Digital board game design for an English vocabulary learning tool while learning from home

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ABSTRACT: English language learners often comment that learning English vocabulary is a challenge due to spelling, pronunciation, parts of speech, and a variety of meanings. Over the years, using educational games for classroom activities has been a popular and effective way to teach since it brings fun and relaxation, creates a friendly environment for competition, and keeps learners interested in learning. Therefore, this research aims to develop a digital learning tool called SQUARE TALKS!, a digital board game for English vocabulary learning focusing on the design phase involving language experts, game designers, and software developers. This current research explores the design phase from the game designers' perspectives. Qualitative methods are used in this research since the research does some observations and content analysis for data collecting. The results of the game development phase covered four aspects: narration, mechanic, aesthetics, and technology. The digital game prototype is envisioned to be an alternative learning tool to use game-based learning to assist learners and teachers during the recent COVID-19 pandemic situation.

Keywords: Digital board game, English vocabulary learning, game-based learning

1 INTRODUCTION

English is important to learn as an international communication language. This makes the teaching of speaking skills and mastery of vocabulary important to facilitate the communication process. Most of the students in the world learn English to develop their abilities and proficiency in speaking. However, this vocabulary learning must be supported by the use of good grammar and pronunciation (Marzban & Firoozjahantigh 2017). The problem that arises is that most students who study English have difficulty with learning vocabulary (Rohmatillah 2014). Other problems arise from the vocabulary learning material itself, such as: (1) the difference between written and oral forms of words; (2) the very large amount of vocabulary; and (3) differences in pronunciation of vocabulary by native speakers and English as a Foreign Language (EFL) teachers. Seeing this situation, we need learning instruments that can provide encouragement and motivation in developing the ability to learn English vocabulary, because vocabulary is the center of language learning (Zimmerman 2012). One learning instrument that can attract the attention of students is to use games, especially games that are classified as edutainment games. By using the play method, the hope is that students can hone and improve their vocabulary memorization skills, improve their interaction and communication skills using vocabulary, and at the same time motivate students to learn (Derakhshan & Davoodi Khatir 2015).

Board games are the media chosen by the research team as a medium for learning English vocabulary. There are many traditional board games used in order to learn English in fun ways, such as Scrabble. The first digital prototype developed to teach English numbers to Telkom University students was SPEAK UP!, a learning media based on Game Based Learning (GBL), a learning method which uses playing and games as learning media. The learning materials within such a process and the results have been determined first, before they apply into the game's gameplay

(Shaffer et al. 2005). The game SPEAK UP! was intended to assist beginner to low-intermediate learners in learning vocabulary to recognize parts of speech and use words. At the first test, the game successfully helped the students understand the vocabulary. After the first test play, SPEAK UP! was introduced to high school English teachers in a community service program, however the COVID-19 pandemic forced the teachers to learn how to use SPEAK UP! in an online meeting.

The conditions brought on by the COVID-19 pandemic made the researchers want to develop SPEAK UP! into a digital version that could be easily accessed using portable gadgets. The first prototype had a very simple and plain interface design that needed to be enhanced further so as to attract the target audience of the game: junior high students. To simplify the game's physical devices, reproduce and update content, facilitate access and expand users, the offline or table-top version of the game was developed into an online game. SPEAK UP! developed into a web-based and mobile online version under the name SQUARE TALKS! As a consequence, this new version needed more advanced visual enhancements in order to bring the attractive visual interface for the players. Until now, SQUARE TALKS! was still under development.

2 METHODS

2.1 *Research methods*

The research uses the qualitative research method to analyze the visual needs for the game's prototype. The research did some observations for data collecting in order to figure out what must be added or removed from the first prototype by running some play tests and interviewing the players about how they experience the game, what they want to see and play in the game, and their feedback about the game. Observation was used for understanding the subjects from the curriculum for making a good game play based on what the subjects teach the students and the visualizations that are close to the students' taste. The research also made some comparisons with other games that were close to this project and in the same genre. Observation was also used for making a good game play (Aditya et al. 2019). The research learned from some similar words and language board game's rules and some board games assets in order to develop board game concepts not only the suitable in visual language but also for designing the game's aesthetics and also its dramatic elements in digital ways.

2.2 *Subjects*

Initially, the board game SPEAK UP! had been tested to 30 students of Telkom University in 2019. After playing SPEAK UP! twice, there was a significant difference between pre-test and post-test vocabulary scores. Thus, SPEAK UP! had a positive influence on improving the vocabulary score and speaking ability of its players. Feedback from students who played SPEAK UP! is that the game has a variety of challenges such as variations of the types of questions on the game card.

On April 23, 2020, SPEAK UP! was briefly introduced to some teachers from different schools in community service activities. Initially, these community service programs would take the form of a workshop, but due to the social and psychical distance required as a result of the COVID-19 pandemic in the Bandung Region, the program later became an online knowledge-sharing session, so that new teachers were given examples of syllabi or lesson plans where SPEAK UP! was used in classroom learning activities. The response from them was very positive and they were curious to use SPEAK UP! in learning activities in their classrooms. However, due to the Covid-19 pandemic, the research team agreed to make "SPEAK UP!" become more advanced as a digital platform that could be accessed easily by the audience.

2.3 *Data analysis*

Feedback from teachers joining the community service programs had been followed up by the research team to bring SPEAK UP! online, in order to reach other students to experience the

media as learning instruments. Using content analysis, the research realizes that although the board game/table-top version is successful in helping the students raise their vocabulary skills, the game still has much weakness with regard to language learning instruments, such as sounds. Therefore, the research team recruited the visual communication advisor and designers to simplify the table-top game to more compact physical devices, reproduce it as digital game, and update the contents so as to facilitate access for an expanded user base.

3 RESULT & DISCUSSIONS

3.1 *Early prototype*

SPEAK UP! was first introduced to high school English teachers in a community service program, however the COVID-19 pandemic forced teachers to learn the uses of SPEAK UP! in an online meeting. This conditions made the researchers want to develop SPEAK UP! into adigital version that could be easily accessed using gadgets. To simplify the game's physical devices, reproduce and update content, facilitate access and expand users, the offline or table-top version of the game was developed into an online game. SPEAK UP! developed into a web-based and mobile online version under the name SQUARE TALKS!

3.2 *New mock up and product development*

Since the research focused on the game's visualizations, this research will use the aesthetics aspect from four basic elements in game design: mechanics, stories, aesthetics, and technologies. These four elements couldn't stand alone to create a good game; they must work as a unity. A game must have a good narration where the world's buildings and characters make the game come to life by using a mechanics that allows the players to interact with their technologies. These aspects must have the aesthetics touch and also the instruments to play with (Aditya & Febrina, 2019). The research is focusing on aesthetic aspects, which give the game looks, sounds, and feels that have the direct relationship to players' experience and Technologies Aspects, as the medium in which the aesthetics take place and produced (Schell 2019). Other opinions that support the statements above are visual aesthetics such as the overall looks, feel of the game, and the character of the game. Visual aesthetics appearance must have a cognitive function and aesthetic function (Plass et al. 2010). Art and design in a game determines how the tools and functions of game mechanics are visualized, how rules are conveyed, and how feedback is displayed. SQUARE TALKS! was developed based on SPEAK UP!, the previous table-top version, that become the mock four or the digital versions. The research discovered that a game design development using a table-top mock up is much more effective for digital game's design, especially for the words and language games. One of several benefits of using the table top mock up is that the games are directly easy to modify

Figure 1. The first SPEAK UP! compared to SQUARE TALKS! Applications appearance (Source Ima Normalia 2019 and Aditya 2020).

Figure 2. The final interface design for SQUARE TALKS! for the Web and applications (Source Ima Normalia 2019 and Aditya 2020).

in its table top mock up manually (Pulsipher 2013). Tracy Fullerton describes that it's important for a game designer and developer to build a board game/table-top prototype as a mock up at first, in order to review the effectiveness and efficiency and make any necessary changes or modifications easily (Fullerton 2008).

3.3 *The final prototype descriptions*

SPEAK UP! thus upgraded into SQUARE TALKS! The name of SQUARE TALKS! itself was taken from the squares shapes on the board game's tracks and the cards as its assets and activities in the game mechanics, talk and find the answers of the quiz than embed in the game. The research finds that to compete with other words games in the genre of the internet, the game must have its own unique identity. There are several visual modifications that are used in SQUARE TALKS!: (1) the flat and general tracks design in SPEAK UP! are filled up with more artistic typography and illustrated with the map of the big islands in Indonesia; (2) he animated effect for cards in digital version; (3) the additional redesign quiz cards and questionnaires from two types of cards, expanded to four types of cards; (4) the sounds enhancements that will help the students with input of the the pronunciations and listening features, greatly helping the player to learn the vocabulary within the game; (5) players could choose whether they could use their photo or use the character's avatars; (6) there were 8–12 avatar characters that could be used in the game; and (7) there are several costumes including traditional costumes for the characters to wear that will open after a player reaches a certain score.

4 CONCLUSIONS

Although the research was still developing on SQUARE TALKS! by the time this paper was written, the research team optimized the aesthetics in digital enhancements to the game that will make it more attractive. (You can, however, try the early access version by downloading it from the Google Play store). With the digital upgrades in visualizations, the researchers hope that SQUARE TALKS! could help students learn and use vocabulary in a fun way without being worried about making mistakes or feeling nervous. The research is also open to the critics and input and suggestions from others in order to do more fine tuning of the prototype especially with regard to aesthetics. New media such as digital board games are a great way to help students learn English vocabulary in fun and easily accessible ways, especially during the challenging times of the COVID-19 pandemic era.

ACKNOWLEDGEMENTS

The research team would like to thank Telkom University for funding the development of Square Talks! Moreover, we also would like to thank the game illustrators Dissa Mirai Aoi and Muflih Rabbani Tampubolon.

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