Designing the Web-Based Language Learning Using Game-Design Elements in an EFL context

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Abstract

With the assistance of various technologies introduced to the academic world, it could be somewhat useful for language instructors to be productive to ensure that their teaching is effectively interesting. Therefore, the purposes of this study were to develop web-based language learning (WBLL) using game-design elements and to explore the satisfaction towards the WBLL. To implement the development of WBLL, ninety English major students at Rangsit University were purposively selected. For the data collection process, the research instrument used was a questionnaire that was divided into two main parts: the general information and the grammatical errors that the participants required improvement. For the data analysis, frequency and percentages were employed in the study. It revealed that vocabulary knowledge and sentence errors were among the highest needs. The respondents also realized that spelling held the third spot. After the completion of the WBLL using the Marvel app, Freepik, and HTML5 as a responsive website, the findings showed that 5 experts in the field of educational technology had a high satisfaction towards the WBLL with an overall mean of 4.24. It can be implied that the use of game-design elements and web-based language learning can be an activity that learners favor and can be a tool for developing learners' cognitive. It may be played individually, in small groups, or as a group, depending on the purpose of the game creator.

Keywords: EFL learners, Game-based, WBLL, Undergraduate learners

1. Introduction

English has grown as a universal language used by people from all over the world and as the center of communication. For educational purposes, learners should be able to use the English language to enhance their knowledge since it has played a vital role as a criterion for admission for higher education.

Because of its importance, the instruction in the language classroom supported by the widespread use of the Internet has increased significantly because technology has advantages over other educational materials. Several studies support the concept of technology-supported language learning (Technology-enhanced language learning approach or TELL), the concept which was providing a language learning environment in which technology plays a role in fostering interactions between the learners and others to enhance cognitive enhancement. In addition to applying language knowledge, Bush (1997) said that it is not a concept of technology as just a tool for the learners to learn a language, but the interaction between the learners and others through technology will facilitate language acquisition.

To elaborate, with the help of the Internet, it allows the learners to practice English or Grammar 24 hours a day (Warschauer, Shetzer and Meloni, 2000), which can serve as a platform for communication between the learners and others, as well as with other learners (Vogel, 2001). Information on the Internet reaches second language classrooms faster than other forms of technology such as television or video conferencing (Coiro and Leu, 2006). Moreover, the internet develops the ability of the learners from education's traditional system in the classroom. The learners will be able to learn, understand, and interact with technology in a more meaningful way (Pianfetti, 2001). In this regard, Web-based Language Learning (WBLL) is thought to be a breakthrough and alternative that has been considered motivational and effective blended learning curricula. According to Raine (2018), the amazingly impressive fact is that *"There is now a wide range of very successful web-based language learning platforms, including the likes of Duolingo with 150 million users (Guliani, 2016), and Busuu with 70 million users (Salter, 2017)."*

Apart from the astonishing features of WBLL, the game-design elements are regarded the contributing to the learners' need for self-learning and sustainable learning. Suksiri (2007) conducted a study with two groups of learners: learners through game-based learning and those through the traditional

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class. It was found that the group of learning through game media felt more eager to learn than the knowledge level of the learners at a higher level. The learners felt that they were more involved in learning, and those who learned through game media had more memory and understanding than those who learned through normal lectures.

Therefore, if the game is used as a means of teaching and learning, it would increase the learners' chances of seeing the correct English structure, which is a sentence that is suitable for daily use. It is a web-based language learning which learners can use on their mobile device for learning from any place by laying out the game layout for the learners to have fun and challenge from playing games and engaging lessons from the content of the lesson to help motivate the learners to learn and develop themselves through sustainable learning.

2. Purposes

The objectives of the study are to develop web-based language learning (WBLL) using game-design elements and to explore the satisfaction towards the WBLL.

3. Materials and Methods

3.1 Methodology

In this section, several researchers, educators, and scholars have been mentioned for their work, concepts, and ideas since the development of web-based language learning is required to be in accordance with many theories.

According to Hutchinson and Waters (1994), they proposed the concept of how to design web-based language learning:

"Designing a course is fundamentally a matter of asking questions to provide a reasoned basis for the subsequent processes of syllabus design, materials writing, classroom teaching, and evaluation."

Based on the idea, using WH-questions as the basis for syllabus designing is as follows:

"Why do the learners need to learn? who is going to be involved in the process? where is the learning to take place? when is the learning to take place? what do the learners need to learn? how will the learning be achieved?"

Moreover, Dubin and Olshtain (1990) provide an idea:

"A syllabus or a course outline should ideally describe: what the learners are expected to know at the end of the course (course objectives); what is to be taught or learned during the course; when it is to be taught and at what rate of progress; what are the different levels or stages; how it is to be taught (suggesting procedures, techniques, and materials); how it is to be evaluated (suggesting testing and evaluating mechanisms)."

Adapting the works of Hutchinson and Waters and Dubin and Olshtain cited in Hasim (2005), a framework is constructed as follows:
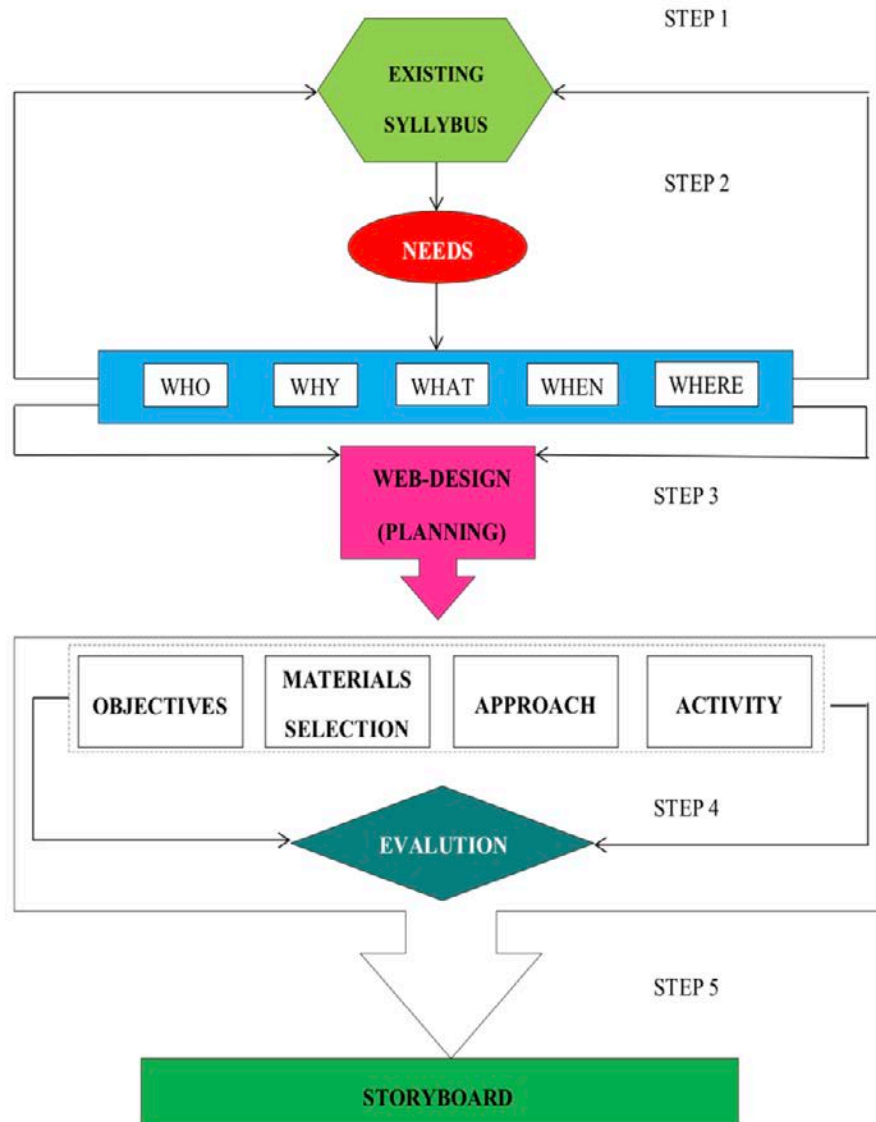
[85]

Figure 1 Steps Involved in Designing English Web-Based Tutorials

For the early development of the WBLL, three phases of the research were conducted, namely, the information, the needs analysis, and the web-design planning. The first phase is to study the present course syllabus to ensure that the web-based language learning meets the standards or criteria. This course is a study of the language used in various authentic texts: newspapers, articles, and advertisements, practicing using these structures to develop reading and writing skills. Moreover, the students will also learn some advanced levels of the English structure.

The second phase is related to a needs analysis. To implement the needs analysis, this research study adopted survey research designs. The research instrument was validated by three experts in the field of English teaching. This study applied purposive sampling, and the main reason why these selected groups of learners were requested to join the current study is because of their exposure to English and their level of

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English proficiency. Lastly, the final phase is planning the website based on needs analysis. Determining the specific objectives and arranging them are based on each level of language proficiency. The content selected in the WBLL is the analysis of the authentic information given by the instructor and brought into the class by the students, verbally explaining the reasons for the particular use of the chosen grammar and rewriting correct grammatical sentences for each ungrammatical one. There are three main objectives for students:

1. To be able to read and understand clearly the English language, treated in-depth and at an advanced level by using various printed materials.

2. To be able to understand and write sentences in the English language more freely, by using either the 'active' or 'passive' voice suitably.

3. To be able to recognize and rewrite some 'registers' involving varieties of English, for example, newspaper headlines, advertisements, and notices.

After the content is settled down, each lesson is designed and examined by the teacher. The web design was made in the Marvel app. Painting the characters and finding background images from websites that are distributed for free (Freepik) are also a part of the development. The programmer wrote using HTML5 as a responsive website that can be played on a mobile phone.

3.2 Samples and Data Collection

Within the scope of this study, purposive sampling was applied. The data were obtained from the administration of the questionnaire, and those obtained from the distributed questionnaires were used to interpret, categorize, and complete the data as follows:

Part I: The background of the participants consists of gender, age, studying year, English educational background, the level of English writing proficiency, and grade average. The data were analyzed in frequency and percentage.

Part II: This part aimed to identify the grammatical errors. Moreover, five experts in the field of educational technology were purposively selected. To ensure the trustworthiness of this study, these validators were university lecturers with more than 10 years of experience in the field. They were asked to do the questionnaire regarding the satisfaction of the WBLL.

3.3 Data Analysis Procedures

For background information, the data were analyzed in frequency and percentage. After current problems were identified, the data were analyzed in frequency, percentage, and mean. The collected data were analyzed by using SPSS 22.0 statistical program.

Regarding the satisfaction from five experts in the field of educational technology, the obtained data were also analyzed in frequency, percentage, and mean. The collected data were analyzed by using SPSS 22.0 statistical program.

4. Results

4.1 Needs Analysis

The data obtained from the distributed questionnaires were used to interpret, categorize, and complete the data as follows:

Part I: The background of the participants consists of gender, age, studying year, English educational background, the level of English writing proficiency, and grade average. The data were analyzed in frequency and percentage. Ninety English majors were recruited at Rangsit University, of which 34.44% were male and 65.56% were female. The questionnaires distributed were returned 100%. The majority of the respondents (47.78%) aged 20-21 years old. All of the respondents (100%) were second-year students. The majority of the respondents (58.89%) were those who have been studying English for more than ten years. Most of the respondents had fair English writing proficiency (63.33%). Lastly, 62.22% of the respondents were those with the grade of 3.00-4.00.

Part II: This part aimed to identify the grammatical features that the learners need to improve. After they were identified, the data were analyzed in frequency and percentage. Most of the respondents agreed that three factors could contribute to errors in writing. The most rated error was "Vocabulary knowledge," which the respondents make very often (33.33%) and often (33.56%). The second-rated error was "Sentence errors," which the respondents make very often (25.56%) and often (26.67%). The third-rated error was "Spelling," which the respondents make very often (25.56%) and often (26.67%). However, the respondents believed that preposition usage and article usage were the least frequent factors that cause them to have errors in writing.

4.2 Development of WBLL

In practice, an outline of an English grammar game for online communication, ENG 212: Applied English Structure course, is created in a computer language to create a system in two parts.

1) Student section

The students can use the website on their mobile phone or tablet device and log into the game using their RSU email address. The content in this online game application is divided into sub-dialogue. The students will be the subject of those conversations. It is an interaction between the students and characters that the players can not control (Non-Player Character).
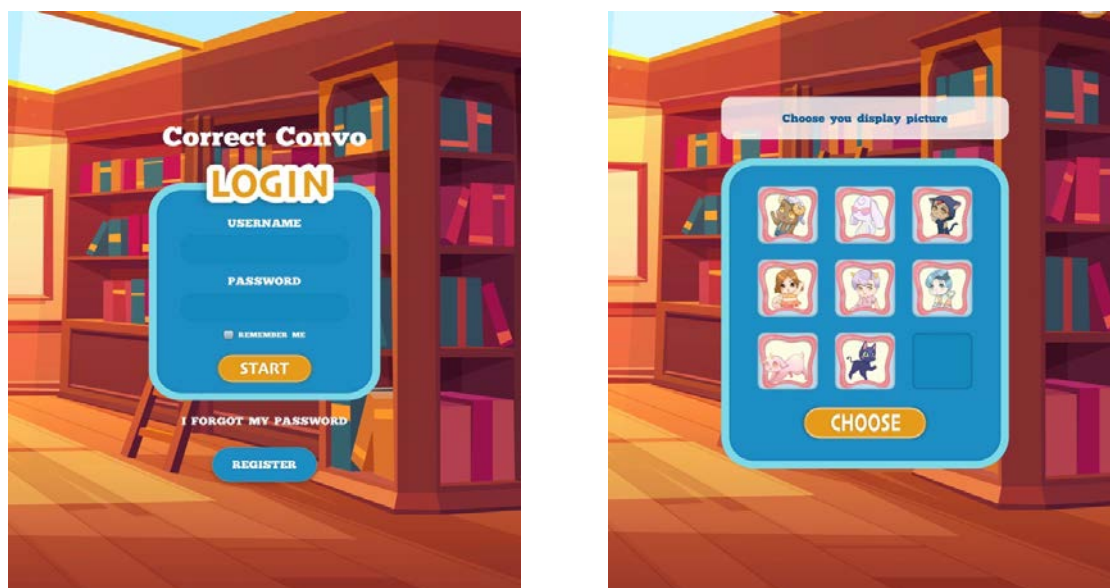

Figure 2 Login and Display Picture

According to Figure 2, the learners can choose the appearance of the character to be played. Once played, more characters will be unlocked, motivating the players to keep playing.

Figure 3 Content and Conversation

Figure 3 reveals the content or conversation that is divided into smaller chapters. From easy to difficult, each chapter begins with an introductory story and summarizes the number of questions for each chapter no more than ten times.

The questions are for the students to choose to ask the non-player character (NPC). Getting useful answers from the NPC can be a clue for answering the questions at the end of each story. The number of clues the players find affects their score and their chances of going to the end of the chapter to advance in the conversation.

The interface of the game includes character scenes, text and voice dialogues, as well as a point system, level (badge), leaderboard, and challenges between the learners and other players.

2) Teacher section

As the researcher plans to apply it to other subjects related to conversational learning, the instructor or administrator has been drafted to be able to add content to suit other courses or content that requires a specific language.

Various ways are required to create an application or website for additional information from mobile devices for being able to add information and easily tracking the results of the students' usage.
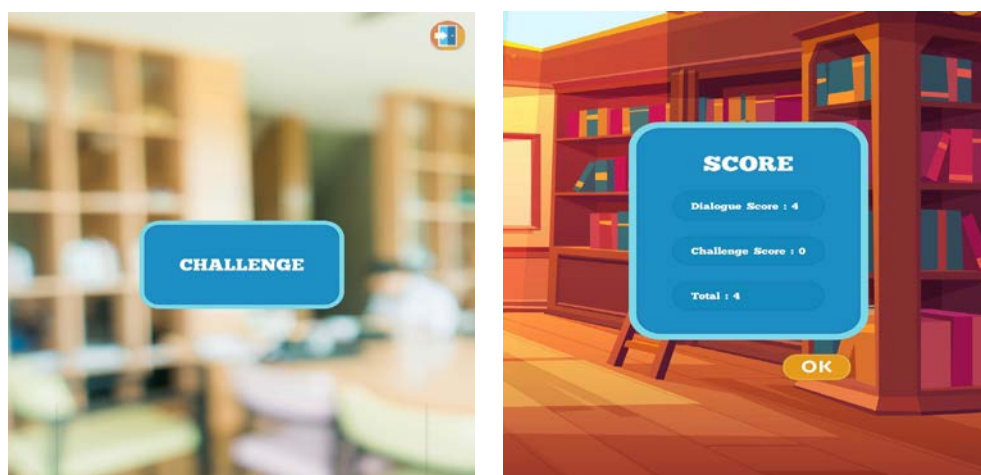

Figure 4 Challenge and Score Board

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The instructors or administrators are required to add course titles, course code, conversation title, and the level of difficulty of the conversation. Text and audio conversations are also a statistical data collection section to track the performance of individual learners or groups.

4.3 Satisfaction towards Web-Based Language Learning

The data obtained from five experts were interpreted as follows:

Table 1 Satisfaction of the Respondents towards Web-Based Language Learning

Satisfaction	Mean	Degree of Agreement				
		5	4	3	2	1
1. The usage of web game interface	3.80	1 (20%)	2 (40%)	2 (40%)	0	0
2. The user-friendly system	4.44	2 (40%)	3 (60%)	0	0	0
3. The font size and style: user-friendly and convenient.	3.80	-	4 (80%)	1 (20%)	0	0
4. The interactive system: quickly responsive	5.00	5 (100%)	0	0	0	0
5. Overall usage: user friendly, convenient, and quick.	4.20	1 (20%)	4 (80%)	0	0	0
The total average mean score	**4.24**					

According to Table 1, with the mean of approximately 3.80-5.00, the respondents agreed that there were two equal levels of satisfaction rated the least, which were "The usage of web game interface" and "The font size and style: user-friendly and convenient." In contrast, the highest-rated result was "The interactive system: quickly responsive," with a mean of 5.00. The second was "The user-friendly system" (Mean = 4.44) while the "Overall usage: user friendly, convenient, and quick" was ranked as the third level with a mean of 4.20.

5. Conclusion

5.1 Conclusion and Discussions

To develop web-based language learning, the early stage involved needs analysis. This study employed quantitative methods for collecting and analyzing data. It can be summarized that most of the respondents found "Vocabulary knowledge," "Sentence errors," and "Spelling" as the most rated among all grammatical errors for them to be improved. After the needs analysis, the development of WBLL was based on the designed content and created by using the Marvel application, Freepik, and HTML5 as a responsive website, respectively. Lastly, the developed WBLL was rated by 5 experts who had high satisfaction with an overall mean of 4.24.

For the discussion part, the findings of this current study are consistent with the work of Jeong-Bae Son (2008) in terms of satisfaction. It was reported that the participants in WBLL sessions showed positive attitudes toward the WBLL and expressed the view that they would like to use more Web activities during and outside class time.

Therefore, game applications can be integrated into teaching and learning: both can be compatible with academic service for society and caused educational innovation. Besides, the development of the WBLL in this paper can be employed in the context of EFL. The possibility of the developed WBLL in this study might provide some positive effects that could be consistent with a vast number of research studies related to game-based teaching and learning.

5.2 Limitations, Implications, and Recommendations for the Further Studies

The limitations of the study are as follows: firstly, no comparison group was employed in this study, thus, using a control group was strongly recommended for future studies.

Second is the implication criteria, which the learners who learn through game applications might have higher learning achievement than before studying. They could also be satisfied with the teaching and learning approach.

Based on the results and conclusions of this study, the following recommendations are made for further research.

1. Further research should use inferential statistics to analyze the collected data to get more details of results to draw a conclusion.

2. Internet-based language testing needs to be conducted by the test takers to see the effectiveness of the WBLL.

6. Acknowledgements

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