
Globalization and Technological Advancement: An Assessment of Impact of Mobile Phones among Secondary School Students in Morogoro Municipality, Tanzania

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ABSTRACT

This study was conducted to assess the impact of the mobile phones among secondary school students in Morogoro municipality. Specifically the study determined the influence of mobile phones on students' behaviors, and assessed the impact of mobile phones on students' academic performance. A cross sectional research design was used to obtain data from both primary and secondary sources of information through structured questionnaire from 90 respondents obtained through simple random sampling. The collected data were coded and analyzed by using Statistical Package for Social Science (SPSS) computer program. Findings revealed that, 93.3% of the interviewed respondents' access and use mobile phones, and 63.3% agreed that mobile phones usage among secondary school students cause behavioural changes. Also the study revealed that students use mobile phones to organize and maintain their social networks (8.9%), search materials on internet and organize discussion (54.4%), and informing their parents' on issues concerning their education (1.1%). A number of impacts on using mobile phones were revealed, including; facilitating engagement of students in sexual affairs (41.1%), decline in moral values (43.3%), decrease in academic performance (91.1%), causing health problems to students (50.0%), cause disturbance in studies (47.8%) and resulting to time wasting (88.9%). This study recommends various measures to be taken by secondary school teachers and parents to minimize the use of mobile phones among secondary school students hence ensuring that students are getting time to concentrate on their studies and improve academic performance.

Key words: Mobile phones, Secondary School Students, Globalization, Morogoro

INTRODUCTION

Background Information and Problem Statement

Technological development has been a notable phenomenon in recent years and has played a major role towards globalization. The world has recently witnessed advancement of technology in various spheres (Archibugi and Michie, 1995; Lall, 2003). Evidence exists (Evenson and Westphal, 1995; Archibugi and Iammarino, 2000; UNCTAD, 2005; UNCTAD, 2004) on how advances in technology have contributed to escalation of globalization in the past decade. The Information and Communication Technology (ICT) being one of those technologies which has rapidly expanded and also being responsible for creating a global connectedness in various aspects. Mobile phones are part and parcel of ICTs. Mobile phones have penetrated almost every day in the society, in fact it is fast becoming an integral part of people's everyday lives (Rebello, 2010; Robertson and Hagevik, 2008; Kelly, 2009). Mobile phones have reached the pocket of billions of people globally, according to International Telecommunications Union (2015), there are more than 7 billion mobile cellular subscriptions worldwide, up from less than 1 billion in 2000. Ericsson, a technology company, estimates that the number of mobiles will rise to 930m by 2019, almost one per an African (The Economist, 2015).

Quarterly telecom statistics report compiled by Tanzania Communication Regulating Agency (TCRA, June 2015) shows that there are seven (7) mobile phone service providers in the country. These include VODACOM, AIRTEL, TIGO, ZANTEL, TTCL, TTCL and BENSON INFORMATICS all these amounting to 34,251,801 subscribers.

It is reported that the adoption of mobile phones by young people has been a global phenomena in recent years (Campbell, 2005a; Walsh, *et al.*, 2008; Bond, 2010; Srivastara, 2005; Allison, 2004; Aoki and Downes, 2003), it has even now become an integral part of secondary school students' daily lives. Mobile phones are used for different purposes in the world almost in all areas of work and social activities (Best *et al.*, 2010; Best *et al.*, 2007; Clark, 2007; Gromik, 2012; Donner, 2004; The Economist, 2015; Harman and Sato, 2011), such as to organize appointments and personal contacts, take and store pictures and videos, browse the internet, e-mail, short messaging services (SMS), play music, access radio, make use of global positioning system (GPS), and provide access to games and entertainment, transferring money, and make phone calls; just to mention some. Students in places such as China, Japan, Philippines and Germany, are using their mobile phones to study not only English but also using these same handheld devices to study Mathematics, Health and Spelling (Robertson and Hagevik, 2008). The rate at which secondary school students have adopted mobile phones in many parts of the world is even more impressive. Mobile phones have become social tools for many secondary school students in Tanzania and other parts of the world. According to Household Budget Survey Report (2007) in Tanzania like other developing countries, 37.6% of young people aged 13 to 17 years old owned mobile phones in urban areas. The reductions in the cost of making calls and sending text messages, free messages, low cost of buying mobile phone, and the issue of

globalization contributed to the surprisingly rapid adoption rate by secondary school students.

Much as mobile phones have a number of positive impacts, mobile phones are never free from the negative ones. Other studies (Alexandru *et al.*, 2007; Campbell, 2005a; Campbell; 2005b; Tilley and Bohlander, 2012; Arun and Leonard, 2005; Coyle, 2005; Hakoama and Hakoyama, 2011), report a number of negative impacts of mobile phones to students on various aspects in other parts of the world including its interruption on academic matters, hence due to the assumption that if students are spending time texting, they are not paying attention in class, then one can argue that cell phones are negatively impacting student learning. While it is strongly agreed that mobile phones have occupied the life style of the young generation especially those in secondary schools, very little is known with respect to the impact of mobile phones to their academic performance and their social life respectively in the context of Morogoro municipality. It is against this background that this study was designed to assess the impact of mobile phones among secondary school students.

Theoretical Approaches on the Use of Mobile Phone

Sociological Theory of Mobile Phone

Sociological Theory of Mobile Phone studies the impact of mobile phones in the society (Geser, 2005). On the implication of cell-phone for individuals, cell phone usage is subject to functional expansion claims the theory.

Therefore, from functional expansion shows that cell phones can gradually change habits among cell phone user.

Theory of Mobile Learning

This theory points out to the contribution of mobile phones into learning process. It claims that some aspects of informal and workplace learning are mobile in the way they are, learning is not only occurring in lecture halls or even classroom but also it occurs outside through the use of mobile technology (Sharples, 2005). The theory emphasizes the use of mobile phone to enhance learning process.

Theory of Identity Development

This theory contends that Adolescence is a period of searching for identity, adolescents struggle with identifying who they are, to what group they belong and who they want to be. (Erikson, 1968). Adolescents are self-conscious and pay significant attention to what peers think of them, increased peer influence on adolescent development. It further claims that adolescents are susceptible to trends, fashions and styles which make them more willing to adopt new technology, devices and certain behavioral characteristics.

RESEARCH METHODOLOGY

Description of the Study Area

The study was conducted in Morogoro municipality located in Morogoro region. Morogoro municipality is administratively divided into 19 wards. According to Morogoro Municipality educational department there are forty seven (government and private) secondary schools in Morogoro municipality. The study involved students from three (3) secondary schools which were randomly selected located in Morogoro municipality, namely Morogoro Secondary School, Forest Hill Secondary School and Kigurunyembe Secondary School. The reason behind choosing these secondary schools is based on the fact that these schools are located in Morogoro urban where there is accessibility of mobile phones connections.

Research Design

This study was conducted in a one round survey using cross-sectional research design. The cross sectional research allows data collection at a single point of the study in one time. The design was suitable for descriptive study for determination of impacts between the variables.

Sampling Techniques and Sample Size

Purposive sampling technique was used to select secondary schools in this study. Simple random sampling method was employed to get a study sample of 90 students from both male and female. Simple random sampling was used to obtain respondents within individual schools. Respondents were drawn from a list of names provided by respective school administration. The sampling size is justified by the fact that a sub sample of 30 respondents is the bare minimum for studies in which statistical data analysis is to be done regardless of the population size (Bailey, 1994). The choice of this figure is based on the fact that 90 students are sufficient to conduct this study and therefore representative because of the homogeneous nature of secondary school students.

Data Collection and Analysis

Questionnaire was used as a tool for data collection through interviewing male and female students in selected secondary schools in Morogoro municipality. The data were collected using structured questionnaire consisting of both open and closed ended questions. In order to obtain the readily available information with regard to the stated objectives the data were obtained from documentation of the area of study concerning the stated objectives.

Primary data was summarized and coded before being entered into computer for processing and manipulation, then statistical package for social science (SPSS) was employed during the analysis of data. Descriptive statistics analysis was done by computing frequencies and percentages.

RESULTS AND DISCUSSION

Socio-Economic and Demographic Characteristics

This subsection presents socio-economic and demographic characteristics basing on the sample of respondents who were studied (n=90). The findings with respect to socio-economic characteristics are presented in details in Table 1.

Age of the Respondents'

Most of the demographic events that determine population dynamics such as births, deaths dependency ratio and mobility are highly associated with age. Age is included in several adoption models and it correlates very often with intention and usage of new technology. For instance, Carlsson *et al.*, (2005) in their study found that age is the only significant predictor for use of mobile services. The results from this study show that the mean age of respondents was 22 years. Group-wise the study shows that 53.3% of respondents were in the mid ages (i.e. 15 – 19 years), 45.6% were in (20-24years) and 1.1% was in (25-29 years).

Sex of the Respondents'

Sex of the respondent is very important aspect in determining the extent to which male or female have an access and use of mobile phones, this is in line with what Sacks *et al.*, (1993) explain on the attitudes towards the new technology, they reported that male tend to display more positive attitudes toward ICT tools (i.e. mobile phones), regardless of the level of familiarity, while female attitudes become more positive as the level of familiarity increases. Findings from this study show that males respondent were 52.2% while females were 47.8%.

Table 1: Respondents' Socio-economic Characteristics (n=90)

Characteristics		Frequency	Percentage
Age	15-19	48	53.3
	20-24	41	45.6
	25-29	1	1.1
	Total	90	100.0
Sex	Male	47	52.2
	Female	43	47.8
	Total	90	100.0

Mobile Phone Ownership

The findings revealed that 93.3% of the respondents own mobile phones while 6.7% do not own mobile phones. These results are in line with what Mezel *et al.*, (2007) reported in their study on mobile phone ownership and use among school children, where they found that it is a common phenomenon to find school children owning mobile phones in three Hungarian cities. Table 2 presents the findings in details.

Table 2: Mobile Phone Ownership (n=90)

Mobile phone ownership	Frequency	Percentage
Students owning mobile phones	84	93.3
Students without mobile phones	6	6.7
Total	90	100.0

Mobile Phone Ownership based on Sex

The results show 48.8% of male respondents owned mobile phones, while 44.4% of female respondents accessed and used mobile phones, this shows that there is a variation with respect to sex in the use and ownership of mobile phones. These results are inline with what Sacks *et al.*, (1993) report that attitudes toward new technology, especially mobile technology, differ between sex, male tend to display more positive attitudes toward mobile technology, regardless of the level of familiarity, while female attitudes become more positive as the level of familiarity increases. The details are presented in Table 3.

Table 3: Mobile Phone Ownership based on Sex (n=90)

Sex of Respondent	Mobile Phone Accessibility	
	Frequency	Percentage
Male	44	48.9
Female	40	44.4
Not owning	6	6.7
Total	90	100.0

Results in Table 3 have similar findings with what has been reported by Castells *et al.*, (2006) and Souter *et al.*, (2005) that in most cases, men tend to be owners of mobile phone devices and women mainly accessed the technology through borrowing and other sharing mechanisms. Also the findings in Table 4 reveal that male respondents were 41.1% who access internet enabled phones and female respondents were 25.5% who access internet enabled mobile phones.

Table 4: Type of Phones Owned based on Sex (N=90)

Type of Phone		Sex of Respondent	
		Frequency	Percentage
Internet enabled	Male	37	41.1
Not internet enabled	Female	23	25.5
Unspecified type of phone		30	33.4
Total		90	100.0

Perceived Influence of Mobile Phones on Students Behaviors

The study sought to establish the influence of mobile phones on behavioral changes among the students. It was revealed that 63.3% of respondents agreed that mobile phones cause behavior change among secondary school students; whereas 28.9% did not associate behavioral changes with mobile phones usage, where the remaining 7.8% had no opinion. Respondents were also asked to explain on how mobile phone cause behavior change, and results shows that 25.6% mention time wasting, 12.2% said that mobile phones facilitate students engagement in sexual affairs, 8.9% claimed that mobile phones cause students to socialize with bad friends, 14.4% cause behavior change through watching phonographic videos, while 38.9% of the respondents had no opinion.

These results are in line with what Campbell (2005b) found in his study on “Behavioral effect of mobile phone usage among students” who reported some amount of moral degradation due to increased use of mobile phones which includes enhancement in tendency of telling lies; watching pornography; public disclosure of personal and confidential information/ photograph and Habit of unnecessary talking among others. The details are presented under Table 5.

Table 5: Mobile Phones and Students Behavior (n=90)

	Frequency	Percentage
Behavior Change		
Mobile phones affect students behavior	57	63.3
Mobile phones does not affect student behavior	26	28.9
Unspecified whether phones cause behavior change	7	7.8
Total	90	100.0

	Frequency	Percentage
<i>How Behavior Change</i>		
Time wasting	23	25.6
Engage in sexual affairs	11	12.2
Socialize with bad friends	8	8.9
Watching phonographic videos	13	14.4
Unspecified how mobile phones affect students	35	38.9
Total	90	100.0

Influence of Mobile Phones on Students Behavior based on Sex

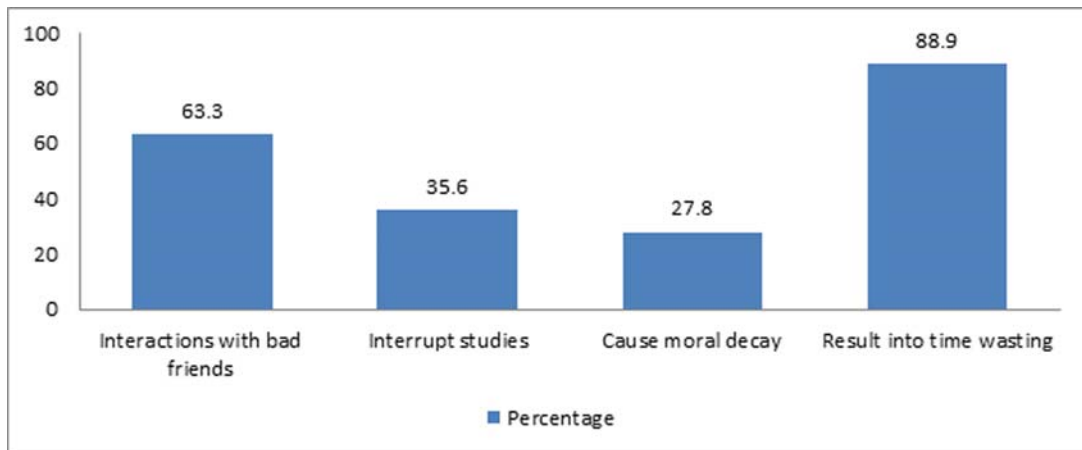
Findings from the study show that 40.0% of male respondents agreed that the use of mobile phones by secondary school students cause behavior change among students, 23.3% of female respondents also agreed that the use of mobile phones among student resulted into behavior change, 8.8% of male respondents claimed that mobile phones has nothing to do with behavior change among students and 20.0% of female respondents also claimed that mobile phone usage among students has nothing to do with behavior change among students, while 6.6% of the respondents had no opinion.

Negative Impacts of Mobile Phones on Students Behavior

The study sought to find the perceptions of the students on some negative impacts related to mobile phone in student's behavior. Among the respondent 63.3% admitted that mobile phones increases opportunity for student interaction and this interaction may be with bad friends and hence cause behavior change among students, 35.6% admitted that mobile phones interrupt their studies when used during studies and when a student spend a lot of time chatting.

Also 27.8% of the respondent agreed that mobile phones can cause moral decay by saying lies to people especially parents when a students need to go somewhere. During the survey respondents where asked to mention the calls they make per day and the results show that 72.2% of the respondents make (5-15 calls) per day and 16.7% of the respondents make (16-26 calls) per day, this may result to time wasting which latter lead to change of behavior among students.

Figure 1: Negative Impacts of Mobile Phones in Students Behavior (n=90)



Impact of Mobile Phones on Students Academic Performance

The use of mobile phones by secondary school students may have both, negative implications towards their academic and social life and positive implications. This study intended to know the rate at which secondary school students relate the use of mobile phones and decrease in academic performance. Under this sub section stand alone impacts were presented to the respondents and the respondents had to agree or disagree with the relevance of such impacts in the context of secondary school students.

The results show that 41.1% of the respondents perceive the use of mobile phones by secondary school students to have impacted negatively in their academic life, whereas 54.4% of the respondents claim that the use of mobile phones can enhance academic performance through searching of the materials, arranging discussions and sharing information among classmates while 37.8% of the respondents disagree that mobile phones can enhance the increase of academic performance.

Another negative implication revealed from the study is on health problems which resulted from the use of mobile phones. From the findings 50.0% agree that the use of mobile phones resulted into health problems i.e. brain cancer, harmful to nervous system, skin problems, eyes and ears problems, 13.3% disagree that the use of mobile phone has something to deal with health problems while 28.9% of the respondents they do not know where the use of mobile phones have any implications to human health. Results correlate with what Ansari (2007) reported that, mobile phones have a number of negative and unhealthy impacts and effects on students' academic performances at the secondary schools level which includes the waste of time and money, its vibration and use may be harmful to health. According to Awaz (2008) mobile phones affect the social life and health of all society members as well as secondary schools students.

Decline in moral values is also another negative implication of using mobile phones revealed from the study. The findings indicated that 43.3% of the respondents relate the

use of mobile phones with decline in moral values through internet and chatting, interacting with bad friends who have bad behaviors, through watching pornographic videos, engaging in sexual affairs, and insulting people through SMS. Another 23.3% of the respondents agree that the use of mobile phones does not have anything to do with decline in moral values and 33.4% of the respondents do not know whether the use of mobile phones can cause decline in moral values or not. Results are in line with what Awaz (2008) reported that mobile phones cause increase in decline of moral values. With the use of mobile phone, now students feel no shy to tell a lie. When they are sitting in hotel or park, they tell to their parents or teachers that they are sitting in the library.

Also the findings of this study reveal that, mobile phone usage has facilitated young people (i.e. secondary school students) engagement in love (sexual) affairs. From the sample (n=90) results show that 41.1% of the respondents who own and use mobile phones have boyfriend/girlfriend and from that, they use their mobile phones to communicate with their boyfriend/girlfriend. When they were asked whether the use of mobile phones facilitate initiation of their relationship 31.1% of the respondents said 'yes' that the use of mobile phones facilitate initiation of their relationship by making communication alive between partners, remembering each other through voice calls, by chatting through SMS and by making appointments when they want to meet each other. Then asked whether mobile phone usage keep their relationship alive and from them 32.2% agree that mobile phone usage make the relationship alive through simplifying the communication process among partners.

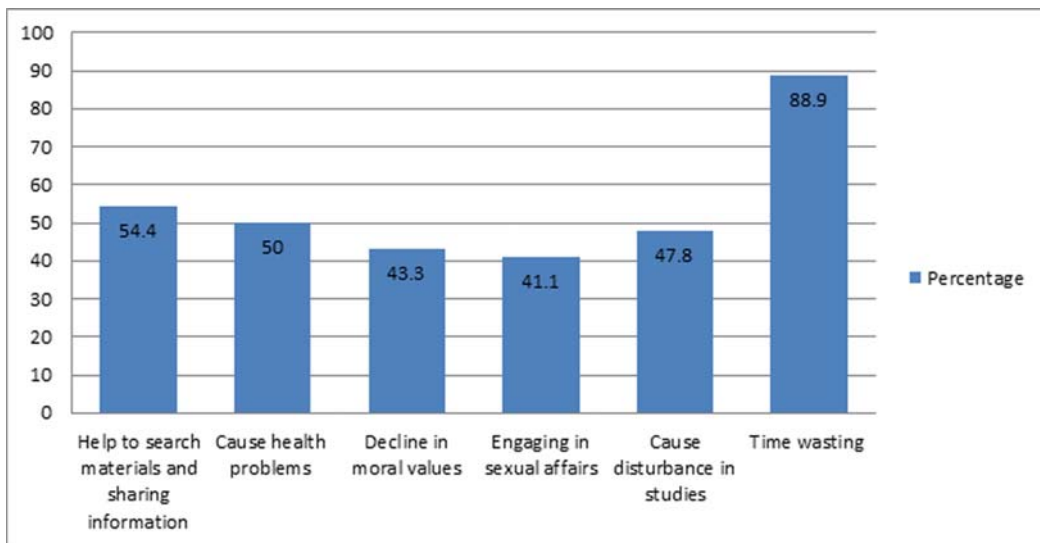
Mobile phone usage also seems to have an impact to students academic life through causing disturbance to students, the findings from this study indicated that 47.8% of the respondents are disturbed by people whom they do not know and from that trend 18.9% of the disturbed respondent pointed out the demand for that person being love/sexual affairs, 16.7% being wrong numbers, and 11.1% searching for new friendship while 52.2% of the respondent are never disturbed by people whom they do not know in their mobile phones.

Another disturbance revealed from the study is the incidence of having phone ringing during the class hours and from the findings 26.7% of the respondents reported to come across with incidence of having phone ringing during class hours and that resulted to loss of concentration among students and from that teachers react and punishing the respective student by taking his /her phone, getting student out of the class, and this affect students psychological which latter resulted into poor academic performance among students especially in secondary schools.

Another negative impact revealed from the study is time wasting. From the sample (n=90) about 88.9% of the respondents prefer chatting through SMS and from that 34.4% of the respondents receive (1-10 SMS) in a day, 6.7% of the respondents receive (11-21 SMS) in a day, 7.8% of the respondents receive (22-32 SMS) in a day, 1.1% of the respondent receive (33-43 SMS) in a day and 38.9% of the respondents receive more than 50 SMS in a day and when asked at what time do they prefer chatting 15.6% of the respondents prefer chatting

in a day-time, 34.4% prefer chatting during night, 40.0% of the respondents prefer chatting anytime. This results are contravene with what Campbell (2005a) reveal in his study that large percentage of students (88%), do not prefer to converse at night because it disturbs their sleep. Only certain percentage of students (12%) would like to talk over night. These results shows that students spend a lot of time in their mobile phones than concentrating on studies as results this may affect negatively their academic performance to larger extent. Results are in line with what Tilley and Bohlander (2012) report that the use of the cell phone is a distraction and that “if students are spending time texting, they are not paying attention in class” then one can argue that cell phones are negatively impacting student learning.

Figure 2: Impact of Mobile Phones (n=90)



Results from Figure 2 are in line with what Qaiser (2012) explains in his study on Factors Responsible for Unsatisfactory Academic Performance of the Secondary School Students he states that “Many electronic devices like cameras, mobiles phones, and VCDs, etc have played a destructive role in students’ academic performance” and this study found that most of students have mobile phones and they play with their mobile phone all the time hence affect their academic performance.

Disciplines With Respect To Mobile Phone Usage

Rules and guidelines set by parents on Mobile Phone Usage

With respect to discipline in the use of mobile phones, this study revealed that parents may have an influence towards the discipline in mobile phone usage. From the findings 91.1% of the respondents said that their parents or relatives allow them to use mobile phones and the reason being to simplify the communication process. These results are in

line with what Netsafe (2005) report that “In an Australian study, 68% of parents reported that as their child had a mobile phone, they knew where they were at any time.

Even though parents allow their children to own and use mobile phones 84.4% of the respondents are not allowed to take their phones with them in school, and from them 37.8% reasoning that mobile phone usage in school environment reduce tension in studies, 2.2% reasoning that mobile phone usage in school affect students psychological, 36.7% reasoning that mobile phone usage are not allowed in school and 8.9% reasoning that mobile phone reducing concentration during class hours while 7.8% of the respondents parents allowed their children to go with their mobile phones in school reasoning that mobile phones simplify the communication when children demand something from parents he or she can be easily access through making a phone call to his or her parents. In fact, many young people (58%) reported that there were no rules set by their parents about their mobile phone use, and only (12%) reported that their parents used removal of their mobile phones as punishment.

Respondents also were asked how long they can stay away from their mobile phones, the findings reveals that 31.1% of the respondents stay away from their mobile phones less than 12 hours, 50.0% of the respondents stay away from mobile phones more than 12 hours, and 11.1% of the respondents they cannot stay away from their mobile phones.

This results indicate that most of the respondents 50.0% can stay away from their mobile phones more than 12 hours and thus have time to concentrate on their studies this shows that students have discipline with respect to mobile phone usage.

Students Mobile Usage Self Regulation

Findings reveal that 52.2% of the respondents have self regulation towards the mobile phone usage, this regulation include using mobile phones after class hours, switch-off their mobile phones during studying and 40.0% of the respondent they do not have any self regulation with respect to mobile phone usage but this study reveal that majority 52.2% have self regulation hence have disciplines in mobile phone usage. The findings also revealed that 98.9% of the respondents are not taking their mobile phones with them in classes while 1.1 % taking their phones with them in classes and when asked what are they doing when mobile phone ring during class, results shows that 2.2% of the respondents who are taking their phones with them in classes walk out and pick up the phones this shows that some students do not have disciplines with respect to mobile phone usage and this may resulted into decrease of academic performance.

Mobile Phones Usage Rules at Schools

This study also sought to find out whether schools allowed students to use mobile phones in school environment. The findings from this study reveal that 88.9% of the respondents said that their school do not allow any students to own and use mobile phones in school

environment and 11.1% of the respondents do not know whether their school allow them to use mobile phones or not. These results are in line with what Matthews (2004) report that, some schools have already issued rules about mobile phone use to counteract these negative impacts.

In order to ensure that this discipline is maintained among students, schools have put forward some actions which will be taken if found a student using mobile phones in school environment, from the findings 34.4% of the respondents mention chasing out students from school as one of the actions taken by school management, 41.1% of the respondents mention suspension being another action taken by school, and 2.2% of the respondents mention phone confiscation by teachers being another action taken by school management to discipline the respective student.

CONCLUSION

Despite mobile phones being very useful as tools of communication, failure to regulate its use may results some negative impacts among youths particularly those in secondary schools. This then calls for a need to have mechanisms to regulate the use of mobile phones so as to create a balancing situation has mobile phones can lead into some negative impacts as revealed from the findings of this study. Parents and teachers where they find necessary for students to use such devices should provide parental guidance to do away with misuses.

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