

# A Report on the use of Mobile Phones in EFL Classes

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## Abstract

The goal of this paper is to report on English as a foreign language (EFL) classes in which mobile phones were either used for educational purposes, or prohibited. The authors created and conducted a questionnaire to learn the amount of study time, motivation and opinions related to using mobile phones for educational purposes of 181 students who participated in classes in which the teachers either encouraged the use of mobile phones through certain activities, or prohibited their use. The results indicated that although there were no statistically significant differences in motivation, students in classes in which mobile phones' use was allowed tended to study significantly more than students in classes in which the use of mobile phones was prohibited. Feedback from students suggested that using mobile phones during class brings many benefits to the lesson, showing a desire for teachers to make use of these tools more regularly. In this fashion, we emphasize that by using mobile phones during EFL classes, teachers can enable students to have access to lesson content more readily, enabling them to increase their learning potential anytime they have their mobile phone on hand.

**Key words :** CALL (コンピュータ支援の外国語学習)

Mobile phones (携帯電話)

English education (英語教育)

University students (大学生)

## 1. Introduction

In the twenty-first century, the mobile phone has become an integral part of everyday modern society. People of all ages use their mobile phones to communicate with others, either verbally or through texting. Furthermore, the brick-like devices of the past have been replaced by phones that are light, easy to carry, and, perhaps most importantly,

contain possibilities beyond the simplicities of making a business call, or sending a friend a short message. There is an abundance of applications, ranging from simple games and reading material to complex activities and school textbooks that can be downloaded onto your smartphone at the push of a button.

The advancement of mobile devices has created great interest especially in the field of education regarding how these devices can be used for the

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benefits of students and teachers alike. In a study using mobile phones in the classroom, Ando and Morimoto (2009) suggested that teachers were able to save valuable class time by having students e-mail their presence in the classroom, rather than taking a role. Furthermore, when students e-mailed their opinions and thoughts about topics that had been discussed in the class, these could be displayed instantaneously on a screen in the classroom, rather than having to wait until the next lesson, as had been the case in the past, prompting Ando and Morimoto to argue that mobile phones must be considered as a tool for learning at school, as well as the traditional pencils and paper. In a study using computer tablets in teaching training, Leis (2013) advised that although initially teachers felt some resistance to using mobile technology in the classroom due to lack of confidence, with practice and guidance, this anxiety could be overcome. In the study, Leis found that such mobile devices brought numerous benefits for teachers, such as more interesting classes and easier access to the Internet to bring information from around the globe into the classroom.

There have also been numerous research projects related to the benefits of using mobile devices for students in an EFL environment. Ono and Ishihara (2011) reported on using an iPod Touch in EFL classes, concluding that they were effective for improving listening and writing skills, despite their thoughts that it would be difficult to type in English on an iPod Touch. In an attempt to help students overcome anxiety related to using English with grammatical accuracy, Baleghizadeh and Oladrostam (2010) had 40 EFL students in Iran record themselves speaking in English on their mobile phones during class. Half of the students were then asked to analyze and comment on their spoken mistakes for homework (i.e., experimental group), while the remaining twenty students were not asked to do anything at all with the recording (i.e., control group). At the end of the treatment period, the students were given a grammar test with the experimental group showing significantly

higher scores than the control group. Using mobile phones for EFL learning has also received favorable results in the area of vocabulary acquisition. In a study in Taiwan, Lu (2008) explained that students learning vocabulary through texting on their mobile phones were able to obtain significantly higher scores than those who studied using the traditional paper method.

There may be preferences to use computers rather than mobile phones for EFL learning due the larger sized screens. Stockwell (2007, 2008, 2010) suggests that although mobile learning seems to be more beneficial because it seems to increase students' word banks and their ease of accessibility, there is a tendency for students to prefer computers to mobile phones. According to Stockwell's students, mobile phones were objects for fun; they were "not a tool for study", and the students "couldn't get into the study mode with the mobile" (2008, p. 260). Therefore, Stockwell continues, it is necessary for teachers to create an environment in which students can feel comfortable using their mobile phone for educational purposes. This paper will now report on one attempt at this, and the advantages this tool brought to the EFL classroom and the students' study habits.

## 2. This study

### 2.1 Research Questions

The current research purports to examine the following research questions:

1. Is there a salient difference in the amount of time spent studying English by students depending on whether mobile phones were used in their classes or not?
2. Are students in classes where the teacher encourages the use of mobile phones more highly motivated than students in classes where their use is prohibited?
3. How do students who have used their mobile phones in class for educational purposes feel about this method of study?

## 2.2 Subjects

This study was conducted at four separate private and public universities in north-east Japan. There were a total of 181 subjects in the sample, with 113 being female, and 68 male. The average age of the sample was 18.83 ( $SD = 1.00$ ) and participants indicated that they spent an average of 122.71 ( $SD = 133.10$ ) minutes each week studying English outside of their regular class time. Students perceived their own English proficiency to be, on average, 2.29 (i.e., lower intermediate) on a scale of 1 (i.e., beginner) to 5 (i.e., upper advanced). Although all the participants had a mobile phone, seven indicated that they could not access the Internet using it. Students ranked their ability to use a mobile phone on a scale of 1 (i.e., basic) to 4 (i.e., advanced) at 1.86, suggesting the majority was able to download applications from the Internet onto their mobile phone, a skill necessary for participation in the classes conducted for this research.

## 2.3 Mobile phones in class

This study aims to gain a deeper understanding of students' reactions when the teacher encourages the use of mobile phones in the classroom for educational purposes. The classes chosen for this research concentrated on improving students' verbal English proficiency. In classes where students were prohibited from using their mobile phones (henceforth Control Group), the instructor ordered them to put their phones in their bag. In classes where mobile phones were allowed (henceforth Experiment Group), students were asked to put their phones on their desk to be used during the lesson. The instructors used the

mobile phones in the Experiment Group in two main ways: videoing and pronunciation practice. These methods were chosen for their simplicity, and low cost (i.e., free of charge), as well as the minimal amount of preparation required by teachers.

### 2.3.1 Videoing

As part of the oral communication classes, students were required to conduct role-plays of authentic situations. Teachers gave the students a short time to prepare the role plays, after which students performed with their partner (i.e., Group A), reflected on their performance and then did a final practice before performing their role-play for another group (i.e., Group C). When doing the first practice, Group A students had two participants from another group (i.e., Group B) record their role-play using the video camera on a mobile phone. Once all students had completed their practice role-play, students watched it back on their mobile phone, making the reflection time more beneficial as students were able to see their own performance (See Figure 1.).

Teachers encouraged students to view their practice role-play once more in their free time, after which, apart from the video taken in the first week, they could delete the video. The instructors did not ask whether students had re-watched their role-play video or not. In the fifteenth and final week of the course, students once again watched their video from the first week, enabling them to see the progress they had made throughout the semester.

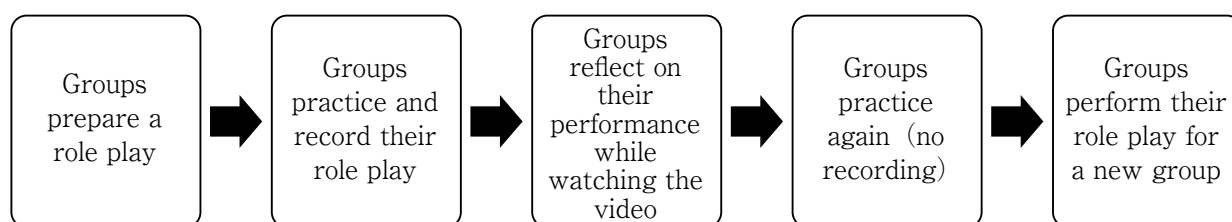


Figure 1. The process for conducting role-plays with mobile phones.

### 2.3.2 Pronunciation practice

As clear pronunciation is a vital part of successful communication, especially in a second language, pronunciation practice is often conducted in oral communication classes. However, it is difficult for instructors to listen to and give advice for every student in the classroom, especially if there is a large number. In order to overcome this difficulty, students were asked to download a free dictation application for their mobile phones. Dragon Dictation® was used for students to practice speaking short phrases used in daily conversations. Students practiced reading phrases from their textbooks to measure the intelligibility of their English. Used every week in class, feedback indicated that students were soon able to get used to the application and saw the benefits of such a tool for improving their pronunciation. With the exact words uttered being displayed on their phone screen, students were able to compare what they had read from the textbook to what had been dictated on the screen. Therefore, they could understand clearly the areas where their pronunciation was strong, and the areas where it was weak. Although initially students had difficulty in getting the application to understand their English, their mistakes allowed them to realize the strong and weak points of their pronunciation. Students commented to the teacher that when the sentence they had read was dictated perfectly by the application, they felt a strong sense of achievement, increasing their motivation to practice more.

### 2.4 Questionnaire

In order to gain a deeper understanding of the effects of using a mobile phone for educational

purposes in EFL classes, the researchers created a questionnaire (Appendix A) to measure and compare students' study time and motivation levels depending on whether they had used the mobile phones in class or not. Four categories (Metacognitive Skills, Mobile phones for private study, Mobile phones for class study, Intrinsic motivation) were measured over 16 items, to which students responded using a Likert scale with 1 being *Strongly disagree* and 6 being *Strongly agree*. The second part of the questionnaire consisted of five open-ended questions to which students expressed their opinions and thoughts regarding using mobile phones for educational purposes. Finally, a third part was included to obtain general background information about the students. The questionnaire was originally prepared in English, then translated into Japanese and checked by three native speakers of Japanese to confirm the meaning and accuracy of the items. The questionnaire was put on the Internet, and subjects accessed the questionnaire by scanning a QR Code distributed to the students by their teacher during class time. The researchers conducted a pilot test with 68 students to measure the reliability and understandability of the questionnaire. Two items were reworded as participants in the pilot test suggested these statements were unclear. The data from the pilot test were not used for analysis in the current study. After it had been rewritten, the researchers conducted the questionnaire for this study.

## 3. Results and Discussion

The results of the questionnaire were gathered into an Excel document and transferred to SPSS

**Table 1 Descriptive Statistics for each Category**

Category	Mean	Std. Error	SD	Variance	<i>a</i>
Metacognitive Skills	3.64	.09	1.15	1.32	.874
Mobile phones for private study	3.46	.07	.97	.94	.683
Mobile phones for class study	3.75	.07	1.00	1.00	.899
Intrinsic motivation	4.65	.07	.89	.79	.697

Note. *N* = 181; minimum score is one; maximum score is six.

version 20 for analysis. Table 1 shows a description of the results for the entire sample. A Cronbach's Alpha test ( $\alpha$ ) was used to measure whether the categories in the questionnaire were reliable with Metacognitive Skills ( $\alpha = .874$ ), Mobile Phone in Study ( $\alpha = .683$ ), and Mobile Phone in Class ( $\alpha = .899$ ) all being deemed suitable for analysis. However, due to the reliability of Intrinsic Motivation ( $\alpha = .588$ ) being unacceptable, item 6 was removed, increasing the reliability ( $\alpha = .697$ ) for analysis. All analyses for the remainder of this paper do not include data related to item 6 in the questionnaire.

The first research question in this study asks whether students study more when they have used mobile phones in their English classes than those students who have not been allowed to use them. Students were asked to indicate approximately how many minutes they spent studying English outside of their English classes each week (Table 2). The researchers conducted a one-way analysis of variance (ANOVA), with 95% confidence intervals (95%CI) and Cohen's  $d$  effect sizes also being reported to measure whether any significant differences could be observed in the amount of study students did between the groups. Analyses indicate that a statistically significant difference could be observed in the length of time students spent studying,  $F(1, 179) = 10.04$ ,  $p = .002$ ,  $d = .52$ , with a medium effect size.

The results in Table 2 suggest that students who had been encouraged to use their mobile phones in class in fact studied significantly more than those students who had not. Several reasons could be given for this longer amount of study time. First, the use of mobile phones in class may have provided students with strategies for studying. It may have been possible that beforehand, although students were motivated in

their English studies, they had been unaware of ways to study. By introducing methods in class through the use of mobile phones, students may have found ways to learn more effectively, as well as gaining interest in a new method of studying.

Second, because students look at their mobile phones in their free time, it is likely that they were reminded of their English classes, and thus felt responsibility to study English more. With the videos and applications used in class being readily available for students to use anytime they had their mobile phone, they may have, for example, felt more motivated to review their class videos or test their pronunciation when they had some spare time.

Third, there is a possibility that students who were allowed to use their mobile phones in class were more highly motivated than those students who were not permitted to use them. Therefore, it could be argued that the larger amount of study was not necessarily due to using mobile phones in class, but simply due to having higher intrinsic motivation to study English. This can be further understood through a discussion of the second research question.

The second research question asks whether students in classes where the teacher encourages the use of mobile phones are more highly motivated than students in classes where their use is prohibited. As mentioned earlier in this paper, it could be argued that the length of time students spend studying English outside of class could be due to factors other than using mobile phones during their English lessons. Table 3 displays a comparison of the four categories focused on in this study, based on whether students used the mobile phones during their English classes or not. No statistically significant differences could be seen in the categories of Metacognitive Skills  $F(1,$

**Table 2 Comparison of Study Time by Students**

Group	$n$	Mean	SD	St. Error	95%CI
Experiment	117	145.60	145.10	13.47	118.92, 172.29
Control	64	81.85	96.70*	11.99	57.89, 105.81

*Note.* Amounts refer to the number of minutes studied by students each week;  $p = .002$ .

**Table 3 A Comparison of each Category for the Experiment and Control Groups.**

Category	Group	n	Mean	SD	Std. Error	95%CI
Metacognitive	Experiment	117	3.63	1.25	.12	3.40, 3.86
	Control	64	3.67	.96	.12	3.43, 3.91
Skills Mobile phones for private study	Experiment	117	3.44	.98	.09	3.27, 3.62
	Control	64	3.48	.96	.12	3.25, 3.72
Mobile phones for class study	Experiment	117	3.97*	1.01	.09	3.73, 4.10
	Control	64	3.45	.91	.11	3.22, 3.67
Intrinsic motivation	Experiment	117	4.70	.89	.08	4.54, 4.86
	Control	64	4.54	.89	.11	4.32, 4.76

Note. Minimum score is 1; maximum score is 6;  $p = .002$ .

**Table 4 Students' comments about using mobile phones for educational purposes.**

Comments	English translation
どこにいてもできるのでいいと思う。	You can use it anywhere, so it is good.
自分がどんな風に英語を話しているのか客観的に聞けて勉強になる。	You can clearly see how you are speaking, so it is very educational.
時間短縮には効果的。	It saves me a lot of time.
Dragon dictation などの英語力が上がるようなアプリをこれからも行っていくべきだと考えます。	Applications such as Dragon Dictation help improve my English, so I feel we should keep using them.
自分たちがいつも使っている携帯電話を使うことでより授業を身近に感じることが出来る。	We use our mobile phones on a daily basis, so our classes become more a part of us.
他の授業でも使うべきだと思う。携帯電話を使うことで、英語を楽しく勉強できると思う。	Other classes should also allow us to use our mobile phones. It becomes more enjoyable to study English.
英語のスピーチの録画をしてみることや、ディクテーションをしてくれるアプリを使って発音をチェックできることはとても効果的な方法だが、スマホではない自分は動作が思いなど、づらい。	Video recording our English speeches and using dictation applications to check our pronunciation is effective, but it is hard for me as I do not have a smart phone.

Note. Translations into English were conducted by the authors.

179) = .05,  $p = .83$ , Mobile phones for private study  $F(1, 179) = .07$ ,  $p = .79$ , or Intrinsic motivation  $F(1, 179) = 1.38$ ,  $p = .24$ . However, a significant difference was shown in the category of Mobile phones for class study  $F(1, 179) = 9.11$ ,  $p = .002$ , with a medium effect size ( $d = .42$ ). This suggests that the students in this sample did not differ in their attitudes towards English study. However, those who used mobile phones in class seemed to see the benefits for their English learning, and this seems to have been influential in increasing the amount of study time done by students outside of their class time.

The third question asked in this research project surveys the reactions of those students who used their mobile phones in their English classes. Students were asked to comment on open-ended questions to gain a deeper understanding of the advantages and disadvantages of using such devices for educational purposes. Here, the authors concentrated on the

final open-ended item, asking for general comments from students. Although few students (i.e., 19) gave their opinions through this item, we were still able to gain some insight to students' attitudes to using mobile phones for educational purposes. Table 4 shows examples of students' reactions in the original Japanese with an English translation. Students' comments suggest that they do in fact see using mobile devices for educational purposes to be a beneficial and fun way to improve their English proficiency. However, as the final comment advises, the advantages seem to be limited to those who own a smart phone. Students whose mobile phone can easily access the Internet may be able to benefit from applications such as Dragon Dictation®, however, those whose phone does not have such capabilities will need to work with other students who do have such mobile phones. However, with all mobile phones now having video cameras, students who do not

own smart phones may still be able to participate actively in classes in which mobile phones are used as tools for reflection through activities such as the videoing exercise explained earlier in this paper, or for improving grammatical self-correction as Baleghizadeh and Oladrostam (2010) described in their paper.

## 4. Conclusion

This paper has aimed to gain a deeper understanding of whether or not it is beneficial for teachers to encourage students to use mobile devices in EFL classes. Using feedback from students through an online questionnaire, the statistical data have shown that those students who used their mobile phones in classes also tended to study more outside the classroom than those who were not permitted to use their mobile phones in class. However, this paper is not without its weaknesses. Because no pre-test was conducted at the beginning of the course, we cannot be entirely sure that differences in the amount of study time was indeed due to the use of mobile phones. There is a possibility that students in the experimental group may have already been studying more than the control group. In future studies, we will be able to gain a deeper insight to the effects of using mobile phones in class by adding a pre-test to the research project. Second, the experiment group and control groups are rather unbalanced. Having better balanced groups may bring stronger reliability to the statistical data to support our proposal that the use of mobile phones is beneficial for learning an EFL.

Despite these weaknesses, the authors feel we have given strong evidence to support previous research that using mobile phones for educational purposes in an EFL environment does in fact bring many advantages to language learners. Further research will enable us to strengthen these arguments, bringing clear evidence that mobile phones should not be hidden in students' bags or under the desk, but used in ways that will encourage more effective learning both in and outside the classroom.

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## Appendices

### Appendix A

The Japanese version of the questionnaire used in this study with English translations. For the convenience of space, the scales 1 to 6 have been removed.

#### Part 1

あなたが次の事柄にどの程度共感できるかを、1 から 6 の番号の中からひとつを選んでお答えください。記入漏れのないようにお願いいたします。Please tell us how much you agree or disagree with these statements. Circle the number between 1 and 6 that best matches your opinion.

全くそう思わない Strongly disagree	そう思わない Disagree	あまりそう思わない Slightly disagree	ややそう思う Slightly agree	そう思う Agree	非常にそう思う Strongly agree
1	2	3	4	5	6
1	英語を勉強するのは楽しい。 I enjoy learning English.				
2	英語の授業で携帯電話（アプリ、ビデオ等）を使うと勉強に役立つ。 I think using a cell phone in English class is educational.				
3	英語の授業で生徒が携帯電話を使うように先生方は薦めるべき。 Teachers should encourage students to use their cell phones in class.				
4	英語学習時、携帯電話（アプリ、ビデオ等）を使うと時間短縮ができる。 When I study English, using a cell phone saves me a lot of time.				
5	自分の英語力が向上するための方法を見つけたい。 I want to find ways to improve my English.				
6	先生に宿題を提出する必要はないと言われたら、きっと宿題をやらないだろう。 If my teacher told me there was no need to hand in the homework, I probably wouldn't do it.				
7	授業時間外でも英語の授業の内容についてよく考えている。 I often think about the content of my English lessons in my own time.				
8	授業時間外にどうやってもっとうまく英語を話せるようになるかをよく考えている。 I often reflect on my performance in English lessons in my own time.				
9	英語の授業で携帯電話（アプリ、ビデオ等）を使うと、もっと効果的に勉強ができる。 I feel that I can learn English more effectively if I use my mobile phone in class.				
10	宿題や自主勉強で携帯電話（アプリ、ビデオ等）を使うとより効率的に勉強や宿題ができる。 Using my cell phone helps me do my homework more effectively.				
11	いつも英語の授業を楽しみにしている。 I always look forward to my English classes.				
12	携帯電話（アプリ、ビデオ等）を使うと英語が上達できる。 Using my cell phone in class improves my English ability.				
13	英語学習のためのアプリをよく探す。 I often spend time looking for applications to help improve my English.				
14	英語学習のためのアプリをよく使う。 I use applications to use on my cell phone to help improve my English.				
15	携帯電話を使った授業だと、授業の内容がより覚えやすくなる。 Classes where we use our cell phones are more memorable than classes where we do not.				
16	英語を上達させるための方法を授業外でもよく考えている。 I often think about ways to improve my English ability.				

#### Part 2

英語学習についての質問にお答えください。Please answer the following questions about studying English.

1	あなたは英語の授業でどのように携帯電話を使った？ How did you use cell phones in your English class?
2	平均として、授業外で週何時間くらい英語を勉強している？（英語の本の読書、英語学習アプリ、ビデオ、など） On average, how much time do you spend studying English outside of class (including time using applications, videos, etc. on your cell phone) ?



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3	授業外の英語学習で、どのように自分の携帯電話を使った？ How did you use your cell phone to improve your English ability outside of class?
4	英語力向上のために、どのようなアプリケーションを使っている？ What applications do you use on your cellphone to improve your English ability?
5	英語学習のために携帯電話の利用についてのコメントがあれば、ここにください。 Please add any comments you have about using cell phones for studying English.

## Part 3

あなた自身についての質問にお答えください。 *Please give the following information.*

あなたは携帯電話を持っていますか？ はい いいえ  
Do you have a mobile phone? Yes No

あなたの英語の先生は英語の授業中、携帯電話の使用を禁止にしていますか？

Did your teacher ban the use of mobile phones in your class?

はい いいえ  
Yes No

性別 男性 女性  
Gender Male Female

年齢 17 18 19 20 21 22 23+  
Age

あなたは携帯電話で簡単にインターネットを使うができますか？ はい いいえ  
Can you easily access the Internet using your mobile phone? Yes No

次の項目のうち、自分の英話力に当てはまるものを選んでください。

Which of the following best describes your English proficiency?

基礎 Basic	決まり文句を用いて簡単な挨拶ができる。簡単な文が読め、短い文章の大意が理解でき、基礎的な英語を用いて簡単な一文を書くことができる。 Can make simple greetings. Able to read and write basic sentences and short phrases.
初級 Beginner	挨拶や人の紹介などの簡単な会話ができる。簡単な文章が読め、基礎的な英語を用いて簡単な文章を書くことができる。 Can do simple introductions. Able to read and write easy sentences and phrases.
初中級 Low Intermediate	日常生活の身近な事柄についての会話ができる。日常生活の身近な事柄についての文章が読め、簡単な手紙を書くことができる。 Can handle simple daily conversations. Able to read and write basic communication necessary for daily life.
中級 Intermediate	日常生活の一般的な事柄に関する会話ができる。日常生活の一般的な事柄に関する文章が読め、簡単な文章を書くことができる。 Can handle normal daily conversations. Able to manage reading and writing of various topics necessary for daily life.
中上級 Upper Intermediate	日常生活の一般的な事柄や専門的な事柄についての会話ができ、講義や放送の大意を理解できる。新聞などの高度な文章が読め、自分の考えを書くことができる。 Can mainly understand conversations and lectures about various professional topics. Able to read newspapers and write freely about one's opinion.

次の項目のうち、自分がどれくらい携帯電話を使えるか、当てはまるものを選んでください。

Which of the following best describes your ability of using a mobile phone?

基礎 Basic	電話やメールなどの基本的なことができる。 Can do basic phone calls and e-mails.
初級 Beginner	アプリやゲームなどをダウンロードし、利用できる。 Can download applications and games from the Internet.
中級 Intermediate	簡単なアプリやゲームなどを作成し、インターネット上に載せるができる。 Can create and upload simple applications and games to the Internet.
上級 Advanced	複雑なアプリやゲームなどを作成し、インターネット上に載せるができる。 Can create and upload complex applications and games to the Internet.

(平成25年 9 月30日受理)