

RPG GAME DEVELOPMENT TO PROMOTE THE CORRECT USE OF LIBRARY

Pongsakorn Kingsuwankul, Thatsanan Chutosri, Thanakorn Uiphanit, Pongpisit Liangyoo, Wannarat Bunchongkien, Natcha Watthanaprapha

¹ Department of Information Sciences, Faculty of Humanities and Social Sciences, Suan Sunandha Rajabhat University, Bangkok, Thailand

² Department of Information Sciences, Faculty of Humanities and Social Sciences, Suan Sunandha Rajabhat University, Bangkok, Thailand

³ Department of Information Sciences, Faculty of Humanities and Social Sciences, Suan Sunandha Rajabhat University, Bangkok, Thailand

⁴ Department of Information Sciences, Faculty of Humanities and Social Sciences, Suan Sunandha Rajabhat University, Bangkok, Thailand

⁵ Department of Information Sciences, Faculty of Humanities and Social Sciences, Suan Sunandha Rajabhat University, Bangkok, Thailand

⁶ Department of Information Sciences, Faculty of Humanities and Social Sciences, Suan Sunandha Rajabhat University, Bangkok, Thailand

Corresponding Author: pongsakorn.ki@ssru.ac.th

ABSTRACT

Learning with games has recently been the alternative method for teachers in class as another interesting way to represent their lessons in the more attractive perspective. This research proposed the methodology to promote the correct use of manners and rules in using libraries. It is intended to provide users with the rules of using the library. RPG game has been developed to provide users with rules and manners in using library while they play. The research focused on 6 basic regulations in using library and missions of the game have been designed based on those rules. The player will be playing as a protagonist of the library game who has tasks to pass and would be able to learn the Do's and Don'ts in using library. Interview and Google form have been used to collect data after the gameplay to determine satisfaction level and feedback from users. The sample group used in this research were 50 library users of Phasi Charoen. The statistics used for data analysis were percentage, mean and standard deviation. The research results were found as followed; 1. Results of game quality analysis promoting the use of Phasi Charoen Learning Library, Phasi Charoen District, Bangkok Province. Overall, it was at a very good level and considering each aspect. It is very good in all aspects, namely, content, presentation and game format, illustrations and characters System and display. And functional aspects of the game 2. Users are satisfied with the learning of rules and manners of using library via RPG games.

Keywords:

Library, Library Usage, Library Rules, Knowledge Game

Article Received: 18 October 2020, Revised: 3 November 2020, Accepted: 24 December 2020

Introduction

The library is the source of information providing information resources to people who seek to access physical form of data in various forms such as books, journals, newspapers, television, CD-ROM, DVD, VCD and computer. A librarian conducts and manages various tasks in libraries which are mainly divided into 5 types: the National Library. School library University library Public library Dedicated library Library service is the kind of the work that the library facilitates the users in reading, researching knowledge and promoting extensive and thorough

reading. It also allows users to quickly receive information and to solve their problems quickly and effectively with more reliable source of information. Libraries provide quiet and serene atmosphere with order and regulations, giving users a better feeling, experience and impression while using the service. There are various kind of services in the library which depends on library policies and objectives. For typical or local libraries, generally there are services such as reading service, book borrowing-return service, book reservation service, library guiding service, answering questions and research assistance.

Some other services may include bibliography collection service, modern news service, Internet service and other services related information accessing. This is the convenience for the library users to avail the services in the past which libraries could not provide before such as electronic media services, mobile library service, Email and Internet service, community service, catering service, etc.

Public library refers to a library that serves people of all ages, regardless of age ranging from children to elderly. Main objectives of public library is to be a data center for local community providing knowledge and news as well as be the learning knowledge center where academic activities can occur there. It is also used to develop learning network in the community. Characteristics and activities of public libraries are divided into 3 types according to the size of the facilities: large, medium and small public libraries.

In the present day, people have become much less interested in libraries. As the world is becoming narrower due to the globalization of information and technology. As a consequence of the advancement of technology and Internet connection, which has become faster and easier to access, people can gain access to data in an unprecedented scale the world has ever witness. This also allows anybody of any age to share information they know in various form such as video, images, paragraphed text, to other people from anywhere anytime. The advance in quick and easy information access inevitably associates with pros and cons. Such information may become less accurate and reliable since anyone can share any knowledge or information; they know without getting it verified first. Though this does not mean the information from Internet is all falsified, but users still have to be careful with the source because the information entering the Internet has not been pre-filtered for accuracy. Most of the official source of information like news company tend to shift their trend of business towards online access to gain more audience

online. Libraries, too, have to adapt to catch up with the trend.

With the change in educational trend, technology has recently gained significant recognition in the education system and has been applied to assist with the learning process to make the lesson less monotonous, enhance the learning efficiency and utilize the technology to help students get a better picture of their lesson. There are various kinds of research that showed the results of learners perceiving usefulness, achieving the goals and easing the learning process through serious game. Gamification has also been proved to be effective in learning process such as the sign language (Herleson Paiva Pontes, 2018), helping learners study sign language as well as learning difficult lessons like computer networking (Thanakorn Uaiphanit, 2019).

This research focuses on the studies of behavior of the library users which will lead to the making of RPG games to promote the correct use of library. This research helps to study the behavior of library users in Phasi Charoen Learning Library, Phasi Charoen District Bangkok. The tool has been developed in the form of RPG game to promote the rules and manners in using library. Satisfaction level of library users has been determined after playing RPG games. The main objective of this research is to promote an alternative method of proposing library regulations to users in the form of gamification.

Literature Reviews

Library in the modern era

Nowadays, "technology" has evolved rapidly and it becomes inevitable for us in our daily lives. From a survey of the availability and use of information technology, in the households of the National Statistical Office (2010: 1), it was found that the age group 6-14 years had a proportion of The highest computer is 65.40 percent.

Donruedee Petchsuwan, and Sirichai Hongsanguansri (2008: 257) stated in their research that computers and the Internet are becoming part of the daily life of today's children and adolescents around the world. The Internet

has played a huge role in the learning of Thai children and youth, together with the government campaigning for the government sector and educational institutions to use technology to support teaching and learning. The Internet is also used as an important educational tool, not as an alternative source, but the main one.

1. Serious game and gamification to assist the learning process

Serious games are the games designed with the other purpose rather than for entertainment such as flight simulation, military game, coding games, medical field, etc. These programs have been carved with the sole purpose to allow learners to get the best experience from environment and situation simulated in the game. There are many solid claims from the research of Yichuan Wang (2017: 514) in which the learners receive satisfactory results of learning achievement with the assist of serious game.

In addition, computer games are all time entertainments for youth and children that comes with computers and show significant trend as Internet era rises, making children increasingly addicted to playing computer games. Games are played everywhere, but who would have thought that playing computer games could be used in education as well. Computer games were extremely helpful in fostering imagination and inculcating knowledge and information indirectly while children are playing. Most of the games, especially RPG games, children are taught with basic knowledge of English, mathematics and physics. Other things like rules, regulations, what to do and what not can also be taught to children while they are playing games within the story of the realm. Modern parents of those children have started to witness potential of game playing as a media to learning process of their children. By this method, it will help draw more children to see the value of education. Suphamanmarman (2009)

There are other examples of serious games that promote learning such as MATHe of Anastasia K. and Packet Warrior of Thanakorn Uiphanit (2019: 41). In Packet warrior, students would be able to

learn and obtain knowledge about networking while playing the game. There is another research about the game for the instruction of library of congress classification system where he created RPG game about classifying books in library. His research inspires this work tremendously as the main prototype of gamification implemented in this research. Similarly to Jenny Díaz-Ramírez's (2020) research in which a gamification has been adapted in the engineering course to promote the better learning efficiency.

Dull and monotonous class can be made more interesting to gain more active interaction from learners and stir up curiosity in the atmosphere using gamification. Priyaadharshini M (2020: 468) et al have introduced game-based learning for programming course in higher education as an alternative methodology to accommodate with the modern learners' interest. This has been proved to gain more interest among students in Python class as well as bring out the similar or even better outcome from learners.

Research Methodology

1. Participants

Population and sample group used in this research are from the library users of the library for learning Phasi Charoen. The researchers study behavior of library users and collect data using gaming application and questionnaire.

400 library users of Phasi Charoen Learning Library, Phasi Charoen District, Bangkok Province, were taken for the population according to Krejcie and Morgan chart, the sample population taken was 196 users.

2. Game design

RPG game development to promote the correct use of library has been designed based on SDLC model (System Development Life Cycle). RPG maker has been used as a developing tool to create this RPG game. The game design commenced with the core ideas of educating users with 5 library regulations of the correct use of library as followed;

1. Book return
2. Littering in library

3. Prohibition of food and drink in library
4. Keeping books in place
5. Prohibition of pets
6. Library fine

protagonist that has missions to complete to end the game. The game will educate players while playing as the missions go on. Player will be playing as a protagonist who just woke up and was told that he had tasks to complete.

These rules and regulations are then divided into missions in which the player will play as a



Fig 1. Portrait and sprite of the protagonist



Fig 2. Mission 1: Returning the book to the library



Fig 3. Mission 2: Collecting litter in the library



Fig 4. Mission 3: Prohibition of food and drink



Fig 5. Mission 4: Keeping books in place



Fig 6. Mission 5: Prohibition of pet



Fig 7. Mission 6: Learning to calculate library fine

3. Data Gathering

Google form has been used to create questionnaire to ask for some personal information and rating of the gaming experience and information gained after playing the game.

In this research, we, researchers, has conducted a study on the obtained data by utilizing descriptive statistics to describe findings from the research as follows: Mean, standard deviation and percentage.

Results

RPG Library game has been designed and developed based on the 6 basic regulations in using library. The core idea is to get people to learn the rules of Do's and Don'ts while playing games. Players who pass the missions would learn the rules and regulations regarding the book return, prohibition of littering, food, drink, pet, keeping books in place and getting fine when books are returned late.

Library users have rated the game excellent overall. The user experience from the gameplay has been rated excellent and the learning outcomes are satisfactory. The results of the analysis of the game quality promoting the correct use library in terms of overall content were excellent ($\bar{x} = 4.62$). With the use of libraries and content to educate about the correct use of libraries ($\bar{x} = 4.32$), having appropriate content information ($\bar{x} = 4.50$) is at an excellent level. The use of language in the content is accurately good. ($\bar{x} = 4.00$). In functional aspect of the game, overall was at excellent level ($\bar{x} = 4.83$). The

smoothness and stability of games is excellent ($\bar{x} = 4.32$) and the missions are appropriately arranged and executed ($\bar{x} = 4.50$).

Discussion and conclusion

It is no doubt that gamification as a learning tool is an alternative effective source of learning. There are similar research such as serious game developments of other researchers that aimed to achieve efficient outcome with more engagement from the learners. These serious games promote the learning of various kind of lessons such as analytics data, sign language, attitude, and other academic-based subjects.

In conclusion, from the research on RPG game development to promote the correct use of library:

1. Users have learnt the rules and regulations of library while performing tasks in each mission of the game.
2. Users experience towards RPG game for library is overall excellent in terms of user experience, game content and information received.

References

- [1] Alonso-Fernández, C., Martínez-Ortiz, I., Caballero, R., Freire, M., & Fernández-Manjón, B. (2020). Predicting students' knowledge after playing a serious game based on learning analytics data: A case study. *Journal of Computer Assisted Learning*, 36(3), 350-358.

- [2] Begoña Gros (2007) Digital Games in Education, *Journal of Research on Technology in Education*, 40:1, 23-38
- [3] Cassandra Folkins, Emily Read, Jeff Munde, Max V. Birk, and Scott Bateman. 2020. A Serious Game for Promoting Positive Attitudes towards Nursing Homes among Youth. In *Proceedings of the Annual Symposium on Computer-Human Interaction in Play (CHI PLAY '20)*. Association for Computing Machinery, New York, NY, USA, 484–498.
- [4] Donruedee Petchsuwan, and Sirichai Hongsanguansri (2008). A pattern of Computer game playing and Addition among child and adolescent psychiatric outpatients at Ramathibodi Hospital. *Journal of Psychiatric Associate Thailand* 2008; Volume 53(3), 257-270.
- [5] Haseeb, M., Hussain, H., Kot, S., Androniceanu, A., & Jermisittiparsert, K. (2019). Role of Social and Technological Challenges in Achieving a Sustainable Competitive Advantage and Sustainable Business Performance. *Sustainability*, 11(14), 3811. DOI: 10.3390/su11143811.
- [6] Herleson Paiva Pontes, João Batista Furlan Duarte, Plácido Rogério Pinheiro, An educational game to teach numbers in Brazilian Sign Language while having fun, *Computers in Human Behavior*, Volume 107, 2020, 105825.
- [7] Jenny Díaz-Ramírez, Gamification in engineering education – An empirical assessment on learning and game performance, *Heliyon*, Volume 6, Issue 9, 2020.
- [8] Katsaounidou, A., Vrysis, L., Kotsakis, R., Dimoulas, C., & Veglis, A. (2019). MATHe the game: A serious game for education and training in news verification. *Education Sciences*, 9(2), 155.
- [9] Kovit Rapeepisan. (2012). Educational computer game. Learning through playing, doing Practice and simulation. *Journal of Information Technology*. 5 (2), 22 - 25.
- [10] P. Lamer, S. Arnab, I. Dunwell, C. Stewart, S. Clarke, and P. Petridis, “Essential features of serious games design in higher education: Linking learning attributes to game mechanics,” *British Journal of Educational Technology*, vol. 48, no. 4, pp. 972–994, 2017.
- [11] Penprapha Kuechat, and Surasak Jirawatmongkon. (2018). Innovation, concepts, factors affecting the selection of digital content games. With women as leaders to expand digital content businesses *Veridian E-Journal*, Silpakorn University, Thai Edition, Humanities Social Sciences and Arts, 11 (1): 773-784.
- [12] Pilan Punyaprapha, and Wanwarun Tangcharoen. (2017). Innovative aggression from online games. *Innovation journal Social communication*, 5 (1), 140-147.
- [13] Pisit Tangpornprasert (2017). Aesthetics and Gamification Design for promoting tourism around the Rattanakosin Island. *Veridian E-Journal*, Silpakorn University, Thai Edition, Humanities Social Sciences and Arts, 10 (2), 2883 - 2893.
- [14] Priyaadharshini M, Natha Mayil N, R Dakshina, Sandhya S., Bettina Shirley R, Learning Analytics: Game-based Learning for Programming Course in Higher Education, *Procedia Computer Science*, Volume 172, 2020, Pages 468-472.
- [15] Samuel, A. (2018). Compliance to Library Rules and Regulations by Students: A Case Study of Walton Whaley Library of Valley View University (VVU), Ghana.
- [16] Saowapa Pinkheaw, and Naphawan Tantivejkul. (2017). Global Brand Communication of Global Brands and Brands. Local products in Thailand. *Journal of Business Administration Economics and Communication*, 12 (2), 93-109.
- [17] Somjai, S., Jermisittiparsert, K., & Chankoson, T. (2020). Determining the

- Initial and Subsequent Impact of Artificial Intelligence Adoption on Economy: A Macroeconomic Survey From ASEAN. *Journal of Intelligent & Fuzzy Systems*, 39(4), 5459-5474. DOI: 10.3233/JIFS-189029.
- [18] Thanakorn Uiphanit. Development of Learning Game for the Instruction of Library of Congress Classification System, *Journal of Information Science*, Vol.37 No.2 (2019): April-June. Page 44-63.
- [19] Thanakorn Uiphanit. Packet Warriors: An Academic Mobile Action Game for Promoting OSI Model Concepts to Learners. *International Association of Online Engineering*. 2019/6/20, Page 41-51.
- [20] Thipsukon Petchopas, and Boonchu Boonlikitsiri. (2015). Game design of Thai folk games in a simulation model. According to the distraction theory *Academic Journal AJNU Art, Architecture, Naresuan University*, 6(2), 90 - 100.
- [21] Vidakis, N., Barianos, A. K., Trampas, A. M., Papadakis, S., Kalogiannakis, M., & Vassilakis, K. (2019). Generating Education in-Game Data: The Case of an Ancient Theatre Serious Game. In *CSEDU* (1) (pp. 36-43).
- [22] Yichuan Wang, P. Rajan, C. S. Sankar, and P. K. Raju, "Let them play: the impact of mechanics and dynamics of a serious game on student perceptions of learning engagement," *IEEE Transactions on Learning Technologies*, vol. 10, no. 4, pp. 514–525, 2017.