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RESEARCH ARTICLE

IMPACT OF MOBILE PHONE ON STUDY HABITS OF UNIVERSITY OF KARACHI STUDENTS

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ABSTRACT

The objective of this study is to examine the effects of mobile phone use on the study habits of University of Karachi students. The research was carried out using questionnaires distributed to 1200 students who own mobile phones .The questionnaires collected demographic information about the respondents, mobile phone type preferences, uses of mobile phones during study, predominant usage during study and information about challenges facing students in using mobile phones for study purposes. The results showed significant gender differences in several aspects of mobile phone use. The results also revealed that mobile phone use has negative and positive effects on the study habits of university students depending on usage patterns.

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INTRODUCTION

This study investigates the effects of mobile phone use during study on the study habits of students. Many students starting university do not always possess the prerequisite skills to cope with the challenges of the new and changing learning environment. An environment where they are expected to study without being told specifically what or when to study. Ultimately their success or failure within university courses is determined by their ability to adopt the most appropriate strategy within a particular learning situation .In order to become effective independent learners in today's changing environment, there is need to focus more on what students are doing outside the classroom in terms of their study habits than on what students are doing in the classroom. Study skills are critical to academic success given the independent nature of university learning yet little attention has been paid to them in the Pakistan context. According to Ling (2001) are susceptible to trends, fashions and styles, which make them more willing to adopt new technology such as, mobile phones .As new technologies emerge, the study habits of university students also evolve .Mobile phones have changed the traditional college experience and to meet these challenges, learning institutions such as, institution must embrace the new technology for learning. Mobile phone use has been increasing in all economic and age sectors and has expanded the boundaries of higher education into an 'anytime, anywhere experience' (Prensky, 2001) leading to university students been labelled as one of the most important markets and the largest consumer group of mobile phone services (Totten *et al.,* 2005, McClatchy, 2006).

Mobile phones are presenting new means for students to access information thereby redefining the educational experience .Redefining this educational experience however presents new challenges for both educators and learners as they determine optimal mixes of technology and pedagogy. Improving the study skills of university students is an area which lecturers and students alike agree is important .The scenario at the Universities are often simply provide a brief initial introduction to study skills to students and there after fail to provide the necessary and subsequent systematic advice and support leading to students failing to develop effective study skills. Every year the University of Karachi admits 'the best and the brightest' and this homogeneous group of super achievers is really quite variable as some perform quite well and others do not. A few drop out and others continue their studies with mediocre grades. These differences can be closely linked to study habits which according to Biggs (1987) and Meyer (1992) have been identified as one of the reasons for academic failure and dropouts. The University of Karachihas been concentrating more on traditional ways. Looking at how University students have embraced mobile phone use, there is a need for the university to also encourage the use of wireless technology enabled devices for learning at anywhere, anyplace and anytime which makes information widely accessible. Based on the extended usage of mobile phones by university students need appearsto unravel the myth surrounding the use of mobile phones as an aid to study and the effects it has on students study habits and academic performance. The significance of the study emerges from the fact that it attempts to identify the effects of mobile phone use on the study habits of university students and the role played by technology in

supporting education, solving educational problems and promoting educational outcomes.

The study is mainly guided by the following research questions:

- What are the mobile phone type preferences of University of Karachi students?
- What do University of Karachi students use their mobile phones for whilst studying?
- What are the effects of mobile phone use during study on the study habits of University of Karachi students?
- What difficulties are faced by University of Karachi students in using mobile phones as study tools?

Literature Review: The mobile phone is one of the most rapidly growing technologies in the world with more than six billion subscribers. In Karachi there are more than 12 million subscribers and these subscribers are mainly shared between Ufone with more than 8 million subscribers, followed by Telenor with around 2.5 million subscribers and Zong with slightly over 2.1 million subscribers. A mobile phone is adevice that can make and receive telephone calls over a radio link while moving around a wide geographical area(Prensky:2001).Modern mobile phones support a wide variety of other services such as, text messaging, multimedia messaging, email, internet access, bluetooth, business applications, games, photography and calendaring among other services. The study prefers a broader definition of mobile phones to also include smart phones as types of mobile phones since they also perform some of the functions offered by a mobile phone. A smart phone is a device that also makes calls but also adds on features that in the past where found on a personal computer such as, Microsoft documents, QWERTY keyboard, synchronizing personal and professional email accounts (Attwell, 2005). The simplest way to tell a smart phone apart from a mobile phone is that mobile phones do not have an operating system whilst smart phones have an operating system such as, Android or Windows. Mobile phones are relatively low cost, powerful, small, and lightweight and with proper instructional design they promise educational opportunities because of their increased flexibility for learners. According to Prensky (2001),today's high end mobile phones have the computing power of a mid-1990's computer and even the simplest voice only phones have more complex and powerful chips than the 1969 on board computer that landed a spaceship on the moon. Study skills according to Al Hilawani and Sartawi (1997), are those skills and habits which are necessary for understanding and retrieving information. Key competencies of study include, acquiring information, recording information, recording appropriate responses to the presented information, locating the required information, organizing and managing information, synthesizing information to create meaningful patterns of responses, memorizing and retrieving information on demand (Hoover:1989). Azikiwe (1998) describes study habits as the way and manner a student plans his or her private reading outside lecture hours in order to master a particular subject oftopic. Study habits can be good ones which lead to a student excelling or bad ones which can lead to a student getting mediocre grades. Effective and successful study consists of more than merely memorizing facts but calls for knowing where and how to obtain information and the ability make intelligent use of it. Study habits directly reflect on one's learning ability and it is significant to find out the study habits of students in order to improve their learning. A perusal of related literature highlights the increased use of increased digital technology by university students in learning and two views have emerged, advocates and opposes. McNeal and Hooft (2006) found mobile phones as important resources which make teaching more relevant and meaningful thereby improving students literary and numeracy skills. In another study Attewell (2004) reported how mobile phone use encourages both independent and collaborative learning experiences and in the process raising self-esteem and self-confidence. Kukulska-Hulme and Traxler (2007) believe that mobile phones are a form of multiple literacy which provides a bridge between the real life texts of the community and formal learning thereby providing a multimodalliterary approach to learning. Kukulska-Hulme and Traxler (2007) also revealed how mobile phones facilitate designs for authentic learning leading to personalized learning that largely targets real world problems and involves projects of relevance and interest to the learner. Mobile phone use has also been found to support lifelong learning that occurs during everyday life, learning that occurs in spontaneity and impromptu settings and outside the formal environment (Brown: 2005). Such personalized learning exerts a democratizing effect on the learning experiences of learners as they take greater responsibility for the learning process instead of being passively fed information by lecturers (Dela Pena Bndalaria:2007).

Mcneal and Hooft (2006) point out that even though mobile phones are popular their use in the learning environment has been met with some resistance from students and educators mainly based on the fact that they are "a source of irritation, delinquency and even crime" (Katz and James, 2008) .Proponents of mobile phone use strongly feel that mobile phones are inappropriate tools for learning as they are actually harmful. Commonly cited negative effects of mobile phone use in education include, chatting and texting when students should be studying. As Cumiskey (2005) notes, public use of mobile phones transforms our roles from social participants to observer or user. In other words, it's not just the student using a mobile phone who is affected but also the one who is studying closer to the user thereby constituting a disturbance to proximate others. Kawasaki (2006), Jeen -Hynn *et al.* (2008) and Ling's (2005) reported how students who are preoccupied with their mobile phones tend to experience psychological disturbances, depression, lower self- esteem and interpersonal anxiety when they study without their mobile phones. Helszer (2004) reports on how some Education administrators spend much time and energy developing policies and procedures to keep mobile phones out of education at the expense of developing sound policies that integrate mobile phone use as knowledge construction and data tools. Gilroy (2004) pointed out that 85% of professors' surveyed in Germany stated that they wanted mobile phones banned from tertiary education mainly because of students cheating in tests, accessing unfiltered internet sites and secretly taking pictures without permission. Mobile phone use has also been found to reduce students thinking abilities and shortening the attention span of students so dramatically that students struggle to read anything longer than a social network posting (Young,1996).

METHODOLOGY

For data gathering and to investigate the study questions a questionnaire with closed and open ended questions designed by the researcher was distributed to a sample of 1200 (600

male Students and 600 female students) students in the department of Statistics, University of Karachi, 2016-2018.The selection of the participants was random and the only criterion was ownership of a mobile phone. The format of the survey was based on a mixed method of seeking qualitative and quantitative responses. The questionnaire consisted of 4 main parts; Part 1 collected demographic information about the respondents, Part 2 asked information about mobile phone type preferences, Part 3 asked questions about uses of mobile phones during study and predominant usage during study and Part 4 gathered information about difficulties facing students in using mobile phones during study.

FINDINGS AND DISCUSSIONS

Mobile phone ranking and type of mobile phone owned: The 200 respondents, 100(50%) female students and 100(50%) male students had owned mobile phones for more than six months and some for more than two years. The respondents were asked to rank four main categories of the mobile phone selection namely price, available features, look and shape and brand. The respondents then indicated the type of mobile phone they own.

Table 1. Mobile phone selection ranking by the respondents

Categories	A	B	C	D
Price	26.40%	36.40%	25.30%	12.30%
Brand	29.80%	30.30%	27.40%	31.00%
Available Applications	24.20%	20.20%	26.30%	19.10%
Look and Shape	21.30%	14.20%	24.40%	21.30%

The results in Table 1 show the importance of brand because this feature gets the most first rank in the sample but the price is also very important. When examined together the first rank and second rank, the results show, that the price gets the most votes. The importance of price is also evident in the number of last rank. Price is very critical to all students and it is the only thing between them and their favorite mobile phone. The available applications were less important than price and brand even though most respondents preferred mobile phones with internet, Whatsapp applications. Correlations showed that usually the more expensive the device was the more applications it had. Female students appeared not worried about the price but were more concerned with the brand, appearance and look while they ranked available applications lower. Male students ranked available applications higher than look and appearance and this confirms past research by Ling(2001),Bianchi and Phillips (2005) that male users are more attracted to technical application and features of the mobile phone such as games while females use the mobile phone as a socializing tool.

Table 2. Mobile phone company ranking by the respondents

Company	%
Samsung	46
Huawei	32
Oppo	7
Nokia	6
Iphone	5
Vivo	4

After this ranking, the next question was on the type of mobile phone owned by the respondent. The results in Table 2 show that the respondents prefer a Samsung mobile phone which is owned by 46%of the respondents followed by Huawei with 32%.The third and fourth highest owned mobile phones are Oppo with 7% and Nokia with 6%.The Apple i-Phone was owned by 5% of the respondents mainly because of its high price. Vivo phones were the least preferred mainly because it is associated with cheap local imitations. The choice of a mobile phone type and the reasons influencing type section of the respondents canbe understood in terms of several established models and theories in terms of adoption of technological products as such as, Theory of Reasoned Action (Fishbein and Ajzen (1975) and the Technological Acceptance Model (Davies, 1989) .The two theories propose several antecedents which, include perceived expressiveness (Cassidy *et al.,* 1992)which is how students express their identity, individuality and emotions, perceived enjoyment (Davies, 1992) which is the extent to which students enjoy using their mobile phones because of the various applications they have, perceived usefulness (Davies:1992), which is the belief that using a mobile phone as a study tool can enhance their learning and perceived ease at use (Davies:1997),which is the degree to which students believe mobile phone will provide easy access to information.

Use of phone applications when studying: The third part of the questionnaire required respondents to evaluate their frequency of mobile phone applications usage during study. The Likert scale contained the following categories of frequency; 1=Never,2=rarely, 3=often, 4=always and 5=no response. All the respondents (100%) do not switch off their mobile phones whilst studying and 65% indicated that they put their mobile phone son silent when studying.

Internet and web browsing: The majority of the phones (76%) were internet enabled and 24% were voice only mobile phones .The majority of respondents with internet enabled mobile phones indicated that they visit internet sites during study time. Most of the respondents indicated that they mainly access Google and other text or search engines during study time thereby turning their mobile phones into research tools. Some of the sights visited included the dictionary and encyclopedia. Eighty percent of the respondents who used Google and other search engines indicated that they use the internet to search for educational information while 20% use the search engines for non-educational purposes. None of the respondents indicated using voice activated search engines despite the several advantages it also has for the blind and sight impaired. The results also showed that female students were more likely to send or receive emails during study than male students. Seventy percent of respondents admitted to accessing social network sites or file sharing sites such as, Face book, You Tube and Twitter during study from time to time or even more frequently. However, 87% of visits to social network sites were for non-educational purposes. Such instances of real time chat and data sharing applications can support communication collaboration and knowledge sharing. If used correctly, social network sites can be productive and enhance learning. Facebook accounts can allow students and lecturers to share links and ideas, regular blogging which allow students to read and comment on each other's posts making students to become content creators. As noted by Northrup (2001) the rise in students' level of interaction corresponds with high levels of learning leading to improved academic performance. Internet search engines have been accused of conditioning students to expect to be able to find information quickly and easily and hence making them lazy. Young (1996) indicated that college students who use the internet

Table 3. Respondents mobile phone application usage when studying

	Never	Rarely	Often	Always	No responses
Internet	22.90%	18%	20.10%	40.10%	0%
Text messaging(SMS)	0.10%	0.50%	24%	75%	0%
Voice	10%	31.40%	22.40%	37.10%	0%
Multimedia Messaging	80.10%	0.50%	0.20%	0%	13%
Camera	18.20%	34.10%	25.40%	23.10%	0%
Video	60%	20%	15%	0.50%	5%
Calendar	20%	53.50%	15%	0.80%	10%
Calculator	0.5%	0.1%	16%	85%	0%
Clock	0%	0.20%	24.80%	73.10%	0%
Alarm	20%	55.30%	22.50%	0.30%	0%
Games	29.40%	68.20%	0.90%	0.60%	0.50%
Organizer	70%	30%	0.50%	0.30%	0.20%
Radio	42%	17.40%	20.30%	21.80%	0%
Audio	10%	89%	0.40%	0.20%	0%

'excessively' experienced a decline in study habits as they are often distracted. Whilst on the internet students can bump into pornographic sites. Despite the various distractions the majority of the respondents agreed that it assisted them in their study. For example, in goggle search if a student spells a word wrongly, Google prompts the student 'Did you mean' thereby providing a correct spelling. The results reveal that the internet is a valuable source of information for students. The epileptic and expensive nature of data connections in Karachi are a major barrier to students fully utilizing the internet as it is very expensive to download documents more so for students to spend more time surfing on the internet.

Short text messaging (sms) and multimedia messaging service (mms): The Study confirmed that the most popular feature used was text messaging. The results from Table 3 show that 75% of the respondents confirmed sending or receiving text messaging during study time. Of the texts messages sent or received, a small proportion of the respondents, 35% pointed out that the text messages were for educational purposes, whilst 65 % where for non-educational purposes .Of the 65% messages relating to non-educational purposes, 70% were to friends, whilst 30% were to parents and relatives. Multimedia messaging service (MMS) was one of the least used applications with 80.1% respondents indicating that they never used the application. More females' respondents than males used the SMS features while male students were more interested in other technological features such as games. This finding is consistent with earlier studies (Nurvitada: 2003, Lie: 2004, Ling: 2001). The respondents indicated that education related SMS messages were mainly on asking for titles of texts, definitions, information on missed lectures and for seeking clarification on concepts. Only5% pointed out that they at times send text messages to their lecturers. The amount of information shared through SMS and MMS is usually less because of the prohibitive high costs of sending a long message. Most of the messages sent or received are written in short hand or abbreviated form. The use of short hand has been related to negatively affecting spelling and grammar proficiency as evidenced from the use of abbreviated words, incorrect subject-verb agreement and misspellings in assignments and examinations (Kate Ross: 2010). Geertsema et al (2011) however disagrees with the negative effects of text messaging by pointing out that there is a stronger relationship between the abbreviations and literacy skills meaning that text messaging gives exposure to the written words which relates to higher literary attainment. Short text messages can be written easily even with 'predictive text' providing timely reminders and students can also use SMS innovative games, pop quizzes to become aware of current events for classroom discussion. Students can also learn languages, literature and writing through language games such as crosswords and Tetris like word puzzles. Mobile phones also provide an incentive for university students to use their literacy skills in their native languages Whilst educators dismiss mobile phone's instant messaging as distracting during study because of non-educational texting and compulsive checking of the mobile phone for messages, even a window could be a distraction to an unmotivated student. Texting provides inventive methods that facilitates collaborative learning and continued conversation despite the physical location there by creating common interpretations and shared understanding. The results show that not all texting has a negative effect.

Voice calls: The results show that students receive and make calls during study since all respondents pointed out that they do not switch off their mobile phones when studying. Over 50% indicated that they at some point during study make or receive calls. More than 90 % of the calls made or received during study were non-educational purposes, pointing out at how mobile phones can be distracting whilst studying. The results also confirmed Junco, Mersen and Salter's (2010)findings that females spent more time talking on the phone than males and that there are more likely than males to receive more family oriented as well as social oriented calls. Receiving calls is the most important feature of mobile phones since it is cost free and the majority (70%) of the respondents pointed out that they receive calls from parents', relatives, classmates and friends during study while only 30% make calls .The results show that respondents were less likely to make a call than to send a message. The students also indicated that they checked their mobile phones several times when studying more than three times in an hour anticipating a call, message or email even if the mobile phone is on vibrate and in a case of network inaccessibility or phone malfunction, 30% said they would be very upset and stressed. The results indicate that voice calls can be used to share educational information but there is need to promote mobile phone etiquette as students should understand some simple etiquette of when to turn off mobile phones and when not to answer mobile phones.

Camera and video recording: Generally a few respondents indicated using the camera and video recording application on their mobile phones for educational purposes. Despite the educational benefits of cameras and video recording, some of the respondents indicated using the camera for sending lewd photographs which can be distracting during study. Camera and video recording applications can become tools for data collection and documentation. For example, the Camera and video recording application can be used to take appropriate

pictures say in economic history, archaeology which can then be published on the internet whilst creative photos can inspire students' creative writing.

Voice recording and music: Although a mobile phone is a sound based technical device, 89% of the respondents rarely use this application and it was actually surprising that the respondents use the camera more than voice recording .The few respondents that use this application to record lectures for their friends who would have missed classes and to record important topics they feel are important or central such as examination revision classes. It was interesting to note that 21% of the respondents cannot study without listening to the radio or music downloaded on their mobile phones.

Games: The results show that 85% rarely play games on their mobile phones while about 14% at one point or another play games during study. Of the few respondents who play games during study the majority were male students. While literature is replete with the distracting effects of games, various features in games can help students to develop problem solving and critical thinking skills. The rules of the games notify contestants presenting the ways to play in order to win there by instilling structural expertise. Playing to win demonstrates to students the need to continuously strive to come out on top.

Calculators, calendars and clock: The respondents indicated that they frequently use calculators and this might be attributed to the fact that as science students they rarely make any calculations. The small percentage of 0.1 % who may not use calculators to calculate coursework marks. 23% of the respondents at least use the calendar to check on assignment due dates and tutorials dates. Scheduling and calendar applications are useful to the respondents as they can increase an individual's organizational skills and regulative or self-directed learning ability. All the respondents confirmed using the clock application when studying to regulate their study time.

Mobile phone use challenges faced by students: The last part of the questionnaire used open ended questions to gather information on the challenges faced by students in using mobile phones as study tools. The main challenges faced by the respondents included, network congestion which slows down speed at which information is delivered, lack of electricity due to power cuts for recharging their mobile phones, high costs of prepaid mobile phone services which limits the rate and time for which one would want to use the mobile phone, small screen size, inadequate memory, short battery, content and software application limitations, lack of inbuilt functions, difficulties of adding applications, differences between application and circumstances, network speed and reliability. The question that arises from these numerous challenges is whether Karachi gives adequate technical support for M-learning at the University of Karachi. Like at other institutions of higher learning in Karachi, Mobile learning is still fragmented and the technical infrastructure is not yet fully ready for truly mobile learning as some learning materials still remain unsupported. The most serious problem faced today is the lack of a sound theoretical framework which can generate effective instructional, evaluative and quality of programmes that rely significantly on mobile technology. But considering great advantages that mobile phone can bring, the adoption of mobile phone as a study tool should be greatly encouraged. The limitations of mobile devices may be a temporal concern if we look at the rapidly advanced functions and numerous applications being introduced every day.

Conclusion

The results show that a mobile phone is a very important tool for study as most of the respondents used their phones for study purposes. Mobile phones are increasingly one of the most popular information access devices and what stands out from the study is the high use of interactive, multiuser functions which can at times be disruptive or beneficial during study. In essence, the study revealed that mobile phones are beneficial for learning but learners have a tendency to abuse them. While additional research is warranted in order to confirm whether or not the findings can be generalized to the University of Karachi and all Universities in Pakistan the size of the sample and consistent patterns do lend credibility to the findings. Higher institutions can take advantage of the potential and capitalize on the mobile phone for educational purposes because of the intrinsic motivation of university students in wanting to communicate amongst themselves. Findings of the study also show that mobile phone designers must take into account how young people use mobile phones for educational purposes. The presence of mobile phones presents a host of options and challenges for today's students. Mobile phones are undeniably convenient, helpful tools for study and can be a hurtful source of distraction depending on the attitude and use pattern of a student.

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