



Pahlawan Qarin: The Concept of Collaborative Learning Game Environment in the Understanding and Translation of the Quran among Youngsters

Juliana Mohamed^{1*}, Rosfuzah Roslan¹, Nurul Farahain Kasmin¹, Siti Hawa Illiyin Mohd Noor¹, Nurul Erna Jeffry¹, Maznee Zaheera Masli¹

¹Department of Information Technology, Center for Diploma Studies (CeDS), Universiti Tun Hussein Onn Malaysia (UTHM), KM 1, Jalan Panchor, 84600 Muar, Johor, MALAYSIA

*Corresponding Author

DOI: <https://doi.org/10.30880/jqsr.2020.01.01.001>

Received 30 September 2020; Accepted 15 November 2020; Available Online 30 December 2020

Abstract: Computer game can be engaging learning resources, motivators and interest drivers and, as a consequence, an efficient way to enhance student learning and success in everyday educational practice. These computer game inspire youngsters specially to work incredibly hard, earning even-needed practice repeatedly. Research has consistently shown that Game-Based Learning (GBL) is a way of engaging users and appealing to various modes of learning. *Pahlawan Qarin* is a game-based framework designed to serve as a way of understanding and interpreting Al Quran to understand its meaning and use in everyday life. It is presented as a desktop (personal computer) game featuring a Collaborative Learning Game (CLG) in which more than one player can play in a group or room using the internet link (network) simultaneously (multiplayer feature). It can be used as an aid tool for teachers in the recitation and education of the Al Quran subject, which is also taught in schools in Islamic Studies. When collaboration with other partners is carried out, youngsters are seen to be highly active in a game playing session, thus motivating them to complete any assignment given. In future, effectiveness of *Pahlawan Qarin* on a broader sample volume (usage by more students and teachers) will be further studied.

Keywords: Collaborative Learning Games, Desktop Games, al-Quran, Multiplayer, Islamic studies

1. Introduction

Al-Quran is the most reference and guidance for Muslims since al-Quran has coming to Prophet Muhammad (PBUH). All areas of tendency can be referenced from the Quran. Therefore, comprehension to the Quran is important so that people do not deviate from the wrong path. Al-Quran refined, studied and understood by a number of scholars until it has been translated into various languages around the world.

Revelation of al-Quran is crucial especially to youngsters. Nowadays, they have been exposed to various mediums; mass media and application through devices. Traditional learning in schools can be classified with; in classes during learning and facilitating (PdPc) and outside class during physical education and health (PJK) (Othman, Ahmad & Rohanai, 2018). Learning process among youngsters can be exciting and fun with various kind of learning method like educational gamification using computer game. Research from (Al-Azawi et al., 2016) and (Sung et al., 2017) shows that computer games in education can be an attractive way to learning environment for acquiring knowledge. This study proves that the educational computer game influence students' ability during PdPc by their interest and motivation (Sun & Gao, 2016).

*Corresponding author: julianaju@uthm.edu.my

2020 UTHM Publisher. All rights reserved.

publisher.uthm.edu.my/ojs/index.php/jqsr

Learning with computer game can be more edutainment to youngsters so that they can learn and know about lessons and more about moral aspect. Instead of learning, they can confront with them to complete the lesson task through collaborative learning environment using computer game. Collaborative learning game (CLG) require more than one player in gameplay where game activities involve problem solving spaces and challenges to promote cooperative learning between those engaged in the game. Bontchev & Georgieva (2018) and Hamari et al. (2016) said that collaborative games are the important indicator for students as engaging learning environments. An educational computer game called *Pahlawan Qarin* has been developed to focus on al-Quran comprehension and translation education. The CLG was developed especially to the youngsters from secondary school. The study caters the issue of youngsters that could not understand the meaning of the verses into al-Quran though they have completed their recitation obligation. Besides, they rarely involved into the additional Quranic classes to enhance and enrich their comprehension to al-Quran. Normally, parents and teachers choose to teach al-Quran by conventional way to their kids as it is must. By using printed paper based or hardcopy, they teach the kids in a common standard like in late 1970's to early 1980's era.

There are several of educational based game that focusing of al-Quran. Basically, the developer focuses on the correct '*tajweed*' to be recited of the verses and display the translation verses such as Quran Puzzle published by Mizan Apps Publisher, Muslim Kids Quran published by Osratouna.com and Marbel '*Mari Belajar Mengaji*' published by Educa Studio. Most of these games are limited to collaborative element which can play by multiplayer feature and adventurous game playing concept. Youngsters nowadays have the option to play while learning with their peers with the new age technology and connectivity through internet networking, creating an immersive world of learning in a fantasy area.

2. Methodology

The methodology used for this study was an ADDIE model (Jones, 2014; Hidayanto, Rahman & Kusnendar, 2017). The model included analysis phase, design phase, development phase, implementation phase and evaluation phase. All phases must follow by sequence as a result for an excellent product. Fig. 1 shows an ADDIE model.



Fig. 1 - ADDIE model.

2.1. Analysis

In this phase, usually a study should start with a brainstorming session, by identified a common problem to be solve, analyzed the requirement needs to build a product and collected all the data needs to the study. From this study, the common problem especially to the youngster is to understand the meaning of the verses in al-Quran. Hence, there are several requirements need to cater this problem by developing an educational computer game to attract their interest and motivational to the al-Quran. The project had been established with the technology and tools needed.

The requirements were gathered in early February 2019, prior to designing the product. The study begins with gathering the information by several interview sessions with a Focus Group consists of individuals from different age group and roles. The questionnaires being asked by students are related to the kind of interest the youngsters have in Islamic Studies especially in al-Quran; their present method of learning, information on uses of al-Quran refrains, enthusiasm for computerized games for learning purposes just as enthusiasm for 'multiplayer' game. In view of the data accumulated, we figured out the storyline to the storyboard of the game which had the blueprint of specialized perspective

and structure of the game play. Table 1 shows the information of the Focus Group, where the primary school students are aged 12 years old and the secondary school students are aged between 13 to 15 years old.

Table 1 - Focus group information.

Role	Primary School	Secondary School	Teacher
	Age 12	Age 13-15	
No. of Respondents	2	3	1

2.2. Design

In this phase, designing is commonly important to make sure some product deliver with good to the targeted user. Storyboarding and graphic element has been created. *Pahlawan Qarin* has been developed based on the concept of ‘multiplayer’ game which this game should be using an internet connection. It is fuses learning part of al-Quran recitation and interpretation and from that point onward, test or test segment as experience playing. The story line of the game spins around the player who is called *Pahlawan* (client/player themselves) that will get terrible/detestable seditions from a being called *Qarin* the Djin.

There are 3 levels provided in this game which the player will have to fight those seditions by finding the correct paper that are containing the name of al-Quran verse and line number. All the player needs to do to annihilate the *Qarin* is by crashing into the paper, which represents the activity of the player recounting those stanzas. In spite of the fact that this game really has a wide particular to be satisfied, because of time imperative, the executed item is considered as the main variant (essential adaptation) which implies that further advancement will be planned soon.

The instruments expected to actualize the game is a personal computer (PC) with Windows working framework (OS), web association, console and mouse as the information regulator. Fig. 2 shows each of the scene from the *Pahlawan Qarin* game.

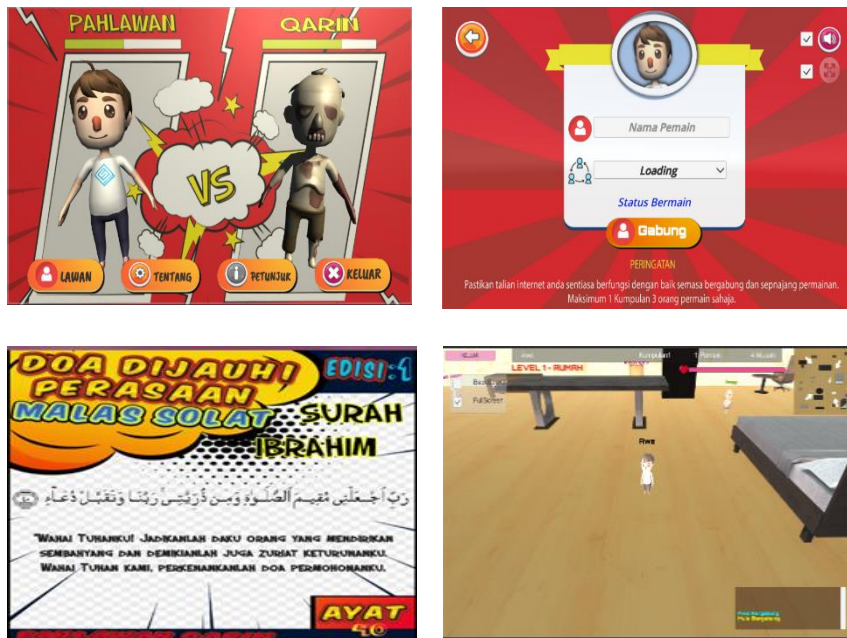


Fig. 2 - Scenes in *Pahlawan Qarin* game.

2.3. Development

In the development phase, the study mainly used Unity (version 2019) which is known as a cross-platform three-dimensional (3D), two-dimensional (2D), virtual reality (VR) and augmented reality games (AR) game engine. This platform develops by Unity Technologies (Buyuksalih *et al.*, 2017). This platform provide free Unity Asset Store as well as 3D Warehouse (<https://3dwarehouse.sketchup.com>) which is in SketchUp format (.skp) to be imported for the characters (player and zombie), environment and objects in the game. Uniquely, the multiplayer feature in this game can be utilized from Photon Unity Networking (PUN). Unity offers PUN for a multiplayer game, a flexible matchmaking, which means that it can bring the players into rooms where the network can synchronize items. Both Unity and PUN

have low-level APIs that are identical. But the main differentiating factor between them is the infrastructure needed for these libraries to use these APIs. A server/client architecture facilitates Unity Networking. All messages must go via the host client and cannot be sent between nodes directly. For example, messages are transmitted from client B to client C using the following route, based on Fig. 3.

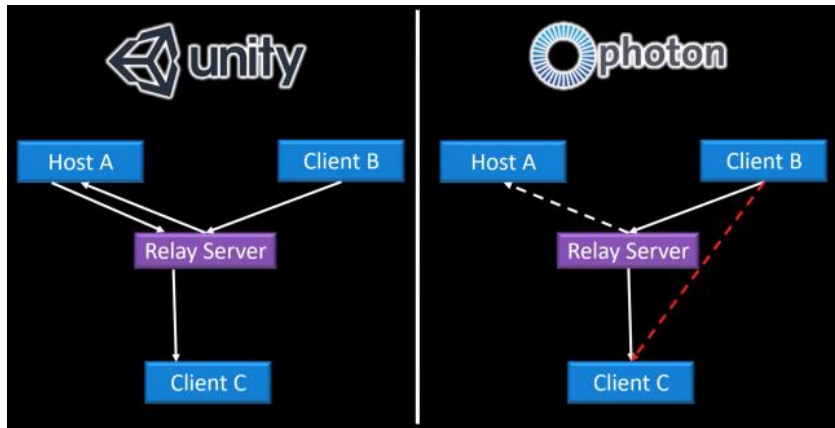


Fig. 3 - Message transferred between nodes in a network in Unity and in PUN.

From Fig. 3, a total of 4 hops from source to destination are taken from the post. In addition to this, the game ends if the host is disconnected from the network. PUN has a similar server / client architecture, but also allows transmitting messages from peer-to-peer. Based on the diagram above, for example, messages are transmitted from Client B to Client C. For the same message transfer between two nodes, that is a total of 2 hops relative to the 4 in Unity. In addition to this, PUN could probably fully bypass the Relay Server and Client B would communicate with Client C directly, thereby minimizing the hops to 1. As a result, PUN is faster than Unity.

In Unity, GameObject in the scenes should attach a script in order to be called by Unity. Object-oriented scripting languages used in Unity to operate all the languages. Visual studio offers C# for the scripting to created, edited and debugged. In additional, Adobe Illustrator also used for designing purposes. CorelDraw and Filmora used for video development with animation feature with help of Microsoft Power Point. Unit testing and integration testing have been continually performed during the development process to ensure that the expected code and output runs smoothly on the screen and environment of multiple clients.

2.4. Implementation

All students played in their selected space simultaneously (5 groups consisting of 3 people each), as the game introduces the multiplayer rule. The teacher played the game as well, joining one of the group of students. In order to speed up the implementation process and to ensure that the session runs smoothly, the students were grouped accordingly. Once linked by joining room, al-Quran verses, recitation and translation were taught or shown in which these essential elements have to be remembered; (i) the negative criteria, (ii) verses name and (iii) verses line number. The level of the game began when the al-Quran recitation session finished. Each level has a recitation session of their own al-Quran. Only the player still alive in the game (winning the level) will progress to the next round. There was no particular time given for the understudies to finish their game playing meeting. There are 7 participants managed to finish all 3 levels from all 14 participant of students. This phase, which consists of these tasks, took about 3 hours altogether; (i) setup for installation and connectivity test, (ii) briefing, (iii) pre-usage data collection, (iv) playing session, (v) post-usage data collection and (vi) discussion on feedback with the participants.

2.5. Evaluation

To quantify the impact of utilizing the game, the questionnaires were given. The participants were given 2 questionnaires of inquiries, are (i) pre-usage: by teacher and students, and (ii) post-usage: by teacher and students. The questionnaires from pre-usage evaluation to students contains of (i) experience playing any games, (ii) experience learning al-Quran, (iii) interest to learn translation of al-Quran, (iv) experience learning the translation of al-Quran (v) interested with appreciation and knowledge about interpretation of al-Quran, (vi) the understanding about interpretation of al-Quran, (vii) about *Qarin* the Djinn, (viii) the interest to find out use of verse al-Quran in overcoming problems and negative values, and (ix) interest and involvement during al- Quran class and interpretation in school. Next, the questionnaires from pre-usage evaluation to teachers contains of (i) their experience teaching al-Quran class (ii) student's knowledge about al-Quran and interpretation, (iii) teaching medium, (iv) student's interest about al-Quran and

interpretation, (v) intention to learn al-Quran and interpretation using collaborative game, and (vi) student involvement in learning the al-Quran and interpretation within class-based observation by teacher.

In other hand, the post-usage evaluation for students contains of (i) similarity with other collaborative learning game, (ii) experience in collaborative learning game characterized Islamic, (iii) interest to find out about al-Quran and interpretation, (iv) experience playing *Pahlawan Qarin* and understand it well, (v) *Pahlawan Qarin* can made games learning as aid materials teaching for Islamic studies subject especially al-Quran, (vi) the interesting interface and creative collaboration learning game, (vii) excited to play collaboration learning game, (viii) exposure about use a sentence from the al-Quran learned in this game, and (ix) improvement in this collaboration learning game. The post-usage evaluation for teachers has been ask with similar questions in addition with (i) teacher's observation with the collaboration learning game to their students, and (ii) comparison students' involvement and interest against learning al-Quran in this test session and before this test.

The teacher and students have been explained on each of the questions. In advance, discussions were held with the teacher about criteria for assessing the engagement factor. These criteria will be used; (i) body language, (ii) facial expression, (iii) enthusiasm shown, and (iv) level of participation. Data collection was carried out using Google Form on the same day that the game, which was located in the computer room of the school on 21 May 2019, was launched. At the end of the session, further research was carried out on the collected data to remove any redundancy and summarize the findings accordingly. All questionnaires and the findings are supplemented in Appendix A to Appendix D.

3. Results and Discussion

This study was conducted at Sekolah Kebangsaan Kampong Raja, Pagoh, Johor, Malaysia among Standard 6 (12 years old) students. There are 14 respondents from students and one respondent from Islamic subject teacher were participated in this study. Table 2 shows the result that CLG indeed has a big impact towards youngsters. From this table, the average increase in engagement and interest found by the students themselves was as high as 20%, although the teacher agreed that the implementation session saw an average increase of 15%. Other calculated elements that are shown in Table 3 (student's feedback) are (i) usability of the product particularly in teaching and learning al-Quran, (ii) attractiveness of the product (user interface, color & graphic aspect, animation, visual design) (iii) user friendly feature, (iv) preference in multiplayer feature and (v) originality of the product.

Table 2 - Level of engagement & interest in al-Quran teaching and learning session.

Samples	(1) Teacher Observation on Students	(14) Students Feedback
Average %		
Before using CLG	75	68
After using CLG	90	88
Increment (%)	15	20

Table 3 - Results for other elements of the product.

Elements	(14) Student's Feedback		
	Disagree	Agree	Strongly Agree
Usability	1	5	8
Attractiveness	0	10	4
User Friendly	0	8	6
Multiplayer	0	0	14
Originality	0	0	14

An agreement based on values (1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree) is required to answer most of the questions asked in the questionnaire. Overall, the feedback obtained was mainly positive, with values 3 and 4 included. Ultimately, during the whole playing session, the students appreciated the multiplayer game by sharing their excitement. They also stated that this was the first time they had experienced an Islamic *Djin* design game that emphasizes the use of verses from the al-Quran. Not only does *Pahlawan Qarin* introduce these students to a being called *Qarin* but also to understand the translation of al-Quran as well as to teach them how and when, according to those circumstances, to apply certain verses. As a result, this study definitely aim that the collaborative learning games can be an aid tools for teacher in the recitation and education of the al-Quran subject during teaching and learning in class.

4. Conclusion

This study presented a Collaborated Learning Game (CLG) approach for the understanding and translating al-Quran learning. A real-time multiplayer game, *Pahlawan Qarin*, was created to test the level of engagement of the student while using this object. In order to make a comparison, the outcomes before using the game and after using the game were obtained. The results indicate that students using CLG have greater commitment to the teaching and learning session of the al-Quran compared to the normal method using only printed media (hardcopy). Teachers also can use this platform as an aid tool during teaching and learning in class. In the future, the effectiveness of *Pahlawan Qarin* on a broader sample volume (usage by more students and teachers) will be further studied.

Acknowledgement

The authors would like to thank students from IT Diploma Project Semester II Session 2018/2019 who producing *Pahlawan Qarin* game with the collaboration of Sekolah Kebangsaan Kampong Raja, Pagoh, Johor.

Appendix A: Pre-Usage Evaluation by Students

Appendix B: Pre-Usage Evaluation by Teachers

Appendix C: Post-Usage Evaluation by Students

Appendix D: Post-Usage Evaluation by Teachers

References

- Al-Azawi, R., Al-Faliti, F., & Al-Blushi, M. (2016). Educational gamification vs. game based learning: Comparative study. *International Journal of Innovation, Management and Technology*, 7(4), 132-136.
- Bontchev, B., & Georgieva, O. (2018). Playing style recognition through an adaptive video game. *Computers in Human Behavior*, 82, 136-147.
- Buyuksalih, I., Bayburt, S., Buyuksalih, G., Baskaraca, A. P., Karim, H., & Rahman, A. A. (2017). 3D modelling and visualization based on the Unity game engine: Advantages and challenges. *ISPRS Annals of the Photogrammetry, Remote Sensing and Spatial Information Sciences*, 4, 161.
- Hamari, J., Shernoff, D. J., Rowe, E., Coller, B., Asbell-Clarke, J., & Edwards, T. (2016). Challenging games help students learn: An empirical study on engagement, flow and immersion in game-based learning. *Computers in Human Behavior*, 54, 170-179.
- Hidayanto, D. R., Rahman, E. F., & Kusnendar, J. (2017). The application of ADDIE model in developing adventure game-based multimedia learning to improve students' understanding of basic programming. In 2017 3rd International Conference on Science in Information Technology (ICSITech) (pp. 307-312). IEEE.
- Jones, B. A. (2014). ADDIE model (Instructional design).
- Othman, H. B., Ahmad, M. B., & Rohanai, R. H. B. (2018). The application of new era teaching and learning technique on Malay language speaking skills for in-training services (LDP). *Khazanah Ilmu Berazam*, 1(3), 15-21.
- Sun, H., & Gao, Y. (2016). Impact of an active educational video game on children's motivation, science knowledge, and physical activity. *Journal of Sport and Health Science*, 5(2), 239-245.
- Sung, H. Y., Hwang, G. J., Lin, C. J., & Hong, T. W. (2017). Experiencing the analects of Confucius: An experiential game-based learning approach to promoting students' motivation and conception of learning. *Computers & Education*, 110, 143-153.
- Unity User Manual. (2019) [Online]. Available: <https://docs.unity3d.com/Manual/UnityManual.html>

Appendix A: Pre-Usage Evaluation by Students

The questionnaire is available from <https://docs.google.com/forms/d/1QFsUKSHex0BXShk1-QoKCbtZR3nFdZ43HoZoYTCvQjo>.

Timestamp	1) Adakah anda berminat bermain aplikasi permainan digital seperti Mobile Legend , War Craft, Angry Bird atau sebagainya ?	Berikan nama game tersebut (Jika Ya)	2) Bagaimana cara anda belajar AI Quran	3) Adakah anda mempelajari sekali tafsirannya?	4) Adakah anda sudah khatam?	5) Adakah anda berminat mempelajari mengenai tafsiran Al-Quran melalui aplikasi permainan?	6) Anda berminat dengan penghayatan dan pengetahuan tentang tafsiran Al-Quran?	7) Adakah anda di ajar bacaan dan tafsiran Al Quran di sekolah anda?	8) Adakah sukar bagi anda untuk memahami atau menghayati tentang kandungan dalam Al-Quran?	9) Adakah anda kerap berasa sedih ATAU marah ATAU leka (lalai) dan perasaan-perasaan tidak baik yang lain ?	10) Bagaimana anda mengatasi perasaan-perasaan tersebut (Jika Ya)	Jika jawapan Ya bagi soalan 9, adakah anda turut membacakan ayat Al Quran yang beresuaian dengan perasaan negatif yang anda alami tersebut?	11) Adakah anda berminat untuk mengetahui penggunaan ayat Al Quran untuk membantu anda dalam mengatasi masalah dan nilai tidak baik (negatif) dalam diri anda?	12) Bagaimanakah cara pembelajaran mengenai isi kandungan Al-Quran yang paling anda minati?	13) Nyatakan (%) minat dan keterlibatan anda dalam kelas pengajian Al - Quran dan tafsiran di sekolah	
5/21/2019 1:04:14	Ya	house flipper	Naskhah AI Quran bercetak (tanpa tafsiran)	Tidak	Sudah	2019 (12 Tahun) Ya	Ya	Ya	Ya	Ya	berdoa saya mengatasinya	Tidak	Tidak	Ya	Melalui Internet/aplikasi elektronik	70
5/21/2019 1:08:30	Ya	shadow fight	Naskhah AI Quran bercetak (bersama tafsiran)	Ya	Sudah	2019 (12 Tahun) Ya	Ya	Ya	Tidak	Ya	dengan mengambil air sembahyang saya kerap marah cara saya mengatasi dengan	Tidak	Tidak	Ya	Melalui Internet/aplikasi elektronik	70
5/21/2019 1:08:45	Ya	pubg mobile	Naskhah AI Quran bercetak (tanpa tafsiran)	Ya	Belum	Ya	Ya	Ya	Ya	Ya	saya mengatasi dengan membaca al-quran saya kerap ketawa cara saya mengatasi perasaan tersebut	Tidak	Tidak	Ya	Melalui Internet/aplikasi elektronik	60
5/21/2019 1:09:11	Ya	fifa mobile	Naskhah AI Quran bercetak (tanpa tafsiran)	Tidak	Belum	Tidak	Ya	Ya	Tidak	Ya	beristiqhfar	Tidak	Tidak	Ya	Kitab	60
5/21/2019 1:09:47	Ya	shadow fight	Naskhah AI Quran bercetak (tanpa tafsiran)	Ya	Sudah	2016 (9 Tahun) Ya	Ya	Ya	Tidak	Tidak			Tidak	Ya	Melalui Internet/aplikasi elektronik	70
5/21/2019 1:09:47	Ya	mobile legend	Naskhah AI Quran bercetak (tanpa tafsiran)	Ya	Sudah	2018 (11 Tahun) Tidak	Ya	Ya	Ya	Tidak			Tidak	Ya	Kitab	80
5/21/2019 1:11:21	Ya	mobile legend	Naskhah AI Quran bercetak (tanpa tafsiran)	Ya	Sudah	2018 (11 Tahun) Ya	Ya	Ya	Ya	Ya	Saya hanya membiarkan perasaan tersebut berfatu	Tidak	Ya	Ya	Kitab	80
5/21/2019 1:11:23	Tidak		Naskhah AI Quran bercetak (bersama tafsiran)	Ya	Belum	Ya	Ya	Ya	Tidak	Ya	saya mengatasinya dengan membaca al-quran saya kerap ketawa cara saya mengatasi perasaan tersebut	Tidak	Tidak	Ya	Melalui Internet/aplikasi elektronik	60
5/21/2019 1:12:03	Ya	pubg mobile	Naskhah AI Quran bercetak (tanpa tafsiran) Naskhah AI Quran bercetak (tanpa tafsiran)	Ya	Sudah	2018 (11 Tahun) Ya	Ya	Ya	Ya	Ya		Tidak	Ya	Ya	Ceramah Agama	70
5/21/2019 1:13:32	Ya	mobile legend	Naskhah AI Quran bercetak (tanpa tafsiran)	Tidak	Belum	Ya	Ya	Ya	Tidak	Tidak			Tidak	Ya	Kitab	70
5/21/2019 1:14:18	Tidak		Naskhah AI Quran bercetak (bersama tafsiran)	Ya	Belum	Ya	Ya	Ya	Tidak	Tidak			Tidak	Ya	Ceramah Agama	60
5/21/2019 1:14:32	Ya	pubg mobile	Naskhah AI Quran bercetak (tanpa tafsiran)	Ya	Belum	Tidak	Ya	Ya	Ya	Tidak			Tidak	Tidak	Kitab	70
5/21/2019 1:16:43	Tidak		Naskhah AI Quran bercetak (bersama tafsiran)	Ya	Sudah	2019 (12 Tahun) Ya	Ya	Ya	Tidak	Ya	saya mengatasinya dengan membaca al-quran dan mengambil air sembahyang	Tidak	Tidak	Ya	Melalui Internet/aplikasi elektronik	70
5/21/2019 1:18:10	Tidak		Naskhah AI Quran bercetak (bersama tafsiran)	Ya	Belum	Ya	Ya	Ya	Ya	Tidak	berzikir	Tidak	Tidak	Ya	Ceramah Agama	60

Appendix B: Pre-Usage Evaluation by Teachers

The questionnaire is available from https://docs.google.com/forms/d/151ix8GpwZd-Ka56L0MEFjenokUA1GD8dbXswD6_GYI0t.

Timestamp	1)Adakah anda mengajar subjek Al-Quran dan tafsir Al-Quran dalam Silibus?	Jika Ya,Darjah berapakah yang anda ajari?	2)Bagaimanakah pengetahuan pelajar tentang Al-Quran dan tafsiran?	3) Medium pengajaran apa yang digunakan untuk mengajar Al Quran dan tafsiran?	4) Adakah anda menggunakan medium elektronik seperti 'apps' pembelajaran atau 'game'?	5)Bagaimanakah pelajar menunjukkan minat hendak belajar Al-Quran dan tafsiran? Dengan cara seperti?	6)Adakah anda ada membuat program penghayatan Al-Quran di Sekolah?	7)Adakah anda berminat sekiranya pelajar-pelajar anda diajar menggunakan medium permainan secara kolaborasi (multiplayer)?	8)Apakah pendapat anda tentang permainan seperti kolaborasi (multiplayer)?	9) Nyatakan (%) minat dan keterlibatan pelajar dalam sesi pembelajaran Al -Quran dan tafsiran di dalam kelas berdasarkan PEMERHATIAN cikgu?
5/21/2019 3:18:46	Tidak		kurang mahir			Buku	Ya	Ya	sangat bagus kerana mampu menarik perhatian pelajar supaya lebih tertarik utk mendalami ilmu alquran	80
5/22/2019 14:37:59	Ya	Darjah 1 hingga darjah 6	Mereka boleh membaca Al-Quran dan mempelajari jawi	Al Quran bercetak (bersama tafsiran)	Tidak	Video	Ya	Ya	bermain sambil belajar bersama dengan rakan-rakannya.	75

Appendix C: Post-Usage Evaluation by Students

The questionnaire is available from <https://docs.google.com/forms/d/11wRNdrNjYN-18LLiOdiRB15wX1f7PoGT13HVZeQL>.

ORIGINALITY		USER FRIENDLY	USER FRIENDLY	USABILITY	ATTRACTIVENESS	MULTIPLAYER	MULTIPLAYER	ENGAGEMENT					
1)Adakah Permainan Pahlawan Qarin ini menyerupai mana-mana permainan digital yang anda pernah main sebelum ini?	2)Adakah permainan ini aplikasi permainan digital bercirikan Islamik yang pertama anda pernah main?	3)Adakah Permainan Pahlawan Qarin ini mengenai Al-Quran pertama anda pernah main.	4)Permainan ini menarik minat anda untuk mengetahui tafsiran Al-Quran.	5)Anda dapat bermain dan memahami cara permainan Pahlawan Qarin dengan baik.	6)Anda mudah memahami setiap paparan dan kata-kata yang berada di dalam permainan Pahlawan Qarin ini.	7)Pahlawan Qarin boleh dijadikan permainan pembelajaran dan sebagai bahan bantuan mengajar guru subjek Pendidikan Islam khususnya Al Quran.	8) Anda berasa seronok semasa bermain Permainan Pahlawan Qarin.	9) Paparan atau suasana yang digunakan di dalam permainan ini sangat menarik, warna yang menarik dan kreatif.	10)Anda seronok dapat bermain bersama rakan anda dalam permainan ini secara Kolaborasi (Multiplayer)	11)Anda mendapat pendedahan tentang penggunaan ayat Al Quran yang dipelajari dalam permainan ini ? (Hanya tahu surah apa ayat ke berapa boleh dibaca ketika situasi apa)	12) Apakah penambahbaikan yang anda boleh cadangkan untuk permainan ini?	13) Adakah anda lebih berminat untuk bermain secara 'multiplayer' iaitu kolaborasi dengan rakan anda pada masa yang sama?	14) Nyatakan (%) minat dan keterlibatan anda dalam sesi pembelajaran Al - Quran dan tafsiran menggunakan Pahlawan Qarin. (Sekiranya meningkat dari sesi dalam kelas (konvensional), sila berikan % yang lebih tinggi dari set soalan pra-penggunaan)
Tidak	Tidak	Ya	Setuju	Setuju	Setuju	Sangat Bersetuju	Sangat Bersetuju	Sangat Bersetuju	Sangat Bersetuju	Ya	kamera dan alat kawalan	Ya	90
Tidak	Ya	Ya	Sangat Bersetuju	Setuju	Setuju	Sangat Bersetuju	Sangat Bersetuju	Setuju	Sangat Bersetuju	Ya	kamera dan alat kawalan	Ya	92
Ya	Ya	Ya	Setuju	Sangat Bersetuju	Sangat Bersetuju	Setuju	Sangat Bersetuju	Setuju	Sangat Bersetuju	Ya	mempunyai senjata	Ya	80
Ya	hampir sama seperti minecraft	Ya	Sangat Bersetuju	Sangat Bersetuju	Setuju	Sangat Bersetuju	Sangat Bersetuju	Setuju	Sangat Bersetuju	Ya	kamera dan controller	Ya	85
Tidak	Ya	Ya	Sangat Bersetuju	Setuju	Setuju	Sangat Bersetuju	Sangat Bersetuju	Setuju	Sangat Bersetuju	Ya	menambah ayat al quran	Ya	85
Tidak	Ya	Ya	Setuju	Setuju	Setuju	Sangat Bersetuju	Sangat Bersetuju	Setuju	Sangat Bersetuju	Ya	tambah nyawa	Ya	90
Tidak	Ya	Ya	Setuju	Setuju	Setuju	Sangat Bersetuju	Sangat Bersetuju	Setuju	Sangat Bersetuju	Ya	penambahan nyawa	Ya	90
Tidak	Ya	Ya	Setuju	Setuju	Setuju	Sangat Bersetuju	Sangat Bersetuju	Setuju	Sangat Bersetuju	Ya	al quran	Ya	85
Tidak	Tidak	Ya	Setuju	Sangat Bersetuju	Setuju	Tidak Bersetuju	Sangat Bersetuju	Setuju	Sangat Bersetuju	Ya	kamera	Ya	92
Ya	plants vs zombie	Ya	Sangat Bersetuju	Sangat Bersetuju	Sangat Bersetuju	Setuju	Setuju	Setuju	Sangat Bersetuju	Ya	kamera.	Ya	95
Ya	plants vs zombie.	Ya	Sangat Bersetuju	Sangat Bersetuju	Setuju	Sangat Bersetuju	Sangat Bersetuju	Sangat Bersetuju	Sangat Bersetuju	Ya	kamera dan nyawa	Ya	90
Ya	pubg	Ya	Setuju	Sangat Bersetuju	Setuju	Setuju	Setuju	Sangat Bersetuju	Setuju	Ya	dari segi kamera	Ya	95
Tidak	Ya	Ya	Sangat Bersetuju	Setuju	Sangat Bersetuju	Sangat Bersetuju	Sangat Bersetuju	Setuju	Sangat Bersetuju	Ya	senjata al quran	Ya	80
Ya	pubg,free fire	Ya	Setuju	Setuju	Setuju	Setuju	Sangat Bersetuju	Sangat Bersetuju	Sangat Bersetuju	Ya	dari segi kamera	Ya	85

Appendix D: Post-Usage Evaluation by Teachers

The questionnaire is available from <https://docs.google.com/forms/d/12T2bJySqC8DYarUadJX4G-zMGUjKfXOiz1IZZ7tJX7w>.

Timestamp	1)Adakah permainan Pahlawan Qarin ini menyerupai permainan lain yang anda pernah lihat sebelum ini?	2)Adakah aplikasi permainan digital ini bercirikan islamik yang pertama anda pernah lihat?	3) Paparan atau suasana yang digunakan di dalam permainan ini sangat menarik, dari segi warna dan kekreatifan.	4)Berdasarkan PEMERHATIAN cikgu, adakah pelajar memahami konsep dan ara permainan ini?	5)Adakah Permainan Pahlawan Qarin ini permainan mengenai Al-Quran dan tafsiran yang pernah anda lihat?	6)Adakah Anda melihat peningkatan penglibatan dan minat pelajar terhadap pembelajaran subjek/ Al-Quran pada sesi ujilari ini berbanding sebelum ini (konvensional) di kelas?	7) Apakah penambahbaikan yang anda boleh cadangkan untuk permainan ini?	8)Melalui pemerhatian cikgu, adakah pelajar seronok bermain Pahlawan Qarin?	9) Adakah pelajar menunjukkan minat yang lebih kepada permainan berunsurkan 'multiplayer' dari main berseorangan (single player)?	10)Nyatakan (%) minat dan keterlibatan pelajar dalam sesi pembelajaran Al - Quran dan tafsiran menggunakan Pahlawan Qarin berdasarkan PEMERHATIAN anda. (Sekiranya meningkat dari sesi dalam kelas (konvensional), sila berikan % yang lebih tinggi dari set soalan pra-penggunaan)
5/21/2019 11:16:54	tidak	Tidak	Ya	Ya	Ya	ya Ya, mereka mendapat pengetahuan tentang jin qarin.	surah pilihan harus lebih sesuai mengikut tahap umur kumpulan sasaran	Ya	Ya	90
5/22/2019 22:36:07	Tidak	Ya	Ya	Ya	Ya		Membuat video hikmah yang tidak terlalu lama.	Ya	Ya	90