Student Perceptions on Ipad Game Use in Class

Rachel Manley Krista Owen

Abstract

Kanda University of International Studies (KUIS) is on the cutting edge of English education. Incorporating iPad technology into the classroom is an important focus of the freshman curriculum and as such, teachers are constantly piloting apps for use in class to meet the needs of students. While the use of iPads in the classroom has received a warm welcome as a tool to improve language skills and reduce paper usage, there remains some resistance towards the use of iPad games in class as a study tool. This is especially true of students and teachers who are more used to traditional methods. Many believe that games are something to be used only to decrease boredom and are not useful as a learning tool; however, more recent research has shown students perceive games as devices that can foster language learning (Kobayashi, Kobayashi, & Fujimura, 2014; Lee, 2012). The proposed project is an observational study based on such recent research; and the aim is to explore student perceptions of whether authentic and collaborative digital board games provide ESL students with an opportunity to foster their communication skills. This research will investigate how students perceive the iPad game, Pandemic, as a learning tool for communication skills which, for the purposes of this research are defined as: speaking, listening, reading, vocabulary, and discussion. An attempt to prove quantitatively the efficacy of such a board game as compared to more traditional methods is beyond the scope of the current research.

1. Introduction

The increasing usage of iPad technology in classes at Kanda University of International Studies pushes for the need to investigate the implementation of digital media into classroom curricula and their effects on the students' learning process. This study investigates the perceptions that students have towards using the iPad game *Pandemic* in class and whether or

not they believe it helps to foster their communication skills. In focusing on student perception, we would like to see how student belief affects their acceptance and enjoyment of *Pandemic* and other games as a study tool.

2. Literature Review

In this research we have chosen to focus on the media of digital games as curricula because games offer students a unique linguistic experience. They are structured and provide a comfortable environment for students to operate (Bridge, 2014). Games present a communicative context complete with a clearly enumerated goal and methods of attaining that goal; while still allowing the students the freedom to make use of their linguistic capital freely in new, interesting, and authentic ways (Gee, 2006). "Drills and repetition of designed expressions do not result in real language use. We should begin giving students chances to use language in unrehearsed, amorphous situations much earlier than we presently do. The emphasis should be on communicative competence [rather] than linguistic competence" (Sobhani & Bagheri, 2014, p. 1068). Games are a useful way of building these unrehearsed communicative events into a curriculum, which is why they deserve to be studied in this context.

This research will focus particularly on the game *Pandemic* because it is an authentic English language digital game that is collaborative in nature. Collaborative games are games where the players must cooperate in order to beat the game system (Linderoth, 2011) and as such require the participating students to discuss plans and strategies with each other. The game Pandemic presents the players with a problem, an outbreak of viruses, and the students must strategize with each other in order to cure the disease(s). This results in genuine communication and discussion, which, as teachers, it is easy for us to see as desirable. The students are using the target language in order to communicate and solve a real problem and at the very least are practicing speaking and listening with each other in an authentic way (Soyoof & Jokar, 2014).

However, what is important to this research is not to prove that games are useful, or that teachers think they are useful, but to see if students perceive them to be useful.

There is a surprising amount of resistance to the idea of using games in the language classroom. They are sometimes viewed by students and teachers as a waste of time that nothing good can come from (Luk, 2013; Lee, 2012; Mummalaneni & Sivakumar, 2008) and some people go so far as to say that "if it's fun it can't really be good for you" (Peterson, 2016). However, when we look at the existing research into gaming as education, there is a solid basis for seeing actual growth and development in the students (Connolly, Boyle, E., MacArthur, Hainey, & Boyle, J. 2012). Dave Bridge demonstrated that Battleship © can be used to teach political concepts and increase student retention (Bridge, 2014), Thompson showed that the board game Resistance © improved student argumentation skills (Thompson, 2015), Ranalli and Peterson showed that the Sims © and MMORPGS improved ESL student vocabulary knowledge (Ranalli, 2008, Peterson, 2010), while deHaan argued that students learn a variety of language skills through interacting with games (deHaan, 2011). However, when it comes to explaining how it is that games achieve this gain and whether or not other methods of teaching might be more effective, the research available has far less to say. Part of the reason that this is the case is that it is not simply the game itself that determines the value of using it as a study tool. The utility of a game as a study tool depends also on how it is taught by the teacher (deHaan, 2011), how the students interact with it (Luk, 2013), and with what attitude the teacher and the students engage with it (Luk. 2013).

It is for this reason that we have chosen to focus on student perception as the primary target of this research. "For language learners...it is precisely these affective factors that are the most important" (Hirschel, Yamamoto, Lee, 2012, p. 292). How the students view a game changes how they interact with it and the satisfaction that they receive from playing it. In fact "students' perceptions of their current learning environment were a stronger predictor of

learning outcomes at university than prior achievement at school" (Lizzio, Wilson, & Simons, 2002, p. 27). This shows that doing research about the perceptions students have towards what they are doing in class has strong pedagogical value for teachers. How students approach a game will affect their perception of its utility and in turn affect their outcomes in class (Luk, 2013; Lizzio et al., 2012). While there is some recent research available that says that students do indeed perceive games as useful learning tools (Kobayashi et al., 2014; Lee, 2012; Sobhani & Bagheri, 2014), there are others that suggest that students perceive them to be a misuse of time (Luk, 2013) and not necessarily the best method of learning (Struwig, Beylefeld & Joubert, 2014).

The purpose of this research therefore, is to tease apart the perceptions of students towards using the game Pandemic as a language learning tool. In order to ascertain these perceptions this paper will depend on self-reporting of the students using a survey. Gaming research has long depended on the survey as a measurement tool (Peterson, 2011; Lee, 2012; Ryu, 2013; Struwig et al., 2014; Connolly et al., 2012; Picciano, 2002) and drawing on these resources we developed our own survey that is comprised of both likert scale and open ended questions designed to answer the following research question:

Which type(s) of communication skills, if any, do the students believe improved through their use of the game Pandemic?

3. Pandemic

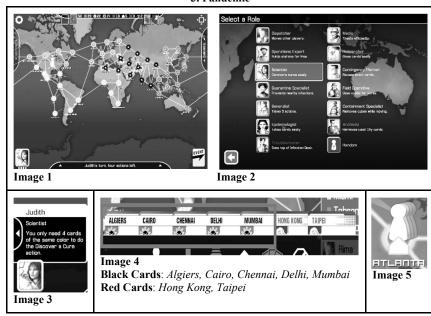


Image 1 shows the setup of the game. At the beginning of the game, nine random cities are selected by the app to be infected by one of four diseases; yellow, blue, black and red. Players can choose from one of thirteen roles, or be randomly assigned a role (image 2). Each role has a different ability, such as the scientist who only needs four of five cards to cure a disease (image 3). The main goal of the players is to find a cure for all four diseases. This is done by having five cards of the same color as the particular virus to be cured (image 4), with the exception of the scientist. The player who has the cards then needs to go to a research station (image 5) to find and spend the cards in order to find the cure. The players win once all four cures have been found.

Pandemic was chosen because it is a collaborative game, where participants are expected

to work together using their language skills. Each role has a different ability and each player is limited to four actions. Since the players are limited by certain criteria, they need to take into account the best way to utilize their character roles as well as strategize what actions or movements to take. *Pandemic* can be considered a smart game because it "offloads some of the cognitive burden from the learners" (Gee, 2006, p. 175). When learning how to play the game, the students do not need to read a manual in order to understand every possible action the game is capable of affording. Instead, each character is a specially adapted smart tool that acts in a certain way. By simply understanding what that character can do, the game allows the students to play effectively even without necessarily understanding the underlying fundamentals of the game. This also allows for multiple play experiences as the actions the game takes depend completely on which characters are in play.

4. Methods & Procedure

4.1 Participants

The participants consisted of the members of a freshman english class at Kanda University of International Studies. There were a total of 21 students; 16 Japanese, one Chinese, one Indonesian, one mixed-race Indonesian, one mixed-race Korean and one mixed-race American. There were nine girls and 12 boys. Before playing the game the students were split into five groups by using an online number generator. Due to the uneven number or students, there were four groups of four and one group of five. In Kanda university the English major students are tiered into high, medium, or low English ability levels according to the results of a discussion test administered at the beginning of the school year. The class used for this research was made up of high tier students and met for 90 minute classes four times a week. The curriculum calls for three five-week units per semester for freshman English and the Pandemic research spanned one unit.

4.2 Procedure

Before the beginning of the research, students were given a plain language statement (PLS), which explained the goals of the research and how their data would be gathered. The participants were asked to read the PLS and sign a consent form indicating their willingness to participate in the research and what it entailed. Both documents were explained to the students during the class and time was given to answer any questions they had before beginning the research proper. Students were given a copy of both documents to keep for their records. They had the choice to omit their data from the research at anytime, however, since the worksheet they were to complete at the end of the research was a class assignment, they still had to participate in all classes of the Pandemic unit and complete the self-assessment portion of the research procedure.

The first element of the Pandemic unit involved the students engaging with the rule book through various grouping and reading activities. The students also explored the tactile functions of the board game by accessing a physical copy of the board game while engaging with the rule book. After this activity, the instructor checked the students' comprehension by going over the rule book with the students and answering their questions. The class was split into two, where each group played a mock version of the game. During the mock game, students could rotate out players so each person could try playing the game. This trial also gave students a hands on experience with the game prior to playing it for research purposes. The mock game gave students a way to understand the rules better and build off of each other by asking for help, providing information and having the researcher available to provide aid when there were no answers to be found from other classmates.

After explaining how to play the game and their hands-on experience of a sample game, each game group, consisting of four or five players, were given half a class period (45 mins) to play the game by themselves one time while being video recorded. Videos were taken of the

students' game-play so that the students could watch them later to help them recall what they were thinking and doing during the game play (Hirschel et al., 2012). After all groups had completed their game-play, the videos were posted on Google Drive and students were given access to their group's video. Each player was also given a questionnaire worksheet that asked the students to self analyze various aspects of their game play and their perception of the game's utility. This questionnaire included several survey type questions and several questions that were free response and the whole questionnaire was a graded assignment in that students received a grade based on completion of the project not on the contents of it (appendix A). A sample questionnaire with one question filled out by the researcher was provided as an example (appendix B).

5. Results and Discussion

Due to some of the limitations of the survey questions, which will be discussed in the limitations section, only the results of questions 1, 2, 5 & 7 will be discussed here.

Question one was a likert scale which asked "Did you enjoy playing the game Pandemic with other players? Why or why not? Please provide at least two reasons for your answer."

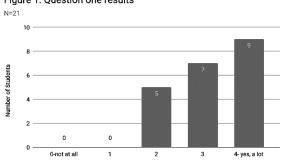


Figure 1: Question one results

Of the 21 students in the class nine said that they enjoyed playing the game a lot, seven said that they enjoyed playing the game, and five chose the noncommittal option two which indicated neither enjoyment nor dislike. From simply viewing the results in figure one, it would appear that the student perceptions of the game Pandemic are much more positive than negative, however we can gain a bit more insight by looking at the explanatory sections written by the students. The students who said that they enjoyed the game a lot tended to focus on the discussion and cooperative aspect of the game saying such things as:

"It was a good opportunity to have conversation with people."

"I think it is good ways to know others' thinking...others deal with the problem in different ways."

"I was able to communicate with them all the time, which was the best thing I was satisfied with. In addition, that game was simply fun: we need to critical-think and cooperate with teammates."

"In this game I have to cooperate with my friends and reach one goal with them. So everyone tried to share their idea through talking."

In contrast, the students who were noncommittal about their enjoyment tended to focus on the difficult nature of the game along with some comments about lack of confidence and their moves being controlled by other students, thus decreasing the enjoyment of the game.

"This game is too hard for me to understand. The words is difficult, and we couldn't understand the rules of this game at first."

"I felt difficulty. I could not communicate very well."

"I have no confidence and I was not sure I understood it. Then other players seemed to understand it, so I obeyed their opinions. That's why I couldn't enjoy it completely."

"I couldn't enjoy playing it, because it was too difficult for me to play without my friends help...Mostly I was helped by [student 21.]"

Question two asked "Do you think your communication skills in one of the five areas below increased while playing Pandemic?"

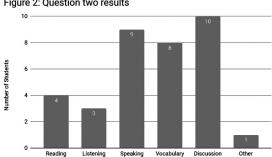
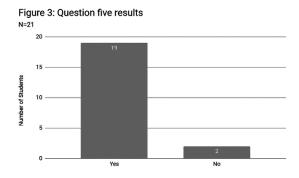


Figure 2: Question two results

In this question many of the students chose more than one answer so the total numbers do not match the number of students in class. In this question the skill most often chosen as having been improved was discussion with ten students selecting it. The next was speaking with nine selections, vocabulary with eight, then reading with four and listening with three. One student selected 'other' as an option, but then did not expound on what they meant.

Another way of analyzing this particular question is to examine how many skills students selected as having improved. There were three students who selected four out of five skills as having improved through playing Pandemic. Two students selected three out of five, three selected two out of the five and thirteen selected only one skill. Of those who only chose one skill the most commonly chosen were speaking and vocabulary at four each with discussion coming a close second with three. Some reasons the students gave for improving their speaking skills were the amount of discussion, cooperation and knowledge-sharing that they had to do with their group members. In regards to the students who selected vocabulary as their improved skill, the common theme in their response was the amount of unknown words in the rule book. After learning the words in the book they also had to use them during the game, such as one participant mentioning learning the word "draw" in the text and then applying it to their game play.

Question five asked the students "Do you think board games are useful for practicing English skills? Why or why not? Please provide at least two reasons for your answer."



As can be seen in figure three, the results for this question were overwhelmingly positive with 19 out of 21 students saying that they thought games were useful and only two who did not. Of these two one stated baldly that their reason was that they did not like playing games, however, the other one gave a reasoned response wherein he mentioned things like the

On the other hand, those who answered positively tended to fall into two camps. Those who thought that the game was useful for practicing speaking skills, which made up eleven of the students and the other eight students who thought that the game improved their vocabulary skills.

narrowness of the vocabulary register and its inapplicability to real conversations.

Those who thought that board games were useful for developing speaking skills tended to say things such as:

"We, English languages learners, in general study English sitting at desks. It might become boring soon, but playing board games is a good way to learn while having a fun... I like speaking English so much, but I do not like reading English very much...Playing this game in the class was interesting and a good way to read and speak English."

"English discussions are very important and for playing pandemic we can have the opportunity to do that."

"We really have to have conversation when we play or make board games. We can't do playing without talking. That's why i think it's good way to learn English through pandemic."

"There are many chances to communicate with other players. I think sharing information and making plan with someone are most important and effective things to practice English in board games."

Those who thought that board games were useful for developing vocabulary skills tended to say things like:

"The first example is about reading and vocabulary. When I was reading the rule book, there were many words and idioms that I did not know in the rule book. As a result, I can acquire meanings of words. (ex: eradicate, vial)"

"First, we're able to learn difficult vocabularies through we read a rule book."

"You also learn the collocations by languages in a game and its rule books."

"I think board games are useful for speaking and vocabulary skills."

"For example I could learn new 18 vocabularies and now I can use these

vocabularies "

"Because I learned many vocabularies through it."

"Let's say I don't know this word, 'discard'. Even though other members say it, when I don't know it, I can understand the meaning of it as they do the action. By doing so, we can know new words."

What is particularly interesting about the student entries about vocabulary is that they were very specific in their answers, often going so far as to mention specific words that they learned, or specific numbers of newly acquired vocabulary. This seems to suggest that this was an easily measurable gain for them.

The final question examined in this research paper is question seven which asked the students "Would you like to play board games as a unit in class in the future? Why or why not? Please provide at least two examples and explain."

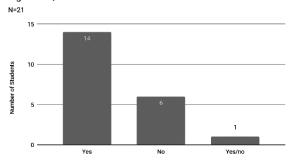


Figure 4: Question seven results

In question seven there was also a clear positive reaction on the part of the students with 14 saying that they would like to have board games as a unit in their class in the future and six saying that they would not. Most of the students who disagreed with this question, as well as

the student who vacillated between yes and no, remarked in the explanatory section that the game level was too difficult and made it hard for them to understand and participate in the game.

"It was too difficult to understand the rules only by myself."

"No, because it is not suited for because of high level of the game, such as Pandemic. It is difficult for me to understand the rules that is so complicated..."

"I would not like to play. First the game level is high. The more easy the game is, the more we can enjoy."

"Depend on the level of the game. If the game is easier than pandemic, I would like to play games as a unit in class in the future. Because, pandemic is too difficult for me"

In contrast, the students who said they would like to have a gaming unit or to play board games in class had a lot of different reasons, such as improving their communication skills, feeling comfortable while playing which led to them having fun with the game, being more open to talking with others and being unafraid of making mistakes.

"I afraid of making mistakes, so i could not tell my opinion in English to my friends. However during the playing Pandemic, I was not afraid of making mistakes"

"To play board games as learning English is not only enjoyable, but we can also improve many English skills, such as speaking or vocabulary skills."

"I would like to play game in class again, cause it's a good chance to think what to do, without waiting for teacher's advice, and by having different roles, we can think about how to help other members."

"Oftenly, I don't express my opinion or idea, so this kind of a unity would be useful in those points"

"I could practice some English skills and enjoy more than normal class. Sometimes I forgot about learning, but just enjoyed this game. So I could practice English more natural. I also paid attention for someone's idea. I focused what they said more than normal class too"

6. Conclusion

Overall, student perception was positive when it came to using Pandemic in class and its potential for fostering language skills. This led to a basic openness towards using other games in class in the future as curriculum tools. However, there were some serious limitations that should be addressed for future research. The first limitation was the amount of time students were able to play the game, which could have affected their belief that the game was very difficult. If they had more chances and time to play, they might have been more comfortable and familiar with the game. Peterson (2012) found in his research that "[I]earner feedback was positive, and suggests that although the participants found the game play challenging, as [his] research progressed they became increasingly comfortable as their familiarity with the game increased." Since the participants did not have much time to play the game, their familiarity with it was not strong and this made it difficult to play. The difficulty level of the game could have affected their response to playing the game itself which then affected the amount of potential learning or improvement they could receive. This limitation could be addressed easily by either choosing a game that is easier to play, or by providing more time and chances for participants to play and thereby increase their familiarity with it.

Another limitation was that one of the survey questions was worded poorly. Question two was written as "Do you think your communication skills in one of the five areas below increased while playing Pandemic? A. Reading B. Listening C. Speaking D. Vocabulary E. Discussion F. Other." Although the question itself is a yes/no question, the answers did not have a 'Nothing' option, so students may have felt obliged to answer in the positive. Although

the researchers could mitigate this slightly by looking at the explanation below where students were required to write about why they had selected their particular answer, in the future, a negative should be included in this question and others like it.

Lastly, from the format of the participants worksheets, it could be seen that many of the participants had difficulties with self-analysis and following directions. In terms of following directions, even though a sample form for responding was provided (appendix B), some did not follow it and in the explanatory sections gave many vague or one sentence answers. This made it difficult to analyze their answers in a more qualitative manner, thereby forcing the researchers to depend solely on the answers to the likert scale questions. The other problem with this section was that many of the students did not adequately make use of the video resource at their disposal to refer to their actions in the game, instead choosing to make more general statements instead of providing specific examples. This could be mitigated in the future by training the students in the use of video stimulated recall tasks (Neville, 2015). This would have the added benefit of making the research more accessible and beneficial to the researchers as well.

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Appendix A

Pandemic After Game Questions

Directions: After watching your recording, please answer the questions below. Please write at least 5 sentences for each question.

- 1. Did you like playing the game Pandemic with other players? Why or why not? Please provide at least 2 reasons for your answer.
 - a. On a scale of 0 to 4, where 4 is "Yes, I liked playing it a lot" and 0 is "No, I did not like playing it at all", how much did you enjoy playing Pandemic?

0 1 2 3 4

- 2. Do you think your communication skills in one of the five areas below increased while playing Pandemic?
 - a. Reading

b. Listenin	g
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- c. Speaking
- d. Vocabulary
- e. Discussion
- f. Other

Why or why not? Please provide at least 2 reasons for your answer.

3. While playing the game Pandemic did you experience any problems with the game or with other players? If there were any, how did you solve them? Please provide at least 2 reasons for your answer.

4.	What language skills do you think you need, if any, in order to collaborate better with other
	players when playing Pandemic? Why? Please provide at least 2 reasons for your answer
	a. Reading
	b. Listening
	c. Speaking
	d. Vocabulary
	e. Discussion
	f. Other
5.	Do you think board games are useful for practicing English skills? Why or why not? Please
	provide at least 2 reasons for your answer.
6.	What skills, if any, do you think board games are useful for? Please provide at least 2
	reasons for your answer.
	a. Reading
	b. Listening
	c. Speaking
	69

d.	Vocabular	
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- e. Discussion
- f. Other

7. Would you like to play board games as a unit in class in the future? Why or why not? Please provide at least 2 examples and explain.

Appendix B

Pandemic After Game Questions

Directions: After watching your recording, please answer the questions below. Please write at least 5 sentences for each question.

- Did you like playing the game Pandemic with other players? Why or why not? Please provide at least 2 reasons for your answer.
 - a. On a scale of 0 to 4, where 4 is "Yes, I liked playing it a lot" and 0 is "No, I did not like playing it at all", how much did you enjoy playing Pandemic?

0 1 2 3 4

I liked this game because we could practice our speaking skills. The first example was when we were trying to decide which city card to discard. Mary and I gave our opinion, I thought we should discard Atlanta, but she wanted to discard New York. I said to discard Atlanta because it was safe, but Mary said to discard New York because it was also safe, and that we should save Atlanta because it has a research station. In the end, the group decided we should discard New York's card because Atlanta had a research station which was important for us to cure the diseases. The second example was.....

OR

No, I did not like the game because it was very difficult to play. When we were going over the rule book, there were many vocabulary words I did not know. My group members helped me understand it by explaining them to me. Some words I was not familiar with were X, Y, Z. Although I learned the meaning of these words, it was still hard to play because we couldn't think of any strategies and I still didn't understand the mechanics of the game.