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Pangasinan Scrabble: Mobile-Based Game in Pangasinan's Mother Tongue

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Abstract: - The popularity of educational games for promoting academic success, motivation, and classroom dynamics is increasing. The development of a mobile-based game called Pangasinan Scrabble has the potential to improve users' vocabulary with Pangasinan words. The game's design, development, and deployment were the focus of this study, which employed the Scrum approach and gathered information from various stakeholders, including students, teachers, developers, and android game users. The game's features and functionalities were evaluated using various methods of data analysis. The game provides modules that cater to the requirements of Pangasinan Scrabble and allows players to confirm the authenticity of words and check terms in the dictionary before placing them on the board. Respondents unanimously agreed that the game is highly beneficial in learning more about Pangasinan's mother tongue, particularly for those studying it. This mobile- based game has assisted users and recognized benefits in the enrichment of Pangasinan terms.

Keywords: mobile-based game, mother tongue, scrabble

Introduction

Today's students grew up with digital tools and have completely different learning styles, as well as a new viewpoint on the educational process. Academics face new challenges and must be obliged to solve critical problems relating to the modification of the educational system to students' needs, preferences, and requirements. Academics must be compelled to utilize various pedagogies and approaches that enable the students to become partakers with strong motivation and participation in their own learning (Abanikannda, 2017).

Modern pedagogical paradigms and educational trends, strengthened by the use of ICT, establish the conditions for the employment of cutting- edge approaches and strategies to execute active learning and interactive learning. Gamification is one of these changes, trends, and innovative approaches.

The use of gamification has the potential to impact students' behaviour, commitment, and motivation, resulting in enhanced knowledge and skill development (Hsin-Yuan & Soman, 2013). Its application is widespread and diverse, with the ability to drive significant initiatives such as employee performance, brand loyalty, and crowdsourcing projects, in addition to learning. The growing appeal of gamification is attributed to its capacity to heighten engagement, alter behaviour, and foster innovation. In education, gamification is becoming increasingly popular, primarily due to its perceived ability to inspire and motivate students, leading to better learning processes and outcomes (Kapp, 2012).

Educational research is increasingly focusing on mobile-based games with the goal of utilizing their diverse and widespread capabilities for teaching and learning, according to Vlachopoulos and Makri (2017). The rise in interest in learning games indicates that games help students acquire skills required in an information-based society and promote innovative learning, not just because of the growing number of people playing games but because games help students develop skills they need while learning in creative ways (Zirawaga et al., 2017).

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A growing number of organizations in the Philippines and around the world are experiencing an uptick in game development. The development of serious games has helped meet the learning needs of both private and government organizations worldwide, including the military, businesses, educational institutions, and healthcare facilities (Labana et al., 2020). Interactive, collaborative, and competitive games are more likely to encourage and increase student engagement in the learning process (Martí-Parreñoa et al., 2016).

The Scrabble game is a language game that can be used for vocabulary instruction, as noted by Onasanya et al. (2021). The game board contains words with varying scores, and it can be played by teams or two individuals. Scrabble is an enjoyable and effective way to learn a range of words, with students tasked with organizing given letters to create meaningful phrases, according to Lampis et al. (2015). Playing Scrabble has been shown to enhance spelling abilities and vocabulary retention, as per Chairiah et al. (2020).

Research into educational games has uncovered new target groups and learning opportunities, particularly in the realm of mobile device games, with a focus on motivational potential and low-threshold learning alternatives. The researcher in this study aimed to develop a mobile-based application that could serve as a learning game. The study primarily focused on the researcher's findings on the Pangasinan dialect, drawn from various sources, and the developers' efforts to create a mobile-based Scrabble game specific to Pangasinan. The study aims to promote an engaging and enjoyable approach to learning Pangasinan through mobile games, striking a balance that enhances students' vocabulary and familiarity with their mother tongue, the Pangasinan language. Pangasinan Scrabble, a board game similar to the original Criss Cross or Scrabble, serves as the means to achieve this goal. The primary objective of the study is to generate interest in local dialects, particularly among Pangasinenses, and encourage the use of the Pangasinan language. The research focuses on designing, creating, and implementing a mobile-based game centered around Pangasinan Scrabble. This program is specifically designed to support users in expanding their vocabulary, with a special emphasis on the Pangasinan language.

Methodology

The application was designed and developed by the researcher, employing the Scrum methodology. In order to gather essential information and gather feedback on the design and functionality of the application, the researcher conducted interviews with a range of individuals, including Android game users, developers, students, and teachers, with a particular focus on those from the Department of Education who still engage in intramural competition using board games. Multiple methodologies were employed during data analysis to assess game requirements and establish connections between the data collected. Figure 1 illustrates the Scrum methodology utilized in the study.

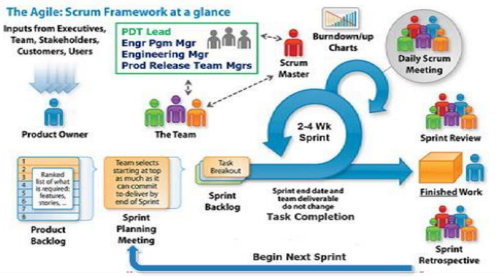

Fig. 1 Scrum Methodology

Discussion and Results

A mobile-based Scrabble game with advanced features has been developed and launched, allowing users to play the game on their mobile devices. Prior to placing a word on the board, users have the option to check it. The game also includes a dictionary lookup feature for quick reference. The figures provided describe the necessary tools for creating the game.

During the design process, an algorithm was developed for the mobile player, enabling them to participate in the game. By incorporating a lexicon into the algorithm, the mobile player is able to actively engage in the gameplay.

The game incorporates various modules that cater to the specific requirements of Pangasinan Scrabble. Figure 2 provides a preview of the Main module before the game commences. Once the game starts, players have the ability to customize their personal identity by tapping the orange ribbon located at the top right of the phone screen.

Fig. 2 Player Registration

Figure 3 illustrates the user's choices when engaging with the game on their mobile device. The researcher has integrated artificial intelligence to provide a single-player experience known as "Manggalaw Na Bukor." Alternatively, there is a multiplayer option where the player can interact and compete with other participants. Upon pressing the play button, the third button will appear as "Mangaway Galaw," indicating that the player will assume the role of the game's host or server. On the other hand, selecting "Milad Galaw" will allow for the inclusion of another player.

Fig. 3 Game Options

Figure 4 shows the time setting, where the player may set the time. The host will set a time restriction for answering the Pangasinan words that will be mapped on the various tiles that will be shown. Each participant gets the same number of minutes to respond to each word submitted.

Another option is timeless, which implies the researcher set no time restriction for playing the game.

Fig. 4 Time Settings

Figure 5 demonstrates that each term delivered by the game's server originated from the Pangasinan Dictionary. Simply hit the check button to submit the words created or guessed to deploy each tile on the board. The player can also cancel the procedure by hitting the "X" button.

Fig. 5 Word selection (Server)

The Pangasinan Dictionary is used to determine whether or not the words produced by the players are valid. A player can "Pass" his opportunity to his opponent. Also, when a player presses the "exchange" button (for which the player will receive 0 points), it will execute two actions: first, it will replace the set of tiles on the rack/stand with a fresh set of tiles, and second, it will hand the turn to the opposing player. If a player uses all seven tiles in the rack at the same time, he will receive additional points.

Figure 6 demonstrates how letters may be scrambled to assist the player quickly come up with a better term. The player can also modify the letter of the tile and pass if no word is available in any player's rack.

Fig. 6 Shuffling Tiles

Figure 7 depicts the module that offers a game summary. Either the player concedes up and says "Atalo ka" to the player who exits the game. The other illustration shows a remark with "Analo ka," which signifies the player has won the game.

Fig. 7 Shuffling Tiles

Figure 8 depicts the game's end outcome, including the participants if there are just one or more. Summary of deductions from bad moves and ultimate score.

Fig. 8 Score Summary

The developer developed the acceptance test during the completion of the game Pangasinan Scrabble. About thirty people took the acceptance tests. These respondents include gamers, students, and teachers who are Pangasinan natives and can readily relate to the project's development and processes. Functional and non-functional tests are included in the acceptance test. Each test has matching variables that are used to evaluate the system. Table 1 shows the evaluation of respondents for the acceptance test in terms of miscellaneous until security criteria. Table 1 shows the overall acceptability test.

Table 1. Over-all acceptability test

Criteria	Weighted Mean	Description
Miscellaneous	95.1	SA SA SA
Interface-related	95	SA SA SA
Search-related	97.3	SA **SA**
Database-related	100.0	
Security-related	93.75	
Usability Security	89.9	
Weight Percentage	87.5	
	94.5	

Table 1 shows the results of an over-all acceptability test for the application. According to the table, the system received a high overall acceptability score, with all criteria scoring SA. The highest scoring criteria were Database- related (100.0), followed by Search-related (97.3), Interface-related (95.0), Miscellaneous (95.1), Security (94.5), Usability (89.9), and Security-related (93.75). These results suggest that the system is well-received and meets the criteria evaluated in the test.

Conclusion

Learning is undergoing a rapid shift towards unconventional methods, including eBooks, audiobooks, and, more recently, mobile applications, driven by technological advancements. This transformation highlights the need to incorporate engaging elements into educational tools to maintain learners' interest in critical thinking and comprehension exercises. Mobile programming, specifically mobile games, holds untapped potential that can and should be harnessed to enhance existing learning approaches and even introduce new methods for acquiring proficiency in the Pangasinan language. The overall findings from the tests indicate that the mobile application effectively facilitates the acquisition of Pangasinan vocabulary and spelling. Additionally, this study provides recommendations for utilizing mobile games as educational tools for learning various local languages.

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