The social impact of mobile phones on teenagers

MJ Cilliers
cilliersm@gmail.com

MB Parker
parkerm@cput.ac.za

Faculty of Informatics and Design
Cape Peninsula University of Technology
Cape Town
South Africa

Abstract

Mobile infrastructure has changed during the past decade and this increase has become so apparent that you hardly ever come in contact with someone who does not possess a mobile phone or other mobile device. It is becoming increasingly easy and inexpensive for teenagers to contact friends and access information via their mobile phones (Reid and Reid 2007, p. 424). Therefore, the study on the social implications of mobile phones is extremely important when it comes to the future of our teenagers. A questionnaire was handed out to high school students in Cape Town to find out how mobile phones have affected their lifestyles. The social implications that mobile phones, and its applications have on teenagers were identified. The paper concludes with findings, divided into demographics, sexually explicit material and mobile instant messaging, that could prove useful to those directly involved in guiding teenagers to lead a more balanced lifestyle.

Keywords: Mobile technology, mobile phones, social implications, teenagers.

1. Introduction

As mobile technology becomes a more prominent aspect of everyday life, people are realising the true power when it comes to the use of mobile devices. These mobile devices allow for the enhancement and ease of access to social and business functions (Lu et al., 2003:206). Educational institutions are also starting to realise the potential of mobile technology in the accessing of educational sources (Chen and Kinshuk, 2005:91). These sources are even extending to health care facilities according to Peters et al. (2003:400).It should be noted that not all literature and perceptions on mobile technology are positive. There is for instance a health concern when it comes to the use of mobile devices, as Timotijevic and Barnett (2006) contest in their article. These are some of the factors that an individual would have to consider when purchasing and/or using mobile technologies.

2. Background

Mobile phones have become common phenomena amongst teenagers according to Campbell (2006:196). The extent to which it can be used to connect and bring information to people is astronomical. Mobile technology has positively impacted the lives of people.

These improvements range from making communication easy to watching videos. Despite this, one cannot help to think that there has to be more to it than this. Whether teenagers are affected negatively or positively by mobile phones is something that will need to be monitored as the influence of the technology becomes more apparent.

3. A look at mobile phone technology

The following section will describe some of the major uses of mobile phones:
- Voice.
- Short message service (SMS).
- Internet.
- Data transfer.
- Mobile instant messaging (MIM).

3.1 Voice

The mobile phone allows a user to speak with one person or many people at the same time. An advantage of voice on mobile phones over that of landlines is that people can be contacted almost anywhere at anytime. There are however concerns when it comes to a person being constantly available. A topic which is discussed later, concerns speaking on mobile phones in public, among other things.

3.2 Short message service (SMS)

As the name suggests, this service allows individuals to send short messages, with a maximum of 160 characters, to other individuals or groups. One of the reasons for its popularity is due to it being seen as a cheaper method of communicating than that of a telephone (Reid and Reid, 2007:424).

3.3 Internet

Previously, if you were travelling abroad, you had to find an Internet café to be able to browse the Web. In recent years, the Internet has extended its reach to include mobile phones. By using mobile phones, it is possible to get access to different social spaces wherever you are (Lu et al., 2003:206). However, there are concerns when it comes to privacy and security that will be addressed in a later section.

3.4 Data transfer

Bluetooth is a technology that enables people to share data, such as music, videos and images wirelessly via their mobile phones, among other devices (Erasala and Yen, 2002:193). Teenagers, for instance, are using Bluetooth to get music from their friends without the need to pay (Slade, 2005:3). This could have dire consequences for music companies as this brings a new way of piracy to life. Security concerns are discussed under the heading, "Concerning mobile phones".

3.5 Mobile instant messaging (MIM)

A large number of people, especially teenagers prefer instant messaging (IM) to that of other electronic communication methods, such as e-mail (Marshall, 2003). One of the attractive aspects of IM is the instantaneous transfer of messages between individuals and groups. Mobile instant messaging has given rise to new friendships and communities. An

example of a popular South African MIM service is MXit (Francke and Weideman's, 2007:4, 6). MXit only charges for data transfer which makes it even cheaper than SMS, which has given rise to its popularity (Country Monitor, 2007). As previously indicated, mobile phones have given rise to certain concerns, which will be discussed next.

4. Concerning mobile phones

According to the study of Turner et al. (2007), circumstances play a major role on how mobile phones affect people, whether it is in the public domain or at work. People seem to have explicit negative feelings towards others making conversations in places of work, public transport and other "confined" spaces. A reason for the level of annoyance might be attributed to the fact that people can't break away from the conversation so easily (Turner et al, 2007).

Lever and Katz (2007:1135) conducted a similar study of mobile phone usage in the public domain. The study was done at a multitude of campus libraries at universities and colleges across the United States. The library is generally seen as a noise-free environment. So naturally, an increase in volume due to mobile phone usage might become annoying as well as distracting. There has been a distinct increase of usage and a need for social change to accommodate this (Lever and Katz, 2007:1135). Due to awareness of such an increase, libraries have instated rules and regulations to try and curb or minimise this mobile phone usage.

Precautionary measures and stricter rules should be instated when it comes to the security on mobile phones. Mobile technology has seen its share of malware and other damaging software over the last couple of years (Furnell, 2005). Modern operating systems on mobile devices are well documented. This has both positive and negative implications. On the positive side, developers find it easier to write software for mobile devices. On the negative side, the openness of the operating systems makes it easier for people to develop malware and other viruses that could ultimately damage the device (Furnell, 2005). The Cabir worm stuck out its head in mid 2004 and was able to propagate itself via Bluetooth (Shih et al.,2008:480; Hulme, 2004). Luckily, its ability to spread was limited by a few factors. A person had to accept the incoming Bluetooth communication and only then would the worm be installed and propagate to devices which had their Bluetooth activated.

Released in 2005, the Commwarrior worm used the MMS as well as the Bluetooth technology. The use of MMS made the spread of the worm less limiting by misleading the user with fake subject lines which tricked the user into installing it (Furnell, 2005).

It seems that, for now, the spread of damaging software on mobile devices is limited by the technology itself. New technology brings new software. Due to this, the damaging software might not need acceptance in the future and the user will have to be more cautious as time passes.

5. Mobile phones – Affects of integration and social behaviour

Campbell (2006) conducted a study on teenage girls and how mobile phones affected them. The research focused on three main topics, namely:
- The media and how it portrays it as being a symbol of independence.
- The parents and how it provides peace of mind for them when it comes to their children.
- The youth and how it is used as a social enabler.

In the past few decades, the media has changed its advertising style with regards to telephones and more recently, mobile phones. One of the target markets that it reached was that of young females. Recently, companies have been concentrating on how mobile phones can be used to gain independence from parents as well as to connect with friends and colleagues. Campbell (2006:201) identifies the campaign to sell the idea of the mobile phone as a way of having fun. This also includes the idea of it portraying your sense of style and uniqueness. As the independence of teenagers become more apparent, so increases the concern of their parents. Parents see it as a way to have a connection with their children, no matter where they are. Campbell (2006:202) determined that parents typically buy mobile phones for their daughters as a precaution.

The integration of mobile phones into the lives of teenagers is creating some difficulties in a number of areas that have to be managed and controlled. Teachers for instance have to cope with students bringing their mobile phones to school. This ranges from disruptions in class, bullying other students and cheating in tests (Obringer and Coffey, 2007:41). A significant part of the mobile phones have video and photo capabilities. This raises issues of privacy where students can be photographed in restrooms and their photos shared via Bluetooth and other data transfer technologies (Obringer and Coffey, 2007:41). As a result, the "violated" teenagers might feel ostracised and too embarrassed to face fellow students in future.

Srivastava (2005:112) uses the mobile phone as an example when speaking about human identity as well as the need to belong. Another aspect touched on, is how it has affected the structure and "closeness" within families. Some argue that it has caused family members to diminish ties with each other while others argue that it encourages the development of independence and individuality. A key point that Srivastava (2005:113) brings to light is that mobile phones connect us to the outside world, and thus makes us feel less lonely. The mobile phone is increasingly being seen as a fashion accessory and status symbol which is becoming an overwhelming social status aspect, especially among the youth.

Social exclusion through cyber bullying is becoming an ever more present factor among teenagers. This is mostly due to an increase in the understanding of communication technologies (Anderson and Sturm, 2007). Cyber bullying is reaching much further than that of its face-to-face counterpart. Where face-to-face encounters would usually only be in public, including schools, cyber bullying can reach into homes where one is supposed to feel safe.

Mobile phones have far reaching implications for teenagers. The following section will reveal and discuss the results from the research study conducted on teenagers at a local High School.

6. Methodology

The following research paper made use of the quantitative approach. This was done by distributing a questionnaire to high school students between the ages of thirteen and nineteen. The questionnaire distribution was divided by class year. In each year a class was randomly selected and in each class, all the students were selected. Thus, the stratified random sampling approach was used. A total of 83 male and 78 female students took part in the answering of the questionnaire. This allowed for a more balanced view of

the data in terms of gender equality. Figure 1 displays the questionnaire distribution in more detail.

Figure 1: Detailed display of respondents.
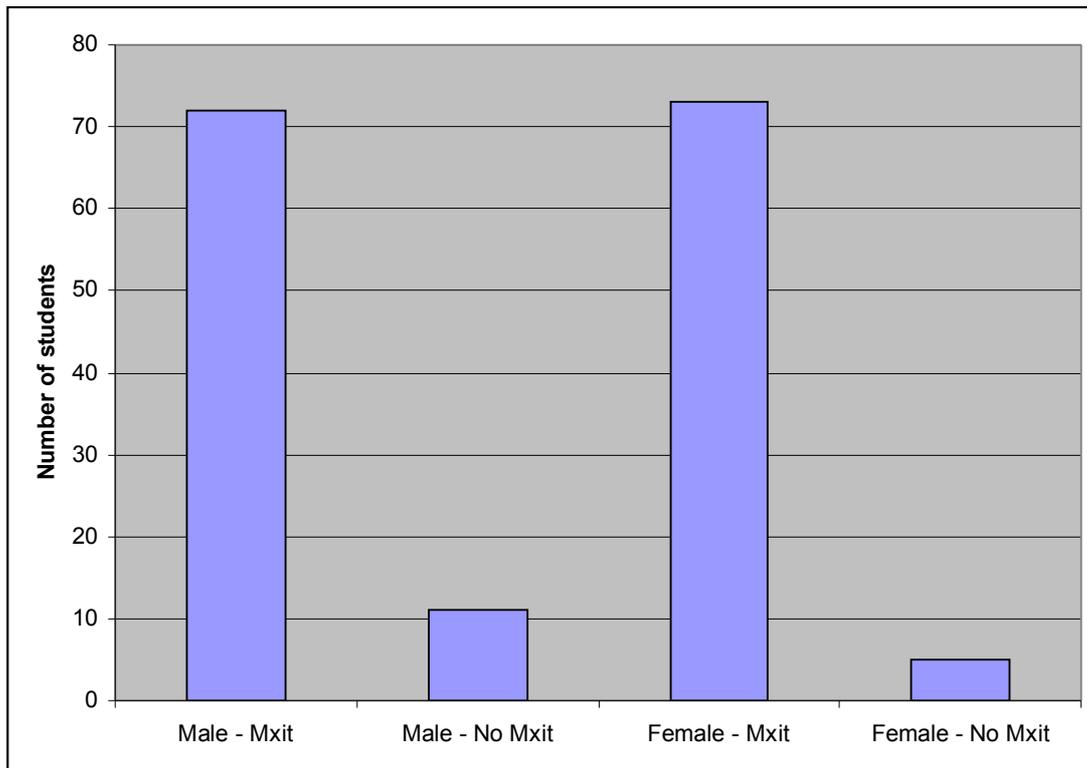
In this questionnaire, the students were asked specific questions pertaining to their own mobile phone usage. It consisted of three components, namely:

- Demographics (General use of mobile phones).
- Explicit material (Whether they have had any experience with sexually explicit material on their mobile phones).
- Mobile instant messaging (The questionnaire concentrated specifically on the MIM, MXit).

Three of the questions used the Five-Point Likert-scale. The questions included all of the main components, consisting of demographics, explicit material and mobile instant messaging.

The teenagers were asked in such a way to deduce how their lifestyles revolved around their mobile phones and to understand how they were affected, socially. The questionnaire reached a large number of students and thus reached one of the objectives by being a representative sample of the study population. The nature of the research has allowed for a view of teenagers and their mobile phone usage.

7. Results & discussion

The following sections discuss the results obtained from the answered questionnaires.

7.1 Demographics

On asking how much money was spent on airtime per month, a significant difference was found between that of male and female students. The average amount spent on airtime

per month by the female students is R110 while the male students only spend R59. The male respondents send out 29% more SMS's per day, than their female counterparts. While taking this and the amount of money spent into account, it can be perceived that the female students prefer using their mobile phones for calling which is seen as a more personal and social way of communication. Thus it gives us a good indication of the different social spaces that females and males find themselves in.

Some of the students spend a considerable amount of time on their mobile phones per day. With regards to the male students, 11% of them spend between five and six hours on the mobile phone while 6% spend more. Although this does not seem as much, it is still an issue that the parents or guardians should look into as it could affect the students unconstructively in terms of their social development and studies. An even greater number of female respondents spend between five and six hours and more on their phones. 18% spend between five and six hours per day and 8% over six hours. This links to the previous paragraph and Campbell's (2006:201) findings on how teenage girls use their mobile phones to communicate with friends. Figure 2 give a graphical representation of the hours spent per day, using mobile phones.

Figure 2: Hours of mobile phone usage per day (All respondents).
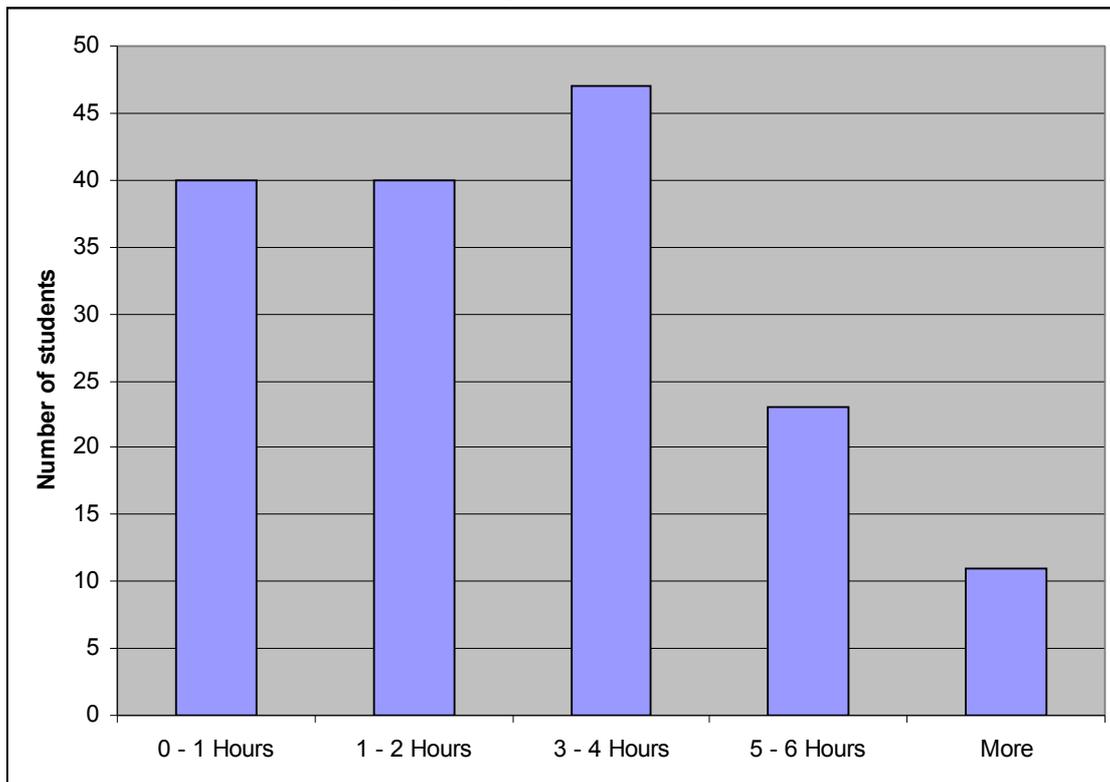
With regards to mobile phone usage in schools, 91% of the girls and 90% of boys responded by saying that they use their phones for less than one hour. This coincides with Francke and Weideman's (2007:16) findings that schools have tried to curb the use of mobile phones during school hours.

As previously discussed, one of the motivations for parents to buy a mobile phone for their child is for security reasons. One of the problems is that they can cause families to draw away from each other more easily, which is discussed under section "5. Mobile phones – Affects of integration and social behaviour" heading. One of the problems that parents face

is that their children can ignore their calls. In the question that asked why students ignored their parent's calls, some of them responded by stating the following:

- "Because it bothers me".
- "I want to enjoy myself".
- "Because they are interrupting me".
- "Asking dumb questions".

This is a clear indication of the social divide that the mobile phone has created between teenagers and their parents. These teenagers see their phones as something that keeps them tied to their parents. The mindset towards their parents is something of definite concern. This is a great example of how mobile phones have had a social impact on teenagers. When they are with their friends, they would ignore their parents' calls all for the purpose of fitting in. They also see their parents as interfering with them having fun and social contact with their friends. So to re-iterate, certain teenagers will deliberately ignore the calls of parents all for the sake of social acceptance. From the respondents, it was gathered that the average age that they received a mobile phone, was twelve for the girls and eleven for the boys. This would have given their phones enough time to set a precedence of what is accepted as the norm of approval in social circles.

The students were asked whether the SMS and MIM allow for more open conversations that the respondents would not normally have. 80% of males and 65% of females responded by saying that it did make them more open. The difference between the male and female respondents could be attributed to the females being more careful and vigilant in identifying problem situations before they do occur. The possible anonymity of a MIM user could also be the cause of this increase in openness. Anonymity could drastically decrease the chance of identification, thus lowering the chances of any ramifications. Figure 3 displays the responses just discussed, in detail. Mobile instant messaging is discussed further in a later section.

**Figure 3: Openness of students towards conversations.**
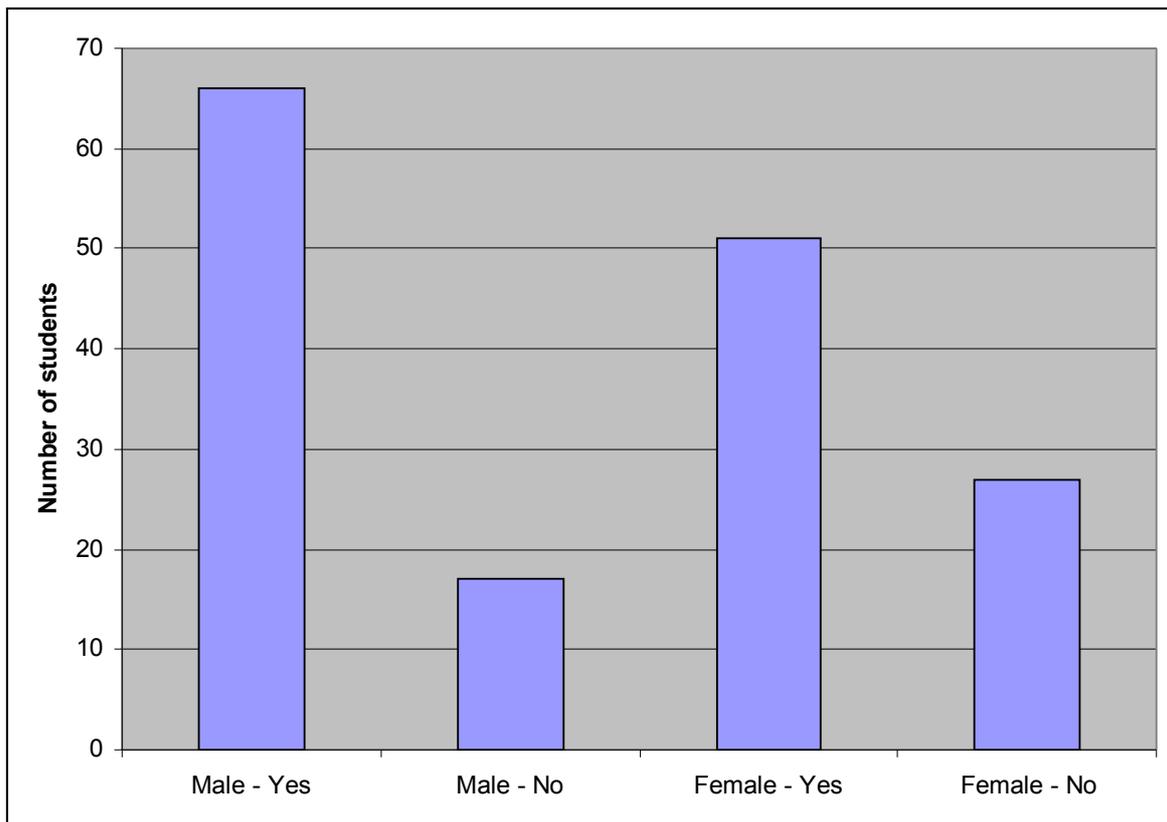
7.2 Explicit material

According to Francke and Weideman (2007:7), "in the Western Cape, exposure to pornography on cellphones is worse than on the Internet". The study conducted as part of this research article found that 82% of the boys and 67% of the girls use their mobile phones to access the World Wide Web. This shows that a sizable amount of the students are at risk of being exposed to pornography. The distribution of pornography also includes methods like data transfer. An equally high number, 85% of girls and 87% of boys, agree that the distribution of explicit material is affecting the sexual and/or aggressive behaviour of the youth. 83% of the boys and 77% of the girls also agree that the distribution of explicit material is causing people to lose respect when it comes to the opposite gender. The possible social degradation due to this exposure should be closely monitored by teachers, guardians as well as the parents of these teenagers.

7.3 Mobile instant messaging (MXit)

Results have shown that 23% of the students spend between three and four hours per day using MXit. A small, but definitely concerning 6% of students spend between five and six hours and 3% more than six hours per day, using MXit. That small amount displays the addictive nature that MXit can bring out in teenagers. Time spent on MXit means time spent away from true human contact. Social development might be adversely affected if there are not people around to personally see to it. Figure 4 shows a more detailed explanation on how many hours a day is spent by the respondents, using MXit.

Figure 4: Hours a day spent using MXit (All respondents).
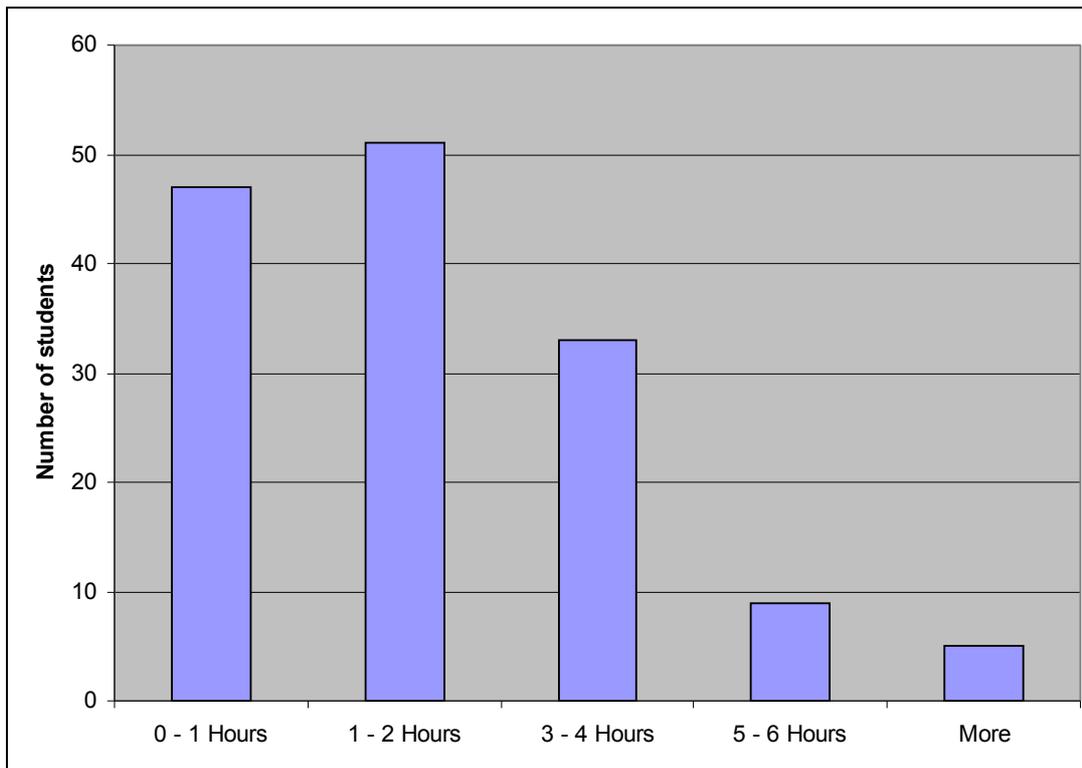
Both 90% of the boys and girls prefer to use private chatting to that of the public chat rooms. This could indicate a strong sense of privacy that the students want to have with real friends, rather that chatting with multiple people about the same topic. This also goes back the finding that the respondents are more open to talk about topics they would not normally talk about face to face with other people. The private chat rooms would allow for this more easily than the public chat rooms. The study conducted in this paper is deemed as a pilot study for further elaboration in future.

8. Conclusion

In this paper we have presented a brief overview on mobile technology as well as the use of it in different facets of society today. The article elaborated on the concerns that face users, including security and speaking in public as well as advertising campaigns to lure teenage girls into buying a particular mobile phone brand. This concentrated on factors, such as finding one's sense of uniqueness, identity and independence. Cyber bullying has unfortunately increased since the inception of mobile technologies. The reach of this type of bullying should be closely monitored by the parents and or guardians of these teenagers. This is especially important due to the possibility that it can reach into homes and into the bedrooms of the teenagers.

A pilot study was conducted as part of this research was aimed at teenagers and investigating how mobile phones have affected their lives, particularly from a social approach. A questionnaire was distributed amongst students of a high school to get results, first hand. The questionnaire was divided into three parts namely demographics, sexually explicit material and mobile instant messaging. The results raised definite issues that need to be addressed by parents and guardians, as previously indicated. From whichever perspective it is observed, mobile phones have most definitely changed the way that society and teenagers in particular, conduct themselves socially. The research study will help to serve as a precedence of precautionary measures. These measures have to be taken to help in the development of teenagers in an ever changing society.

9. List of references

Anderson, T. and Sturm, B. 2007. Cyberbullying from playground to computer, *Young Adult Library Services*. Available WWW: http://www.ebscohost.com/ (accessed 14 February 2008).

Campbell, R. 2006. Teenage Girls and Cellular Phones: Discourses of Independence, Safety and 'Rebellion', *Journal of Youth Studies*, 9(2) . Available WWW: http://www.ebscohost.com/ (accessed 14 February 2008).

Chen, J. and Kinshuk 2005. Mobile technology in educational services, *Journal of Educational Multimedia and Hypermedia*, 14(1) . Available WWW: http://www.proquest.com/ (accessed 16 July 2005).

Country Monitor. 2007. Thumb power. Available WWW: http://www.ebscohost.com/ (accessed 23 April 2008).

Erasala, N. and Yen, D.C. 2002. Bluetooth technology: a strategic analysis of its role in global 3G wireless communication era, *Computer Standards & Interfaces*, 24. Available WWW: http://www.sciencedirect.com/ (accessed 31 May 2008).

Francke, E. and Weideman, M. 2007. South African youth and mobile technology impact: The MXit phenomenon. *Proceedings of the 9th Annual Conference on World Wide Web Applications*, September 2007. Cape Town: South Africa: 1-19.

Furnell, S. 2005. Handheld hazards: the rise of malware on mobile devices, *Computer Fraud & Security*. Available WWW: http://www.sciencedirect.com/ (accessed 7 May 2008).

Hulme, G.V. 2004 . Dial v for virus , *InformationWeek*. Available WWW: http://www.proquest.com/ (accessed 22 May 2008).

Lever, K.M. and Katz, J.E. 2007. Cell phones in campus libraries: An analysis of policy responses to an invasive mobile technology, *Information Processing & Management*, 43(4). Available WWW: http://www.sciencedirect.com/ (accessed 7 May 2008).

Lu, J., Yu, C.S., Liu, C. and Yao, J.E. 2003. Technology acceptance model for wireless Internet, *ProQuest Education Journals*, 13(3). Available WWW: http://www.proquest.com/ (accessed 4 March 2008).

Marshall, B. 2003. Instant messaging: It's not just for kids anymore, *Computers in libraries*, November-December. Available WWW: http://www.ebscohost.com/ (accessed 21 April 2008).

Obringer, S.J. and Coffey, K. 2007. Cell Phones in American High Schools: A National survey, *Journal of Technology Studies*, 33(1/2). Available WWW: http://www.proquest.com/ (accessed 21 April 2008).

Peters, T.A., Dorsch, J., Bell, L. and Burnette, P. 2003. PDAs and health sciences libraries, *Library Hi Tech*, 21(4). Available WWW: http://www.emeraldinsight.com/ (accessed 5 March 2008).

Reid, D.J. and Reid, F.J.M. 2007. Text or Talk? Social Anxiety, Loneliness, and Divergent preferences for Cell Phone Use, Cyberpsychology & behaviour, 10(3). Available WWW: http://www.ebscohost.com/ (accessed 14 February 2008).

Shih, D., Lin, B., Chiang, H. and Shih, M. 2008. Security aspects of mobile phone virus: a critical survey, *Industrial Management & Data Systems*, 108(4). Available WWW: http://www.emeraldinsight.com/ (accessed 22 May 2008).

Slade, N. 2005. The new face of piracy, *MusicWeek*. Available WWW: http://www.ebscohost.com/ (accessed 3 May 2008).

Srivastava, L. 2005. Mobile phones and the evolution of social behaviour, *Behaviour & Information Technology*, 24(2). Available WWW: http://www.ebscohost.com/ (accessed 14 February 2008).

Timotijevic, L. and Barnett, J. 2006. Managing the possible health risks of mobile telecommunications: Public understandings of precautionary action and advice, *Health, Risk & Society*, 8(2). Available WWW: http://www.ebscohost.com/ (accessed 14 February 2008).

Turner, M., Love, S. and Howell, M. 2007. Understanding emotions experienced when using a mobile phone in public: The social usability of mobile (cellular) telephones, *Telematics and Informatics*. Available WWW: http://www.sciencedirect.com/ (accessed 15 April 2008).

Acknowledgements

END