

# ANALYSIS ON MOBILE PHONE USAGE IMPACTS IN CLASSROOMS FOR STUDENTS

M.AKHILA DEVI, MVP.RAMESH BABU

Sree Dattha Institute of Engineering and Science Hyderabad Telangana

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## ABSTRACT

The findings of the present study show that a substantial percentage of students uses the cell phone for more than 4 hours per day; receive on an average 18 calls per day and make about 8 calls daily. The most popular applications are music and games. They feel that cell phones are status symbols and that most of the world is addicted to cell phones. They admit that cell phones provide security when lost or in new places but state that late night conversations do not disturb concentration in the class. About 40 percent of students admit that they would prefer talking to friends on their cell phones rather than parents when they are at home. However, they do not prefer to engage in cell phone conversations when they are in a low mood. There are, however, a number of problems that have arisen when using mobile learning in a language classroom. The smaller screen, for example, makes it difficult to read content and input text with the online keyboard. Technical problems such as difficulty connecting the Internet, hardware failures and software issues are all common problems. Moreover, distractions from students who do not stay focused on the assigned tasks are becoming a classroom management issue as well. Some of the advantages and disadvantages of using mobile devices in a language classroom at a university setting are discussed in this paper.

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## 1. INTRODUCTION

Mobile technology has an effect on students in the classroom. This means that there are disadvantages and advantages to using mobile technology. According to Ravizza (2014), "The use of these devices in the classroom can have both positive and negative effects on classroom learning" (p. 1). The positive effects of mobile technology can be positive as supported by studies done by Rosenberg (2012) and Reyshav (2015), while it could have negative effects for students as noted by Lynch (2013), Davidson (2015) and Yang (2015). The use of mobile technology in the classroom needs to be reduced, because it is having an effect on students learning. I have placed my focus and time researching a topic that focuses on mobile technology. Teachers expect students to have a mobile device with them during class. Many students do not participate in class, because they do not have the mobile technology. There are also students who are not engaged in technology: whereas other students want to learn from a teacher's real life experiences.

Technology has changed almost everything. With the Internet and our mobile devices, everyone is now connected. Cell phones have become a necessity, more than just a luxury. And today, there is a very long standing debate about the use of mobile phones in the classroom.

This argument was brought about by the thin line between the advantages and disadvantages of fast connectivity in the present society, as listed below. Read along and decide for yourself whether allowing the use of mobile phones in the classroom is a good idea or not.

### 1.1 Advantages of Mobile Phones in Classrooms

The use of mobile phones in the classroom may be a prima facie bad idea, but mobile devices can also be beneficial inside the classroom.

- Cell phones make students connected. With mobile phones, parents will be less worried since they can easily check on their children, and students can easily call for their parents in times of emergency.
- Cell phones encourage collaborative learning. Students can share notes and reminders faster and easier with mobile devices.
- Cell phones can be used as memory aids. Students can document their lessons by taking pictures and/or videos to enhance retention. With smart phones, learning can also be more interactive and fun.

- Cell phones can be used as paper and pencil. Students can use their phones for taking down notes and even for saving reminders.

Cell phones give access to a pool of information. Students can also use their phones to browse the internet to find the information they need. They can also utilize their dictionary or translator to facilitate their learning.

### **1.2 Disadvantages of Mobile Phones in Classrooms**

Allowing students to use their cell phones in the classroom is a bad idea because of the following reasons:

- Cell phones cause distraction. Students can easily be distracted when their phones ring or vibrate, and the learning process will be totally disrupted when the students start to send and read messages or make and receive calls. Moreover, with the advent of smart phones, it is now easy for students to access the internet and play or shop online.

- Cell phones can be used in cheating. Text messaging is the new note passing. Students can exchange text messages with test answers on them without the teacher's knowing.

- Cell phones can be used in bullying. Students can take a video or a picture of their teachers and/or classmates that can be dehumanizing.

- Cell phones can be detrimental to school safety. Cell phones can cause chaos during bomb and other threats because of the parents' rushing to the school.

- Cell phones can be health hazards. Constant exposure to the radiation emitted by mobile phones may be bad for the students.

### **1.3. Integrating mobile devices with learning and instruction**

Mobile computers have gradually been introduced into educational contexts over the past 2 decades. Mobile technology has led to most people to carry their own individual small computers that contain exceptional computing power, such as laptops, personal digital assistants (PDAs), tablet personal computers (PCs), cell phones, and e-book readers. This large amount of computing power and portability, combined with the wireless communication and context sensitivity tools, makes one-to-one computing a learning tool of great potential in both traditional classrooms and outdoor informal learning.

With regard to access to computers, large-scale one-to-one computing programs have been implemented in many countries globally (Bebell & O'Dwyer, 2010; Fleischer, 2012; Zucker & Light, 2009), such that elementary- and middle-school students and their teachers have their own mobile devices. In addition, in terms of promoting innovation in education via information technology, not only does mobile computing support traditional lecture-style teaching, but through convenient information gathering and sharing it can also promote innovative teaching methods such as cooperative learning (Lan, Sung, & Chang, 2007; Roschelle et al., 2010), exploratory learning outside the classroom (Liu, Lin, Tsai, & Paas, 2012), and gamebased learning (Klopfer, Sheldon, Perry, & Chen, 2012). Therefore, mobile technologies have great potential for facilitating more innovative educational methods. Simultaneously, these patterns in educational methods will likely not only help subject content learning, but may also facilitate the development of communication, problem-solving, creativity, and other high-level skills among students (Warschauer, 2007).

### **1.4 Problems and Limitations**

Some of the problems and limitations that I encountered when conducting research were due to the time constraint. I was hoping to obtain the equal amount of disadvantages and advantages related to my primary research question. I found that there were more disadvantages than advantages when it comes to the effects of mobile technology on students in the classroom. Although I faced this limitation, I was able to obtain enough information to answer my secondary research questions. I decided that the use of mobile technology should be reduced, because it is having an effect on students learning.

There were also problems finding articles that talked about the advantages of using mobile technology in the classroom. When I searched for articles in the CSUMB library database there was more information to find the disadvantages than the advantages. It seems that my topic is not very popular yet. I decided to not become frustrated and continued to do my work.

## 2. LITERATURE REVIEW

Modern phones have a variety of features that simply were not possible years ago: Mobile phones are not just for voice communication anymore (Ishii, 2006). College students can access the Internet, send or receive text messages, check email, and even video chat with others quite literally from the palm of their hand. In addition, students can access a variety of social network sites (SNS) from their mobile phones. Scholars boyd and Ellison (2008) explain that SNS are online services that allow people to create a profile, create a list of other users who share a connection with the user, and view the lists of connections created by others within that system. For the purposes of the current study, we use the technical term SNS in place of other terminology (e.g., social networking sites) because SNS better conveys the way in which users communicate with others via these systems.

boyd and Ellison note that other terms, like social networking sites, emphasize relationship initiation and users forming connections with others with whom they might not normally have come in contact. However, the term SNS better conveys the way in which users communicate with other people they have connected with. As boyd and Ellison put it, “They are Modern phones have a variety of features that simply were not possible years ago: Mobile phones are not just for voice communication anymore (Ishii, 2006). College students can access the Internet, send or receive text messages, check email, and even video chat with others quite literally from the palm of their hand. In addition, students can access a variety of social network sites (SNS) from their mobile phones.

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Hammer, Ronen, Sharon, Lankry, Huberman, Zamtsov, (2008) featured that though the felt usage of mobile phones was illegitimate they could not help refrain from using it. Social conventions are rapidly changing. Mobile culture has intensely invaded college classrooms and students are under urge to be multi-taskers during lectures. Cell phones retrieve some sense of community, sense of geographical closeness, regression, egocentricity, self-centeredness, inconsideration. Students are prone to constant distraction, constant need for external stimulation, shorter attention span, and difficulty in maintaining close and intimate relationships. The findings show a sense of cognitive dissonance among students.

Regarding the review of laptop-based programs, Zucker and Light (2009) believed that school programs integrating laptops into schools have a positive impact on student learning. However, they also believed that laptop use did not achieve the goals of increasing higher-level thinking and transformation of classroom teaching methods. Penuel (2006) reviewed 30 studies that examined the usage of laptops with wireless connectivity in one-to-one computer programs. Those studies found that students most often used the laptops to do homework, take notes, and finish assignments. General-purpose software such as word processors, web browsers, and presentation software were relatively common. Bebell and O'Dwyer (2010) examined four different empirical studies of laptop programs in schools. They discovered that in most schools participating in one-to-one programs there were significant increases in grade-point averages or standardized tests of student achievement, relative to schools that did not provide such programs. In addition, they found that most students used their laptops to write, browse the Internet, make presentations, do homework, or take tests. Furthermore, teachers made more changes to their teaching

methods when they had increased opportunities to use laptops. Students participating in one-to-one programs also had a deeper engagement with what they were learning when compared to control groups.

Texting, the ability to send short messages to another person, is perhaps one of the more popular features of modern cell phones. Roughly 94% of 18\_34-year-olds report that they send or receive text messages using their phones, and 63% of this age group access the Internet using their phone (Zickuhr, 2011). There is little question that students' communication habits regularly lead them to text while in class. Research conducted by the Pew Internet & American Life Project found that 14\_17- year-olds who text typically send and/or receive roughly 60 text messages a day. Furthermore, 64% of teens with mobile phones have texted in class, and 23% access SNS via their phone (Lenhart, 2010). Indeed, researchers at one university found that 62% of students admitted that they had texted while in class (Ransford, 2009). Campbell (2006) reported that young people ages 18\_23 are more tolerant of mobile phones in the classroom when compared to older age brackets. Essentially, "Young people tend to have very positive perceptions of mobile phones and regard the technology as an important tool for social connection" (Campbell, 2006, p. 290).

According to Yang (2015), "Information can be presented in several modes, such as video, audio, picture, and text, which can affect the cognition and learning of individuals" (p. 294). Mobile technology in the classroom is used to teach students by having them watch videos, hear stories, and read picture books. Yang (2015) claims us that "the abundance of mobile applications (commonly called mobile apps) for learning increases the possibility of designing a variety of micro-learning activities such as quick grouping, random questions, peer rating, and self-reflection" (p. 293). Teachers use mobile apps in their mobile technology to teach their students.

### 3. CLASSROOM ATTENTION

Recent studies exploring the effects of texting/posting on student learning outcomes have relied on information processing theory (see Mayer, 1996) as a basis for arguing that texting can cause distractions that hamper student learning. Briefly, information processing identifies attention, working memory, short-term memory, long-term memory, and metacognition as key resources used by individuals when they learn new information. Because learning is a process, diminished capacity with any single resource can impact other resources. Thus, in the case of texting/posting, students' attention can be divided, which can distract attention from on-task behavior. In turn, information processed in working/short-term memory may be incomplete or inaccurate, which could lead to inaccurate or insufficient storage of information in long-term memory.

A variety of studies outside of the educational setting provide evidence that texting/posting can impede information processing. For instance, Just, Keller, and Cynkar (2008) found that simulated mobile telephone conversations disrupted driving performance by diverting attention away from the task of driving. Other researchers found that drivers are talking on a mobile phone experienced visual distractions, such as failing to notice important visual cues like traffic lights or the environment surrounding road intersections (Trbovich & Harbluk, 2003). In general, these researchers concluded that "distracting cognitive tasks compete for drivers' attentional resources" (Harbluk, Noy, Trbovich, & Eizenman, 2007, p. 378). Given the evidence surrounding dangers associated with using mobile devices while driving, many states now have laws penalizing drivers who text behind the wheel.

Although not life-threatening in the classroom, texting/posting produces negative consequences for students and instructors. Burns and Loheny (2010) found that both students and instructors identified mobile phone use as a distraction in class, and Campbell (2006) found that students and instructors perceived the ringing of cell phones in class as a problem. Although texting is considerably more covert than actual telephone conversations, a growing body of literature suggests that it is equally problematic. Kraushaar and Novak (2010) explored connections between classroom laptop usage and course achievement. The authors recruited students who voluntarily installed activity-monitoring software onto their laptops. This software recorded what programs were running and the times that each program was in use. Kraushaar and Novak developed a rubric to classify programs as productive or distractive towards

the student. Productive programs were those programs that were courserelated (e.g., Microsoft Office), while distractive programs included web surfing, entertainment, email, instant messaging, and computer operations. “Using a browser to view an active window containing a course-related PowerPoint slide would be considered productive, while viewing an active window for a Web site that was unrelated to the course would be considered distractive” (Kraushaar & Novak, 2010, p. 244). Their study found that 62% of the programs that students had open on their laptops were considered distracting. In addition, and of particular relevance to the current study, the researchers found that instant messaging was negatively correlated with quiz averages, project grades, and final exam grades.

In an experiment testing whether texting negatively impacts students’ ability to learn information, Wood and colleagues (2012) observed a small but consistent negative effect on exam performance when students engaged in simulated texting, emailing, or Facebook posting. They reasoned that when students engage in multiple simultaneous tasks, like texting and listening to lectures, one or both behaviors suffer. Similarly, Wei et al. (2012) found support for a causal model identifying texting as a significant mediating variable in the relationship between students’ self-regulation, a key aspect of metacognition, and cognitive learning. Specifically, when higher rates of texting behavior are present, students tend to be less able to self-regulate their behaviors in ways that allow them to succeed on performance assessments. Although each of these studies concluded that texting can diminish learning because students’ attention is divided, they did not identify specific mechanisms through which the diminished attention/diminished achievement link is made. By providing specific analysis of these mechanisms, teachers will have a greater ability to explain to students how their grades could be impacted when they text or post to Facebook during class. For example, when teachers want to explain the negative impact of texting in class, they can perhaps be more detailed by noting specific ways in which texting impacts student note taking and recall, and perhaps even work towards mitigating these negative effects.

#### 4. IMPACTS ACADEMIC PERFORMANCE OF STUDENTS

This is the first and foremost negative impact associated with the excessive use of mobile phones or sophisticated versions on smartphones. The **academic performances of students** can get impacted very badly. You get easily distracted and carried away by instant chats, memes, watching **Facebook** and downloading apps. This can invariably have its own set of consequences when it comes to achieving robust performances in academics. There are students who download **educational apps** too to help them cope up with their studies in a better manner. But how many of you are interested in class-related tutorials?

#### **Indulge in Pornography**

As mobile phone devices come to you with an open-ended email access system, there are students who indulge in various forms of misconduct too. Teenagers download porn videos or scintillating audio clippings too. What is more? These can easily be circulated via FB messenger, what’s App and Snap Chat. Other students get easy access to sex sites and porn stuff. Again, this can leave a detrimental impact on the healthy well-being of society. Today, teenagers involving themselves in the gang rape of even smaller girls, are on the rise. Thanks to innovative technology and mind-boggling videos.



### **Lose Out on Age-Old Values**

This is a major **impact of mobile phones on students' life**. Again, you tend to lose-out on **traditional values** and age-old traditions when you are exposed to I-phones, I-pads, and mobile tablets. Yesteryear kids used to read epic books on Ramayana, Mahabharata or even the Bible. Today's kids enthrall themselves with Batman, Spiderman, Cinderella Princess, and other Western-Age Disney characters. The advent of mobile phones and wide-spread usage of these have literally made us kill our rich cultural and diversified heritage.

### **Anti-Social Activities- On the Rise**

As mobile phones and data devices have come to each and every household, one can easily say that terrorism is on the rise. Anti-social militants just change multiple SIM cards to unveil their area of operations. In terms of where to plan a serial bomb blast, where to plan Cyanide based blasts and so on. Exchange of anti-social IP addresses is made hassle-free with exposure to mobile phones and smart-phone devices. As students get easy access to money, they indulge themselves in terrorist activities as well. Data hackers too stalk innocent victims or can steal confidential banking details of innocent people. Cyber-crime and anti-social activities are definitely on the rise, with easy access to cell phones or mobile tablets.

### **Class-Hours Getting Disrupted**

In schools or colleges, you find students secretly carrying their cell phones or mobile tablets. These keep buzzing. Else your phones keep ringing. This can disrupt the class hours. Teachers or College professors are unable to continue with their classes when phones keep ringing continuously. As for students, they keep looking at each other and distract themselves from what is happening in the class. Even the brighter students end up losing out their grades when this happens.

### **Easy Access to Copying Answers During Examinations**

Again easy access to multi-faceted technology is destroying our creative bent of mind. Students copy answers through micro links. They hardly want to study hard for their exams. In the name of looking at the watch or having a God's idol as the display picture, they can easily copy answers or even circulate these to other students. Wide-spread copying of answers is again becoming a negative foray into students' lives. They hardly realize that they can be debarred from appearing in further examinations or cracking competitive tests when they get caught.



### **Leads to Hard-Core Vision Problems**

A lot of moms are proud to see their sons or daughters juggle between various **apps** on mobile phones or smart-phone tablets. They proudly reveal to the relatives as to how intelligent and brainy their kids are. Not many of us realize the fact that continuous viewing of mobile phones can lead to serious vision-related problems. Perennial eye-infections, lazy eye and cylindrical issues rise among students who are just in their first grades.

### **Series of Health Problems**

Most of the smart-phones emit radiation as against user-friendly LED screens. This can have a series of health hazards apart from eye-infections alone. Quite a lot of us put the hands-free while listening to news clippings, watching videos or listening to music. For students and grown-up adults, this can impact the delicate tendons, situated near the ear-drum. Quite a lot of teenagers buy invisible hearing-aids to combat this particular issue. Radiation impact can also lead to blockage of heart, cirrhosis and coronary disorders. Cancers can also be caused when you are exposed to radiation over-time.

### **Increased Social Security- A Good Sign**

Again, though a lot of negative effects have been stated in the blog write-up, you get certain benefits too. Students who carry their cell phones and use it optimally are here to gain. They can call their parents or elders at home, in case they are faced with emergencies. GPS enabled mobile devices can also help parents know where their kids are. Again, this can prevent unforeseen situations.

## **5. METHOD AND PROCEDURES**

### **5.1 Method**

#### **5.1.1 Recruitment of Participants**

Participants in the study were students enrolled in one of several communication courses at a large Midwestern university. In those courses, students are required to participate in a research participation pool for a small amount of course credit. Following established departmental policies, students in the research pool were randomly assigned to one of several research projects being conducted within the department, of which this project was one. All students in the research participation pool completed a brief screening questionnaire when they initially registered for the overall research pool. The questionnaire posed several questions that helped the research pool administrator ascertain which participants met conditions to participate in particular studies. Students assigned to our study needed to meet three requirements, which were included in the screening questionnaire. First, students needed to be 18 years of age or older and a current university student. Second, students needed to have access to a mobile phone capable of accessing the Internet. Finally, students needed to have not taken two specific classes: the Introduction to Human Communication course and the Interpersonal Communication course.

Students who took either of the courses were excluded because those courses address theories covered in the lecture materials used for the study. Excluding students who had taken those courses minimized the risk of including participants with previous knowledge of the theories used in the stimulus materials. Both the research pool generally, and the procedures of this study in particular, were approved by the university's Institutional Review Board.

A total of 54 students meeting the screening criteria signed up for and attended one of the meeting times for the present study. Participants were divided into one of three groups: a control group, a low-distraction group, and a high-distraction group. Seven participants experienced technical problems that did not allow them to fully participate. These participants did receive credit for participating in the study, but because they were not able to complete all of the required steps, their information was excluded from the study. This left a total of 47 participants, 19 in the control group, 14 in the low-distraction group, and 14 in the high-distraction group. The age of the participants ranged from 18 to 22, with the average age being 18. The majority of participants (55.3%) were first-year students, 38.3% were sophomores, and 6.4% were juniors. The mean self-reported GPA of the participants was 3.33 (SD\_0.380). No statistically significant difference in age, GPA, or year in school was found between the three experimental conditions. All other aspects of the participants' demographics (e.g., sex and ethnicity) appeared consistent with the general student population of the university.

## 5.2 Procedures

This is a qualitative study that examines the effects of mobile technology on students in the classroom. The purpose of this research project is to prove that there are disadvantages and advantages of using mobile technology in the classroom. Reviewing several peer reviewed articles and website articles helped me find the disadvantages and advantages of mobile technology in the classroom.

As part of my research, I focused on trying to seek the answer to my research questions. I chose to focus my research on the disadvantages and advantages of mobile technology in the classroom. My research was extensive research of many forms, such as a literature review, surveying five teachers and surveying 32 students.

Since the beginning of my research, I knew that surveying five teachers and 32 students would be helpful. I passed out five surveys to teachers and 32 surveys to students. They helped me figure out if there was a shortage of mobile technology and if it was a distraction. The survey for teachers asked whether there is enough mobile technology for students in the classroom? Do students have difficulty using mobile technology in the classroom? Whether teachers help provide students with the mobile technology, if they cannot afford it? Would teachers remove mobile technology from the classroom? Are there enough resources for mobile technology for students in the classroom? The survey for students asked whether they have a mobile device and internet access at home? Whether students prefer to have fun activities on a mobile device? If you do not have a mobile device, does your teacher let you borrow one? If you have a mobile device, do you see it as a distraction?

## 6. RESULTS, FINDINGS AND DISCUSSION

This section consists of a synthesis of results, finding and the data on the results from the surveys along with the discussion based on my research topic of scholar, who have done some research on mobile technology. The following paragraphs will contain some discussion on what research says about the effects of mobile technology for students in the classroom. There will be some discussion on how mobile technology is integrated in the school curriculum. They will also contain some discussion on what happens when there is no sufficient mobile technology in the Effects of Mobile Technology on Students in the Classroom classroom and what to do when there is too much use of mobile technology in the classroom. In addition, there will be some discussion on whether there are enough resources for mobile technology for students in the classroom.

After conducting research as mentioned in the method and procedures section, there is a correlation among the research questions and the answers; therefore, an attempt to find information that would help in understanding "how does mobile technology affect students in the classroom?" In the results, findings



and discussion section, I will go over the findings that helped me thoroughly answer all my research questions leading up to my results. Through my research, my results indicate that we should reduce the use of mobile technology in the classroom. Through this section, my goal is to convey to you what I have found through my extensive research.

Moreover, my secondary or related research questions include: What does research say about the effects of mobile technology for students in the classroom? How is mobile technology integrated into the school curriculum? What happens when there is no sufficient mobile technology in the classroom? If there is too much use of mobile technology in the classroom, how can schools control the use of mobile technology? Are there resources for mobile technology for students in the classroom? If there are, how could schools tap into those resources? I will attempt to answer each question.

### **6.1 What does research say about the effects of mobile technology for students in the classroom?**

According to Glackin (2014), “Mobile device use depends upon a number of factors. These include: the availability of a wireless connection; reliability of the connection; purchase and maintenance costs of mobile devices; ease or difficulty of use” (p. 300). Students use mobile technology based on whether they have good internet connection. The affordability and whether they know how to use mobile technology, will determine if they decide to use a mobile device. Kuznekoff (2015) informs us that “students readily acknowledge that their use of digital devices causes them to either not pay attention in class and/ or to miss instruction from faculty members” (p. 347). Mobile technology is a distraction to students in the classroom. By looking at the five teacher surveys (See Appendix 1), the data shows that there are students who have difficulty using mobile technology in the classroom. 20% of the teachers voted yes and 80 % voted no to their students having difficulty using mobile technology in the classroom. Froese (2012) also tells us that “students are aware that using cell phones for personal communication in class compromises classroom learning” (p. 329). Students are aware that if they send messages through their email. They will fall behind during class discussion. Yang (2015) states that “Wireless and mobile technologies can motivate young people to learn, sustain their interest, and improve their learning and development” (p. 292). Mobile technology can help students learn in the classroom by grabbing their attention. Reychav (2015) also states that “Mobile devices are very useful, and provide support that can facilitate learning because of freedom of movement between different locations” (p. 145). Students can use their mobile device to do their homework anywhere they have internet connection.

### **CONCLUSION**

The goal of this study was to further understand and examine the impact of student texting/posting, during class lecture, on student learning. We found that students who were using their mobile phone frequently during a video lecture scored, on average, 13 percentage points, or a letter grade and a half, lower on a multiple-choice test than those students who were not using their phones. Students who were not using their mobile phones not only did 62% better on overall note taking, but also recorded 93% more outstanding answers in their notes than the group of students who were frequently using their mobile phones. Finally, students who were not using their mobile phones recalled 87% more minimally sufficient answers than the high distraction group and in general did substantially better at recalling information from the lecture. These findings provide clear evidence that students who use their mobile phones during class lectures tend to write down less information, recall less information, and perform worse on a multiple-choice test than those students who abstain from using their mobile phones during class.

Using mobile technology too often in the classroom leads to lower levels of learning. Mobile technology in the classroom is used to teach students by having them watch videos, hear stories, and read picture books. Students who come from a low family income will not be able to afford a mobile device, which means that they will not participate in class. When there is too much use of mobile technology in the classroom, its use should be reduced because students are not learning. Students use mobile technology based on whether they have good internet connection. It also means that the affordability and whether they know how to use a mobile device, will determine if they decide to use a mobile device.

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