



RESEARCH PAPER

A Critical Discourse Analysis of the Language Used in the Mobile Phone by the Students of Social Sciences in Higher Institutions of the Punjab

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DOI

[http://doi.org/10.47205/plhr.2021\(5-II\)2.38](http://doi.org/10.47205/plhr.2021(5-II)2.38)

PAPER INFO

ABSTRACT

Received:

August 29, 2021

Accepted:

December 26, 2021

Online:

December 29, 2021

Keywords:

English Language

Higher Education

Mobile Phone

Social Science

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The objectives of our study are to find out how teachers and students deal with this issue in Higher Education Institutions of Punjab, Pakistan. We are trying to justify our assumption that classroom teachers, especially teachers who do not have smartphones, have questions about mobile phones. We address this problem, a survey methodology was adopted, data were collected through online interviews with 250 college students and 30 teachers in nine Punjab divisions of Pakistan. Results show that 70% students used smartphone for entertainment and 30% teachers respectively while 45% teachers used mobile phone for education. Teachers and students used mobile phones during class for information gathering, file sharing, searching educational material and online lectures. Research recommended that Higher Educational Institutions are required to use handheld devices to enhance academic and curriculum activities to cope new challenges.

Introduction

If you go to a higher education institution in Punjab, Pakistan, you will find many students with mobile phones. As they walk between classes, many quietly listen, write, or read emails. They will have fast chats to inform other students about the wrong hours or evening plans. Bestowing to researchers, in Punjab, Pakistan, more than 90% of people between the ages of 17-23 have Internet-enabled mobile phones (Batool, 2018). Pakistani youths have quickly embraced smart mobile knowledge that lets them to send emails to their groups and get access to the Internet as they go about their daily routine. Considering their popularity, we want to know how mobile phones are being used by college students for educational purposes and to measure

students' response to foreign language learning materials, especially for mobile phones (Andersen, 2009).

An indication of a mobile learning event is that the smart phones may be utilized for text and instant messaging. This function of the smart phones allows its users to establish communication with other mobiles 24/7 and anywhere, where they immediately connect and share personal information (Iqbal, 2017). In the national survey, 60% of students like to write messages because they can perform multiple tasks, which allows them to use the device during conversations, using a computer, or listening to music. In addition, 58% reported sending messages as a means of communication (Grimus, 2014; West, 2013). Students perform a variety of tasks and complete tasks on their mobile phones using mobile packages; Some students prefer to play on a personal computer, considering the device only for entertainment (Black, 2010; Yousuf, 2007).

Today we have to accept the truth that mobile phones are the part of the student life and will become more and more real in the future, so sooner or later it will once again become a normally recognized education tool like soft books, games, movie, personal computer or internet. The capabilities of smartphones can be traced back to personal computers, carrying them in a pocket and providing access to a variety of data and information sources around the world. This obvious benefit has great potential for educational purposes (Thornton & Houser, 2005).

Mobile phones are not closing the divide of a digital world as the developing countries have a large share in the production of cell phones (Kumar, 2011). These mobile phones are not only used for home use but also used for educational purposes by accessing the internet. Similarly, between China and the United States, the use of mobile phones has increased by 17 - 23-90% for Chinese and 80% for Americans. This trend shows that mobile phone technology has the potential to reduce the digital divide between different ethnic groups as well as those in low social and economic conditions (Valk et al., 2010).

Mobile phones have also become an educative tool and recently due to Covid-19, all the Higher Education Institutions moved their regular classes to online classes. All the students of the Higher Education Institutions including public and private colleges and universities delivered their lectures to the students on mobile phones. Even, majority of the universities conducted their exams online and students of the universities and colleges have given their exams online. This is only possible due to the use of technology all over Punjab.

Both teachers and the Education Department look at it with some contempt when they try to incorporate this innovative technology into alternative long-established practices. In my opinion, such an opportunity should be considered, because, throughout history, the advancement of technology has never been as accessible to civil society as mobile communication (Batista & Barcelos, 2014; Grimus, 2014). Although, we are living in neither a big country nor in rich country, we have been given the opportunity to introduce mobile devices that do not cost a penny in education, as students have already had the opportunity to apply.

There has been marvelous development in the usage of cell phones in Pakistan. Pakistan's telecommunications market is said to be one of the largest in the world. Smart phones are accessible to individuals aged 15 and over. Cell phone technology has brought the world closer. It has provided a great convenience in communication between people via calls or SMS. Most users belong to the age group of 17 to 23 years. Links are made rapidly through cell phones, which was not possible before. However, although the mobile phone offers many benefits, but it has many disadvantages that may cause problems. Some people use mobile phones extremely that it is addictive.

It is noticed that students using SMS service while communicating to other students or persons. Visitors, too, guests are waiting for the end of mobile phone use. Students use cell phones to play games, text and call even during class. Smart phone use while riding motorcycle and driving a car is commonly noticed, which can increase the risk of accidents. Previous researches have shown that many nature behaviors such as neuroticism, extroversion, etc. and smart device users have a certain relationship with each other. Gender can also play a role in high cell phone usage. The provision of additional features such as the messaging, games, radio, etc. can cause excessive use of smart phones. It is therefore planned to study various applications of the smart phones, including teacher and student roles.

During the study, it is revealed that different students have different purposes for the usage of the mobile (Gupta et al., 2016) which are given as under:

- Sharing of thoughts
- Coordination activities
- Emergency
- Security reason
- Lifestyle
- For fun only
- Can't live without a phone
- Taking pictures
- Record videos

- Listening music
- Download games
- Uber / Cream service
- WhatsApp
- Food services
- E-Commerce
- Online Food delivery, etc

According to the report, most of the students buy mobile for coordination activities and then taking pictures.

The mobile phone also has adverse effects on humans like chronic headache, impaired concentration, impaired memory, fatigue, sleeplessness, hearing problem, skin problem, warmth around the ear, and relation to mobile phone use. According to a survey conducted by (Khan, 2008), the relation to mobile phone use is the highest score and then impaired memory.

Literature Review

Pakistan is now witnessing a social revolution. This revolution involves integrating mobile phones into the daily lives of students and teachers. When asked what they think of mobile phones by college students, they may say, "I like it" or "I can't live without it." If you go to the same university and ask what you think about the university or education, you may get a completely different answer. Conversely, teachers and principals may describe distractions that can interfere with mobile phones.

Mobile phones belonging to a group of devices called Information and Communication Technology (ICT). This device group includes items such as PCs, PDAs, GPS, and mobile phones. For some time, PCs have been part of the education and instructive environment. PDAs have gradually become accepted, but their scope is limited. On the other hand, mobile phones are becoming more and more popular and undeveloped. Fortunately, some have begun to look for ways to integrate mobile phones into their learning environment (Saran et al., 2008).

The millennium has been a time of rapid technological change and a extremely interconnected world. This group has tolerant connections with peers. On average, this generation sends 42.5 text messages a day, 30% send more than 100 text messages a day, and 53% claim to be able to write with their eyes closed. Millennials live instantly and receive information immediately, in their own hands, 24-7.

The Millennials learning by collaborating with colleagues, sharing information, learning through Facebook, and playing online games and experiments. They also want to use their devices, such as cell phones, hand held devices, and portable devices, for educational purposes. Mobile machineries such as smartphones, laptops have many strong abilities, and many of the Millennium has the same mobile device and mobile network. However, these tools offer many opportunities and challenges in education. Many parents buy cell phones, primarily for emergencies. Many parents argue that cell phones provide instant communication between children and parents when there is a threat during school violence. Some parents even go so far as to purchase GPS-based services for their children. Parents also want their children to take their cell phones to school.

Today's smartphones are high-end portable computers with OS that support the calendar, timeline, high resolution camera, WWW, and audio-video functions. These smart mobile tools permit the students to solve their assignments, take online classes, access their online exams, access online resources and can access all-educational resources 24/7/365. The students also can connect with other students all over the world through different mobile applications like Facebook and Zoom software (Houser & Thornton, 2005).

A question to keep in mind when it comes to education is how to multiply curiosity for mobiles? With this in mind, the purpose of this discussion is to explore how young people watch mobiles, to explore how educators and educational institutions trade education from a different perspective, and to develop ideas on how to assess education. Growing up in school-age students with intimacy in the learning experience (Kabir & Kadage, 2017).

Personal Expression

To understand the spread of mobile phones, you need to drive on the street or visit a mall. These devices are rapidly becoming an integral part of human life. Used for waking up in the morning, organizing meetings and personal contacts, storing personal images, storing and playing music, and taking pictures. Mobile phones are becoming more and more personal (Nail & Ammar, 2017). The ability to personalize ringtones, skins, photos, songs and communicate with voice and text can be considered a personal extension. They are used to determine who we are as individuals. In addition, the social benefits that young people give to a person's mobile phone in a social situation have a significant impact on social norms (Kartikadarma et al., 2018).

What is happening individually to school-age students, especially middle and high school students? Adolescence is also the time when young people begin to

express themselves as their unique individuals (Curran et al., 2017). Adolescents now have something very real, something very real. The physical beings that help express, shape, and comfort their lives cover the abstraction of intellectual ability to do so. Considering the reaction of students to mobile phones, it can be said that "personal worship" is developing not only as a tool but also as a partner and supporter, centering on mobile phones (Aker et al., 2010; Şad & Göktaş, 2014).

The current generation has a great ability to quickly understand, use, leverage, and integrate new and innovative technologies. For this purpose, children today are called "digital natives" and adults are considered "digital immigrants." The content and use of mobile phones by young students are getting bigger and faster (Aker & Mbiti, 2010). A survey conducted in Japan reported that 95% of college students own mobile phones. In some parts of Japan, South Korea, Europe, and the Philippines, 96% of scholars use mobile phones. In the United States, more than 80% of high College scholars and 70% of school going students have mobile phones.

Today's teens, digital natives, can live in multiple locations at once without any problems. A short walk through the streets and sidewalks of the university campus, or the corridors of the mall, will note that there are two people in more than one place at the same time (Bradley & Holley, 2013). At the same time, effective two-way communication is a testament to the diversity of today's generation. These third places are for discussions and multiplayer games. Often, these third places create a new ID called an avatar. This can reflect individual ego or modified ego (McConatha et al., 2008).

Marketing Thoughts

Teenagers think they should have a cell phone and think it should be good to use it to become a regular, acceptable, and practical member of modern society (AlTameemy, 2017). Ask earnestly. Digital natives view mobile phones as tools and partners to achieve personal transformation. Mobile phone retailers and suppliers are taking advantage of this fact by highlighting various ways to personalize their mobile phones and experiences. Marketing strategies need to change to focus on unique learning-related issues, as well as the process of making the learning experience personal, unique, and real (Moura & Carvalho, 2008). The idea is therefore to develop mobile and media-based learning tools related to specific content and goals in response to unique descriptive and creative skills. This discussion not only refers to marketing promotion that aims to increase educational marketing enrollment but is also designed to promote or increase the interest and motivation of young people seeking knowledge in a good education. You have to be careful to show it (Ekanayake & Wishart, 2015).

Educational Uses

Mobile phones have many quick uses for adults. Many applications are built into the phone software. Some of these include phones and rosters, calendars, timers, timers, alarm clocks, calculators, and notebooks (Ekanayake & Wishart, 2015; Kukulska-Hulme & Traxler, 2007). In addition, today's mobile phones can take pictures, record movies, record voices, participate in conversations, and send emails. In addition, these multimedia features and their ease of use. So why not take advantage of these powerful mobile features? In addition, these powerful tools are retained and are the responsibility of students and their parents, reducing some of the technical burdens of the local educational community (AlTameemy, 2017).

The use of mobile phones and mobile devices as educational tools in regions such as China, India, Bangladesh, and Iran has shown that most of them occur outside the Pakistani border, with Asian educators calling. It shows that it is slow to change the perception of. Technology that can integrate disruptive technology into the curriculum. In China, for example, mobile games designed for mobile phones are included in the 11th and 12th-grade social studies curriculum. With this integration, students participated and acknowledged that they had learned more information than they had expected (Aliff et al., 2015; Herrington et al., 2009).

The different ways to integrate a mobile phone into the curriculum are as different as the mobile phone itself. For example, when studying ecology, students can browse and encounter them on their mobile phones. When visiting the ecosystem, students can record with the built-in camera and record voice or text notes about the key features they see. After completing the assignment, students can email the teacher's picture to see the text (Mehdipour & Zerehkafi, 2013). Such exploration activities are a great place to incorporate mobile phones into the learning process. On a mission, student groups can participate in mobile phone chat sessions to discuss the main points of the story, the aspects seen, and what it means to them. When you're done, you can email the text to your teacher for confirmation. Other methods of integrating mobile phones should not be too complicated. For example, researchers have shown students the invisible power of electromagnetism by dialing and sending phone numbers and changing readings on an electronic scale (Herrington et al., 2009).

In places like China, Hungary, the United Kingdom, and the United States, students study math, health, and spelling to learn English. Mobile phones are used to deliver historic content during guided tours of government parks. In the UK, it is being discussed to bring mobile phones to evaluation forums. College students were used to checking completed exams and fingerprints using their mobile phones. Other ways to integrate mobile phones with learning and education are being sought. One researcher investigated how students' interest in mobile phones focuses on reading

and mathematics. This study demonstrates an experimental study in which a large university used a mobile phone as a medium for interaction and feedback devices. The survey confirmed that students are very interested in games and are eager to use them again in the future. Another researcher included mobile phones as part of a computer program that included a web-based discussion platform. The mainstream of scholars (85%) enjoyed the system and felt that sharing voice knowledge about text-based information would benefit. In addition, researchers have sought to develop a more student-centric environment by developing an "adaptive mobile learning management system" that matches the student's learning style when interfering with the mobile environment.

Challenges for Cell Phones

The use of mobile phones in college is as weak as the media. Mobile phone enthusiasts see online resources, communication, and media creativity as potential learning tools, but many school leaders translate, especially because they can distract the host from the student's ringing tone. I consider it an obstacle to learning, Email, text messages, Twitter, scams. These early policies did not include the inclusion of mobile phones in the college curriculum (Akpan, 2017; Wong, 2010). As a result, smartphones have formed love-hate relationships with scholars, parentages, and college staff.

Instant messaging via mobile phones and social networking sites seems to be the most common way for students to tease others. Bullying has been a social problem for generations, but messages can be sent to dozens of people at once, and cyberbullying goes further away from college bullying. Cyberbullying is intensifying as criminals become more aggressive because of user privacy.

Material and Methods

In addition to analyzing international research databases within our research framework, our main purpose is to get feedback from students and faculty on mobile communications at universities in Punjab, Pakistan. We were looking for an answer to the question of how much time do students spend on their mobile phones and for what purpose?

Our study consisted of 9 divisions (Lahore, Sahiwal, Multan, Bahawalpur D.G. Khan, Faisalabad, Sargodha, Gujranwala, and Rawalpindi), 250 students and 30 teachers. The sample size is small as we have covered 9 different divisions of the province. Since this survey is very simple, we used the data collection method to ask questions. That is, participants were filled out online in connection with their

smartphones. Especially if students and teachers have smartphones and what were their application features? Answers are collected and automatically registered in the database. We used our education profile to distribute surveys to LinkedIn groups and asked college colleagues to help us to collect student answers.

Our hypothetical is that the college teachers are not adopting this advanced technology, especially those that don't have mobile phones. Undisputed systematic observations and descriptive methods have been applied.

Results and Discussion

The first question that asked the students and teachers about the possession of smartphones that can use as a mobile learning device. We after receiving the answers to the survey questions compiled the answers digitally and concluded that 94% of Male students across Punjab have smartphones whereas, on the other hand, 82% of female students of the colleges have mobile learning devices as shown in **Table 1**, and overall if we combine both male and female students, then we found that 92% students of the colleges have a smartphone. If we talk about the teachers of the colleges, then we found that 83% of male teachers and 67% of female teachers have a smartphone as shown in **Table 2**. Overall, 80% of college teachers have a smartphone. We also divided the students into two groups i.e., 17-20 years old students and 21-23 years old students. We also found that the students who fall into the 17-20 years old category have a 77% ratio and on the other hand second group has a 94% ratio. The results show that older students have a high ratio of smartphones. The overall picture of the results is given in **Figure 1** below.

Table 1
Possession of Mobile Phones among students

Altogether	Male	Female	17-20 Years	21-23 Years
92%	94%	82%	77%	94%

Table 2
Possession of Mobile Phones among teachers

Altogether	Male	Female
80%	83%	67%

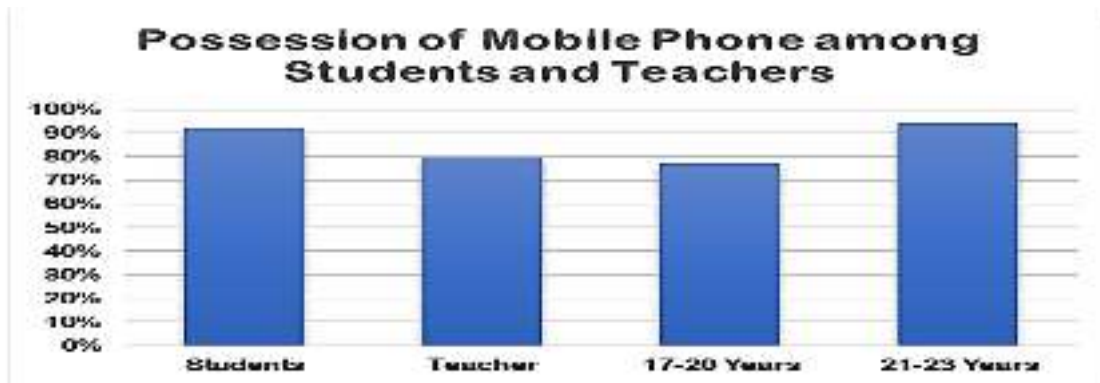


Figure 1: Possession of Mobile Phone among students and Teachers

The next question that was investigated in this survey is the motivation of the students and teachers to buy or hold the smartphone. **Table 3** shows the results we found in this research. We can easily get the eye-catching difference in the results of the two groups. The first group is more conscious about smartphones due to their entertainment purpose (73%) and the second group is a little bit mature group and they also preferred entertainment (63%) as the purpose to buy the smartphone. We can also notice that teachers do not prefer entertainment (30%) and buy the mobile due to Education purpose (45%). **Figure 2** also clearly shows that students do not buy smartphones for official purposes whereas the teachers also do not buy cell phones for official purposes. The given below statistics and results shows that the first group of the students have less motivation of educational purpose of mobile whereas, on the other hand, the teachers mostly buy the smartphone for educational purposes.

Table 3
Purpose of Mobile Phone among teachers and students

Purpose	17-20 Years	21-23 Years	Teacher
Entertainment	73%	63%	30%
Communication	20%	20%	20%
Education	7%	16%	45%
Official	0%	1%	5%

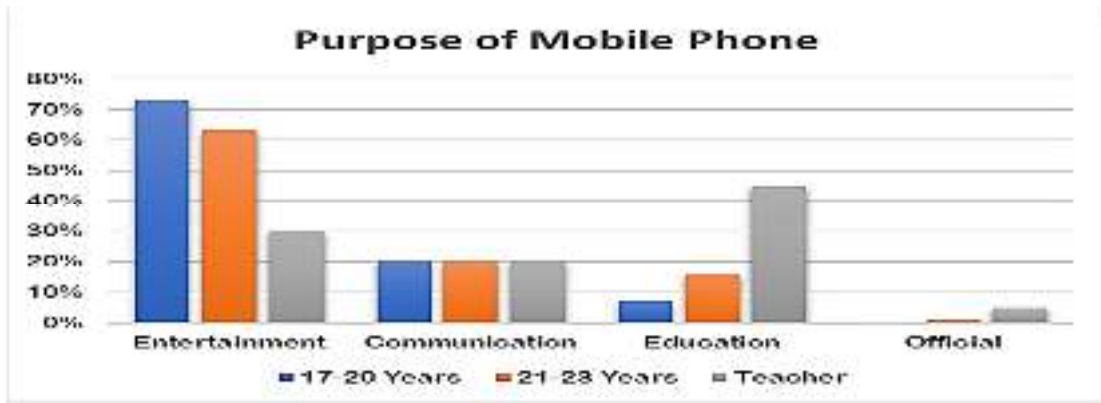


Figure 2: Purpose of Mobile Phone among teachers and students

The authors have already clearly mentioned that mobile phone is not allowed in the premises of the colleges but even then, the students came in the college with their mobile phones and mostly set it on salient mode. This question is very hard for the students whether they used mobile phones during the lecture or not? We noticed that we received a Yes answer and the second group of the students is mostly used the mobile phone during class hours (19%). The first group of the students is mostly intermediate level students that's why they do not use their mobile phones during lectures even 10% of students answered Yes. The teachers of the colleges due to no restriction upon them used mobile phones during their lectures and 34% of teachers admitted the fact that they used a mobile device during lectures. **Table 4** demonstrated the results and **Figure 3** explained the results we compiled.

Table 4
Usage of Smart Phone in College during the lesson

Answer	17-20 Years	21-23 Years	Teacher
Yes	10%	19%	34%
No	90%	81%	66%



Figure 3: Usage of Smart Phone in College during the lesson

The results of **Figure 3** clearly show that students and teachers use mobile phones during their lessons. Therefore, we become more interested to get know that for what purpose they attempt to use the mobile phone in the class. We noticed that teachers think that students used mobile phones during the class due to getting information and the students also agreed on this aspect whereas, on the other hand, teachers think that 20% of the students use mobile for cheating purposes and the students do not admit this fact (10% and 5%). **Table 5** and **Figure 4** clearly showing the six categories of reasons for the usage of the mobile phone during class and students also preferred sharing the file (25% and 21%) and teachers do not agree with their answer by stating that 13% of students use mobile during class for file sharing.

Table 5
Application of Mobile Phone in College during Class

Usage	17-20 Years	21-23 Years	Teacher
Taking Quiz	5%	10%	15%
To get Knowledge	7%	12%	19%
To share files	25%	21%	13%
To get Information	35%	37%	25%
Research Purpose	18%	15%	8%
Cheating	10%	5%	20%

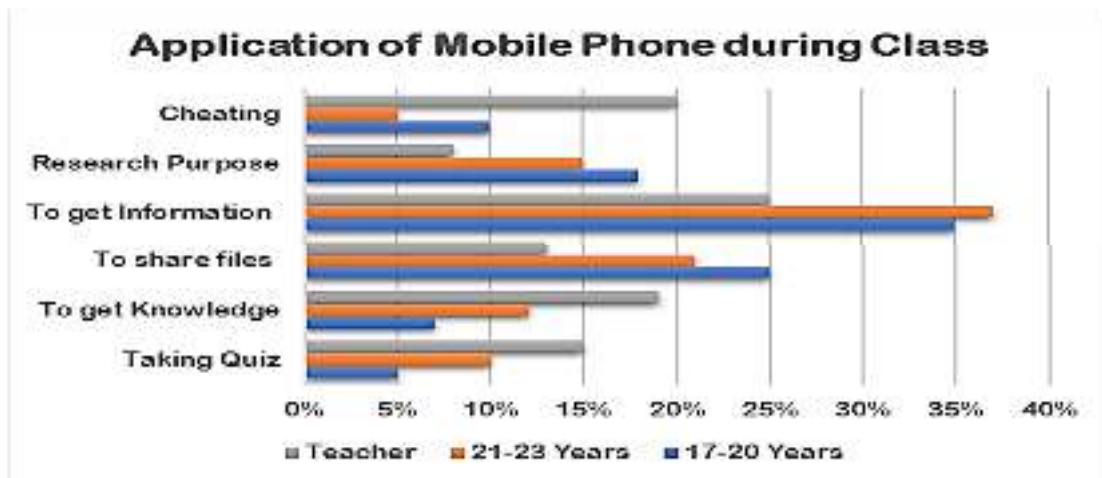


Figure 4: Application of Mobile Phone in College during Class

The last question of this survey was asked to know daily how many hours students and teachers spent on smartphones. **Table 6** and **Figure 5** illustrated the results. The students of the first group stated that they used 2hr to 4hr per day (35%) and we also found a very high number in more than 8hr category i.e., 27%. The response of the teachers about the usage of the mobile is quite reasonable i.e., 39% for 2hr - 4hr and then 25% in 4hr to 6hr. The second group of the students is more mobile conscious and 34% of this category students used mobile more than 8hr. The results are interesting.

Table 6
Spent time on Mobile

Time (Hours)	17-20 Years	21-23 Years	Teacher
2 hr - 4 hr	35%	15%	39%
4 hr - 6 hr	23%	20%	25%
6 hr - 8 hr	15%	31%	11%
More than 8 hr	27%	34%	25%

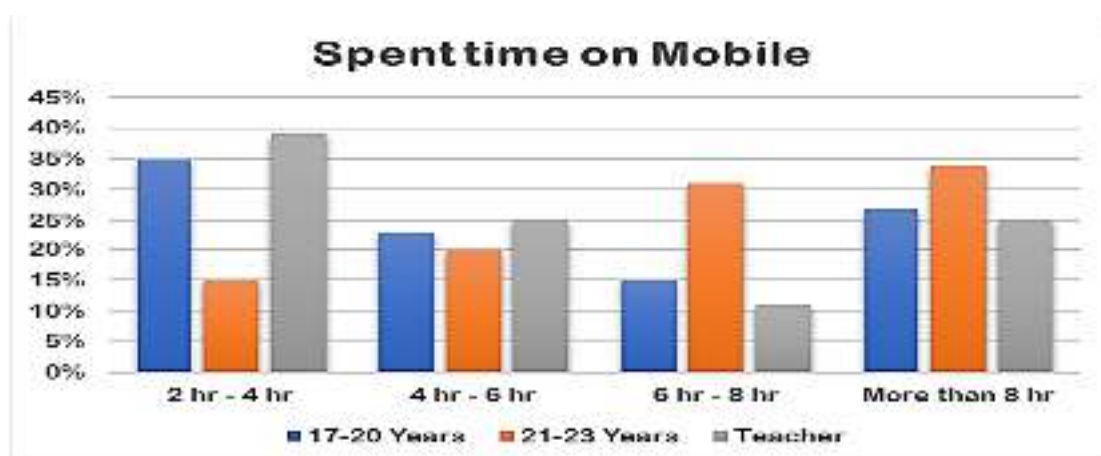


Figure 5: Spent time on Mobile

Conclusion

According to our research, mobile communication is gaining momentum not only internationally but also in institutional education in our country. Despite development trends, many schools and universities do not allow mobile phones in the premises of the institutions and also forced the teachers to adhere to traditional teaching methods. Well-defined education policies that require rules and

recommendations for the proper use of new technologies in education are needed to address this question.

According to the results, most college students use smartphones and there is virtually no gender distribution in the use of cell phones. Also, most students choose a prepaid connection over a postpaid connection. Gender differences were not found for cell phone use, internet browsing, phone calls, and SMS and all three of these have no gender issues. Overall, the need to connect is a very important factor in using cell phones for social networking. Despite these facts, we should complete that cell phones have a place in all educational institutions not only worldwide, but also in our country.

We conclude the article with recommendations and future work. First of all, the above study must extend to more college students in Punjab in get better understand about the smart phone usage in higher educational institutions of the Punjab. Second, a separate and independent research is require to be carried out regarding handheld devices like tablets and smartphone usage for in-depth information to academics activities and non-academics activities, so that educational institutions may provide more quality of education to their students. Third, as mobile learning is growing quickly and most probably, it become a most efficient way to deliver lectures in future especially in Covid pandemic, it is essential to find the ways to adopt the adopt the new technologies for education purposes and other curricula activities. It is also significant to scrutinize the consequence of accepting mobile learning in relations of privacy and security.

References

- Aker, J. C., Ksoll, C., & Lybbert, T. J. (2010). ABC, 123: The impact of a mobile phone literacy program on educational outcomes. *Available at SSRN 1694142*.
- Aker, J. C., & Mbiti, I. M. (2010). Mobile phones and economic development in Africa. *Journal of Economic Perspectives, 24*(3), 207–232.
- Akpan, V. I. (2017). Cell Phones as Effective Learning Resource. *Journal of Education, Society and Behavioural Science, 1*–8. <https://doi.org/10.9734/JESBS/2017/29011>
- Aliff, N., Hamzah, M. I., & Rahim, A. A. A. (2015). Teachers acceptance of mobile learning for teaching and learning in Islamic education: A preliminary study. *Turkish Online Journal of Distance Education, 16*(1), 184–192.
- AlTameemy, F. (2017). Mobile phones for teaching and learning: Implementation and students' and teachers' attitudes. *Journal of Educational Technology Systems, 45*(3), 436–451.
- Andersen, E. (2009). Cell phones in schools: Toys or tools. *Retrieved From*.
- Batista, S. C. F., & Barcelos, G. T. (2014). Considerations on the use of mobile phones in educational context. *International Journal on New Trends in Education and Their Implications, 5*(1), 1–10.
- Batool, S. A. (2018). Does the Use of Mobile Phones Predict Women's Economic Empowerment at the Household Level in Pakistan? *Pakistan Journal of Social and Clinical Psychology, 16*(1), 39–46.
- Black, A. (2010). Gen Y: Who they are and how they learn. *Educational Horizons, 88*(2), 92–101.
- Bradley, C., & Holley, D. (2013). Empirical research into students' mobile phones and their use for learning. In *Innovations in Mobile Educational Technologies and Applications* (pp. 318–333). IGI Global.
- Curran, V., Matthews, L., Fleet, L., Simmons, K., Gustafson, D. L., & Wetsch, L. (2017). A review of digital, social, and mobile technologies in health professional education. *Journal of Continuing Education in the Health Professions, 37*(3), 195–206.
- Ekanayake, S. Y., & Wishart, J. (2015). Integrating mobile phones into teaching and learning: A case study of teacher training through professional development workshops. *British Journal of Educational Technology, 46*(1), 173–189.

- Grimus, M. (2014). Mobile Phones and Gender. Chances and Challenges in Education around the World. *Gender and Education from Different Angles*, 22, 184–203.
- Gupta, N., Garg, S., & Arora, K. (2016). Pattern of mobile phone usage and its effects on psychological health, sleep, and academic performance in students of a medical university. *National Journal of Physiology, Pharmacy and Pharmacology*, 6(2), 132–139.
- Herrington, J., Herrington, A., Mantei, J., Olney, I., & Ferry, B. (2009). *New technologies, new pedagogies: Mobile learning in higher education*.
- Houser, C., & Thornton, P. (2005). *Poodle: A course-management system for mobile phones*. 5-pp.
- Iqbal, S. (2017). Mobile phone usage and students' perception towards m-learning: A case of undergraduate students in Pakistan. *The Journal of Distance Education/Revue de l'education Distance*, 32(1).
- Kabir, F. S., & Kadage, A. T. (2017). ICTs and educational development: The utilization of mobile phones in distance education in Nigeria. *Turkish Online Journal of Distance Education*, 18(1), 63–76.
- Kartikadarma, E., Listyorini, T., & Rahim, R. (2018). An Android mobile RC4 simulation for education. *World Trans. Eng. Technol. Educ*, 16(1), 75–79.
- Khan, M. (2008). Adverse Effects of Excessive Mobile Phone Use. *International Journal of Occupational Medicine and Environmental Health*, 21(4). <https://doi.org/10.2478/v10001-008-0028-6>
- Kukulska-Hulme, A., & Traxler, J. (2007). Mobile teaching and learning. In *Mobile learning* (pp. 41–60). Routledge.
- Kumar, M. (2011). Impact of the evolution of smart phones in education technology and its application in technical and professional studies: Indian perspective. *ArXiv Preprint ArXiv:1109.0937*.
- McConatha, D., Praul, M., & Lynch, M. J. (2008). Mobile learning in higher education: An empirical assessment of a new educational tool. *Turkish Online Journal of Educational Technology-TOJET*, 7(3), 15–21.
- Mehdipour, Y., & Zerehkafi, H. (2013). Mobile learning for education: Benefits and challenges. *International Journal of Computational Engineering Research*, 3(6), 93–101.

- Moura, A., & Carvalho, A. A. (2008). *Mobile learning: Teaching and learning with mobile phones and Podcasts*. 631-633.
- Nail, B., & Ammar, W. (2017). Mobile learning education has become more accessible. *Am J Compt Sci Inform Technol*, 5(2), 1-4.
- Şad, S. N., & Göktaş, Ö. (2014). Preservice teachers' perceptions about using mobile phones and laptops in education as mobile learning tools. *British Journal of Educational Technology*, 45(4), 606-618.
- Saran, M., Cagiltay, K., & Seferoglu, G. (2008). *Use of mobile phones in language learning: Developing effective instructional materials*. 39-43.
- Thornton, P., & Houser, C. (2005). Using mobile phones in English education in Japan. *Journal of Computer Assisted Learning*, 21(3), 217-228.
- Valk, J.-H., Rashid, A. T., & Elder, L. (2010). Using mobile phones to improve educational outcomes: An analysis of evidence from Asia. *International Review of Research in Open and Distributed Learning*, 11(1), 117-140.
- West, D. M. (2013). Mobile learning: Transforming education, engaging students, and improving outcomes. *Brookings Policy Report*, 9, 1-7.
- Wong, K. Y. (2010). Cell phones as mobile computing devices. *IT Professional*, 12(3), 40-45.
- Yousuf, M. I. (2007). Effectiveness of mobile learning in distance education. *Turkish Online Journal of Distance Education*, 8(4), 114-124.