

Smartphone Use Among University Students

By

Meri Asatryan

Presented to the

Department of English & Communications

in Partial Fulfillment of the

Requirements for the Degree of Bachelor of Arts

American University of Armenia

Yerevan, Armenia

01.21.2021

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Abstract

The dramatic changes in technology and its rapid development lead to its addiction. However, education in undergraduate universities in Armenia has mostly not engaged technology fully in its academic offerings yet. This capstone provides information on the existing policies regarding phone use during class in undergraduate universities and colleges. It analyzes the possible disadvantages and advantages of phone use during the learning process. Finally, the project involves possible methods and suggestions of phone use during lessons. This research includes information about various countries and focuses on Armenia. It includes surveys and interviews in Armenia to find out applied methods, policies, and suggested strategies of phone use during class in Armenian undergraduate universities. The analysis is based on interviews and a survey of students from different majors and universities. It also includes in-depth interviews with various instructors from different spheres. The research also compares the situation before and after the Covid-19 pandemic regarding education and device use in Armenia.

Introduction

The role of education is significant in our lives as schools and universities shape people that will inhabit the world in the future. The well-being of the world and each country separately, to some extent, depends on the quality of education people get. What would happen if people would not get proper education in universities? The answer is that we would not have professionals in any sphere including the essential professions like doctors and lawyers. Thus, the better education will be, the more professional and conscientious citizens we will have. Since the world is evolving rapidly, education must pursue and adapt to every possible sphere of it. Students must get acquainted with all the fields of studies and use modern, innovative, and progressive studying methods. As technology is leading with its quick development, there is a chance that education falls back. Therefore, the educational system has to apply any possible strategies to improve and catch up with technological developments. In case the educational system adapts to technological features, it can take advantage of it. One of the possible methods to merge education and technology is using gadgets such as smartphones during classes.

Smartphone use is accessible and easy as many of the students own a phone. Besides, it is a small gadget with various tools and features that can be applied for educational purposes. Of course, laptops and tablets are also good devices that can be used in education. However, they are mainly bigger and more difficult to carry. Besides, not everyone owns a laptop or tablet because of their cost. While, there are smartphones of various price ranges and most of the students manage to have a smartphone.

The smartphone usage in the class is more relevant in undergraduate universities and colleges since at those ages students mainly own and know how to use a phone properly.

Another reason for choosing this particular group is that undergraduate students are more mature and organized than secondary or primary school students.

The question of whether phones should be used or be restricted in the university is still doubtful and controversial. While some experts claim that education can benefit from mobile phones, others argue that phones will become a headache for the teachers. Since the opinions differ, very few universities and colleges use and allow phones during classtime. The majority choose to imply policies of banning phone use to prevent having additional problems. However, some universities are trying to take advantage of technology. As stated in the Campus Computing Project in 2015, only around 48% of US campuses, including both private and public universities and colleges possess their private mobile applications for their students (Atas & Celik, 2019).

To reveal the answer to whether phone use is a benefit or a drawback for students, I reviewed the methods in which mobile phones can be used in the classroom for studying purposes. But as every country has its own culture, policies, tendencies of behavior, and other factors influencing education, each of them requires a separate study on the effectiveness and methods of phone use during class. My research includes discussion of smartphone use, particularly in Armenian undergraduate universities. It mainly focuses on various undergraduate universities, revealing existing policies, their effectiveness, and possible changes. It also includes comparison of Armenia's findings with the world and introduces some effective implementation of smartphones and possible policy changes.

The Armenian educational system overall and especially universities have major problems and gaps. In some universities students' study with old methods and policies established more than ten years ago. The research aims to reveal some of the existing problems and find possible solutions to them mainly focusing on smartphone use in the undergraduate universities.

Key terms and definitions

Undergraduate student/university: Undergraduate students in Armenia are mainly 17-23 years old, studying in a specific department, major. The undergraduate university is usually a 4-year program before graduate university and after high school or college.

Instructor, Professor, Lecturer - These words are used interchangeably and describe a faculty member who is teaching in undergraduate universities.

Attention span - Is the total of time that is spent on focusing and concentrating before one gets unwinded and distracted from a specific task.

ADHD - Attention deficit hyperactivity disorder.

Fidgeting - Is a small erratic movement of different body parts, mainly feet or fingers. Usually reflects discomfort or is noticed when a person is not concentrating and is not paying attention.

Literature review

The existing literature analyses the benefits and problems that can arise during phone use during class for educational purposes. Several studies refer to only positive aspects, while some of them discuss both sides. Existing literature also provides some data about students' approach, showing their motivation and eagerness to change policies and include phones into their daily

class activities. Several surveys show data about student's perceptions and behavior. The literature review has three main categories: Cell-phone usage in general, drawbacks, and benefits.

Cell-phone usage in general

According to the survey presented by Kowalski, 73 percent of teenagers in the U.S. possess and use a smartphone. Only approximately 12 percent do not own a cell phone (Kowalski, 2016). Apart from owning a phone, around 90 percent of students write text messages using their smartphones. More specifically, they send around 30 text messages daily and receive some (Kowalski, 2016).

The survey done by Beth Humble-Thaden includes 142 participants of an Upper-Midwestern university. It included questions about the existence of policies and fairness in their university and activities initiated both by students and teachers. The results showed a big interest of students in changing the policies and adding phones in their daily class activities (Humble-Thaden, 2011). The survey initiated by Deborah Tindell and Robert Bohlander included 269 respondents and aimed to show how often students use a phone and why. The results showed that 97% of students admitted that they are texting and breaking the rules during the class (Tindell and Bohlander 2012). Similarly, John Obringer and Coffey Kent did a survey with 200 random high-school students of the U.S. The results showed that most U.S. schools have restricted phone use in the school (Obringer and Coffey 2007).

Drawbacks

Larry Rosen bases his research on psychological aspects and claims that phone use in the classroom is a complete distraction. He argues that students are addicted to their phones, and

instead of using phones in school, they have to forget them. The author gives several tips, such as creating a tech-free zone (Rosen 2015). According to Humble-Thaden, there are several drawbacks, which are why schools ban phones—such as ringing phones during the class, inappropriate, sending, or receiving messages (Humble-Thaden, 2011). Synnott's also claims that phone use impedes studies and the learning process (Synnott, 2015). Besides, he states that students will misuse phones during class, which will become a distraction (Synnott, 2015). Kowalski also claims that students can misuse the phones, and she states that many students are distracted by texting their peers (Kowalski, 2016).

Benefits

According to David Odom, there are numerous advantages that the phone has in a classroom besides access to various limitless resources. The author introduces a list of the most important benefits, including "Learner-centric education," motivation, collaboration, etc. (Odom 2015). According to Humble-Thaden, phones are easier to use than computers as they connect to the internet better and are cheaper (Humble-Thaden, 2011). Thus, all of the students can access phones, while some of them cannot access computers. On the other hand, Kowalski suggests that phones are great tools for taking notes and typing quickly (Kowalski, 2016). She also claims that phones can provide help during math by providing several tools like a calculator. In addition, she talks about replacing some educational materials such as books with phones (Kowalski, 2016).

Several surveys also showed the benefits and willingness of phone use during the class. For instance, Beth Humble-Thaden's survey addressed students' perception about phone usage during class. Its results proved that students are looking forward to policy changes and think positively about phone use in the classroom (Humble-Thaden, 2011). Jack Tessier's survey had 33 participants, and it focused on how those students perceive phone use during the class. The

results revealed that the phone helps students learn and is beneficial for the learning process (Tessier 2013).

Overall, there is literature addressing and identifying some important points helpful for my research. Both listed benefits and drawbacks are strong arguments that help answer my main research question. Policies abroad and the student's attitude towards phone use policies are also what I am focused on. However, the existing research is not enough for answering all the questions raised, and this sphere has some gaps that must be filled. First of all, there is no research done specifically in Armenian schools and colleges. Besides, few guidelines and policy changes are suggested, which is also a critical component of this sphere's research. Additional primary research can help to conclude and finalize the findings.

Research questions

My capstone analyzes and covers many details and aspects connected to phone use in undergraduate universities, aiming to answer a primary research question: Should phones be restricted or permitted in undergraduate universities? The answer to this question includes revealing the benefits of phone use those students get deprived of by banning phones and the problems that are being avoided by restricting phone usage. The capstone also addresses the question of how phones can be used in Armenian universities to improve students' learning experience. The research analyzes how Armenian students use smartphones and how they behave during class.

Methodology

My research study includes qualitative and quantitative research analyzing and revealing what policies universities have and how phones can be used, particularly in Armenian

undergraduate universities. Besides, my study explicates the negative and positive sides of phone use during class. The research discusses and represents the problem from lecturers, professors, and students' points of view. It examines what all of the essential stakeholders of the educational process think, including the teaching staff and the students.

My quantitative research includes surveys concerning my research question. I have presented surveys done outside of Armenia in different states, and I have conducted surveys in Armenia without particular limitation to a region or a university. The survey was sent to as many university students as possible to as many areas as possible. The survey was available online on social media such as Facebook groups. It was also sent to some private group chats, asking them to take part in it and spread it. The survey has more than 100 participants from different universities and majors in Armenia. I did the survey in Armenian for most students, but the English translation was available for students from English-speaking universities. The majority of the questions in the survey offered multiple answers to select from, with only one with a blank field for filling in. The survey included a consent form and 6 questions.

The survey reveals what percentage of university students in Armenia use their phones during the class for non-educational purposes. It also shows what percentage of universities have policies banning or allowing phones at school. Besides, the survey identifies whether students break those rules or not. Most importantly, it reveals whether students would be happy to use phones for educational purposes and if they think it can effectively be applied or not.

Whereas my quantitative research seeks statistics and numbers from students, my qualitative research analyzes ideas and opinions. It includes a series of in-depth interviews with instructors of undergraduate universities and the students. It is essential to understand what students think about phone usage and how they imagine it being used during the classes. They

are the main components of the class, and their attitude is significant for studying the sphere. I have interviewed 6 students from different universities and majors and 3 faculty members. All the participants agreed to disclose their identities, except one faculty member. The participants were senior student majoring in law Gayane Azaryan from UFAR (Fondation Université Française en Arménie), Inesa Khandanyan, senior Business student from AUA (American University Of Armenia), Yeva Militonyan, and Meri Arsenian senior English and Communications students from AUA, Karine Arevshatyan freshman student from National University of Architecture and Construction of Armenia and Jane Asatryan senior law student from YSU.

On the other hand, lecturers conduct the classes, and their opinion on phone use during class is essential. Since they are people directly implementing methods suggested, their feedback and proposals are significant and informative. The faculty interviewees were Biology lecturer from Medical Institute, Gayane Arzumanyan, Mica Hilson, the chair of the English and communications program at the AUA, and adjunct lecturer at AUA Aram Mkrtchyan (pseudonym).

The interviews have several purposes, revealing current policies and finding out their effectiveness and possible changes. The interviews also include discussions about current methods with which phones are applied for educational purposes and their implementation. Interviews show different perspectives, techniques, and approaches to education from both students' and lecturers' points of view. The interviews were conducted in the form of discussions, including but not limited to questions prepared in advance, while supporting an informative dialogue with the interviewees. The questions varied depending on the interviewee. They included open-ended questions to create communicative and engaging conversations. The

interview length was different for each interviewee. On average, interviews lasted from 10 to 30 minutes. Some of the interviews were conducted in English, while some of were in Armenian.

6. Theme #1 Policies in undergraduate universities regarding phone usage in Armenia:

What are the official policies in universities? Are the policies satisfying? How often and why are the policies neglected? How are the policies respected?

Revealing the policies

The policies in Armenia are not very different from the policies that are applied all around the world. In order to find out whether those policies are fair, proper, and respected, I have interviewed both students and professors. The interviews with students were mainly to find out if they are aware of the policies and if they are satisfied with them and respect them. The results of the interviews display that the policies differ not only from university to university but also from class to class. The majority of the students interviewed were aware of the policies applied in their universities, and only 2 of the interviewees stated that they are not aware of official policies. It is interesting that out of 6 students, only 1 said that they are entirely free to use any type of device, including smartphones, whenever they want. Karine remarked, “I think that in the university, we are all mature adults; thus, we do not have strict restrictions. If the student chooses to use a phone, he realizes that he may be distracted. I can take out my phone and do anything with it anytime during the class, and that’s my choice” (Karine, interview, April 25, 2021). It is important to mention that she is a student of the National University of Architecture and Construction of Armenia, where the classes are more practical than in other universities and include more assignments and tasks like drawing. On the other hand, a student from UFAR says that they are restricted from using phones unless they have to look for information such as an article or a book on the phone or other device. She said, “Sometimes we

can share information, even though we are not allowed to use cell phones. There are some professors who allow and for whom it's okay to share information with the help of the phone" (Gayane, interview, March 21, 2021). The same idea that the policies depend on an exact professor and class but not on the university was supported by three AUA students. Yeva explains, "I would say that professors control phone usage during lessons. Some of them are pretty tolerant, but others - completely otherwise" (Yeva, interview, April 12, 2021). Another AUA student, Meri, mentioned that even though it depends on the professor in most cases, AUA professors restrict phone usage during the class unless it is an emergency. According to Meri, while most classes phones are prohibited, laptops are allowed to be used for educational purposes (Meri, interview, April 18, 2021). The strictest environment with stricter restrictions and rules was presented by Jane, who is a Law student at YSU (Yerevan State University). Jane says, "It is not allowed to use them, it is not allowed to answer phone calls or even text someone" (Jane, interview, March 29, 2021).

The interview results of lecturers confirmed the fact that the policies of phone use in the undergraduate universities mainly depend on the instructor methodology, strictness, and the course that they are teaching. Interestingly, even professors from the same universities have completely conflicting opinions regarding phone use policies during class. For example, while an instructor from AUA is strict about phones and considers their usage during the course as a distraction and disrespect, another instructor from AUA doesn't even care about phone usage in the classroom. Dr. Mica Hilson explained, "It varies from instructor to instructor. There is no official university-wide policy about that. Some instructors strongly restrict the phone use during the class, other instructors like me really don't care about phone use in the classroom" (Mica Hilson, interview, March 23, 2021). Dr. Hilson explains that he has no problem with phones as

it's a student's choice whether they want to be distracted; for him it is important not to make others distracted. He only restricts and monitors using phones during the exams (Mica Hilson, interview, March 23, 2021). In contrast, a biology lecturer from Armenian Medical Institute, Gayane Arzumanyan, claims that phones must not be used during the class, and she strictly restricts students from using phones during her lectures (Gayane, interview, April 25, 2021). The results of the surveys support the findings of interviews regarding phone use policies as 75% of participants to the question "What are the policies regarding phone use in your university?" answered that it depends on the particular professor.

The level of satisfaction regarding the policies

The majority of the interviewees, including both the students and the instructors, were pretty satisfied with the policies that were applied in the universities, and only a few changes were suggested. The main reason for the high level of satisfaction is that, as mentioned earlier, the policies are not the same for all the classes and universities, and those are pretty flexible. The remarks and complaints of students about the policies were only about those sometimes being too strict. One of the UFAR students, Gayane, said "It would be better if there were no restrictions in some cases, for example, when we need to share information or when we need to record some lessons" (Gayane, interview, March 21, 2021). She explained that in her university, some lessons are not allowed to record; those are mainly lessons with French professors. She said that the students want to record the lecture to listen when they need to recall something or prepare for exams. She explained, "We do not have books or any other materials for preparing for our exams. It would be better if we could always be allowed to use phones for recording lectures" (Gayane, interview, March 21, 2021). A student from AUA Inesa mentioned that sometimes some instructors are being too strict about the phones, which is not very good. Inesa

says, “I don’t like when professors are too strict about the phones as sometimes, I can look at the time on my phone and they are like do not look at your phone” (Inesa, interview, April 12, 2021). Jane also supports the point that if the policies are not very strict, then some restrictions are acceptable. She said that the policies that they have in YSU are satisfying. She said, “The policies are not very strict, and if there is an emergency, you can ask permission, and most of the time, they will let you use it.” (Jane, interview, March 29, 2021) Two AUA students Yeva (personal communication, April 12, 2021) and Meri (personal communication, April 18, 2021), say that they are happy with the policies at AUA. They both think that if there were no policies at all during classes, there would be no control over students, and everyone would end up using phones.

The instructors are satisfied with the policies because they are the ones who set them and they are not obligated to follow the policies of the university. Gayane Arzumanyan thinks that phones must always be prohibited, and she is happy that she successfully restricts students from using phones during class. She remarked, "Armenian students are used to strict rules starting from the kindergarten and schools. They are used to strict rules, and even in some schools, the teachers collect the phones. The same strictness has to be continued in the universities" (Gayane, interview, April 25, 2021). Mica Hilson said that he is very satisfied with the policies and he thinks that the policies should differ from instructor to instructor. He remarks, "I would be against any kind of effort to regulate university-wide. I feel like any kind of attempt would be overlooking ways in which some instructors do find it useful to have students have their phones out in the classroom" (Mica Hilson, interview, March 23, 2021). He also adds that he recognizes that there are some cases where some instructors would find it very distracting. He claims that a lot of it varies from subject to subject, psychology, and teaching methods of the instructors

themselves (Mica Hilson, interview, March 23, 2021). Overall, both students and instructors are satisfied with the existing policies.

Students' maturity and respect of the policies

Whenever the maturity of students is high, the rules and policies can be loose. The maturity of the students has a significant impact on the guidelines, the choice of methodologies of the instructors, and the way they respect the policies and guidelines of a class. While some of the instructors think that undergraduate students are mature enough to follow the policies and their actions, others claim that their maturity level is low and they need to be controlled.

According to one of the AUA instructors, he had never had a student who didn't respect his instructions and discipline. He states, "I ask politely and present the rules of the class, and they obey. I think it is disrespectful when students use phones during the class." He explains by saying that he expects students to come to class to listen and participate, and when they do not do that, it means that they do not respect him and the course. It also means that they are not interested in the class and they show it (Aram, Mkrtyan, March 24, 2021). Gayane Arzumanyan says that the level of maturity of undergraduate students is not very high. They need strictness and rules; otherwise, the class will not be practical. According to her, even if phones are restricted to use, some students still use them, especially during the lectures in the big classrooms where monitoring is complex (Gayane, interview, April 25, 2021). According to Dr. Hilson, students are pretty responsible in terms of phone usage. The only times that he has noticed issues are when occasionally he observes when there will be students giggling together in the back of the classroom because they are looking at something on their phone (Mica Hilson, interview, March 23, 2021). Dr. Hilson explains, "They are mature enough to take responsibility for their education. I treat students the way where it's putting responsibility for choice on them;

much policing on how they use either device is more like babying” (Mica Hilson, interview, March 23, 2021).

The survey results show that 75% of the students use their phones during class for non-educational purposes. In addition, all 6 student interviewees claimed that even if they are being restricted, they still use their phones for non-educational purposes. Gayane says, "Sometimes I use my phone when the lessons are not very interesting or when I have no mood to study. I often use phones for listening to music with headphones"(Gayane, interview, March 21, 2021), Inessa also says that she uses the phone for non-educational purposes when she gets bored during class. She says that she surfs the internet or looks at some photos to unwind from the boring class (Inesa, interview, April 12, 2021). Meri also states that she uses the phone during the class and remarks, "I am not always disciplined in terms of phone usage during the classes. If the course is interesting for me, I hardly ever use my phone. However, if the class is boring, I get distracted by my phone a lot" (Meri, interview, April 18, 2021). Without any exception, all participants unanimously said that even if it is not allowed, they still sometimes use the phone during the class, mainly when the lecture is boring.

7. Theme #2 The main disadvantages of phone use during class: How addicted are students to their phones? How distracting are the phones?

There were several disadvantages and drawbacks regarding phone use during the class suggested by both the students and the professors. The majority of the interviewees mentioned that phones are distractions in the list of the cons of phone use during the class. This was the most common disadvantage mentioned by the interviewees, and it was the main reason they would not like phones to include in the educational process. Aram Mkrtchyan remarked, "Students miss a lot of information because they are being distracted by phones" (Aram,

Mkrtchyan, March 24, 2021). Dr. Hilson said that the main problem with phone usage during the class is that sometimes students get too much into the activity they are doing with their phones and become unable to follow the class (Mica Hilson, interview, March 23, 2021). The majority of students agreed with professors and mentioned that distraction is a real issue when they have a phone. Karine said, "Sometimes this happens unconsciously when I look at my phone and realize that I was distracted by the phone through the whole class" (Karine, interview, April 25, 2021).

Besides distraction Gayane Arzumanyan mentioned discipline and control issues that can arise because of allowing phone use during the class. She explains, "Undergraduate students need to be disciplined during the class; if you allow them to use phones for educational purposes, you will not be able to control how they use it." According to Gayane, even if phones would be allowed for some educational activities, the classroom would become a mess as the instructor would not be able to control why the students use their phones (Gayane, interview, April 25, 2021).

"Even if there were interesting and useful activities with phones, it would be difficult to do them during the class at my university" (Karine, interview, April 25, 2021). Karine explained that most of the instructors at her university are old, and their teaching methods were not changed for more than ten years. Thus, she thinks that their instructors cannot organize activities with phones. "They are not very familiar and used to how technology is used, and they do not know about modern teaching methods" (Karine, interview, April 25, 2021).

Another interesting drawback of phone usage during the class was suggested by Meri. She claims that youth has significant numbers of screen time even without incorporating phones in education. She thinks that including phones in education will increase the screen time of youth even more, which can have a lot of harmful consequences (Meri, interview, April 18, 2021).

Another disadvantage that was mentioned is that phones are simply inconvenient to be used during class. Instead of phones, it is better to use laptops with the help of which it is easier to take notes, read something, and search for information (Aram Mkrtyan, interview, March 24, 2021).

Besides, students are very addicted to using their phones during the lessons; they watch some videos or play games, and all this has to be done during the breaks. They are so addicted to their phones that they check their messages or look at the time so frequently that they get distracted (Yeva, interview, April 12, 2021). The majority of the interviewed students support this fact as 5 out of 6 students said that they are addicted to their phone and that addiction makes them check it very often. "I often use social media, watch videos, pictures and chat with my friends. When I use it while having classes, I get distracted and simply miss what has been said: an interesting latent discussion or a helpful lecture" (Yeva, interview, April 12, 2021). The phone makes it difficult to concentrate as it constantly reminds you about fun activities outside of the class. Jane said, "I face difficulties concentrating very often, and cell phones are the number one reason for it" (Jane, interview, March 29, 2021). According to Jane, the phone adversely influences her studies as when she uses it during class, she gets distracted, and it is difficult for her to concentrate on class again. Besides, she thinks that the big problem is that you don't feel how time passes when you get involved in an online conversation during the class (Jane, interview, March 29, 2021).

8. Theme #3 The main advantages of phone use during class: What activities can effectively be done? What activities are already being applied?

The research has revealed several advantages and effective usage methods of a phone during class. However, those were mainly listed by the students, and the students are more prone

to engaging with phones in their studies than the professors are. The survey results show that more than 90% of students think that phones can be used for educational purposes. Two out of three interviewed professors believe that phones are not likely to be included in the process of education even though they have listed some pros of phone usage during the class. The most common advantages listed were 1. Quick research, 2. Calculator 3. Recording the class, 4. Taking photos of the materials or the blackboard, 5. Interactive quizzes 6. Taking notes.

Quick Research

One of the most common phone usage for educational purposes is quickly looking up some information and doing quick research. Inesa brought an example and said that she might quickly google it whenever the instructor says something new that she does not understand (Inesa, interview, April 12, 2021). The professors quite welcome this type of phone usage. "Checking information, looking up, and adding things is great; I get excited when students are using phones in that way as it's the right way" (Mica Hilson, interview, March 23, 2021). Dr. Mica Hilson explained that it is very welcome when students look for something they do not know during the class or even add some more information to what the professor explains. Quickly looking up information by phone is very helpful for law students. Whenever they discuss something related to laws, it is easy for them to look for the particular law with their phones. Jane remarked, "It is usually easy to search for some information, mainly to look up for laws during the class" (Jane, interview, March 29, 2021). The process of reading something or doing quick research with phones is also helpful during group work. Much in-class group work requires students to find some information or students decide to do some research. The students can use their phones and, after doing research individually, share their findings in the group (Yeva, interview, April 12, 2021). When the students break into groups for activities like close

reading, a clip to watch or a picture to look at, their phones are very helpful as the professor can assign each group something to look at with their phone. The professor may ask to look at a certain newspaper article, book or something from Moodle, and every student can access it with his/her phone. Sometimes they can look at the material privately as they all have phones. Dr. Mica Hilson said "It's a very common thing during my class during group work activities" (Mica Hilson, interview, March 23, 2021). Sometimes professors ask students to do research to get more engaged in the class and discussions. "During the class, the instructor could ask us to search something on our phones to get more involved in the class, in the topic that we are discussing" (Inesa, interview, April 12, 2021).

Tools: Calculator, Camera, Notes, Audio Recorder

Another advantage mentioned by the students and professors is using the phone tools like the calculator, audio recorder, camera, and notes. Students use their phones for taking photos from the copies, books, and sometimes the blackboard. Sometimes students take photos of the slides or information that the professors show. Even though the data is being shared with them, sometimes they prefer to take photos and keep those on the phone. Whenever professors demonstrate notes/presentations on the screens during the classes but do not share them with students, they can take a photo and have the vital information on their phones (Yeva, interview, April 12, 2021). Students that take mathematical classes find using calculators with their phones very helpful. While carrying a separate calculator is not very convenient, they can simply use it with their phones. Besides using calculators, students taking mathematical classes can download some useful apps for solving problems. "For mathematical classes, we can find some useful apps and solve some problems" (Inesa, interview, April 12, 2021). It is also effective when students open the class presentations/notes on phones while listening to the class. During the in-person

classes, there are some cases when the students need to see the screen but can't because they are sitting in the last row or issues with the projectors. In cases like this, it is helpful to open the presentation on the phone and follow the class. Students also like taking notes with a phone, especially whenever they do not have a notebook. "Sometimes, I also like to take notes on my phone. There are good apps that help you to organize your notes, and I love using them" (Yeva, interview, April 12, 2021).

Other activities: Quizzes, listening, translations

There are several other activities that students prefer doing with their phones during class. Some effective activities are doing translations, especially during language classes. "I always use my phone during class to translate some words, especially when I'm writing essays" (Gayane, interview, March 21, 2021). Translating is more beneficial for students from universities who study in foreign languages like AUA, RAU, and UFAR. Besides doing translations, students can do activities like listening with their phones. Gayane said, "We do some very helpful online listening exercises in French with phones" (Gayane, interview, March 21, 2021). Another possible activity connected with specifically non-mathematical classes like the English course is writing posts on a specific topic for a social media account. Whenever the students see how the course material can be helpful in real life, they are more eager to learn it (Meri, interview, April 18, 2021).

Having interactive quizzes with phones was mentioned as a very effective method for using phones during the class. Quiz games like Kahoot are beneficial for engaging students in the class and help revise and learn class material. Students find Kahoot quizzes helpful in getting ready for the exams. Inesa explained, "For example, we can have something like Kahoot to get prepared for exams, and it's suitable for all the courses that are not mathematical ones. It boosts

the memory" (Inesa, interview, April 12, 2021). Yeva also liked quizzes because they were interactive and advantageous for her as, after the quizzes, she would look at the answers and discuss them with friends. "I would love to have more online quizzes. It would work in every course because professors can design a quiz that either summarizes the topic or helps the students to get ready for the exams." The quizzes will keep the students motivated to study, and they will discuss the mistakes they made with their peers, which will help to understand those flaws (Yeva, interview, April 12, 2021).

9. Theme #4 Attention span

Sometimes it is difficult for students to remain concentrated for an entire class. Thus, some amount of distraction in the form of phone usage may be considered normal and acceptable. Dr. Mica Hilson explained that sometimes instructors feel insecure about how to read some classroom behaviors. They think that only nodding, eyes on them are the signs of attention, which is how they define and make sure that they have the students' attention. But he claims that it's a big thing to ask for in a fifty-minute class, and everyone is not going to be as alert for all of the class time (Mica Hilson, interview, March 23, 2021). "The average adolescent or young adult finds it difficult to study for 15 minutes at a time; when forced to do so, they will spend at least 5 of those minutes in a state of distraction" (Rosen, 2017). Karine supported this point and explained that she cannot concentrate on one thing for a long time, and she usually does something with her phone and simultaneously follows the class. She tries not to get very engaged in phone activity and listen to the class at the same time. "I don't read anything on the phone. I rather do something not very attention-grabbing like looking at the photos" (Karine, interview, April 25, 2021). Dr. Mica Hilson claims that many students are scrolling Instagram or looking at some photos, which are not very distracting activities. He explained, "That's a little bit of a

distraction, and it's not a giant distraction"(Mica Hilson, interview, March 23, 2021). So, some activities with the phone may be done along with listening and following the class.

Another interesting finding is that sometimes it might be that people need a little kind of brief distraction to refocus on what they are doing. Students may need to look at the phone for several minutes and then refocus on the class. This behavior might be the way a student is dealing with his/her concentration-related issues. Dr. Mica Hilson remarked, "I think that if students have that certain degree of distraction or they feel like playing on their phones, it's not a major problem, although I do recognize that some instructors think it is" (Mica Hilson, interview, March 23, 2021). He also explained that some students fidget, or they can't sit still because of being hyperactive, which is called ADHD. This is why many students are not able to concentrate on the class for a long time. They are not used to focusing on one single task for a long time. "Teenagers are almost always attempting to multitask" (Rosen, 2017). Dr. Mica Hilson claimed that social media and the internet encourage shorter attention spans. Students do things for a short time or multitask rather than focus on a single task. Consequently, it becomes a challenge for the students when they are expected to focus on a single task, sometimes a tedious task, especially if it's a lecture-based class. "I recognize that kinds of feasible issues where students can feel physically uncomfortable to sit on their chairs, and all this has to do with different types of abilities, cognition, brains, conditions" (Mica Hilson, interview, March 23, 2021). Teachers sometimes assume that everyone is the same, and everyone would thrive in that environment. It is a very traditional kind of authoritarian classroom environment where the teacher is the center of attention, and all eyes have to be on the teacher all the time. "This is the case where I think Disability Studies pedagogy really influences. Students have different needs; sometimes what they're doing when they are looking at their phones might be helpful for them" (Mica Hilson,

interview, March 23, 2021). This kind of behavior is not disrespectful. It's not about teachers and it is more about students. By looking at the phone, they might do what is for their education and learning needs, and the student is trying to do something that's best for her learning needs that the professor might not be aware of (Mica Hilson, interview, March 23, 2021).

10. Theme #5 COVID pandemic and future teaching trends: What will be changed after the pandemic? What future trends are expected in the delivery of classes?

Expected situation and possible changes after Covid-19

The Coronavirus pandemic has influenced education severely. The classes became online, and it's interesting to know what changes are expected after the pandemic. Will everything be back to normal as it was before Covid-19, or will some habits be changed? The majority of interviewees predict that everything will be back to normal, although they suggest some changes in the habits of students, instructors, and the universities. Professor Aram Mkrtchyan said, "Back to normal. There may be some changes. For example, the university may hire foreign instructors to teach from abroad without additional travel expenses. Much easier for the university" (Aram, Mkrtchyan, March 24, 2021). Even though some changes in the habits of students may be noticed, professors think that students would love to be back on campus and everything will be offline again. Dr. Hilson explained, "I think students will be hungry for face-to-face contact that they didn't get for a long time. They may be appreciative of that, more desiring in the engagement by putting their phones away" (Mica Hilson, interview, March 23, 2021). Dr. Hilson also discussed another option where some students might be so used to online and feeling more comfortable with the mode where they communicate with phones, especially when chatting; it may be more awkward for them without a phone. He said, "We have been in

this situation long enough and we may have new habits developed" (Mica Hilson, interview, March 23, 2021).

The majority of the student interviewees think that Covid-19 has influenced their education, and the impact will remain even after the pandemic. The results of the interviews show that students use more phones during online classes both for educational purposes and for unwinding from the classes. "Education has changed because online education is leading to excessive phone usage. The opportunity of turning the camera off gives the students freedom to use their phones as much as they want"(Meri, interview, April 18, 2021). Moreover, excessive phone usage is likely to stay even after the Covid-19 pandemic as students got even more addicted to their phones during online classes. "After the pandemic, we will use our phones more often during classes because we're used to them" (Yeva, interview, April 12, 2021). Inesa also believes that after Covid-19, phone usage will increase. "Usage of all digital devices will increase because we are used to staying at home and having all our classes with phones and having conversations with phones. The usage of phones will definitely increase even if we go back to campus classes again" (Inesa, interview, April 12, 2021). Jane thinks that there will probably be more permission to use phones. However, she believes that studies of some professions like the law will stay the same. "In some professions like law, cell phones cannot be helpful. Maybe in some modern professions, phones will be more included" (Jane, interview, March 29, 2021). Gayane thinks that the number of online universities will increase even after the Covid-19 pandemic. Gayane remarks, "I think that some universities will continue their lessons online as it's advantageous and a good opportunity for the universities but not for students" (Gayane, interview, March 21, 2021).

Most of the interviewed students stated that during online classes, phones distract them from the lessons more than during offline courses. "I think that it's disturbing to concentrate on the class when I am at home with my phone" (Gayane, interview, March 21, 2021). Yeva explained that before the pandemic, it was easier for her to concentrate and not get distracted. Offline classes with the professor physically present created an atmosphere "forcing" her to listen to the class. Yeva said, "Now I'm not concentrating at all. I get distracted easily by my phone or by family members. However, when the lessons were offline, I used my phone less frequently. I concentrated more on the class, listened to the professors, and simply did not have time for using it" (Yeva, interview, April 12, 2021).

Expected future trends in the delivery of classes

Since technology is developing extremely fast, it is essential to anticipate what future changes that we might have related to it. While some professors are looking forward to those changes and welcome them, others think that their methods are enough and changes will be unfavorable. For example, Dr. Hilson sees some interesting usage methods of phones during the class as something new and helpful. He explained that since we are used to using tools like Zoom, the instructors may start connecting by video conference with someone who is not in the class. Dr. Hilson discussed an example of a class like PR, where instructors cancel some courses so that students can physically go somewhere to meet a client. He suggested that maybe in the future, the meeting could be arranged in the classroom by talking to the client with Zoom. Dr. Hilson anticipates that there may be some conversations with people abroad, "Perhaps students can work with a client who is in another country" (Mica Hilson, interview, March 23, 2021). On the other hand, other professors Aram Mkrtyan and Gayane Arzumanyan, would not want to

include technology more in delivering classes in the future. "There could be some changes, but I wouldn't prefer that" (Aram, Mkrtchyan, March 24, 2021).

One of the students, Karine, suggested that the main thing that will be changed in the future will be the communication of students and professors. She thinks that students will be more connected with professors via online tools and messengers. Students will be able to easily and quickly get feedback from professors during doing a project or homework by writing a message to professors (Karine, interview, April 25, 2021). On the other hand, another student Jane claims that the future changes depend entirely on the university, the major that the student chooses, and the particular work that needs to be done. "Eventually, technology will be more used; we cannot avoid it" (Jane, interview, March 29, 2021).

Limitations and avenues for future research

Unquestionably there are some limitations regarding my research and avenues for future research. The first limitation is the number of participants in the interviews that were conducted. The faculty members interviewed were only 3. Also, the professors were not from various universities as two of them were from AUA and only one from a Medical Institute. The first avenue for research is interviewing more professors from different universities of Armenia which could improve the study.

The second limitation is the number of students that were interviewed. Only 6 students were interviewed. I couldn't find interviewees from several universities. An avenue for future research is interviewing more students from various universities and different age groups. It would be great to have at least one interviewee from each undergraduate university in Armenia.

Another limitation of the research is the number of participants in the survey. Even though the survey was sent to many groups of different universities, the participants were still few. Instead of having 100 participants, it would be better to increase the number of participants in the survey. The majority of students participating in the survey were senior students. Thus, an avenue for research is surveying a wider scope of participants with a bigger age range.

Conclusion

To conclude, this research was devoted to phone use during the class in undergraduate universities in Armenia. As technology is evolving and phones are becoming indispensable to students, it is essential to understand how phone usage during class influences education. The analysis of 9 in-depth interviews and a survey with more than 100 participants show that students are prone to using phones during class. The professors set the majority of policies regarding phone use during the class, and in most universities, there is no single universal policy regarding it. Both students and professors are primarily satisfied with the policies applied. Although some students use their phones for non-educational activities, it seems disrespectful and unacceptable for some professors.

There are both advantages and disadvantages of phone usage during class. The common benefits are quick research, calculator, recording class lectures, taking photos of the materials or the blackboard, interactive quizzes, and taking notes. On the other hand, significant disadvantages are distraction, increased screen time, and inconvenience.

An interesting finding was about attention span and that in some cases students are unable to concentrate on the class for a long time. Thus, sometimes they can look at their phones

and get back to a class. This may be a helpful method with which they deal with their concentration problems.

Phone usage during the class is expected to increase, and while some students see it as an advantage, professors do not see it as a favorable change. In addition, the pandemic of Covid-19 has changed the methods of education and has included devices more into daily studying routines. Those changes are expected to remain, and some new habits and addictions may be noticed after the pandemic.

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Appendices

Appendix A:

a. Survey Consent

I have been informed that the purpose of the project is revealing whether mobile phones can be used in Armenian undergraduate universities. Within the bigger context of the project, the interview conducted by Meri Asatryan is meant to focus on the drawbacks and benefits that mobile phone usage can have in various undergraduate universities and understand the methods of usage.

This is to state that I agree to participate in the capstone project conducted by Meri Asatryan. The capstone director is Dr. Hourig Attarian of the College of Humanities & Social Sciences at AUA (tel.: 060 612769, email: hourig.attarian@aua.am).

I understand that my participation in this study is anonymous, the data from this project may be published in print or digital format for academic purposes, the data collected in the following survey is only going to be published as aggregated data, and that I am free to withdraw my consent and discontinue my participation at any time without negative consequences.

b. The Generic Consent Form for Interviews in English:

CONSENT FORM

Consent to participate in a capstone project conducted at the American University of Armenia (AUA). This is to state that I agree to participate in the capstone project conducted by Meri Asatryan. The capstone director is Dr. Hourig Attarian of the College of Humanities & Social Sciences at AUA (tel.: 060 612769, email: hourig.attarian@aua.am).

PURPOSE: I have been informed that the purpose of the project is revealing whether mobile phones can be used in Armenian undergraduate universities. Within the bigger context of the project, the interview conducted by Meri Asatryan is meant to focus on the drawbacks and benefits that mobile phone usage can have in various undergraduate universities and understand the methods of usage.

PROCEDURES: I understand that the interview will be conducted in participants' homes or another appropriate place, and might be recorded on video or audio. Alternatively, the interview may be conducted on Zoom or another online platform. As a participant, I will be asked to reveal what I think about phone usage in undergraduate universities and the possibilities to use them, as well as their impact on learning. The interview will last from 5 to 30 minutes, however, as a participant, I am free to stop at any time, refuse to answer any questions, or withdraw from the project at any given point. I understand that if I wish to extend the focus group for more than 30 minutes, I will be provided that opportunity.

RISKS AND BENEFITS: I understand that the interview involves the sharing of my personal views and opinions, which will be treated with the utmost care and consideration. I have been informed that I am free to stop, take a break, or discontinue at any time. There are no risks involved in partaking in this interview.

CONDITIONS OF PARTICIPATION: As a participant, I will have access to all the recorded material for verification purposes. Throughout the project, if and when the material produced is in Armenian, I will have the opportunity to review and verify the English translations.

I understand that I am free to withdraw my consent and discontinue my participation at any time without negative consequences.

I understand that the data from this project may be published in print or digital format for academic purposes.

In terms of **identification and reproduction** of my participation:

I agree to **disclose my identity**. I understand that my identity may be revealed in any publications or presentations that may result from this interview.

I agree to the reproduction of sound and images from this interview by any method and in any media for academic purposes (which may include webpages, documentary clips, etc..)

OR

I understand that my participation in this study is **confidential**. My identity will be concealed. I will be given a pseudonym in any publications or presentations that may result from this interview.

I agree that while data from my interview may be published, no sound or images from it may be reproduced.

When photographs, artifacts, or documents are scanned or photographed

I agree to let the student researcher copy family photographs and documents for use in the student project only.

I HAVE CAREFULLY STUDIED THE ABOVE AND UNDERSTAND THIS AGREEMENT.

I FREELY CONSENT AND VOLUNTARILY AGREE TO PARTICIPATE IN THIS STUDY.

INTERVIEWEE:

NAME (please print) _____

SIGNATURE _____ DATE _____

INTERVIEWER:

NAME (please print) _____

SIGNATURE _____ DATE _____

If at any time you have questions about your rights as a capstone project participant, please contact Dr. Hourig Attarian of the College of Humanities & Social Sciences at AUA (tel.: 060 612769, email: hourig.attarian@aua.am).

c. The Generic Consent Form for Interviews in Armenian:

Համաձայնության հավաստագիր

Համաձայնագիր մասնակցելու դիպլոմային ծրագրի իրականացման Հայաստանի ամերիկյան համալսարանում: Սույնով հավաստում եմ, որ համաձայն եմ մասնակցել ՀԱՀ Հումանիտար և հասարակական գիտությունների ֆակուլտետի դասախոս դոկտոր Հուրիկ Ադդարեանի (հեռ. 060 612769, էլ. հասցե hourig.attarian@aua.am) ղեկավարությամբ Մերի Ասատրյանի կողմից դիպլոմային աշխատանքի նախագծի հարցազրույցին:

Նախագծի նպատակը

Տեղյակ եմ, որ այս նախագծի նպատակն է հասկանալ, թե արդյո՞ք հեռախոսները կարո՞ղ են օգտագործվել համալսարաններում: Մերի Ասատրյանի անցկացրած հարցազրույցը նպատակ ունի հասկանալ համալսարաններում հեռախոսի օգտագործման դրական և բացասական կողմերը:

Ընթացակարգը

Հասկանում եմ, որ հարցազրույցը անցկացվելու է մասնակցի տանը կամ մեկ այլ պատշաճ վայրում, և տեսագրվելու և/կամ ձայնագրվելու է: Այլընտրանքորեն, հարցազրույցը կարող է անցկացվել Zoom-ով կամ այլ առցանց հարթակում: Որպես մասնակից ես պատասխանելու եմ հարցերի և մասնակցելու եմ քննարկման թե արդյո՞ք ճիշտ է հեռախոսների օգտագործումը համալսարաններում: Տեղյակ եմ, որ հարցազրույցը տևելու է մոտ 5-30 րոպե, բայց այդուհանդերձ մասնակիցները կարող են որևէ պահի դադարեցնել հարցազրույցը, հրաժարվել պատասխանել որևէ հարցի, կամ որևէ պահի դուրս գալ նախագծից: Հասկանում եմ, որ եթե ցանկանամ հարցազրույցը երկու ժամից ավելի երկարաձգել, ինձ այդ հնարավորությունը կընձեռվի:

Ռիսկեր և օգուտներ

Տեղյակ եմ, որ որևէ պահի կարող եմ դադարեցնել հարցազրույցը, ընդմիջել կամ հրաժարվել շարունակել: Հաշվի առնելով, որ ուսանողների նախագծերը ներլսարանային ցուցադրման մաս են կազմելու (կայքով և/կամ հրատարակումներով), իմ պատմությունը և կարծիքները, իմ թույլտվությամբ, նույնպես ներկայացվելու է:

Մասնակցության պայմանները

Որպես մասնակից ինձ հասանելի կլինեն ձայնագրված և գրի առնված տվյալները՝ դրանք ստուգելու նպատակով: Նախագծի ամբողջ տևողության ընթացքում, ես հնարավորություն կունենամ վերանայել ու հաստատել անգլերեն թարգմանությունը, եթե նյութը հայերեն է:

___ Հասկանում եմ, որ որևէ պահի կարող եմ հետ վերցնել համաձայնությունս ու հրաժարվել մասնակցել նախագծին՝ առանց բացասական հետևանքների:

— Հասկանում եմ, որ այս նախագծի տվյալները գիտաուսումնական նպատակներով կարող են հրատարակվել՝ տպագիր կամ թվային տարբերակներով:

Իմ հարցազրույցի ինքնության բացահայտման և վերարտադրման առումով

— Համաձայն եմ, որ **ինքնությունս հայտնի լինի**: Հասկանում եմ, որ ինքնությունս կարող է բացահայտվել այս հարցազրույցի արդյունքում հրատարակված նյութերում:

— Համաձայն եմ գիտաուսումնական նպատակներով այս հարցազրույցի նկարների ու ձայնագրությունների վերարտադրմանը որևէ հաղորդամիջոցով (վեբ կայքեր, և այլն):

ԿՅՄ

— Հասկանում եմ, որ իմ մասնակցությունն այս ուսումնասիրությանը **գաղտնի է**: Ես հասկանում եմ, որ իմ ինքնությունը չի բացահայտվի այլ ցանկացած հրապարակման կամ ներկայացման մեջ, որոնք կլինեն այս հարցազրույցի արդյունքը, կօգտագործվի ծածկանուն:

— Համաձայն եմ, որ չնայած իմ հարցազրույցից որոշ նյութեր կարող են հրատարակվել, սակայն ոչ մի ձայնագրություն չի կարող վերարտադրվել:

Այն դեպքում, երբ լուսանկարներ, իրեր կամ փաստաթղթեր են նկարվել կամ սկանավորվել

— Համաձայն եմ, որ ուսումնասիրությունն անող ուսանողը պատճենահանի լուսանկարներ ու փաստաթղթեր նախագծի շրջանակներում օգտագործելու համար:

ՈՒՇԱԴԻՐ ԿԱՐԴԱՑԵԼ ԵՄ ՎԵՐԸ ՇԱՐԱԴՐՎԱԾԸ և ՀԱՍԿԱՆՈՒՄ ԵՄ ԱՅՍ
 ՀԱՄԱՁԱՅՆԱԳՐԻ ԿԵՏԵՐԸ: ՀՈԺԱՐԱԿԱՍ ՀԱՄԱՁԱՅՆՈՒՄ ԵՄ ՄԱՍՆԱԿՑԵԼ
 ԱՅՍ ՈՒՍՈՒՄՆԱՍԻՐՈՒԹՅԱՆԸ:

Մասնակից՝

Ստորագրություն _____ Ամսաթիվ.

Հարցազրույց վարող՝

Ստորագրություն _____ Ամսաթիվ.

Եթե որպես բանավոր պատմության նախագծի մասնակից որևէ պահի հարցեր կունենաք
 ձեր իրավունքների վերաբերյալ, կարող եք կապվել ՀԱՀ Հումանիտար և հասարակական
 գիտությունների ֆակուլտետի դասախոս դոկտոր Հուրիկ Ադդարեանի հետ (հեռ. 060
 612769, էլ.հասցե՝ hourig.attarian@aua.am):

Appendix B: Survey Questions

1. In which university do you currently study?/ Ո՞ր համալսարանում եք այժմ սովորում:
2. Which year student are you currently?/ Դուք ներկայումս ո՞ր կուրսի ուսանող եք:
3. Do you use your phone during class for non-educational purposes? / Դասի ընթացքում ձեր հեռախոսն օգտագործո՞ւմ եք ոչ կրթական նպատակներով:
4. What are the policies regarding phone use in your university? / Որո՞նք են ձեր համալսարանում հեռախոսի օգտագործման վերաբերյալ կանոնները:
5. Do you think phones can be used for educational purposes? / Ի՞նչ եք կարծում, հեռախոսները կարո՞ղ են օգտագործվել կրթական նպատակներով:
6. What type of activities would you like to use phones for during the class? / Դասի ընթացքում ի՞նչպիսի գործողությունների համար կցանկանայիք օգտագործել հեռախոսներ:

Appendix C: Interview Questionnaire

d. Interview questions for students

1. Can you please introduce yourself, mentioning your university name and your major?
Which year student are you currently?
2. What are the official policies regarding cell phone and device use during class in your university?
3. How satisfied are you with the existing policies regarding phone restrictions, and would you like to make some changes? If so, what changes?
4. How often and why do you use your phone during class?
5. How addicted are you to your phone, and how does that affect your studies?
6. What are some activities you do with your phone during classes?
7. What activities do you think there are that can be effectively included in your educational process with the help of phones?
8. How often and why do you face difficulties concentrating in class?
9. What are the pros and cons of phone use during the class?
10. What activities with phones would you like to have, and how do you imagine them?
Please, bring specific examples pertaining to specific courses.
11. How do you think phone usage has changed or will be changed after the pandemic of Covid?

e. Interview questions for Professors

1. Could you please introduce yourself, including the place of your employment and position?

2. What are the official policies regarding cell phone and device usage in the class before the pandemic at your university?
3. How satisfied are you with the existing policies regarding phone restrictions, and would you like to make some changes? If so, what changes?
4. Please, tell me how students respect these policies and how their behavior impacts the classroom environment?
5. Please, tell me about how you control the phone use of undergraduate students and what are some effective methods?
6. If students use the phone during the class for non-educational purposes, what should an instructor do?
7. What types of activities require students to use devices, mainly phones, in your classes, and what methods you think can be applied to use phones effectively in the future?
8. What do you think about undergraduate students in general? Are they mature enough for using a phone for educational purposes while being at the university? Why or why not?
9. What do you think about phone addiction, and how does it affect studies?
10. Do you allow recording or taking photos during the class?
11. Can you please list the pros and cons of phone use during the class?
12. What has changed or will be changed after the pandemic of Covid?
13. What do you think about how the trends are changing in the delivery of classes in the next five years, and whether there is a role for phone usage to play in that?