

Cell Phone Technology and Second Language Acquisition: An Action Research Experiment.

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Abstract: This action research study explored the possibility of engaging Japanese university learners of English as a Foreign Language (EFL) to use their cell phones to communicate in the target language. One hundred and two students participated in a pre and post-test survey to collect their opinions about producing cell phone-based audio-visual resources. In addition, evidence collected from 50 participants' cell phone videos reports on their verbal performances. The outcome of this experiment provides an example for integrating cell phones as part of the language curriculum and it reveals that students gained some benefits from using this technology.

Introduction

Owners of Cell phone Technology (CpT) can now take pictures, write notes, record their voices or short videos, compose as well as listen to music, watch audio visual material, use a bilingual dictionary, send text messages to their peers, engage with social networking software and make regular calls. Such technology is beginning to receive some attention from researchers but the educational benefits have not yet been fully explored.

This paper reports on an action research structured study conducted over 14 weeks at a Japanese university. The objective was to observe whether or not it would be feasible to integrate CpT in the curriculum to enhance language learning. The task required students to produce a 30-second cell phone-based video recording once a week over the course of a term. A 30-second time limit governed the length of students' video productions. This was a communicative task set within a syllabus that intended to engage students to rely on their prior knowledge of the target language to improve their verbal performance.

The data collection process included all students' cell phone-based video productions, a pre and post written test, a mid-term essay and an end of term in-class video recorded short communicative performance. By the end of this study, it was possible to conclude that CpT is a suitable learning device, but that further research needs to be conducted in order to provide additional evidence for understanding the benefits such a learning tool brings to the language acquisition process.

This paper presents a review of the literature to consider strategies for incorporating CpT in the English as a Foreign Language (EFL) classroom and then suggests a new avenue for integrating CpT in the language classroom. After describing the purpose of the research, the classroom environment, the course and task as well as the research methodology, the paper discusses the results collected in terms of quantitative and qualitative evidence. The paper concludes by defining some of the limitations with the findings and it provides some suggestions for further research.

Literature Review

The use of Personal Digital Assistants (PDAs) has received extensive attention from researchers interested in mobile learning (Corlett, Sharples, Bull & Chan, 2005; Facer, Joiner, Stanton, Reid, Hull & Kirk, 2004; Klopfer, Yoon, & Rivas 2004; Kukulska-Hulme & Traxler, 2005; Lai & Wu, 2006). However, very few articles have considered the possibility of using cell phones as a learning tool (Kiernan & Aizawa, 2004; Thornton & Houser, 2005; Wang & Higgins, 2006). In Japan, students are more likely to own a cell phone than a PDA; at the end of September 2008, there were 109 million subscribers to cell phones (Ministry of Internal

Affairs and Communications, 2008). Therefore, this study focuses on CpT as a potential tool for stimulating students to practice their communicative skills.

Defining the capabilities that CpT can offer the EFL teacher is a primordial step of any research. Wang and Higgins (2006) reviewed CpT to outline the limitations that such a device holds when contrasted against the needs of the language learning environment. Although they stated that CpT did provide positive opportunities for language education, they argued that such devices were not yet ready for mainstream pedagogical consideration. They justify their decision by explaining that since learning requires an effort, most students would be unlikely to want to study with a phone; they would prefer to use it for entertainment. They argued that "People lack the motivation needed to use mobile learning consistently." (p. 4). They also contended that learning and teaching require interaction for learning to occur. In Wang and Higgins' opinion, examination via cell phones was cumbersome to implement and the surrounding environment was also a source of distraction for learners. Other limitations included slow internet browsing and the connection was unreliable, reducing the possibilities for independent offline learning. They noted that the screens were too small for optimum reading purposes and the memory capacity was insufficient for viewing learning materials. Finally, they pointed out that CpT cannot replace learning; it simply provides a new tool for learning. Unfortunately, apart from referring to Thornton and Houser's (2005) research, Wang and Higgins offered few alternatives and/or reviews of teaching attempts with CpT. However, Thornton and Houser (2005) as well as Kiernan and Aizawa (2004) provided evidence that CpT could be a useful tool for enhancing learning development of Japanese EFL university students.

Thornton and Houser (2005) first conducted a survey to assess 333 female students' use of CpT, revealing that 100% of their students owned a cell phone. The survey also divulged that 83% of the students used their phones for chatting with friends and rarely used them for educational purposes. Then they conducted two experiments to assess vocabulary retention. The first experiment involved cell phone text messaging and the second required participants to rate the quality of viewing idioms on videos or "vidioms" on cell phone screens (p. 217).

The first project divided 44 students into two groups; a cell phone and a PC group. These students received three short text messages at intervals throughout the day. The difference between the pre and post tests revealed that students from the cell phone users retained the vocabulary items better than those in the PC group. Students' feedback also indicated that 71% preferred receiving cell phone messages and 91% saw benefits from the learning approach.

In the second project, Thornton and Houser (2005) provided 31 students with the opportunity to use either a cell phone or a PDA to view a collection of 15-second vidiom clips during a ten minute learning session. Viewing vidioms on cell phones or PDAs seemed an appropriate learning approach to students. Feedback from these participants indicated that due to screen size, PDAs were better devices than cell phones for viewing videos. Both devices were reported to have poor audio quality.

While Thornton and Houser's (2005) research was primarily experimental, Kiernan and Aizawa's (2004) research was more rigorous in demonstrating the benefits of using CpT to encourage students to focus on form and negotiate meaning during particular teacher designed tasks. The purpose of their research was to understand whether or not cell phones are valuable tools for language learning in a task-based learning environment. Conducted over a three week session, their project involved four forty-five minute classes of approximately thirty Japanese first-year engineering students. The authors first divided their classes into high and low level learners and then they divided them into three groups: "PC email, cell phone email and speaking" (p. 73).

Prior to undertaking the tasks, students completed a survey in Japanese which aimed to elicit information about students' cell phone use habits as well as a pre-test "to test learners' knowledge of target pragmatic phrases" (p. 75). Thereafter students completed three tasks; two picture narrative tasks that encouraged students to share information to fill in a worksheet and one invitation task. Kiernan and Aizawa (2004) hypothesized that students would use the target pragmatic phrases in their conversation, therefore, "the same [pre-]test was re-administered with the order of the items changed as a post-test" to assess any vocabulary gain from the tasks (p. 75). However, their findings reveal "that none of the students used" any of the target pragmatic phrases during the activities (p. 75). Kiernan and Aizawa (2004) conclude that it might have been rather "naïve" to anticipate pragmatic phrase retention through accidental exposure during the pre-test and expect it to transfer over to a particular communicative task (p. 80).

Nevertheless, Kiernan and Aizawa (2004) outline affordances and constraints with cell phone versus PC-based email exchange. Whereas both devices seemed conducive to facilitating outside of class time communicative exchanges, the use of cell phones appeared to be popular with learners. In addition, students with cell phones developed a more economical form of verbal expression during their email exchange. The constraints included the limitation of language output possible, due partly to the inability of the cell phone to deal with text larger than one hundred words, as well as the slow typing speed of the users.

As Wang and Higgins (2006) claimed, the technology is not yet up to standard for educational needs. Still, findings from Thornton and Houser (2005) and Kiernan and Aizawa (2004) clearly indicate that it may be possible that the researcher's vision and the structure of the project are not flexible enough to blend in with CpT. For example, Kiernan and Aizawa (2004) originally wanted to compare PC and mobile phone email users with speaking cell phone users, but they explain,

Speaking on the mobile phone was abandoned early on due to complaints [from students] about the potential phone bills... Instead this option was replaced by audio recorded pair work speaking (p. 74)

To overcome this situation, Thornton and Houser (2005) provided learners with cell phones, an option which may not have been available to Kiernan and Aizawa (2004).

Other observations from these three studies are the short time frame of their experiments, ranging from one day to three weeks. Also, all research experiments were teacher designed with a specific focus either on listening comprehension or writing responses to teacher-selected items. Such research interests exclude any influence the student could have in producing authentic autonomous content.

A New Avenue: Cell Phone Video Production

It is now possible for online video storing site (such as youtube.com) subscribers to upload videos produced on their cell phones. Such opportunities offer educators greater opportunities to integrate CpT into their curriculum. This section explains the reason for selecting CpT as opposed to already existing educational resources such as digital video cameras or tape recorders.

The ever increasing affordability of quality video cameras has allowed teachers to consider integrating these tools in their classroom. A few articles include video as a learning development resource. For example, the pedagogical purpose underlying Levy and Kennedy's (2004) research was to introduce audio-conferencing as part of developing students' acquisition

of Italian. These authors video recorded some of the computer-student interactions to use as discussion materials to assist students in reflecting on their use of the target language. Their research reveals that by using recorded audio and visual evidence, students were able to notice how they made errors. One student, for example, was able to realize that "she was prone to having difficulties with double consonants in Italian" (p. 58). Levy and Kennedy (2004) concluded that students were able to use the target language for self-identified purposes and that the opportunity to reflect on the audio-visual recording of student productions assisted them in becoming more aware of their abilities.

In addition, Barton and Haydn (2006) found that audio-visual material recorded during teacher training sessions provided examples that stimulated discussion with participants. These authors also shared the video recording with colleagues in order to demonstrate "which forms of intervention in the area of Information Communication Technology (ICT) had an impact on trainees' practice" (p. 267). Therefore, it is possible to utilize video recording devices strategically to guide the learner to pay more attention to their own performance as well as to facilitate discussion around in situ audio-visual material.

Thus, by combining previous digital video camera-based research with CpT, this paper hypothesizes that it may be promising for EFL students to use their cell phone video recording feature to record themselves delivering speeches on issues of interest to them. Through this strategy, not only are learners determining focus on form and relying on prior knowledge of the language to structure their speech, but they are also producing authentic content through which they are able to express their opinion at a particular point in their life experience (Skehan, 2003). In addition, as demonstrated in Levy and Kennedy (2004) and Barton and Haydn (2006), video recordings allow the producer to view and reflect on their own performance. This paper argues that the option of creating cell phone based video recordings regularly over a long period of time may influence the producer to consider new strategies to improve upon their overall performance. Finally, creating videos can be a form of entertainment and with a mix of purposeful tasks and activities, video can encourage students to look at their surrounding environment more carefully and create audio-visual resources to express their opinion on a given topic in the target language. By producing video material in spoken English, students become producers of their own learning content.

Study

Purpose

The purpose of this study was to reveal whether or not cell phone-based video production is a suitable communicative learning tool for learners of EFL at a Japanese university.

Participants

Due to their prior seven years of English language education, second year undergraduate students were selected because they possessed enough English language ability to participate in this research study. Although the course was compulsory, students selected courses based on their educational preferences. Hence while 138 respondents completed the course entry survey, only 102 students (72 males, 30 females) from the Education, Engineering, Arts & Law and Medical faculties remained to complete the study. The other 36 students decided not to finish the course. Some of these students explained that the objective of the course did not meet their academic needs.

Course

The course was based on the assumption that "for good learning to occur, the language syllabus must take into account the eventual uses the learner will make of the target language" (Brinton, Snow & Wesche, 2003, p. 3). With this specific assumption at its core, the objective of the course was to shift away from grammar-based, reading and writing activities and to

provide students with the opportunity to speak and to express their opinions in English with minimal assistance from the teacher.

During the term of the course, students completed two electronic presentations with speeches as well as an end of term test. In addition to these general requirements, students were requested to produce a cell phone video each week. This paper focuses on the latter of the three tasks.

Task

The cell phone video task required students to produce one 30 second audio-visual recording of themselves speaking in the target language on a topic covered in class each week. This research hypothesized that delimiting a time constraint could improve students' oral performance. Therefore the 30 second time limit was based on two observations. First, some cell phones cannot email video recordings longer than 30 seconds. Second, the latest speaking and writing test offered by the Test of English for International Communication (TOEIC) has six speaking tasks each with defined time limits, ranging from 15 to 60 seconds. These speaking tasks are conducted by a computer and all recordings are sent by internet to a group of examiners (Trew, 2006). Based on these observations, it was decided that a 30 second cell phone video recording was an appropriate assessment, authentic not only as a test preparation activity, but also as a response strategy.

At the start of the term each student received a criterion sheet that described the purpose of the task, the assessment rubric as well as the themes students had to address. A twelve week outline focused on topics related to the course. The themes were general, revolved around topics covered in class, and were familiar to students. These topics included a self-introduction, comments on the essay "The History of English", an opinion of a good presentation delivery, a reflection on writing skills, comments on the synopsis of the novel *The Life of Pi*, two reflections on presentations delivered in class by peers, a reflection on the CNN short televised interview "Bethany the surfer girl", a reflection on the concept of beauty, and three consecutive reflections on presentations delivered in class by peers. Students had a few days to produce and send their final video to a Yahoo! email account managed by the teacher. This class specific email account maintained the privacy of the students. Students viewed and accessed all videos produced by their peers.

Apart from the cell phone criterion sheet, the task was unstructured. The teacher did not attend to any specific grammatical or linguistic features and he did not support or guide students with the production of their cell phone videos. Instead, the course aimed to expose students to authentic and practical communicative skills. It was anticipated that providing students with full control over the design of their content and video production was a suitable approach. Each cell phone video topic encouraged students to reflect upon their learning in class. Through this approach it was anticipated that students would not only retain more about the content covered in class but that they would also become more focused on the activity since it required them to reflect on what they were learning through the curriculum. The whole activity process, it was envisioned, would encourage students to spend more time practicing to improve their oral productions. This would engage students to increase their cognisance of the target language, either by accessing their prior knowledge of the target language or by learning new necessary lexical items (Gass & Selinker, 2001).

Procedure

Action Research

Action research is a "practical" research method that allows the researcher to shift from the unknown to the known or from hypothesis to results (Kemmis & McTaggart, 2005, p. 561). It was selected because this is an ongoing study and much of the data collection process and data

analysis remained to be tested. In addition due to the limited research in direct video production with cell phone technology, action research enables the research to examine and reflect upon all or individual parts of the research. This seemed to be a more flexible and progressive approach as a research method.

Kemmis and McTaggart (2005) explained that action research is neither quantitative nor qualitative in structure, because the aim is primarily for both the researcher and participants to develop a common understanding from which change can emerge. It is during this process of discovery that the researcher develops various data collection methods. These can include questionnaires, audio recordings, research diaries and interviews and are best implemented within a triangulation framework (Burns, 2000; Lankshear & Knobel, 2004; Richards, 2003).

Data Collection Process

As Table 1 reveals, seven data collection stages were scheduled over a 14 week term. Adhering to an action research framework, Stage 1 asked students about their demographics, cell phone habits, and access to computer technology. Some of the questions were based on the Thornton and Houser (2005) research survey. The pre-test also allowed students to experiment with producing their first cell phone video. Evidence from the first submissions provided an opportunity for the researcher to observe any technical challenges, such as non-compatible video formats, and to consider alternatives. Once technical constraints were overcome, Stage 2 collected students' cell phone video productions from the second to the final week. These videos were most suitable for data collection since students had become more confident with the task and process. The videos were stored as evidence of students' cell phone video-based speaking exhibits. Stage 3 gathered the weekly cell phone video homework to generate an overall view of students' performances.

Stage	Activity	Purpose	Teacher Task
1	Pre-test	Collect evidence regarding: - demographic background - computer skills - cell phone habits	1) Prepare & provide test 2) Collect & tally tests 3) Compile data
2	First cell phone video	Collect first oral linguistic performance	Transcribe and code speeches
3	Task: Weekly cell phone video	Collect video evidence	1) Track students' participation 2) Store videos and transcribe speeches
4	Mid-term essay	Collect evidence about students' perception of the study	Tally all responses
5	Final cell phone video	Collect last performance	Transcribe and code speeches
6	Post-test	Collect written evidence of students' opinions of the course	Tally all responses
7	Impromptu Speech	Collect evidence of students' ability to speak spontaneously	Transcribe and code speeches

Table 1 - Data Collection Stages

Halfway through the term, students were given a free-writing activity (Stage 4) concerning their opinion on the progress of their cell phone video productions. This free-writing activity was also included in the post-test written assessment in order to observe if students' opinions about the cell phone video task changed at the end of the term.

Stage 5 gathered all the end of term cell phone videos submitted by students. Stage 6 administered a written post test which queried students about their opinion of making weekly videos.

The aim of Stage 7 was to collect evidence of students' ability to speak spontaneously. Students able to complete the post-test early were encouraged to volunteer to be video recorded in-class. Willing participants delivered a 30 second spontaneous speech in-class concerning their opinion of the course.

By the end of the term, the pool of evidence consisted of two sets of 50 cell phone video productions, two sets of 102 free-writing activities and one in-class video performance from volunteer students. All exhibits were stored on the teacher's computer, their content transcribed and coded.

Data Analysis

Data from 102 participants were collected over the course of one academic term. Students' cell phone video performances and in-class video recordings were examined in terms of words uttered per second. This data was analyzed to observe any major changes over the course of the term.

Both quantitative and qualitative data analyses were applied to generate conclusive evidence from the pre and post-test surveys. The students' free-writing activities were categorized in terms of similarities and differences in opinion expressed.

Results

Student access to technology and experience of technical constraints are discussed first. The second set of evidence reports on students' verbal performances and approaches to video production. The next set of evidence compares and contrasts cell phone videos and in-class performances collected over the term. The final set of evidence tabulates and compares the evidence generated from the written mid-term essay and post-test. All the information is then collated to provide a single overview of the outcome of the study.

Student access to technology

One hundred and thirty-eight students completed the course entry survey. Four students indicated that they preferred not to have their responses included in any research documentation. In relation to technological devices ownership, 80 students reported owning laptops compared with 48 students who had access to a desktop only. Six students did not own a desktop or a laptop; therefore, they were encouraged to use the computer laboratories available on campus. All students owned a cell phone with an embedded video recording device (n=134).

This evidence indicated that university students either own or have access to electronic devices such as computers and cell phones. This led to the conclusion that the task was within the technological reach of the students and that further investigation in the educational use of cell phones was possible.

Video formats

Upon collecting, storing and viewing the first cell phone video productions, technical challenges began to emerge. Ninety percent of the cell phone video formats were received as .3gp, a format designed by Apple, and equivalent to MPEG4 for cell phones. The other video formats were .amc, .afs, and .mov. The .afs format is a Sharp format which is not recognised by either Quicktime or Windows Media Player. Attempts were made to download the Sharp converter software, but it did not appear to function as anticipated, and this type of video had to

be discarded. Also the .amc format seemed to have technical limitations which prevented it from playing the audio file attached to the video; thus the video played without any sound. Solutions for this technical occurrence to date have not been discovered. The .mov file format was compatible with Quicktime and Windows Media Player.

In relation to cell phone video design, these varied in quality from plain to very creative. Figure 1 shows an example of a creative video. In this instance, the student used images and text to improve the quality of her video design.

Other students filmed their videos outside in natural settings such as in a park or the middle of town. Nonetheless, very few students chose to be creative or illustrative with their videos. Unfortunately, due to privacy issues in Japan, the less creative videos cannot be displayed since they show the image of the student.



Figure 1 – Creative video example

Cell phone video analysis

As Table 1 displays, the cell phone video evidence was collected in three stages. Stage 2 cell phone videos are identified as the first set of evidence and were collected in week two of the course. Videos collected during Stage 5 are classified as end of term performances. Stage 7 videos refer to volunteer students' impromptu speeches. Each stage is discussed below separately before drawing a conclusion about students' overall performances.

At the end of week two, 102 videos were submitted. However, for the purpose of this research, only data from students who had submitted all cell phone videos during the term of the course could be considered. Thus at the end of the term only 50 participants had submitted all their videos. The remaining 52 students had failed to consistently send in videos, had been sick or submitted incompatible cell phone video formats. In addition, one student indicated on the post-test to not wanting to be included in the research. In total, five students did not consent to participating in the study and their data are not included in this research.

All videos submitted were transcribed. The information they revealed was tabulated in terms of time length, number of lines, and words uttered. The average of each variable was then calculated.

Stage 2 – First cell phone video performance

From the 50 participants who submitted their videos, the average speaking time was 20.7 seconds. Most students produced speeches that contained an average of 4 lines. Finally, the average word count per dialogue was 36.2 words.

Stage 5 - Final cell phone video performance

Videos submitted in week 12 were catalogued and transcribed. From this set of evidence, the data revealed that the average speaking time was 21.3 seconds. Most students on average produced speeches that contain 4.2 lines of utterances. Finally, the average word count per dialogue was 36.3 words.

Stage 7 – Post-test in-class impromptu speech

As the evidence suggests, there were no major differences in length or duration between student videos produced in stages 2 and 5. Therefore in order to ascertain whether or not cell phone-based learning benefits learners and can be considered a viable EFL teaching strategy, a final video recording of students was conducted.

Once students had completed their end of term exam, 16 students were randomly invited to deliver an impromptu speech in front of the video camera. Volunteers were asked to explain their opinion of the course. No time limit was enforced; it was up to the student to decide when to stop speaking. On average, the students uttered 43.4 words in 27.1 seconds.

Comparing the results revealed an increased percentage difference in time, lines and words spoken, between stages 2 and 5 and Stage 7. The evidence on Table 2 would lead to the conclusion that the activity improves speech production. Not only were students able to speak for a longer period of time, but they were also able to increase the number of words they uttered.

Time			
	Average	Difference	Percentage
Stage 2	20.7		
Stage 5	21.32	0.62	3.00%
Stage 7	27.13	6.43	31.06%
Lines			
	Average	Difference	Percentage
Stage 2	4.04		
Stage 5	4.22	0.18	4.46%
Stage 7	5.06	1.02	25.25%
Words			
	Average	Difference	Percentage
Stage 2	36.28		
Stage 5	36.32	0.04	0.11%
Stage 7	43.44	7.16	19.74%

Table 2 – Speech output

However once the data is analyzed at a deeper level, that is words spoken per seconds the results reveal a different picture. As Table 3 reveals, there is no major difference in words uttered per second between Stage 2 and Stage 5. In Stage 7, students uttered 43.4 words in 27.1 seconds, or 1.6 words per second. The percentage difference between Stage 2 and 7 indicates a 9.4% decrease in words uttered per second

Stages	Time	Lines	Words	Words / seconds	Percentage difference
Stage 2	20.7	4.04	36.28	1.75	
Stage 5	21.3	4.22	36.32	1.70	
Stage 7	27.1	5.06	43.44	1.60	- 9.4%

Table 3 – Words per second

Stage 7 was an impromptu speech and since students could not write their speech, this may have affected their abilities to keep track of their speech.

Dealing with such evidence purely at the numerical level does not seem to reveal any conclusive evidence. Nor does it provide an indication of the type of speech performance students were capable of producing. Therefore further research in the area of fluency, especially in terms of speaking strategies, is necessary.

Mid-term data collection results

A mid-term essay was administered to collect information about how students perceived the study. As Table 4 indicates below, out of 102 consenting students, 2 did not provide any clear and comprehensible information and 21 students did not think that making the videos was beneficial to them. Their responses included details that indicated students would write a script instead of speak spontaneously (n=12), teacher feedback was not immediate (n=3), the task required too much work (n=4), the deadline was too close to the lesson (n=1), and the cost of emailing videos affected students' finances to the point where the activity would be cumbersome rather than of any benefit (n=2).

Nonetheless, 69 respondents perceived good educational benefits from this activity. Their responses were divided into two categories; general and specific. For the more general type of response, 35 of these students concurred that creating cell phone-based videos provided them with a regular opportunity to practice speaking, thinking and improving their linguistic performance in the target language. The remaining 43 students offered a variety of positive responses regarding their production of cell phone videos.

Categories	Tally	Positive Comments	Negative Comments
First time to hear/see myself	14	14	0
Chance to communicate with the teacher (he corrects our errors)	6	6	0
Good practice to improve speaking skills	35	35	0
Few chances to speak English; the project helps practice	8	8	0
It is good for my future (English is an international language)	3	3	0
Good to learn about technological benefits	1	1	0
It was embarrassing at first but I gained more confidence	2	2	0
Cannot correct errors immediately	3	0	3
I write a script	12	0	0
Need to make a lot of effort to prepare and remember speech	6	0	6
Deadline is too close to our lesson (one day after lesson)	4	0	4
Cell phone time is too short to express my opinion	4	0	4
It costs money to send a video by email	2	0	2
Incomprehensible response	2	0	2
Total	102	69	21

Table 4 – Mid-term essay response

The evidence outlined in Table 4 indicated that 12 respondents reported that students wrote a script. While some of the students saw this as a negative strategy, others reported that the activity allowed them to reflect upon the structure of their speech. Therefore this item was not reported as either positive or negative feedback.

Post-test responses

The post-test was a 20 item test which focused on cell phone video production and contained two free-writing activities. For the purpose of this paper, only the feedback gathered through the free-writing activities was utilized as it provided the most information concerning the benefit of using CpT in the EFL classroom.

Item 18b was a short essay on the following open question: “This term you have created 12 cell phone videos. Reflecting on this experience, what do you think about the cell phone videos?”

As Table 5 reveals, 37 students first perceived the cell phone video study as challenging, but with persistence, it became manageable and enjoyable. Forty-two students provided positive feedback indicating various positive outcomes. Out of 102 respondents, 79 participants believed that creating cell phone videos was beneficial for developing communicative skills. The remaining 15 respondents indicated that the homework schedule and the technology were impediments to their ability to benefit from this task. Eight students did not provide clear answers that could be categorized.

Item 18b	Tally
Negative feedback	
30 seconds is not enough time	6
Only one day to create video is not enough time	4
Difficult to speak my opinion	3
Not useful	1
No video feature option on my phone	1
Subtotal	15
Positive feedback with some negative experience	
First I didn't like it but then made it with friends and it was fun	2
Difficult, I was anxious about the project but I became accustomed to it	7
First boring but then it became interesting because I could express my opinion	4
Difficult but good practice to speak in short time meaningfully	12
Expensive to send every week but good practice	2

Didn't like to film myself but practice was good	4
Embarrassing to speak in front of camera but it was good practice	1
I didn't like some parts of the homework	5
Subtotal	37
Positive feedback	
Good because it provides opportunity to speak in English	10
Regular weekly activity is good	8
Good because the teacher checks my speech	7
Helps to practice pronunciation many times	4
Fun to create movies	3
Ability to convey ideas in short time	2
Practice speaking fluently and select easy words	2
Improves my speaking skills	2
Opportunity to listen to my progress	2
Challenging to speak without a script	1
I can speak more aggressively	1
Subtotal	42
No answer	5
Answer is not relevant to item 18b	3
Subtotal	8
TOTAL	102

Table 5 – Item 18b: What is your opinion of the cell phone video study?

Responses from Item 18b indicated that the majority of students enjoyed making cell phone videos to enhance their English speaking abilities.

Item 19 was another open-ended short essay which asked students to explain their preferred process to create a cell phone video.

Responses to Item 19 indicated that students continued to write their scripts and memorize them before attempting to video record themselves (see Table 6). Twenty-one students indicated that video recording their best performance took several efforts.

Item 19	Tally
Think about topic, write in Japanese, translate to English, practice many times and send video	21
Write idea, practice and send video	19
Write down, remember and deliver the speech	17
Reflect on class content and speak without notes	12
Write, check grammar, practice and send video	8
Brainstorm idea, record video without notes and send video	7
Decide on content, use dictionary, practice, record video send	4
Write my opinion and make movie	2
Write logical composition, choose easy words and speak	2
Record myself speaking	2
Look for good scenery, practice, record many times, send best video	1
Think of idea, write, draw pictures, practice, film and send best video	1
Can't remember	1
No answer	5
TOTAL	102

Table 6 – Item 19: Explain your cell phone video production process

Responses from Item 19 indicated that students developed various strategies to create their cell phone videos. While the majority of students wrote their ideas before speaking, some did attempt to speak more spontaneously. Regardless of the route they selected, practice was an important element which empowered the students to improve their speaking ability. The responses indicated that students viewed their videos before sending in their best performances. The technology empowered students to gain control over their speaking performance.

Discussion

The literature review indicated that CpT was not yet suitable for language education or general forms of learning (Wang & Higgins, 2006). Yet some researchers were willing to experiment with the technology and offer some suggestions for further projects, such as Thornton and Houser's (2005) experiment with idioms and text message-based activities to share knowledge (Kiernan & Aizawa, 2004). This paper commented that for the most part, research by Wang and Higgins (2006) and Thornton and Houser (2005) was conducted over a short time period, ranging from one day to three weeks. An objective of this research study was to maximize the potential implications by extending the research plan to the length of a full academic term. This research proposed that if a study could combine the benefits of video with task-based learning and independent learning, then a method of learning and teaching utilizing CpT could be developed. Therefore the aim of this research was to integrate CpT into the EFL communicative course.

The first set of students' cell phone video productions did confirm, to some extent, Wang and Higgins' (2006) argument that CpT needs to improve in order to become a reliable teaching and learning tool. Also, similar to Kiernan and Aizawa's (2004) findings, some participants did complain about the cost of sending cell phone videos as email attachments; however, evidence also indicated that students were willing to endure the cost, focusing instead on the potential learning benefits of the study.

From a sample size of 102 participants, some students had not completed or submitted all the videos and thus only 50 participants' performances were selected for analysis. As the research progressed and evidence was gathered, it became apparent that the difference in communicative performance between stages 2 and 5 had not shown any major improvement. Therefore students were invited to volunteer to participate in a post-test impromptu task to be video recorded in-class. Comparative analysis between stages 2 and 5 and Stage 7 revealed that accurately calculating students' word output was inconclusive and needs further investigation.

The feedback generated from the mid and end of term essay writing activities indicated that students applied two strategies. They either mentally rehearsed their speech or they wrote it down and memorized it. Very few participants were inclined to speak spontaneously. Students felt more comfortable writing their script first. This preference could be due to two factors. First, since this was an assessable activity, students might have interpreted the task as a performance task and therefore they might have decided to place more emphasis on their ability to demonstrate that they could speak English rather than on their ability to speak naturally. The second reason could have been due to the fact that Japanese students tend to excel in their writing and listening abilities. The over emphasis on these skills and abilities could be partly due to the university entrance exam which is structured primarily on writing, reading and listening comprehension tests.

Nonetheless, the extra effort spent preparing their scripts helped increase their exposure to writing strategies through the use of dictionaries and language reference texts. This diligence also increased their development in the sense that they were paying more attention to details, and they reflected upon the structure of the text they wrote. Since creating a cell phone video was an out of class activity, it allowed students the opportunity to prepare and plan their communicative output. The recording option of the device and the out of class requirement permitted students to review, evaluate and improve upon any aspect of their communicative performance. The immediacy of the feedback that cell phone videos offered the students empowered them to improve upon their performances until they were satisfied and ready to send their best performance for evaluation.

A few students mentioned that since teacher corrections were not immediate, there was little benefit in this activity. However, student feedback also indicated that the cell phone video technology is a simple instantaneous audio-visual feedback device, allowing them to reflect upon their videos prior to submitting their work.

In conclusion, based on the evidence collected, CpT did provide some learning benefits to students. CpT was also a suitable learning device for an EFL environment, providing students with an accessible and flexible learning process. Although some students did not send in all of their videos, they were all able to enjoy the activity and improve their speaking ability.

Limitations

This research was concerned with evaluating whether or not CpT could be considered as a teaching tool in the EFL classroom. While the evidence gathered would seem to indicate that students did indeed benefit from the regular task of creating cell phone video recordings, some aspects of the findings were limited.

After tabulating stages two, five and seven cell phone video transcripts, the aim was to contrast the evidence and to determine any linguistic improvement. At first, the improvement was perceived in terms of length of speaking time, number of utterances per video and word count. However, it became apparent that based solely on the length of speaking time, number of utterances and word count that students did not make any major improvements. The research did not take into consideration students' competence. Luoma (2004) asserts that while testing speaking ability can be problematic, assessing fluency is primordial since it indicates the speakers "speech-pause relationships, ... markers such as hesitations, repetitions and self-corrections" (p. 89). Further research in this area is necessary.

In addition, the fact that some students did not submit all of their videos seems to be of concern since it affects the overall structure of the research. This leads to two research ambiguities. First, there is the need to understand why students did not complete all of their videos. At this stage, the researcher assumes that based on the attendance records some students were sick or busy, but it could also have been that the task was too hard or too time consuming, as some of the feedback from the mid-term and post-test essays revealed. Second, the reason why volunteer students seemed to have spoken more spontaneously for the maximum length required could have been due to other external factors. For example, they might have had other English classes which increased their exposure to lexical items and grammatical structures. These were not considered at the time of designing the data collection process, and should be considered when developing further research.

Conclusion

While some educational institutions are formulating strategies for providing flexible long distance education (Weber, Yow & Soong, 2005), it would seem that with further technological development, CpT could become a viable option for content review optimization. Integrating CpT as part of the EFL teaching method deserves further investigation, since as this research suggested, students have benefited from regularly expressing their opinions in the target language outside of class time using CpT.

The aim of the task asked students to produce weekly 30 second cell phone video recordings speaking in the target language on a topic covered in class. The first and final videos submitted by 50 participants did not provide any drastically perceptible improvements in their verbal output but it did provide them with consistent practice in expressing their opinion in the target language and the ability to view and improve upon their performances. By the end of this experiment students perceived some benefits in creating cell phone videos and a few had made some progress in their ability to speak spontaneously. Nonetheless, the degree of improvement

needs to be investigated further.

As this researcher revealed, cell phones are suitable tools to empower students to maximize their skills and experiences in generating audio-visual resources. It is now up to language educators to recognize the merits of this learning method and to further advance this field of research.

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