Examining Attitudes towards and Usage of Smartphone Technology among Japanese University Students Studying EFL

Jeremy White (jwhite@fc.ritsumei.ac.jp)
Ritsumeikan University, Japan
Daniel J. Mills (dmr11096@fc.ritsumei.ac.jp)
Ritsumeikan University, Japan

Abstract
In this last decade there has been an explosion of innovative mobile technology and applications that have been made available to the public. With the introduction of the smartphone, sophisticated digital devices are now ubiquitously available in classrooms. While there are many positives to the use of smartphones for educational purposes, there are still several obstacles to the implementation of mobile technology in the classroom. In 2011, White and Mills (2012) collected data from 403 Japanese university students regarding their adoption, usage of and attitudes towards smartphones for the purpose of language learning. The following paper presents the results of research collected regarding these factors one year later. A comparison of the two data sets shows that students are increasingly adopting smartphones for personal use but are still reluctant to use the devices for education purposes, based on current application usage. However, attitudes towards the use of these devices for learning have become more positive in the 12-month period.

Keywords: mobile learning, mobile assisted language learning, computer assisted language learning, technology adoption, technology usage

INTRODUCTION

According to the Ministry of Internal Affairs and Communication (2012), 95.6% of Japanese people own one or more mobile phones. In addition, among young people and women, mobile phones are the preferred device to access the Internet (Akiyoshi & Ono, 2008). Since Japanese university students have access to these devices and are familiar with their use, mobile phones seem to be an ideal tool to facilitate computer-assisted language learning both in and out of the classroom. However, previous studies on student attitudes and perceptions towards these devices have shown that both physical and psychological limitations have prevented widespread adoption for educational purposes (Stockwell, 2008; Wang & Higgins, 2006). With the introduction of the smartphone, many of these limitations may have been reduced or eliminated (Stockwell, 2012). In fact, Barr (2011) showed that Japanese university students were using their phones in a number of ways to enhance learning including as a camera to capture notes and assignments written on the whiteboard, as a voice recorder to record lectures, and to access applications to learn foreign language vocabulary. Furthermore, White & Mills (2012) demonstrated that students held positive attitudes towards the use of smartphones for language learning and had either already adopted the technology or planned to do so in the near future. Due to the rapid diffusion rate of new technology, such as smartphones, data gathered even a

year prior may be outdated. Therefore, it seemed important to the researchers to conduct another review of Japanese students' usage of and attitudes towards smartphones for the purpose of English language study at this time.

PURPOSE OF THE STUDY

The purpose of this study is to examine attitudes towards and usage of smartphone technology among students studying English as a Foreign Language (EFL) at a private Japanese university over a 12-month period. For the purpose of this study, a smartphone is defined as a cellular phone that contains many functions of a personal computer such as the use of an operating system, Internet connectivity and an increased capacity for data storage when compared with a traditional mobile phone. Although several studies in Japan have examined student attitudes towards and usage of mobile phones for language learning, few of these studies have been conducted since the introduction of the smartphone. The researchers believe that in the past, mobile phones may not have been an integral part of students' lives, but since the introduction of the smartphone, attitudes towards these devices and the purpose of their use may have changed. By conducting this study, the researchers hope to gain a better understanding of Japanese university EFL students' changing attitudes towards and usage of smartphones over a 12-month period. Researchers, teachers, and administrators might find the results of this study helpful in facilitating future attempts to integrate smartphones in the Japanese university context.

Research Question

The following research questions were addressed in this study:

1. How has the rate of adoption of smartphones among undergraduate students studying compulsory English courses in a Japanese university changed over a 12-month period between 2011 and 2012?
2. How have attitudes towards the usage of smartphones for the purpose of English study changed among Japanese university students studying English as a compulsory subject over a 12-month period between 2011 and 2012?

LITERATURE REVIEW

Mobile Assisted Language Learning in Japan

In recent years, due to the increasing popularity of mobile devices, mobile learning (m-learning) has been a subject of interest to both educational researchers and teachers. M-learning is characterized by the ability of students to access learning materials anytime and anywhere and is facilitated by the use of hand-held mobile devices such as tablets, PDAs, and mobile phones (both traditional and smartphones). Japan is one of the leaders in the world of mobile technology penetration with 95.6% of the population owning one or more mobile devices (Ministry of Internal Affairs & Communication, 2012), mobile phones offer both teachers and students of EFL with an ideal device to facilitate teaching and learning.

A number of studies have been conducted in Japan using mobile phones for English language teaching and learning both inside and outside of the classroom. Stockwell (2012) described an activity where Japanese students created mobile blogs in English. Using the university's course management system (CMS) and a single e-mail account, students took pictures and wrote short messages in English recording their daily experiences.

Thornton and Houser (2005) described two projects using mobile phones to facilitate language learning in Japanese universities. One project was called "Learning on the Move" (LOTM) where students were sent English vocabulary lessons via mobile e-mail several times a day. Another project, called "Vidioms", was used to teach students English idioms using video, which were delivered through their mobile phones. Thornton and Houser (2005) reported that both projects were well received by students who were very satisfied with both the mode of delivery and content of the projects.

In addition, Zhang (2008) described a project conceived at the University of Tokyo that was called iTree. The purpose of iTree was to increase participation in online discussions boards by providing students with a visual representation of the discussion threads. This graphic was displayed on students' mobile phones as wallpaper, a background image on the home screen of the phone, and was updated in real time. The hope was that this constant reminder would prompt students to increase participation in electronic discussions.

Obari, Goda, Shimoyama, and Kimura (2013) describe four projects involving m-learning and English study conducted by Mobile Learning Study Group Task Force 26 centered at Aoyama Gakuin University in Tokyo Japan. These projects focused on a several aspects of English language learning including TOEIC preparation, vocabulary learning and two projects involving the authentic use of video in the target language (Obari et al., 2013). The results of these projects in terms of student performance were positive.

In research conducted in Kanda University of International Studies, Barr (2011) attempted to ascertain informal usage of smartphones, by students, for the purpose of language learning. He found that students reported using their phones in the following ways:

1. Using the camera to take pictures of the white board to capture notes and homework assignments from the teacher.
2. Students used the voice-recorder function of their smartphones to record presentation practice to assess and improve fluency and pronunciation.
3. In one case, a student used the Google voice recognition search feature to practice her pronunciation.
4. Several students used flashcard apps to learn foreign language vocabulary.
5. Students used English news apps such as BBC, CNN and Discovery to practice reading and watch videos.

Anzai, Funada, and Akahori (2013) investigated one of these informal uses, mobile photo note-taking, in order to examine the effect this trend might have on vocabulary retention. Anzai et al. (2013) found that there was no significant difference in vocabulary retention in the short term

among students who took notes by hand and those that simply took pictures of the instructor's notes on the board. In addition, Anzai et al. (2013) stated that mobile photo note taking might have had the additional benefit that students could access their notes at any time and place when carrying their mobile device.

Attitudes and perceptions

Several studies have been conducted in Japan, which address student attitudes towards mobile phones as language learning tools. Thornton and Houser (2005) found that 71% of participants preferred to receive English vocabulary lessons through their mobile phones rather than by computer. Furthermore, 93% of the Japanese university students in their study believed that mobile phones were a valuable educational tool that enhanced their learning. Stockwell (2008; 2010; 2013), however, found that students, when given a choice, preferred to complete English vocabulary activities on their personal computers rather than on their mobile phones. In fact, according to Stockwell (2008) 61% of students never attempted to use their mobile phones for the activities in the study. Stockwell (2008; 2010; 2013) found that in all studies there were high percentages of students, who when given a choice, preferred to complete English vocabulary activities on their personal computers rather than on their mobile phones.

In addition to research focusing on mobile phones, there is a growing body of literature regarding the use of other mobile devices in Japan. Brown, Castellano, Hughes and Worth (2012) found, in their study of iPad integration into the classroom, that using iPads enhances the interaction and support of the group dynamics, with 16 of 34 students in the class commenting on the usefulness of the iPad. However, 7 of the students did not feel the iPad was useful, preferring instead to use regular computers. Kondo et al. (2012) reported on a TOEIC MALL project undertaken at a Japanese university with 88 first year university students. This study explored ways to incorporate experimental MALL practices to improve students' TOEIC listening and reading test scores by using mobile devices, Nintendo DS, outside of the classroom. The goal was to transfer the responsibility for language learning form the teacher to the student using a five-step learning module. Results suggests that self-direct learning was enhanced by the use of the MALL device, with increased scores in reading section of the TOEIC test. Most importantly, students showed an interest to continue their self-directed study using mobile devices. Ockert (2014) reported on the use of iPads to record Japanese junior high school students and allow them to see themselves speaking English as an intervening stimulus to influence the affective variables of confidence, anxiety, and willingness to communicate (WTC) with the hope of increasing their English as a foreign language WTC. This study found a positive influence for iPad use on confidence, and a decrease in anxiety. In addition, the increase in WTC and decrease in anxiety was more pronounced in boys than in girls, highlighting an interesting area for further research.

Challenges

Research by Wang and Higgins (2006) showed that technical as well as psychological limitations present challenges that prevent wider adoption and usage of mobile phones for language learning. From a psychological standpoint, Wang and Higgins (2006) found that Japanese students viewed their phones as entertainment devices and felt uncomfortable about using their personal devices for educational purposes. In addition, despite the fact that one of the perceived advantages of m-

learning is that students can access learning materials anytime and anywhere, Japanese students preferred to study in a fixed location where they had access to their computer (Wang & Higgins, 2006). Lastly, while m-learning is thought to facilitate informal learning among participants, research conducted in the Japanese university setting seemed to indicate that students in this setting may not possess the autonomy and self-directedness to take advantage of this affordance of the technology (Kondo et al., 2013). Kondo et al. (2013) utilized Nintendo DS hand-held game consoles for TOEIC study instead of mobile phones in order to address the privacy concerns presented by Wang & Higgins (2006). However, Kondo et al. (2013) found that over the course of two academic semesters self-directed study with the device decreased sharply once external motivation in the form of testing and teacher intervention were removed.

From a technical standpoint both Wang and Higgins (2006) and Stockwell (2008; 2010) have identified factors such as the small size and low resolution of mobile phone screens as a major barrier to their use for education. In addition, even though many Japanese students are quite fast at inputting data using a mobile phone keypad, the speed of using a mobile device is one-tenth the speed of using a computer. Probably for this reason, Stockwell (2010) showed that students were slower in completing vocabulary activities using a mobile phone and made more mistakes in the exercises. One solution to the technical limitations of a small screen size and keyboard is the use of tablets instead of mobile phones. Yet, Brown et al. (2012) discovered that while tablets such as the iPad may offer resolve some technical limitations, students' lack of familiarity with the device, applications and the operating system still continue to present challenges to educators and researchers attempting to facilitate MALL in Japanese university English classrooms.

Finally, the use of personal mobile phones in the classroom presents a unique challenge to instructors due to the disruption these devices can cause. Many teachers are reluctant to allow students to use their phones because of the possibility of students receiving calls during class and using the phone to text and e-mail in matters not related to learning. In addition, since students own a variety of makes and models of phones, teachers may have trouble ensuring that materials can be accessed on all devices and may not be able to provide technical support for phones with which they are unfamiliar.

Mobile phones offer several advantages to the Japanese learner of English. They are ubiquitous with over 95% of the population possessing at least one of these devices (Ministry of Internal Affairs & Communication, 2012), and they offer the advantage of anytime, anywhere access to learning materials (Kukulska-Hulme, 2009). Yet, students' attitudes and perceptions towards the use of these devices for learning are mixed due to the technical limitations as well as psychological barriers to acceptance (Wang & Higgins, 2006). With the introduction of smartphones, many of the technical limitations associated with traditional mobile phones have been reduced or eliminated. In addition, since smartphones are used for a greater variety of daily tasks, not just as an entertainment or communication device, students may be more accepting of using their smartphones for learning despite their reservation to do so with traditional mobile phones. For this reason, it is important that researchers take another look at student usage of and attitudes towards these devices as tools that could facilitate the language learning process.

METHOD

Population and Sampling

The population for this study consisted of first through third year economics and business majors studying English communication and writing at a private university in Western Japan. The students were members of several intact classes taught by the researchers. The majority of students were ethnic Japanese between the ages of 18 and 22, while a small minority of the students were of Chinese or Korean ethnicity. Students in the Japanese education system study English for six years in junior and senior high school before beginning their university studies. First year students had experienced one semester of English study at the tertiary level, while second and third year students had taken three and four semesters of classes, respectively, at university. In addition, based on the previous experience of the researchers with students at this university, it is possible that students had lived in English speaking countries, attended international schools, and private English conversation schools; however, this information was not included in the survey. Previous research with this population indicated that 99.5% owned a mobile phone (White & Mills, 2012).

Since intact classes were used for this study, the sample can be defined as convenience. Students in these classes were informed of the purpose and risks of the study and were asked to voluntarily participate. Every effort was made to let students know that they were not required to take part in the study and that their decision would not affect their standing in the class.

Instrumentation

The same instrument was used for data collection in 2011 and 2012; however, in 2011, a paper survey was used (see White & Mills, 2012), while in 2012 an online survey system was used. Both surveys were conducted in classes on a volunteer basis with 100% of the students present participating in both years. The survey contained six sections consisting of one to four items in each section and 17 items in total. The first section of the survey consisted of basic demographic questions. The second section was related to the adoption of mobile phones. The third and fourth sections of the survey were used to explore the reasons why participants decided to adopt or reject smartphone technology. The fifth section of this survey consisted of items relating to smartphone usage. The final section was related to the students' attitudes toward the use of smartphones for English language teaching and learning.

The items in the survey instrument were created by the researchers based on their experience as EFL instructors and knowledge of smartphone technology gained from early adoption. Once the items were created, several steps were taken to ensure the construct validity of the instrument. To check the validity and reliability of the instrument, the researchers used a method similar to that of Bolliger and Fethi (2012). First, the instrument was reviewed by a panel of experts involved in Japanese university education. The reviewers were instructed to rate each of the questions for clarity and relevance, and recommend changes, additions, and deletions based on their expert opinion. Once the researchers took into consideration the opinions of the panel, and were satisfied with the English version of the instrument, a native Japanese speaker translated the instrument into Japanese. An additional native Japanese speaker then reviewed the translated

instrument as above, and further improvements were made to the instrument. The final version of the survey instrument can be found in Appendix 1.

Data Collection

In 2011, the data was collected in class through a paper-based instrument (White & Mills, 2012), while in 2012 the data was collected through an online form created on Survey Monkey (www.surveymonkey.com). In both cases, the researchers began by explaining in Japanese, both orally and in written form, to the students the purpose of the study, what steps were taken to ensure the confidentiality of the participants, and potential risks. Students were told that participation was voluntary and would not affect their grade in the course. At the completion of this orientation, students were asked to volunteer to participate in the study. In 2011, paper-based instruments were distributed in class to volunteers (White & Mills, 2012), while participants in the 2012 survey were directed to the online survey, which they accessed through their personal digital devices in class. After the participants completed the survey, the researcher input the data into an Excel spreadsheet in preparation for analysis.

RESULTS

Survey data were analyzed using Microsoft Excel. Frequencies and percentages were calculated for each survey item and differences between responses in 2011, from White & Mills' previous study (2012) and 2012 were analyzed by charting the data.

Description of the Sample

403 students volunteered to participate in the 2011 survey (White & Mills, 2012) and 162 students volunteered for the 2012 study. Since the 2012 sample size was smaller than the size of the sample in 2011, there is a chance that the accuracy in which it reflects the population has been reduced. However, 162 participants is still a large enough proportion of the total population to maintain reliability in the results for 2012. A summary of the demographic characteristics of the sample can be found in Table 1:

Table 1.
Demographic Characteristics of the Sample

Characteristics				
	2011		2012	
	n	%	*n*	%
Grade				
1st	211	52.35%	74	45.57%
2nd	182	45.16%	88	54.43%
3rd	10	3.00%	0	0.00%
Major				
Business	208	51.61%	88	54.42%

International Business	84	20.84%	32	19.72%
Economics	98	24.31%	42	25.85%
International Economics	13	3.22%	0	0.00%
Class Level				
Upper Intermediate	240	59.55%	51	34.69%
Intermediate	162	40.19%	96	65.31%
No Response	1	0.24%	0	0.00%
Total	403	100%	162	100%

Smartphone Adoption and Determinants

Data were collected regarding participants' mobile phone ownership. The results revealed that 99.5% of participants in 2011 (White & Mills, 2012) and 100% of participants in 2012 owned one or more mobile phones. In 2011, 54% of those phones were smartphones (White & Mills, 2012); however, by 2012, 85% of participants owned a smartphone. In both years, the operating system used by smartphone adopters was almost evenly split between Android and iOS. Interestingly, in the two years in which data were collected, there was only one participant who used a smartphone with a Windows-based operating system.

The individuals who had not adopted smartphones were asked to identify their reasons for not doing so. From 2011 to 2012 the percentage of participants who stated that their reason for not adopting the technology was due to their level of interest, the expense or its complexity reduced. However, there was a marked increase in the percentage of rejecters who identified "other" reasons for their decision. The following chart is a summary of the responses:

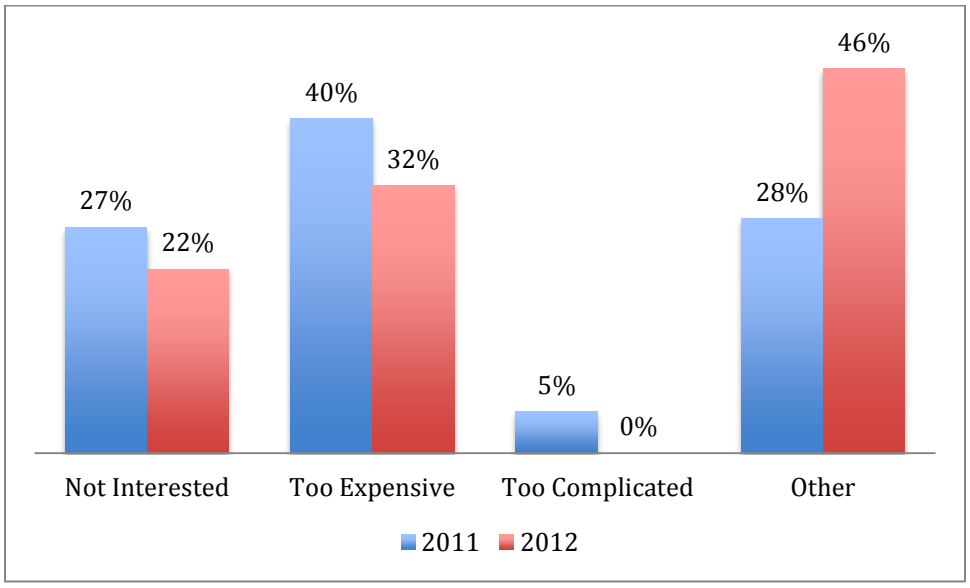

Figure 1. Reasons for not adopting a smartphone.

Use of Smartphones for Personal and Educational Purposes

Data were collected regarding how students used their smartphones for personal and educational purposes. In 2011 (White & Mills, 2012) only 6% of students used their smartphone for educational purposes, that is a stand-alone application solely used for the purpose of language learning. This increased very marginally to 7% in 2012, demonstrating that students still do not view their smartphone as a tool for educational use. Encouragingly, the number of students that use a dictionary function on their smartphones increased by 10% from 11% in 2011 (White & Mills, 2012) to 21% in 2012. The number of students who used their smartphones for games remained relatively unchanged from 2011 to 2012. In 2011 the number of students who used games on their smartphones was 31% (White & Mills, 2012), increasing slightly to 35% in 2012. The most dramatic change can be seen with students using their smartphone for other purposes. This includes social networking, news applications, weather applications, camera, and a variety of other applications. In 2011 the number students who used other applications was 27% (White & Mills, 2012), but in 2012, this almost doubled to 50%. The following chart is a summary of the responses given by the students:

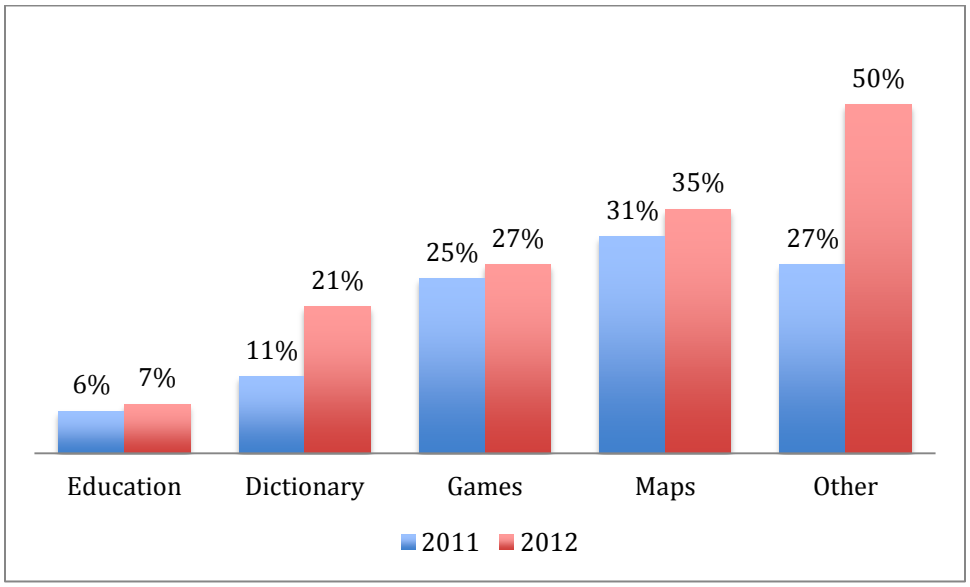

Figure 2. Types of applications used by participants

Attitudes Towards Smartphones for English Language Learning

Research in technology acceptance has shown that users' attitude toward a particular innovation is a predictor of the decision to adopt or reject that technology (Davis, 1989). In 2011 (White & Mills, 2012), 4% of participants believed that using smartphones for the purpose of English language learning would be "harmful" or "not helpful". In 2012, the percentage of participants who held the same viewpoint decreased slightly to 3%. However, the percentage of participants who held "neutral" attitudes towards this use of the technology differed more significantly with 29% of students in 2011 (White & Mills, 2012) choosing this response as opposed to 19% in 2012. Finally, the percentage of students who believed that smartphones would be "helpful" or

"very helpful" in their language study increased from 67% in 2011 (White & Mills, 2012) to 78% in 2012. The following chart provides a comparative summary of participants' attitudes in 2011 and 2012:

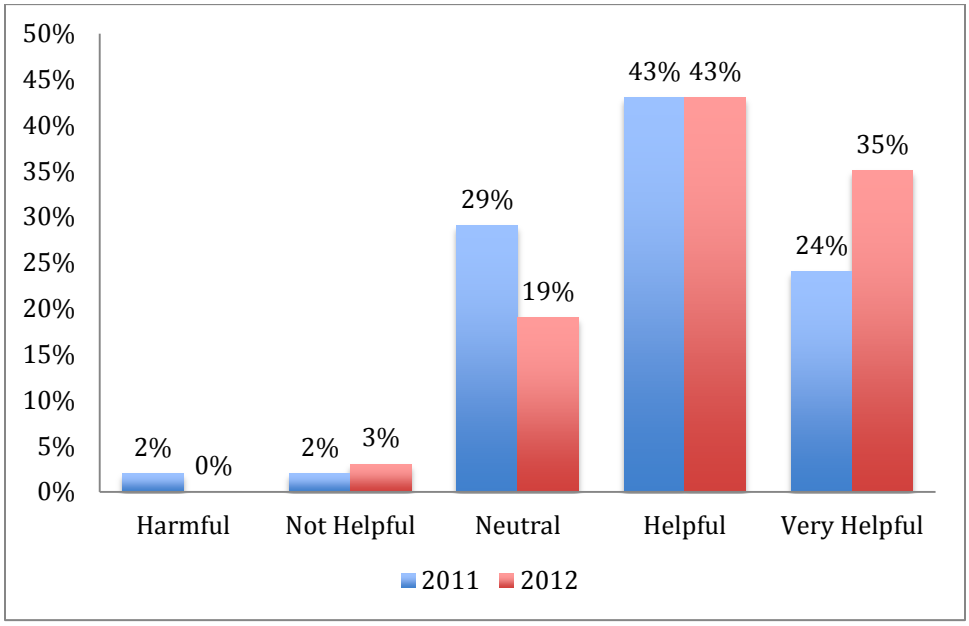

Figure 3. Attitude toward the use of smartphones for the purpose of English language study.

DISCUSSION AND RECOMMENDATIONS

This project focused on answering two research questions:

1. How has the rate of adoption of smartphones among students in a Japanese university changed over a 12-month period between 2011 and 2012?
2. How have Japanese university students' attitudes towards and usage of smartphones changed over a 12-month period between 2011 and 2012?

In regards to the first research question, the results of this study showed that smartphone adoption increased from 54% in 2011 (White & Mills, 2012) to 85% in 2012. This represents a dramatic increase of 31 percentage points over a 12-month period. This is important for teachers who are considering making use of smartphones in their classes, since one concern with the integration of any technology, especially when using students' personal devices, is access. Though we have not reached a point of universal access among Japanese university students, the rate of penetration of increasing and is by far the most ubiquitous Internet enabled device among this group.

The results of this study also provided some interesting information related to the second research question. For example, rejecters in 2012 were less likely to cite lack of interest, expense, or complexity as reasons why they had not adopted the technology. In addition, usage of

applications, including educational, dictionary, game, and map applications all increased. Whilst dictionaries are also educational the researchers separated dictionary from education as they wished to gain an understanding of the use of standalone language learning applications. This can be explained both by the improving proficiency and sophistication of users who are learning to use their smartphones for multiple purposes, and also the fact that more and better applications are being introduced every day, which are effectively replacing the need for other technological devices and software. Yet, it would seem that Japanese university students are still not extensively using educational applications on their smartphones, indicating that access to this technology has not changed the reluctance of members of this group to use their personal phones for learning (Wang & Higgins, 2005). However, since the percentage of students who indicated that the devices would be "very helpful" for the purpose of English language study increased from 24% to 35% over a 12-month period, it would seem that the students in this study are at least open to the possibility of using their phones for educational purposes. Possibly the lack of usage of educational applications could be explained by the fact that, until recently, digital technology was not widely used in Japanese education. Therefore, students have not had extensive experience using devices such as mobile phones for reasons other than entertainment or personal communication.

Despite shedding some light on the adoption and usage of, and attitudes towards smartphones among the university students surveyed, the results of this study can only be considered a preliminary investigation of the topic. In particular, several limitations of the survey instrument need to be rectified in order to adequately answer the questions posed by the researchers. First, the responses available to participants in some survey items must be modified in future research. For example, question 8, which asked non-users for their reason for rejecting the technology, provided the response of "other" without inquiring from responders what their "other" reasons for rejecting the technology were. Since 28% of participants in 2011 (White & Mills, 2012), and 46% of participants in 2012 chose this response, a large proportion of the respondents' reasons for rejecting the technology are not clear to either the researchers or readers of this research. This is also the case for question 15, which inquired about application usage. 24% of respondents in 2011 (White & Mills, 2012) and 50% of respondents in 2012 indicated that they used applications in categories other than education, dictionary, games and maps. Obviously, both of these items will need to be revised in future studies. In the original survey design the researchers hoped that participants would provide clarification to their response of "other" in the space provided. However, it seems that this was not clear enough to the respondents. Despite the lack of explanation of "other" in question 15, the researchers can hypothesize what applications the students used based on statistics of application usage during that time. According GMO Cloud (2012), in 2011, weather, news, and entertainment applications accounted for 42.8%, 40.9%, and 40.1% of free app downloads in the Japan iTunes store, and music application accounted for 23.8% of paid applications. Second, only one question was included to assess participants' attitudes towards the technology. In order to truly understand attitudes and perceptions towards smartphones as learning tools, a more sophisticated scale, based on an established framework, such as the Technology Acceptance Model (Davis, 1989), needs to be utilized.

CONCLUSION

The 12-month period from 2011 to 2012 has seen the rate of smartphone penetration among Japanese university students reach 85%. Although not yet universal, this provides encouraging signs for teachers who wish to implement these devices in their classrooms. With the attitudes towards smartphones from students without smartphones becoming more positive, it is likely the number of students with at least one smartphone will be 100% in the near future. Similar positive results can be taken from the usage of smartphones for educational purposes, which has seen steady increases over this 12-month period possibly due to the development of more useful and relevant applications, and an improvement in the sophistication of the students' understanding of the potential of their smartphone. However, there is also a clear divide in the minds of some Japanese university students who do not want to use smartphones, or lack the understanding of how they could be used for educational purposes. Students possibly prefer to only use their devices for social purposes. It is obvious that much work on educating Japanese students on how to use their devices for educational purposes needs to be undertaken before these devices will be fully accepted in the classroom. While not all the findings of this research were positive, the increasingly positive attitudes of many students combined with the increased availability of smartphones create an encouraging future for smartphone use at Japanese universities.

REFERENCES

Akiyoshi, M., & Ono, H. (2008). The diffusion of mobile internet in Japan. *The Information Society , 24*, 292-303.

Anzai, Y., Funada, M. & Akahori, K. (2013). Immediate effects of mobile photo note-taking in English vocabulary learning. In T. Bastiaens & G. Marks (Eds.), Proceedings of World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education 2013 (pp. 550-556). Chesapeake, VA: AACE. Retrieved February 18, 2014 from http://www.editlib.org/p/114891.

Barr, K. (2011). Mobility in learning: The feasibility of encouraging language learning on smartphones. *Studies in Self-Access Learning Journal*, *2*(3), 228-233.

Bolliger, D., Fethi, I. (2012). Development and validation of the online student connectedness survey (OSCS). *The International Review of Research in Open and Distance Learning, 13*(3), 41-65.

Brown, M., Castellano, J., Hughes, E., Worth, A. (2012). Integration of iPads into a Japanese university English language curriculum. *JALT CALL Journal*, *8*(3) 197-209.

Davis, F. (1989). Perceived usefullness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly, 13*(3), 319-340.

GMO Cloud (2012). Japanese gaming trends: Past, present, and future. Retrieved from https://cloudsleuth.net/sites/default/files/Japanese_Game_Industry_Trends_20121016_PRESENTATION.pdf

Kondo, M., Ishikawa, Y., Smith, C., Sakamoto, K., Shimomura, H., Wada, N. (2012). Mobile assisted language learning in university EFL courses in Japan: Developing attitudes and skills for self-regulated learning. *ReCALL, 24*(2), 169-187.

Kukulska-Hulme, A. (2009). Will mobile learning change language learning?. *ReCALL, 21*(2), 157-165.

Ministry of Internal Affairs & Communication (2012). *Information and communication in Japan.* Whitepaper, Ministry of Internal Affairs & Communication.

Obari, H., Goda, Y., Shimoyama, Y. & Kimura, M. (2008). Mobile technologies and language learning in Japan. In T. Koyama, J Noguchi, Y. Yoshinari, & A. Iwasaki, WorldCALL 2008 Proceedings (pp 201 - 204). Fukuoka, Japan.

Ockert, D. (2014) The influence of technology in the classroom: An analysis of an iPad and video intervention on JHS students' confidence anxiety, and FL WTC. . *JALT CALL Journal*, *10*(1), 49-68

Stockwell, G. (2012a). *Computer assisted language learning: Diversity in research & practice.* Cambridge, UK: Cambridge University Press.

Stockwell, G. (2013). Tracking learner usage of mobile phones for language learning outside of the classroom. In P. Hubbard, M. Schulz & B. Smith (Eds), *Learner-computer interaction in language education: A festschrift in honor of Robert Fischer* (pp. 118-136). San Marcos, TX: CALICO.

Stockwell, G. (2010). Using mobile phones for vocabulary activities: Examining the effect of the platform. *Language Learning & Technology*, *14*(2), 95-110.

Stockwell, G. (2008). Investigating learner preparedness for and usage patterns of mobile learning. *ReCALL, 20*(3), 253-270.

Thornton, P., & Houser, C. (2005). Using mobile phones in English education in Japan. *Journal of Computer Assisted Learning, 21*(3), 217-228.

Wang, S., & Higgins, M. (2006). Limitations of mobile phone learning. *The JALT CALL Journal, 2*(1), 3-14.

White, J., & Mills, D. J. (2012). Get smart!: Smartphones in the Japanese classroom. In A. Stewart, & N. Sonda, *JALT2011 Conference Proceedings* (pp. 328-337). Tokyo, Japan.

Zhang, K. (2008). Ubiquitous technology for language learning: The U-Japan movement in higher education. *Journal of Comupting in Higher Education, 20*(2), 81-91.

Appendix 1. Questionnaire

This survey is being conducted to gain a greater understanding of the current usage and possible future use of smart phones in the classroom. Jeremy White and Daniel Mills may use all results from this survey in future publications; however, as this is an anonymous survey, no personal information will be disclosed.

このアンケートはスマートフォンの現在の使用状況を調査し、今後の授業での活用を進めるために行います。ダニエル・ミルズとジェレミー・ホワイトはこのアンケート結果を論文発表に使用しますが、匿名のアンケートですので個人情報は掲載されません。

1. Which grade are you currently in? (Please circle the correct answer)
あなたは今何回生ですか？　(正しい答えを○を書いて下さい)
1st　　2nd　　3rd　　4th

2. Which department are you from? (Please circle the correct answer)
あなたはどの学部に所属していますか？　(正しい答えを○を書いて下さい)
International Business　　Business　　International Economics　　Economics

3. Which class level are you in? (Please circle the correct answer)
どのレベルのクラスを受講していますか。(正しい答えを○を書いて下さい)
UI IM PI

4. Do you own a cell phone? (Please circle the correct answer)
携帯電話をもっていますか。
Yes No

5. How many cell phones do you own? (Please circle the correct answer)
携帯電話を何台持っていますか。
1 2 3 3+

6 When did you buy your first cell phone? (Please write the correct age)
初めて携帯電話を買ったのは、何歳の時ですか。
0-5 6-10 11-15 16-20 20+

7. Do you own a smart phone?
スマートフォンを持っていますか。
Yes No

Question 8 - 10 need to be completed by non-smartphone users
スマートフォンを持っていない方のみお答えください。

8. If no, why do you not have a smartphone?
スマートフォンを持たない理由はなんですか。
Too expensive（値段が高い） Not interested（興味がない）
Too complicated（操作が難しい） Other （その他）( )
9. If you were to buy a smartphone, which brand or model would you buy?
もしスマートフォンを買うなら、どの携帯電話会社、どのモデルをかいますか。(For example iPhone 3G, 3Gs, 4, Galaxy etc.)

10. Why would you buy this brand or model?
なぜその携帯電話会社、モデルを買おうと思いますか。
Price（値段） Already a customer（すでに契約している）Friend/Family Recommendation（友人、家族のすすめ）
Other（その他） ( )

Questions 11 - 14 need to be completed by smartphone owners.
スマートフォンを持っている方のみお答えください。
11. When did you buy your smart phone? (Please write the year and month if possible)今持っているスマートフォンはいつ買いましたか。（できれば年月も書いてください。）

12. What type of smart phone do you have?
どのタイプのスマートフォンを持っていますか。
iPhone Galaxy Xperia Dynapocket Kiddi

13. Why did you buy that model?
どうしてそのモデルを買いましたか。
Price（値段） Already a customer（すでに契約をしていた）Friend/Family Recommendation（友人、家族のすすめ）
Other（その他） ( )

14. What cell phone company are you with?
どの携帯電話会社と契約をしていますか。
Softbank AU Docomo Other ( )

15. What applications do you use most? (Please circle all appropriate answers)どのアプリケーションをよく使いますか。（正しい答えに○を書いて下さい。
Dictionary（辞書） Education（学習） Games（ゲーム）Maps（地図）Other（その他）
( )

16. Do you use your smart phone in your English classes?
スマートフォンを英語の授業で使用しますか。または使用したことがありますか。
Yes No

17. How helpful would it be to use a smart phone in your English class?
英語の授業でスマートフォンを使用することは、学習に役立つと思いますか。
5 - Very Helpful（とても役立つ）
4 – Helpful（役立つ）
3 - No change（変わらない）
2 - Not helpful（役に立たない）
1 – Harmful（使用しない方がよい）

We thank you for your participation in this survey.