

Original Paper

Complexity, Conflict, and Uncertainty: Smartphone Use and the Efficacy to Learning on University Students in EFL Classrooms

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Abstract

The use of smartphones among university students is like a double-edged sword (Qi, 2019), on the positive side, it can boost academic performance; on the negative side usage (or the restriction of it) can detract from learning. The studies offered seem to create a dichotomy: smartphone use during class is either positive or negative. This paper, however, aims to reveal how students' smartphone use in the classroom is an intricate, conflicting picture that has several layers of complexity creating a confusing picture for the instructor as to how, when, or why to use smartphones in the classroom. In order to explore Taiwanese university students' potential conflicting viewpoints on the smartphone uses during class time, this study collects both quantitative and qualitative data for data analysis. All the questionnaire respondents used their smartphones during class time. The main reason they do so is due to learning purposes (e.g., check English words online, participate in class activities). However, it is interesting to note that the most frequent uses for the students are for personal reasons, e.g., check the time, check personal messages. Moreover, quantitative data shows that 2/3 of the participants in this study believed that it is all right to use their smartphone during the class, because being able to check information online aids their learning during the class. On the other hand, about 1/3 of the students believed that cellphone use is a distraction for them during the class. Semi-structured interviews also reveal that the interviewees expressed that they have mixed feelings about the appropriateness of the use of smartphones during class. Hopefully, these data can shed light on how teachers approach students' smartphone uses policy in class.

Keywords

Smartphone uses in class, university students, EFL classrooms

1. Introduction

Teachers are certainly aware of smartphones entering their classrooms. They are hidden in backpacks, stuffed into pockets, and held in the hands of students whose eyes are glued to the screen as they move to their seats as the bell rings. However, what is far less certain is exactly how those ubiquitous devices are used while instruction is taking place. Over the last decade, we have witnessed a sharp growth of research studies on the use technology, particularly MALL (Mobile Assisted Language learning) in the classroom.

A majority of these research studies focused on the positive benefits MALL has brought to language learning. Valk et al. (2010) study in Asia indicated that mobile phone use in the classroom facilitated on-demand communication between teachers and students; mobile phone use also enabled discussion and shared problem-solving tasks which improve content understanding and application. In a similar vein, other researchers (Churchill & Churchill, 2018; Rao, 2019) discussed how the use of technology in EFL/ESL classrooms makes the teaching-learning process more effective and flexible. Studies focusing on the positive advantages of classroom cellphone use urge language teachers to embrace the latest innovative technologies, to welcome them into their classrooms. One advantage comes in the form of the ARS - Audience Response System (e.g., Polleverywhere, Zurio) capability of inviting shy EFL speakers in language classrooms to participate more actively in class discussions, hence, they become more motivated to attend EFL classes (Meguid & Collins, 2017). Yudhiantara and Nasir's study (2017) discussed how students benefited from using different kinds of mobile phone dictionary applications, such as translation, or English only apps, during class time; combined with video and audio functions they enhanced these learners' phonological awareness.

Conversely, some studies focused on problems mobile phone use creates in EFL classrooms. Kuznekoff and Titsworth (2013) discovered that student mobile phone use during a video lecture negatively affected students' note taking performance, which eventually led to poorer assessment results. Dubon's study (2018) considered detrimental psychological factors: due to the constant use of mobile phones, Dubon found that when students are denied access during class time negative effects to mood or anxiety occurred that proved detrimental to their learning.

The studies mentioned above appear to create a dichotomy: smartphone use during class is either positive or negative. This paper, however, aims to reveal how students' smartphone use in the classroom is an intricate, conflicting picture that has several layers of complexity creating a confusing picture for the instructor as to how, when, or why to use smartphones in the classroom. Such conflicted viewpoints may not only create tensions between teachers and students – tension could even exist within the student herself. Tensions arise from user habits, level of self-control, separation anxiety and the like.

In line with the Complex Dynamic Systems Theory (CDST), which urges researchers to explore language learning in a nonlinear dynamic context, which illuminates a picture that is “chaotic”, “multifaceted complexity”, and “highlight[s] the significance of change and development” (Dorney,

MacIntyre, & Henry 2015, pp. 3-4). Since both mobile phone uses and language learning are both Social Science issues, I do believe that to explore these two issues requires a position that expects a multi-layered complexity. This multi-layered complexity on the use of smartphones during the class not only affects teachers' teaching approach during the class, it also deeply affects students' learning efficacy. As such, there is a need to explore whether or not students find the use of smartphones helpful; how smartphones, when used, are actually functioning inside the classroom, and the efficacy (or impairment) of smartphone uses to the students' actual learning in the classroom. To this end, the following research questions are proposed:

- 1) What are the reasons that students use smartphones in class?
- 2) What are the students' perceptions of the benefits of smartphone uses during the class to their own learning effectiveness?
- 3) What are the students' perceptions of the problems of smartphone uses during the class to their learning effectiveness?

2. Method

2.1 Research Aim

The study aims to adopt a mixed research method, collecting both quantitative and qualitative data from students from a private language university in Taiwan. A mixed method approach is an appropriate approach to adopt to best capture the multi-layered complexity of the relationship between students' smartphone uses and their language learning effectiveness. As Larsen-Freeman (2015, pp. 12-14) point, some key elements of Complex Dynamic Systems Theory are "change", "complexity", "relationship", "nonlinearity", "context dependent", which are fitting to the core ideas of this current study. To best capture all of these, researchers should "remove any qualitative/quantitative boundaries and merge the two approaches within some form of mixed methodology" (Dorney, MacIntyre, & Henry, 2015, p. 4).

2.2 Research Instrument

This study analyzes original survey data from students from a private university in southern Taiwan. A survey method was used to explore the opinion or attitudes of a group (students at this university) through a questionnaire (Fraenkel et al., 2012). In this study, descriptive survey approach, "a one-shot survey for the purpose of simply describing the characteristics of a sample at one point in time" (Mertler, 2016, p. 115) was employed. To achieve this end, a questionnaire (Appendix 1) with 7 questions was used to explore university students' viewpoints on the use of mobile phones during the class. The questionnaire comprised of 3 closed questions (e.g., 'Have you ever used your cellphone during the class before'), and 4 open-ended questions (e.g. 'Do you find it helpful to use your cellphone during the class? Why or why not?'). The questionnaire questions were adapted from both Tindell and Bohlander's (2012) and Berry and Westfall's (2015) studies. Questions were revised according to the researcher's own teaching experience in the research context.

In addition to questionnaire, participants who express interest in being interviewed also participated in semi-structured interviews. A total of 8 students were interviewed to further comment on the use of smartphones during class time. Only one guided question was used in the interviews: “How do you feel when you use smartphone during the class? Do you think it’s OK to do so? Why or why not?” The researcher asked follow-up questions based on the answers they provided. Each interview, conducted in the students’ native language (Mandarin Chinese), lasted about 10 minutes.

2.3 Research Participants

The research participants are all university students at a private university in southern Taiwan. The researcher recruited student participants through distributing questionnaire during the break time in between their classes. It was made clear that the participation was voluntarily, and it would not affect their grade in any ways. 105 questionnaires were distributed. 73 valid questionnaires were received, which made the response rate 69.5%.

3. Result

Questionnaire close ended questions are analyzed using SPSS 14.0. Basic descriptive statistics, such as means, percentages, standard deviation was employed and the results will be presented below with relevant discussions. As for the qualitative data, content analysis was adopted to analyze the answers from open-ended questions and interview questions (Maguire & Delahunt, 2017). Based on the answers, words/phrases are categorized into themes. The results of thematic coding are presented here to add dynamic features of each research question.

3.1 Students’ Use of Smartphones in Class

Table 1 below shows the results of the questionnaire first question - Have you used your smartphone during the class? 100% students said that they have used their phone during the class time.

Table 1. Students’ Use of Smartphones during Class

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	73	100.0	100.0	100.0

As to the reason why they used the phone, the following figure reveals that the most common reasons are using it to participate in class activities - out of 73 participants, 68 participants chose this (93.2%) , followed by using the phone to check the time (87.7%), and check the meaning of English words online (72.6%).

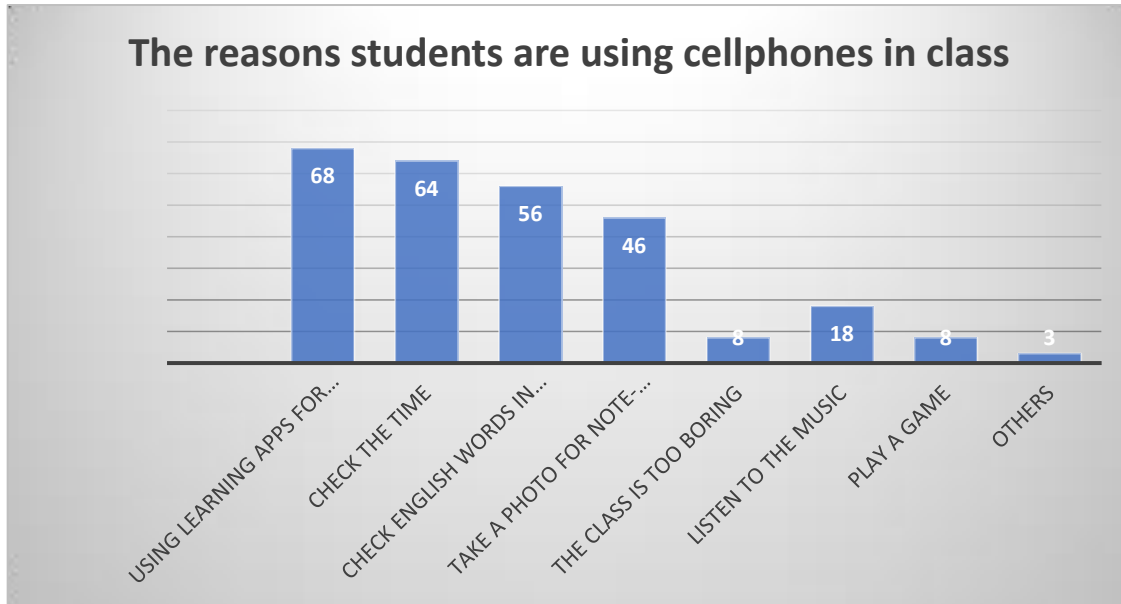


Figure 1. Reasons that Students Use Smartphones during Class

As for the most frequent uses of the smartphone uses in class, at a quick glance, the following table shows that the results are not too different from the ones above.

Table 2. The Most Frequent Uses of Smartphones in class

	Reasons	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<i>Check the time</i>	13	17.8	27.7	27.7
	<i>Check personal messages</i>	12	16.4	25.5	53.2
	<i>Check English words online</i>	8	11.0	17.0	70.2
	<i>Take a photo for notetaking</i>	3	4.1	6.4	76.6
	<i>The class is too boring</i>	9	12.3	19.1	95.7
	<i>Others</i>	2	2.7	4.3	100.0
	Total	47	64.4	100.0	
Missing	9	26	35.6		
Total		73	100.0		

However, it is interesting to note that ‘using learning apps for class activities’ is not mentioned at all. This conflicting picture is intriguing. This shows that while most teachers have asked their students to use apps in their smartphones for learning purposes, the most frequent reason the students use their cellphones are mostly for personal reasons, e.g., check the time, check personal messages. This result shows one conflict of the students’ smartphone uses in class. In one way, students believe that they are using the phone because of learning requirement. However, most of time, while their cellphone is

accessible, they are using it for personal uses, not for learning. So, does smartphone uses indeed enhance learning? Or is it more of a distraction? Can they easily recognize the differences? This point will be further elaborated in the interview data below.

3.2 Students' Perceptions of the Benefits of Smartphone Uses during Class

In the questionnaire, the second question asked to respondents to comment on whether they believe students should use their smartphones during the class or not. As the table shows, about 2/3 of the students believed that using their smartphones in class is appropriate.

Table 3. Students Viewpoints on whether They Should Use the Smartphone in Class or Not

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	47	64.4	65.3	65.3
	No	25	34.2	34.7	100.0
	Total	72	98.6	100.0	
Missing	9	1	1.4		
Total		73	100.0		

Table 4. Benefits of the Use of Cellphones during Class

Benefits	Frequency/Percentage (out of a total of 73)
I need to be able to check information, such as English words, class materials online.	40 (54.8%)
I can use relevant apps to aid learning.	22 (30.1%)
I can check the time during the class.	10 (13.7%)
The class is boring. It helps me relax.	8 (10.9%)
I can take pictures of the board for notetaking purposes	5 (6.8%)
I would like to stay in touch in case of emergency contact from my family or friends.	3 (4.1%)

Over half of the participants believed that it is helpful for them to use their smartphones in class because they need to look up some information online, e.g., check the meaning of an English word or textbook information online. Here are some samples of the respondents' answers from the open-ended section:

Respondent #10: *"I need to check information online to help me better understand class materials."*

Respondent # 65: *"Checking some information on the concepts that the teacher is talking about is important for me."*

3.3 Students' Perceptions of the Problems of Smartphone Uses during the Class to Their Learning Effectiveness

On the other hand, the remaining 1/3 students believe that it is not appropriate to use smartphone during the class. The reasons they cited are categorized below:

Table 5. Problems of Cellphone Uses during Class

Problems		
Get distracted from the class	20	27.4%
The teacher's teaching may be affected	9	12.3%
Get bored during the class, could fall asleep	2	0.3%

Here are some samples of the respondents' answers from the open-ended section:

Respondent #41: *"Yes, smartphones shouldn't be allowed. This way, I can focus on the teacher better".*

Respondent #29: *Yes, because I can focus better during the class, and not distracted by others' classmates' use of smartphones.*

The answers from the open-ended questions all point out the fact that students are easily distracted using smartphones, either from their own use or from other classmates'. There is no doubt that without access to smartphones, students are in a better position to focus fully during the class.

3.4 Interview Findings

While the questionnaire data seems to describe the findings in a straightforward manner, adding it to the interview data portrays a picture that that is full of conflicting viewpoints. First of all, one main theme that emerged is that students they themselves have conflicting desires: on one hand, they want to the freedom of being able to use smartphones anytime they want to; on the other hand, they want the teacher to help them control themselves more. These conflicts may not be very apparent from the questionnaire data; however, interview contents captured the conflicts the students are battling with:

Interviewee # 2: *"If the teacher doesn't control us, I tend to check my phone more often than I would like to. It's hard not to, especially when other classmates are doing the same thing. So, I would like the teacher to be stricter in the use of the smartphone, but not too strict. I will feel bad if I can't check my phone at all!"*

Interviewee #6: *"I wish the teacher can be stricter on the cellphone use in class. If the teacher is not strict, I just can't control myself. I will always want to check Line messages or Facebook. But I still want to have access to my phone during the class sometimes."*

Interviewee #5: *"I feel very anxious if I can't use the cellphone in class. I will always think whether someone has sent me a message or not. But when I check the messages, I also feel guilty because I'm not paying attention to the teacher."*

These excerpts show that students' viewpoints on the use of smartphones are a mixture of anxiety, guilt, lack of control, yet at the same time, full of desire. It is hard to judge whether to use it or not to use it is a better solution, because both ways bring on the students' unease, which lead to lack of proper attention in class. Adding to this, students also mentioned that the teachers teaching strategies, and the type of classes also makes a big difference.

Interviewee # 1: *"It depends a lot on the teacher. Some teachers are really boring. They just read from the PPT slides, or textbooks. In those classes, I think using the phone is OK- It helps me to survive the class. In some other teachers' class, you really have to pay attention, and the teacher would randomly call someone to answer questions. In those classes, I use my phone less."*

Interviewee # 3: *"My use of the phone depends a lot on the teacher. If the teacher doesn't explain the contents well, I will google some information to help me. I think that's important for me. Otherwise, I will feel lost in class. If the teacher already explains things well, then whether to use my phone or not doesn't make that much difference".*

Interviewee #8: *"If the teacher's class is very tense, I would like to use my phone sometimes. It helps me relax a bit during class time."*

4. Discussion

All the respondents in this study have used smartphones during the class time. The main reason they do so is due to learning purposes (e.g., check English words online, participate in class activities). However, it is interesting to note that the most frequent uses for the students are for personal reasons, e.g., check the time, check personal messages. This is one of the layers of complexity this study attempts to investigate. While the use of smartphones is helpful in their learning, at the same time it is also distracting, as Selwyn's (2016, pp. 1010-1011) large sample survey study in Australian universities shows, "distraction at fingertips" and "being disruptive in class" main downsides of digital technology of students' university study.

The quantitative data shows that 2/3 of the participants in this study believed that it is all right to use smartphone during the class, because being able to check information online aids their learning during the class. They viewed that smartphone is a valuable educational aid, both learning- wise (helps to comprehend class materials) and emotion wise (they feel more relaxed during the class with access to their phone). In Chen and Denoyelles' survey study (2013), students also perceived more mobile devices as powerful learning aid in terms of the ease of information retrieval. On the other hand, about 1/3 of the students believed that using smartphone is a distraction for them during the class. When they have access to their phone, they cannot concentrate during the class and could be easily distracted their own desire to use their phone for personal reasons. However, through interviews the participants revealed another layer of conflict and uncertainty regarding this. All the interviewees expressed that they have mixed feelings about the appropriateness of the use of smartphones during class. There are times they found smartphones helpful to their learning, but other times they found distracting. There are

times they found smartphones comforting to their learning anxiety, yet at the same time feeling guilty of not being to control their use of the phones for personal reasons better. Barry & Westfall (2015, p. 70) commented that professors are fighting a losing battle over controlling smartphones in the classrooms. I do believe that my study shows that not only professors, but the learners themselves, are fighting a losing battle over their own self-control, hence, creating a complexity conflicts over the use of smartphones in class. This is no longer a “to ban, or not to ban” level of decision. The reason of the smartphone uses, the level of it as an integration of the lesson, the amount of time used, type of the classes, teachers’ teaching strategies are all part of the decision of all the teachers’ consideration on the smartphone uses in class. Since each classroom is individual and unique, the language teachers should adopt a flexible approach, to prepare this multifaceted complexity and conflicts in terms of smartphone uses in the classrooms. Teachers should not prepare one model and believe that it will fit in all her classes. In line to the proponents of Complex Dynamic Systems Theory (CDST), teachers should understand the importance of the learner context, both internal (e.g., learners’ emotion) and external (e.g., teachers’ teaching strategies), and how it interplays with the appropriate use of smartphones in class. As Ushioda (2015, p. 51) describes, learners are “in a dynamic constellation of cognitive, affective, motivational and behavioral characteristics in a constant evolving interaction with one another”, hence, creating a dynamic model of smartphone uses which suits the characteristics of the learner group is instrumental to maximize learning effectiveness.

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