Usages Pattern of Cell Phone in Classroom: A Case Study of Mathematical and Physical Science Faculty Students of Jahangirnagar University

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Abstract
Now-a-days mobile phone is very important communicational device. This cableless device reduces the hazards of the land phone. In spite of its various advantages it has some disadvantages also. Misusing of mobile phone increases the disadvantages of this device day by day. Unnecessary talking makes the reasons of wasting the money and time for the youth. Modern cell phones enable users to access a variety of electronic media at almost any time and any place. At present, the cell phone is likely to be on hand while university students are in class and studying. Thus, the main purpose of the present study is to investigate the usages pattern of cell phone in class room with the help of the evidences from Mathematical and Physical Science Faculty Students of Jahangirnagar University. The result shows that a cell phone is a very important tool for study as most of the respondents used their phones for study purposes. Cell phones are increasingly one of the most popular information access devices and multiuser functions which can be beneficial during study. This study suggests that mobile phone designers must take into account how young people use cell phones for educational purposes. The presence of cell phones presents a host of options and challenges for today's students. Higher institutions can take advantage of the potential and capitalize on the cell phone for educational purposes because of the intrinsic motivation of university students in wanting to communicate among themselves.
Keywords: Mobile phone usage, Classroom, University students

1. Introduction

Cell phones are an integral part of our daily life as well as university life and culture. Modern cell phones enable users to access a variety of electronic media at almost any time and any place. Even a casual observation of today's university students will reveal cell phones being used, both overtly and covertly, in every possible campus setting, including the classroom [1]. As cell phone technology continues its rapid development, the device appears capable of contributing to student learning and improved academic performance. For example, modern "smart-phones" provide students with immediate, portable access to many of the same education-enhancing capabilities as an Internet-connected computer, such as online information retrieval, file sharing, and interacting with professors and fellow students [2-3]. Conversely, some recent research suggests that many college students perceive the cell phone primarily as a leisure device, and most commonly use cell phones for social networking, surfing the Internet, watching videos, and playing games [4-5]. If typically utilized for leisure rather than education, then cell phones may disrupt learning within academic settings [6]. Both theoretical perspectives and previous empirical studies suggest that the recent rapid increase in cell phones has influenced multiple aspects of student's daily lives.

After the introduction of cell phone or mobile phone in Bangladesh in 1993, today, we see people use them in all kinds of situations, from the most private situations such as in bed to public places such as in the streets, on the bus, in shops, restaurants, public theaters, offices, at work as well as leisure, while attending seminars, classrooms and so on. Mobile phones can be a source of great disruption in workplaces as well as in classrooms. Now almost every mobile phone provide individuals with access to texting, games, social media and the internet. So, they have reduce the attention of students in classes and can therefore be injurious to learning. Many teachers have a zero-tolerance policy during the class time, since they assume that their students are using them to text friends or playing games or update their various social media sites. The aim of this paper is to examine how important it is for university students to use and their usage pattern of cell phone in class rooms.

2. Literature Review

Sánchez-Martínez and Otero [7] used a combination of self-reported monthly cell phone expenses and frequency of use data to identify intensive cell phone users in a large sample of Spanish high school students. They shows that the intensive cell phone use was related to school failure as well as other negative behaviors such as smoking and excessive alcohol use. There is a negative relationship between calling, texting, and self-reported grade point average (GPA) among university students in the United States [8]. Also, calling and texting were positively correlated with a self-reported measure of academic difficulty among a sample of female, Taiwanese university students [9]. Popular activities such as playing video games, surfing the Internet, and monitoring social media sites are now all easily accomplished with most cell phones. Researchers have linked each of these

activities, independent of cell phone use, to academic performance. For example, heavy video game playing has been associated with lower GPAs [10-11]. Also, low levels of Internet use have been associated with improved academic performance [12]. Among the heavy Internet users information seeking was associated with better academic performance, while video game playing was associated with lower levels of academic performance [13]. Several recent studies have identified a negative relationship between social-networking site use (e.g., Facebook, MySpace, Twitter) and academic performance [14-15]. In particular, Kirschner and Karpinski [16] demonstrated that Facebook users have a lower self-reported GPA and spend fewer hours per week studying than nonusers. Likewise, some researchers [17-18] found a strong, negative relationship between time spent on Facebook and actual cumulative GPA. These negative relationships have been found in populations across the world, including North America, Europe, and Asia [13], [19]. Recently, multitasking has emerged as a possible explanation for the negative relationship between electronic media use (including cell phone use) and academic performance [8], [14], [16] [19-22]. Indeed, several studies reveal that students frequently report using a variety of electronic media including cell phones while in class, studying, and doing homework [7-8], [21], [23]. Several recent studies, using a variety of methods, identify a negative relationship between multitasking and academic performance. Firstly, Wood, et al., [22] measured the influence of multitasking with an array of electronic media on students' ability to learn from typical, university classroom lectures. Emailing, MSN messaging, and Facebook use via computer were all investigated as was cell phone texting. Results showed that multitasking with any of the technologies was associated with lower scores on follow-up tests compared with students who did not multitask. Secondly, Junco and Cotton [21] used a hierarchical regression to determine the power of multitasking to predict actual cumulative college GPA. Results showed that Facebook-multitasking and texting-multitasking were significantly and negatively related to college GPA after controlling for sex, actual high school GPA, time preparing for class, and a student's Internet skills. Finally, Rosen et al., [14] observed the study behaviors as well as study settings of a sample of middle school, high school, and university students.

3. Methodology
This is a case and field study research. A well-structured questionnaire has been developed after the intensive review of the literature and practical experience. A face to face survey was conducted among the students of second year to fourth year from different departments of Mathematical and Physical Science faculty in Jahangirnagar University. On an average the class size is 50. The survey was administered among 130 students which includes 81 male students and 49 female students. Purposively, all departments of Mathematical and Physical Science faculty of Jahangirnagar University is selected. Mathematical and Physical Science faculty includes Statistics, Environmental Science, Mathematics, Computer Science and Engineering, Geological Science, Chemistry and Physics department. The result of this entire paper is computed by using IBM SPSS 22.0 and Microsoft Office Excel-2010.

4. Results and Discussion
The frequency distribution given in Table 1 shows the distribution of 130 respondents. The percentage of respondents is almost same for all departments considered in this study. The highest number of respondents about 16% were from Statistics department and the lowest percentage (about 13%) of the students were taken from three departments (Environmental Science, Chemistry and Physics).

Table 1: Frequency distribution of the respondents.

Department	Frequency	Percent
Statistics	21	16.2
Environmental science	17	13.1
Mathematics	19	14.6
Computer science and engineering	19	14.6
Geological science	20	15.4
Chemistry	17	13.1
Physics	17	13.1
Total	130	100.0

The bar chart given in Figure 1 depicts the brand of mobile phone used by the students of Mathematical and Physical science faculty of Jahangirnagar University. Among 130 respondents majority students (39) use the cell phone made by Samsung which indicates that Samsung is the most popular brand to the students. The cell phones made by Symphony has the second height position by the choice of the students. The less popular cell phone is made by Maximus.
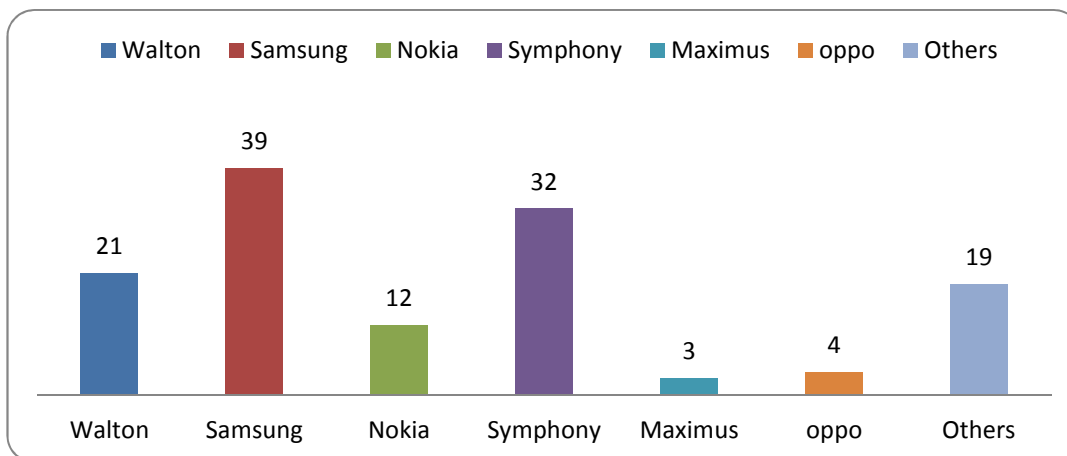
Figure 1: Bar chart of the brand of mobile phone used by the respondents.

Among the total respondents, about 67% respondents use mobile phone which price belongs to 5,000-15,000 Taka (Taka is the currency of Bangladesh) while about 9% respondents use mobile phone which price is more than 20,000 Taka (Figure 2).
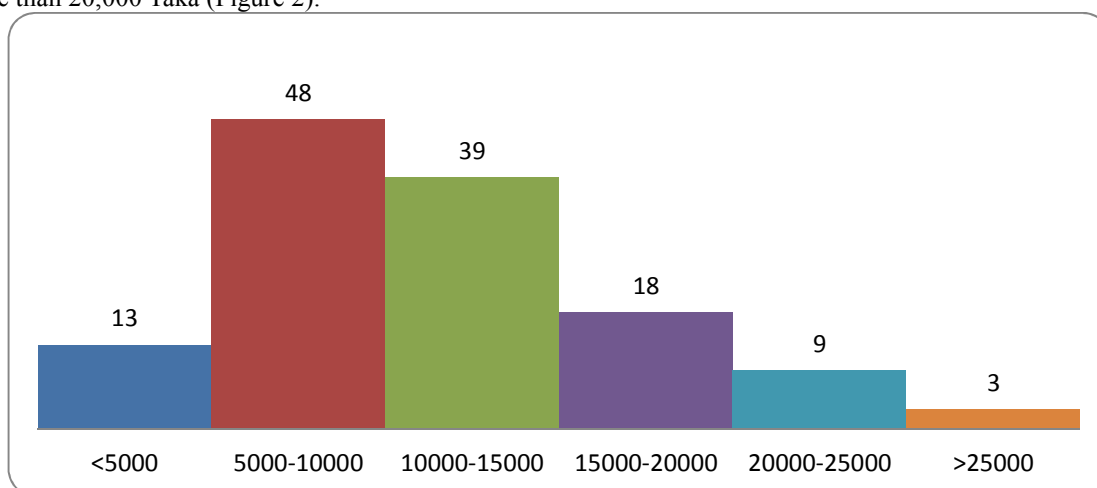

Figure 2: Histogram of Price of mobile phone

According to the empirical findings of the study it is observed that around 35% of the respondents spend less than 20 hours on mobile phone in a week. About 37% of the students spend 20-30 hours per week on mobile phone. Only approximately 11% of the respondents spend more than 40 hours on mobile phone in a week (Figure 3).
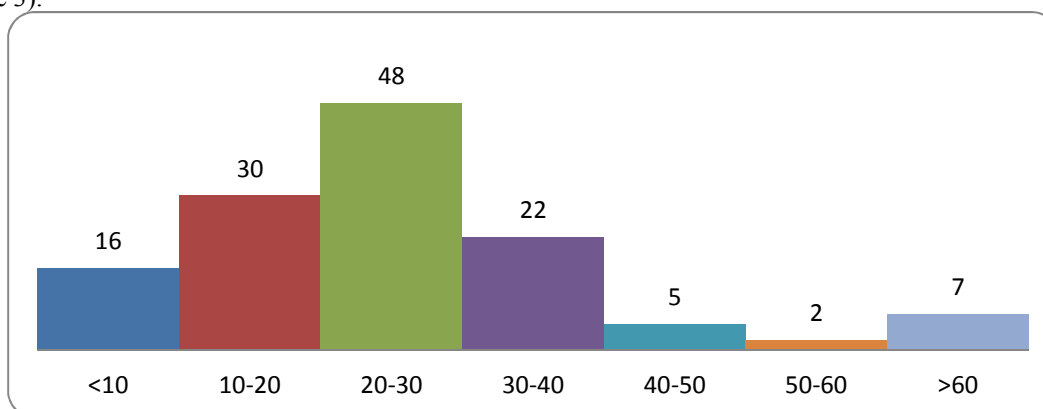

Figure 3: Histogram of the weekly spending time on mobile phone.

The impact of mobile phone on student learning is examined in a 5 point Likert scale. About 28% of respondents revealed that the frequent use of mobile phone never interferes their learning whereas 32% are of the agreement that it also assists them in learning sometimes. Among the respondents, 30% have the opinion that the calls/messages received just before class impact on their ability to concentrate sometimes and 3% said that it

happens to them always. Only 36% of the students said that the uses of mobile during their study time distract them sometimes and 32% said it also assists them in learning (Table 2).

Table 2: Impact of mobile phone use on learning.

Variables	Never (1)	Seldom (2)	Sometimes (3)	Often (4)	Always (5)	Total
How often does the use of Mobile Phone in class interfere your learning?	36 (27.7)	34 (26.2)	31 (23.8)	20 (15.4)	9 (6.9)	130 (100)
How often does the use of Mobile Phone in class assist your learning?	14 (10.8)	24 (18.5)	41 (31.5)	39 (30)	12 (9.2)	130 (100)
How often do the calls/messages received just before class impact on your ability to concentrate?	38 (29.2)	35 (26.9)	39 (30)	14 (10.8)	4 (3.1)	130 (100)
How often does the use of Mobile Phone during your study time distract you?	13 (10)	34 (26.2)	47 (36.2)	25 (19.2)	11 (8.5)	130 (100)
How often does the use of Mobile Phone during your study time assist you in learning?	10 (7.7)	13 (10)	28 (21.5)	41 (31.5)	38 (29.2)	130 (100)

N.B. Values in parenthesis indicate percentage.

Mobile phone is also helpful for the students for exchanging of useful information with their classmates about their studies. Students use this fascinating magic device also in a very better way. Some of the studies proved that this technology has increased the academic performance. In this context the study tried to find out the positive effects on learning achievements of youth. Majority (60%) agreed that they can easily contact the teachers for study purposes. Among the respondents 93% agreed that they can easily contact their classmates for help in studies. 56% students agreed that their academic performance has been increased due to mobile technology whereas 12% students disagreed and also 48% respondents agreed that mobile phone has helped to increase the level of quality of education whereas 27% disagreed with this opinion. Majority (91%) use it as dictionary/thesaurus/calculator in class rooms (Table 3).

Table 3: Positive effects of mobile phone on learning achievements.

Variables	Can't say (1)	Strongly Disagree (2)	Disagree (3)	Strongly Agree (4)	Agree (5)	Total
I can easily contact the teachers for study purposes	30 (23.1)	10 (7.7)	11 (8.5)	12 (9.2)	67 (51.5)	130 (100)
I can easily contact classmates to get help in studies	1 (0.8)	5 (3.8)	3 (2.3)	63 (48.5)	58 (44.6)	130 (100)
My academic performance has been increased due to mobile technology	9 (6.9)	6 (4.6)	16 (12.3)	26 (20)	73 (56.2)	130 (100)
The Mobile Phone has helped to improve the level of the quality of education	9 (6.9)	5 (3.8)	35 (26.9)	19 (14.6)	62 (47.7)	130 (100)
Students use dictionary/ thesaurus/ calculator of mobile phone in classes	3 (2.3)	2 (1.5)	7 (5.4)	54 (41.5)	64 (49.2)	130 (100)

N.B. Values in parenthesis indicate percentage.

From the results given in Table 4, it is concluded that 38% students strongly disagree with that they keep their mobile phones on and the ring tone disturbs the class while 6% of the students strongly agree that the ring tone disturbs the class. Around 49% of the respondents strongly disagreed to the statement that they purchased their mobile phone without the permission of their parents, but 15% of the students agreed that they purchased their mobile phone without the permission of their parents. Among the respondents, 30% disagreed that they send missed calls to class fellows to disturb classes, but 13% agreed that. 41% students disagreed that they waste their time sending/writing SMS during class work on the other hand about 12% agreed to the statement that they waste their time sending/writing SMS during class. Some students (34%) disagreed that mobile phone has put negative impact on students' moral values however some students agreed that (35%). Unfair means in examination hall is very dangerous for any nation but students have tendency to do that. Among the respondents, about 24% disagreed to use mobile phone in examination hall as a source of unfair means while 24% agreed and 13% strongly agreed that students use mobile phone as a source of unfair means in examination hall. Almost half of the students (47%) disagree that mobile phone is responsible for their low academic

performance but around 20% students agree that mobile phone is the cause of their low academic performance. Given the pervasiveness of cell phones and the acceptability of their use almost anywhere these days, it's difficult to imagine successfully enforcing almost any policy in the classroom and still having time left to teach.

Table 4: Negative Effects of mobile phone on learning achievements.

Variables	Can't say (1)	Strongly Disagree (2)	Disagree (3)	Strongly Agree (4)	Agree (5)	Total
I keep my mobile phone on and the ring tone disturbs the class	4 (3.1)	49 (37.7)	46 (35.4)	8 (6.2)	23 (17.7)	130 (100)
I purchased the mobile phone without the permission of the parents	5 (3.8)	63 (48.5)	42 (32.3)	8 (6.2)	12 (9.2)	130 (100)
I send missed calls to class fellows to disturb the classes	5 (3.8)	63 (48.5)	39 (30)	6 (4.6)	17 (13.1)	130 (100)
I waste my time sending/writing SMS during class work	7 (5.4)	41 (31.5)	53 (40.8)	14 (10.8)	15 (11.5)	130 (100)
The Mobile Phone has put negative impact on students moral values	12 (9.2)	17 (13.1)	44 (33.8)	12 (9.2)	45 (34.6)	130 (100)
The mobile phone is a waste of time for students	8 (6.2)	20 (15.4)	47 (36.2)	19 (14.6)	36 (27.7)	130 (100)
The students use mobile phone in examination hall as a sourceofunfair means	13 (10)	39 (30)	30 (23.1)	17 (13.1)	31 (23.8)	130 (100)
Students tease the fellow mates by sending missed callsthrough unknown members	19 (14.6)	29 (22.3)	39 (30)	16 (12.3)	27 (20.8)	130 (100)
Mobile phone is responsible for my low academic performance	15 (11.5)	29 (22.3)	61 (46.9)	6 (4.6)	19 (14.6)	130 (100)

N.B. Values in parenthesis indicate percentage.

5. Conclusion

The most serious problem faced today is the lacks 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 cell phone can bring, the adoption of cell 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. In essence, the study revealed that cell phones are beneficial for learning but learners have a tendency to abuse them. Higher institutions can take advantage of the potential and capitalize on the cell phone for educational purposes because of the intrinsic motivation of university students is wanting to communicate amongst themselves. Findings of the study also show that mobile phone designers must take into account how young people use cell phones for educational purposes. The presence of cell phones presents a host of options and challenges for today's students. Cell 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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