1.0 Introduction

The 21st century has seen rapid technological advancement whereby one of its results is the invention and use of the mobile phone (United Nations Educational, Scientific and Cultural Organisation, [UNESCO], 2012). It has been established that mobile phone use in education improves the teaching and learning process (Mtega, Dulle, Malekani & Chaila, 2014). The use of the mobile phone in teaching and learning, significantly contribute to students' academic performance by promoting students' autonomy and acquisition of life skills (Kafyulilo, 2014; Michael 2016). Thus, mobile phone use in teaching and learning will potentially trigger effective teaching and learning process (Mikre, 2011). For that reason, ICT policies in education statements and directives from the educational authority in Tanzanian seem to encourage learners' use of advanced technologies in learning to promote learner autonomy (United Republic of Tanzania [URT], 1995; URT 2007; Mtega *et al.*, 2014).

Mobile phone technologies offer learning experiences that can effectively engage and educate learners and are often markedly different from those afforded by conventional desktop computers (UNESCO, 2012). These devices are used dynamically, in many different settings, giving access to a broad range of uses and situated learning activities. The personal nature of these technologies means that they are well-suited to engage learners in the teaching and learning processes actively. Mobile phone use in the teaching and learning process is now a central focus to evaluate its practicality in influencing teaching and learning.

According to the Web-based Education Commission (WBEC), Kerry and Isakson (2000), the internet is perhaps the most transformative technology in history, reshaping business, media, entertainment, and society in astonishing ways. Its use has contributed to growth of the world economy by creating a solid and lasting demand for technologically skilled workers and a technologically knowledgeable workforce (WBEC, Kerry & Isakson, 2000).

The United States Department of Commerce (USDC) (1999) shows that between 1998 and 2008, the demand for information technology skilled workers increased and more than two million jobs needed to be filled to replace individuals leaving the workforce. Despite this demand for technologically proficient individuals, the exact requirement has not been made in the education sector. The concept of technology and its usage in education has just recently been used to transform teachers and their learners.

Tanzania's information and communications technology (ICT) policy for basic education recognises the mobile phone as a potential tool for revolutionizing teaching and learning processes (URT, 2007). For instance, bridge information technology (IT) is one of the projects launched in 2007 in Lindi, Mtwara, Coastal, Dar es Salaam, Tanga and Kilimanjaro regions by reaching 536 schools and 116,000 pupils. The project's objective was to increase access to quality education among grade five and six pupils (UNESCO, 2012; Urassa, 2012). The project used mobile phones to provide teachers with access to a variety of digital video content in Mathematics, Science, English, and Life Skills (Urassa, 2012).

Although mobile phone is a promising ICT tool in teaching and learning process (Thomas & Orthober, 2011), there are worries on the use of mobile phone in teaching and learning process as there are society outcries that learners' use of programmes in mobile phone will lead to spoiling their long preserved cultural practices (Porter 2015; Urassa, 2012).

For instance, the community thinks that the use of mobile phone in teaching will negate the objective of education of nurturing learners in the manner that preserves good socio-cultural practices (Urassa, 2012); since the use of mobile phone will lead learners to access such useless programmes like pornography and films, which promote learners engagement in cruelty, unplanned sexual behaviours as well as cybercrimes.

Consequently, most schools in different countries ban the use of mobile phones in school environments (Kiwele & Bali, 2013). According to Ford and Batchelor (2007), most schools ban mobile phone use because students misuse the gadget by recording fights, violence and watching pornography.

Given such negative perceptions and the promises of mobile phone use in enhancing teaching and learning, the study sought to determine the challenges of using the mobile phone as a tool for improving teaching and learning in secondary school in Kinondoni Municipality, Dar es Salaam. Since a mobile phone is a potential technological tool for enhancing effective teaching and learning, it was logical to determine the challenges that contribute to the effective use of mobile phone in schools would mitigate any challenges.

1.1 Literature Review

Studies about using technologies in teaching and learning have revealed critical challenges in embedding effective classroom

processes. For example, a study by Kaliisa and Picard (2017) revealed that the use of mobile learning technologies faced significant challenges, such as poor technology, limited infrastructure, and limited acquisition of mobile learning pedagogical skills among lecturers. It also revealed the negative attitude among students and lecturers and the incompatibility of mobile devices with the University Online Management Systems. On top of that, it was reported that policies to guide the implementation of mobile learning were lacking in many institutions and countries. In India, Sumathi *et al.* (2018) studied the impact of smartphone usage on academic performance among students of higher learning. The study findings established various challenges, such as lack of experts to handle faults, operational difficulties, high cost of data subscription from services providers and fragility to be the embedders when using smartphones in teaching and learning.

Pedagogically, learning happens everywhere, anytime, with learners fully responsible for their learning. This learning environment makes it difficult to measure learning occurred due to learning technology. From a psychological point of view, users are not yet ultimately used to phones as educational and learning tools (Shudong & Higgins 2006).

Another study done in Manila, Philippines by Jin and Sabio (2018) revealed that many students use smartphones not for educational purposes but pleasure and entertainment through their social media accounts. Thus, mobile phone use in teaching and learning was not helpful to students. The students were not focusing on their instructional topics during the discussion as they were inclined to play games and use mobile devices for Facebook leisure. It is for this reason that Mirald and Spikol

(2007) advise on the need to consider the designing of content in a way that keeps the pedagogic goals and at the same time suits the social technologies learners use in their daily life. The study also shows that, as part of the rules and regulations, the the use of mobile devices during class hours was restricted as a result students were rarely used them.

In Tanzania, Mtega *et al.* (2015) assessed how mobile phones facilitated the teaching and learning process. It was found that some teachers and students were unaware of the capacity of their mobile phones. Some of those who owned smartphones were using them just for calling and texting messages as they did not know other applications supported by their smart phones. Some teachers were using their mobile phones for storing files, although their mobile phones had limited storage capacity. Other said that they were not sharing stored files. All these challenges limited them from using their mobile phones for sharing lecture notes and other functions, including chatting, whipsawing and searching for study materials.

Another study in Tanzania by Kibona and Mgaya (2015) on the academic performance of students in higher learning institutions revealed that those who owned smartphones at campus focused on notification for social media messages. This made them spend a lot of time chatting rather than discussing academic matters. It was further observed that students used most of their time using their smartphones to take pictures, upload, or share their location and status at a given time.

The reviewed literature indicates two crucial things: first, is the use of the mobile phone as the ICT tool in education can significantly improve the quality of teaching and learning. In that score, the future of education lies in the use of technology

within the classroom through such tools as the mobile phone. Second, the success of mobile phone use depends very much on the established supportive environment such as reliable ICT infrastructure, failure of which positive results can hardly be achieved. Thus, the setbacks should be identified and solved for the effective use of mobile phones in the teaching and learning process.

Against this backdrop, this study was undertaken to determine the challenges, if any, on the use of the mobile phone in teaching and learning in secondary schools using Kinondoni Municipality, Dar es Salaam Region as a case of reference.

The study was guided by the Social Constructivist theory, with its origin in advancing the teaching and learning process. The theory's assumption is that learners have a rich background regarding life experience (Brooks & Brooks, 1999; Thomas & Orthobert, 2011), which can construct new conceptions and understanding.

As observed by Vygotsky (1930), the theory maintains that learning is a social process where learners and teachers need to actively interact in the learning process. Thus, mobile phone technology allows learners to interact in the teaching and learning process via mobile phone (Gredler, 2000; Thomas & Orthobert, 2011; Woolfolk, 2006). This, in turn, makes the teaching and learning process learner-centred, whereas the teacher needs to provide as much activities as possible. The rationale behind the current study is that, knowing the nature of the challenges of using mobile phones in secondary schools in Kinondoni Municipality, Dar es Salaam Region will shed light on how best to create the best practices and mitigate the

challenges for effective use of mobile phones in teaching and learning in secondary schools in Tanzania.

2.0 Materials and Methods

The study used an exploratory research design in which qualitative and quantitative approaches were applied. The design allowed varied questions that generated a wide range of responses, hence a rich source of information for the study. Qualitative approach was applied to obtain a detailed understanding of the subject under study – allowed researchers to understand the experiences and perceptions (Patton, 2002) of learners currently using mobile tools for learning purposes. On the other hand, the use of quantitative approach provided the researchers with the opportunity to quantify information for easy interpretation when they are shown in numerical form.

Kinondoni Municipality was considered a study area. Kinondoni is among the five municipalities found in Dar es Salaam Region. Other municipalities are Temeke, Ilala, Ubungo, and Kigamboni. The choice of Kinondoni Municipality in the study was associated with two reasons: first, proximity of the researchers' residents. Second, the study area is said to have many ICT centres. Therefore, it was easier for the researchers to access the data required in the study. On top of that, ten schools were randomly selected in the study.

As for the sample, the study constituted 224 participants. Out of that sample, 191 participants employed for quantitative data were teachers (n=91) and students (n=100), whereas 33 participants were employed for qualitative data; of whom there were school heads (n=10), District Secondary Education Officer (n=1), teachers (n=10), students (n=10) and Quality Assurers (n=2). Teachers and students were chosen randomly in

the selected schools to avoid biasness, while education officers were purposefully sampled because they had enough information and experience on the topic studied. Lodico *et al.* (2010) add that purposive sampling is usually done to select participants who can provide relevant information to the study.

The data were collected through questionnaires and interview. According to Mojtahed, Nunes, Miguel, Martins, Jorge and Peng (2014), an interview as a qualitative research technique is opted in a study because it increases the credibility of study's findings. In addition, participants are expected to have innumerable amounts of freedom to engage in a conversation. However, in this study, the interviews were conducted to participants in their respective workplaces during the working hours.

Moreover, this study used questionnaires to complement data from interviews conducted. Questionnaires also allowed the researchers to obtain large amounts of information (Christensen *et al.* 2013) more rapidly than through interview (Lapan & Quatrefoil, 2009). Nevertheless, the questionnaires were administered to participants during working hours at their respective workplaces.

Quantitative data were analysed using Statistical Package for the Social Sciences (SPSS) version 20.0 software. Data were descriptively summarized, compiled and presented using frequencies tables to enable comparison and for easy interpretation. On the other hand, qualitative data were subjected to content analysis. The researchers synthesized and searched for general patterns by grouping data into meaningful categories based on research objective that helped in search for the main themes.

Nevertheless, the ethics of research were adhered to by the researchers. For instance, before collecting data, the researchers requested the research permit from the Open University of Tanzania (OUT) as evidence that introduces them to other authorities. Also, the researchers sought the participants' consent during the data collection – no participant was forced to participate in the study. Moreover, the researchers ensured anonymity as they hid the names of the participants in the study findings. Privacy was also ensured during the data collection process, especially in storing and processing data. Lastly, the researchers acknowledged authors and their works to avoid academic dishonesty.

3.0 Findings

The study sought to determine the challenges on the use of mobile phones in teaching and learning in secondary schools in Kinondoni Municipality. In this regard, Table 3.1 presents the summary of the participants' (i.e., teachers and students) opinions through questionnaire regarding the the challenges of using mobile phones in teaching and learning in secondary schools.

Table 3.1: Challenges on the Use of Mobile Phone in Teaching and Learning in Secondary Schools in Kinondoni Municipality (N=191)

Statement	N	Mean	Std. Deviation
1. Difficulty in creating the mobile phone account	191	1.45	1.01
2. Stumbling block to sign in to the mobile phone	191	1.37	.89
3. Obstacle of uploading photos and study materials in mobile phone	191	1.30	.92
4. There is limited internet connectivity	<u>191</u>	3.35	<u>1.78</u>

5. It is a hurdle to edit my profile on a mobile phone	191	1.43	1.08
6. It is very laborious to create files, copy and paste study materials into created files	191	1.53	1.08
7. The use of mobile phone technology is time consuming	191	1.50	1.09
8. If one is not careful when using mobile phone s/he technology may be diverted from the learning the educational matter	191	4.35	.67
9. There is a lack of trained or expert teachers in the use of mobile phone technology in teaching and learning	191	4.36	.80
10. There is limited storage of mobile phone	191	4.31	.55
11. There is poor attitude among parents on the use of mobile phone in teaching-learning process	191	4.28	.66
12. There is high cost of internet bundle	191	4.54	.50
13. There is a poor attitude among teachers on the use of the mobile phone in the teaching-learning process	191	4.35	.63
14. There is poor policy to clear guide on mobile phone use in teaching and learning.	191	4.38	.51
Average	191	3.04	.79

Key: N= Total, and Std= Standard

Source: Field Data (2021)

The results presented in Table 3.1 indicate that most of participants disagreed that they face challenges on the following aspects, as per the indicated mean and standard deviation on the statement: “*Difficulty in creating the mobile phone account*” had the mean of 1.45 and standard deviation of 1.01 respectively. On the other hand, the statement stated, “*Stumbling block to sign in to the mobile phone*” had the mean value of 1.37 and standard deviation of .89 respectively. Additionally, the statement stated, “*Obstacle of uploading photos and study materials in the mobile phone*” had the mean value of 1.3 and standard deviation of .92 respectively. This

shows that participants were technically able to perform such operations using their mobile phones.

Furthermore, participants indicated that they were capable of handling other operations. For instance, the statement stated, *“It is a hurdle to edit my profile in mobile phone”*, received the mean value of 1.43 and standard deviation of 1.08 respectively. On the other hand, the statement stated, *“It is very laborious to create files, copy and paste study materials into created files”* had a mean value of 1.53 and standard deviation of 1.08 respectively. The participants also positively indicate that the use of mobile phone does not consume their time as most of them disagreed with the statement that, *“The use of mobile phone technology is time consuming”*, which received the mean value of 1.50 and standard deviation of 1.09 respectively.

However, the participants pointed out some limitations they face when using mobile phones in learning. Most of them agreed with the statement that *“There is limited internet connectivity”*, which had the mean value of 3.35 and standard deviation of 1.78. They also pointed out that, *“If one is not careful when using mobile phone technology, s/he may be diverted from learning the educational matter”*, which received the mean value of 4.35 and standard deviation of .67 respectively. It further means that using the mobile phone technology diverts attention from concentrating the educational matter(s) because sometimes there are sexual ads that come in the phone, which may influence phone users to concentrate on them and forget doing what they are supposed to do.

Nevertheless, the findings of the study revealed that the participants faced another challenge: *“There is a lack of trained or expert teachers in the use of mobile phone technology in*

teaching and learning.” According to the participants’ opinions, that statement received the mean value of 4.36 and standard deviation of .80 respectively. In addition, the participants pointed out the challenge of limited storage of mobile phones, which showed the mean value of 4.31 and a standard deviation of .55 respectively. However, most of the participants agreed with the statement, “*There is poor attitude among parents about using mobile phones in teaching and learning*”, which received the mean value of 4.28 and standard deviation of .66 respectively.

On top of that, the participants agreed with the statement, “*There is high cost of internet bundle*”, which showed the mean value of 4.54 and standard deviation of .50 respectively. Similar participants indicated that poor altitude among teachers on the use of mobile phone in teaching-learning process is a challenge. As a result, the mean value of 4.35 and standard deviation of .63 respectively were associated with the statement posed to the participants. In addition to that, the participants indicated that poor policy to clear guide on the use of mobile phone in teaching and learning is a challenge, which showed the mean value of 4.38 and standard deviation of .51 respectively.

Teachers and students were also interviewed to respond to the challenges of using mobile phones in teaching and learning in secondary schools in Kinondoni Municipality. The interviews were conducted with students (n=10), teachers (n=10), Quality Assurers (n=2), school heads (n=10) and District Secondary Education Officer (n=1). Majority of participants indicated that they could not afford internet bundle and that they cell phones were limited in holding capacity that they were forced to delete

previous downloaded materials before downloading new ones. It was also indicated that they were not in possession of required ICT materials, such as smartphones, iPad, and screen to access the Internet.

Another challenge was the poor ICT infrastructure, especially in the government-owned schools. Eight teachers out of ten interviewed insisted on that. One of the interviewed teachers had this to say:

If you look at most of private schools, you will realise that they are doing well in their studies because there is good ICT infrastructure in their schools. However, in the government-owned schools, the situation is different. Most of the students perform poorly in their examinations because of poor ICT infrastructure (Interview with Teacher from School 02, 10/08/2021).

However, three teachers who participated in the interview believed that mobile phone should not be used in the teaching and learning process because they will cause students misbehaviour and lack of concentration during studies. For example, one of the three teachers, who supported such idea, maintains that:

Students tend to lose focus when in classrooms with their mobile phones on. In most cases, they access sites that are disruptive such as pornographic sites, music and other entertainment programmes. Mobile phones should not be used at all in teaching and learning process. I wonder why there is even a move to make mobile phone one of the teaching and learning tools (Interview with Teacher from School 05, 02/08/2021).

When interviewed, six students out of ten indicated that they find it difficult to use mobile phones in learning because they could not afford to buy smart phones and air time and because there was no clear guideline on the use of mobile phone at school. They indicated that some teachers sometimes discouraged its use while others encouraged it. One of the students had this to say:

We [students] like smartphones because we live in the digital era, but the problem is that there are no clear guidelines stipulating the use of smartphone in teaching and learning processes. You find that even most of our teachers discourage the use of smart phone as they say we can be trapped to see other things a part from using them for learning (Interview with Student from School 4, 01/08/2021).

Nevertheless, District Secondary Education Officer responded by blaming teachers' rigidity regarding mobile phone use in teaching and learning processes. He also proposed what should be done to avoid the negative effects of mobile phone usage in teaching and learning processes as he said:

Teachers are so adamant about the use of mobile phones; it seems they are afraid that it may cause indiscipline cases. I think technology is should not be discouraged in its uses. Instead, teachers should learn and accept mobile phones in teaching and learning processes. However, guidance is needed on using mobile phones productively rather than barring them completely (Interview with DSEO, 03/08/2021).

On the other hand, regarding the mobile phone usage in secondary schools among students, Quality Assurers opined that ICT cannot be underestimated. One of them had this to say:

We live in the digital epoch where many things are accommodated by ICT. Teaching and learning processes should also be done technologically. If that is done, both students and teachers will easily find learning materials and learn how they can use such materials in the teaching and learning processes (Interview with Quality Assurer, 03/08/2021).

Generally, the responses from both interview and questionnaire show that though mobile phone use is a promising move in enhancing effective teaching and learning, there are challenges limiting its applicability. Analytically speaking, the challenges of using mobile phones in teaching and learning in secondary schools can be grouped in to the following categories.

4.0 Discussion

Teachers' attitude: The findings through interview and questionnaire have revealed that some teachers either discourage or do not promote the use of mobile phones in the teaching and learning process because it is sometimes unclear to them on how technology can be useful in enhancement learning processes. Brosnan (2001) noted that teachers may be a hindrance if they do not have required ICT skills thus feel uncomfortable as they may lack training. Lack of training and skills on ICT may put teachers on the disadvantage side as they may feel unconformable promoting what they don't know to students (Brosnan, 2001).

However, it has been established that mobile phone use in education improves teaching and learning process (Mtega, Dulle, Malekani & Chaila, 2014). The use of the mobile phone in teaching and learning, significantly contribute to students'

academic performance by promoting students' autonomy and acquisition of life skills (Kafyulilo, 2014; Michael 2016).

The voice of teachers and others who oppose the use of technology, especially mobile phone usage in teaching and learning processes represents society's negative perspective. Porter (2015) and Urassa (2012) stressed that worries on the use of mobile phone in teaching and learning process as associated with low level of understanding towards the use of mobile phone technology because the community members tend to think that mobile phone technology will usually spoil their long preserved cultural practices.

Students' behaviour: The participants, through the interview, indicated students' behaviour is one of the hurdles to the use of mobile phones in teaching and learning. Students' behaviour is responsible for some teachers negatively taking the use of mobile phones when used in teaching and learning processes. This is supported by Mikre (2011), who shows that it is very common to observe limitations related to students' behaviour as they tend to misuse the technology for leisure time activities and have less time to learn academically.

Similarly, Yousef and Dahman (2008) described online gaming use of Facebook, chat rooms and other communication channels as drawbacks of ICT use in education because they switch to these sites at the expense of students' study. When misused, they cause students' distractions culminating to consuming time for studies.

Conversely, mobile phone technologies seem to offer learning experiences that can effectively engage and educate learners and are often markedly different from those afforded by

conventional desktop computers (UNESCO, 2012). Similarly, Tanzania information and communications technology (ICT) policy for basic education recognises the mobile phone as a potential tool for revolutionizing teaching and learning processes (URT, 2007).

As Mikre (2011) observes, if ICT is not properly used, the disadvantage will overweight the advantage. If, for instance, students misuse ICT technologies (mobile phones) may result in teachers spending much time controlling students from websites unrelated to the learning content. The fear by some interviewed teachers that mobile phone use in teaching and learning in secondary schools may negatively impact the learning and teaching process is supported by Mikre (2011) that downloading materials through ICT may limit students' imagination. Overreliance on downloaded digital learning materials may limit students' critical thinking and analytical skills. Students may also focus on superficial presentations and copying from the internet.

Technology-based limitations: The participants also identified poor ICT infrastructure as technological setback. They revealed that there is poor ICT supply infrastructure in government-owned secondary schools, which limits the use of mobile phones in teaching and learning processes. This is in line with Mikre's (2011) observations that ICT challenges include; lack of appropriate buildings and rooms to house the technology, lack of electricity and internet connectivity. Thus, there is a need to deal with infrastructure-related challenges before planning ICTs integration to the education system as suggested by Mikre (2011).

5.0 Conclusion and Recommendations

Generally, there are challenges that limit the effective use of mobile phones in secondary schools in the teaching and learning processes. The challenges stem from various angles, such as students' behaviour, teachers' attitude and technological-based limitations. Teachers have required ICT skills thus feel uncomfortable and may develop negative attitude towards the use of the mobile phone as the strategy to save face. Regarding students' behaviour, as they misuse mobile phones for leisure rather than for studies to a great extent solidify the already established teachers' negative attitude towards the use of mobile phone in teaching and learning. As for technology-based limitations, the lack of or poor ICT infrastructure limits mobile phone use in the teaching and learning processes.

Based on the findings of this study, the following recommendations are made:

- i. On teachers' negative attitude to the mobile phone use in teaching and learning, education should be provided to make teachers aware of the usefulness of that ICT tool in promoting effective teaching and learning processes for quality education. Teachers should also be equipped with relevant ICT knowledge and skills to keep up with the widening technological gap in life and education.
- ii. Students should be educated on the positive use of mobile phones in teaching and learning processes rather than just focusing on sites and programmes that take much of their time at the expenses of their studies. Students should use mobile phones to access education content.
- iii. Heads of schools should promote and supervise productive mobile phone use in teaching and learning process. As the

overall in charge of the school, school heads should see that students' regulations on using mobile phones properly are in place and make sure that they are used for academic purposes.

- iv. As for the education authorities, there should be a serious campaign to promote mobile phone use in teaching and learning. This may be achieved through education provision, establishing ICT infrastructure to enable easy access to technology by students and teachers to enjoy the fruit of technology.

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