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Game-based Learning of Fundamentals of Islam

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Abstract: Back in the old days, our method of learning Islamic Education was always the traditional way which included pen and paper and two-way communication between a teacher and the student. In this digital era, a new method of learning has been implemented which uses electronic devices. Learning Islamic Education often creates boredom among young students, and this will affect their concentration and understanding. To cater to this problem, a game-based learning method needs to be implemented in classrooms. The scope of the project is for young learners of Islamic Education in primary school. This study aims to research the effectiveness of game-based learning methods by using video games. The development of the game is based on the Game Development Life Cycle (GDLC) methodology. GBL Model is the model that was used to ensure it fits for education purposes. Results show that most players understand the learning content and suggest there is room for improvement.

Keywords: *Islamic education, Islam fundamentals, Game-based Learning*

1. Introduction

Islam is derived from the Arabic principle that carries the meaning of peace and submission (to Allah, the almighty). Islam is also a religion that includes rituals and spiritual values. The pillars of Islam must be understood properly as a value of ritual as well as spiritual, which must be transformed into our life, in the form of civilized human resources (Fajar, 2017). Every Muslim was taught about the Fundamentals of Islam such as the Five Pillars of Islam (Rukun Islam) then followed by the Six Pillars of Faith (Rukun Iman).

The Five Pillars of Islam are the core beliefs and practices of Islam. They consist of the Shahadah (declaration of faith), 5 Prayers, the fast of Ramadhan (sawm), almsgiving (zakat) to the needy and pilgrimage (Hajj) to those who are able. The Six Pillars of Faith (Iman), part of the Muslim's beliefs is very important and holds weight on Judgment Day (Rahmah, 2012). The first pillar is the belief in Allah The Almighty. Next is the belief in the Angels (Al-Malaa'ika), the angels are messengers of Allah. Third is belief in the books of Allah such as The Torah, Zabur, Injil and Quran. The fourth is belief in the 25 prophets mentioned in the Quran. Next is belief in Yawmil Qiyaamah (Final Day). This is the assessment of humanity for all deeds. Lastly, the belief in Allah's predestination (Qada & Qadar). Allah has recorded all from the beginning of life until the final day. Everything happens according to the will and decree of Allah. However, Allah gives the freedom to humans to make their own choices.

Muslims were taught those fundamentals during their years in kindergarten & primary school but some methods of learning implemented by the teachers back then were less interesting while some did not provide further explanation. Through the years, teachers have been inventing games for their students so that they can learn better with more interest. Nowadays with the evolution of technology, video games started to be used in education. With more appealing and interactive content many teachers & instructors used game-based learning or gamification as one of their teaching methods.

Even with the evolution of technology, many schools are still using the traditional method of learning, usage of textbooks & notes. Traditional methods may not be able to inspire learners to be creative and think outside of the box. They usually have a fixed structure. Students must read the contents of the books to learn and this does not guarantee their understanding of the topics they are referring to. For students who have difficulties in reading, they might feel less motivated. Those methods can be less effective and might affect students' concentration and interest in learning. Students nowadays are more attracted to digital interactive media. When trainees(students) participate in traditional learning activities, they rarely display the level of effort and motivation that is typical of simulation games, thereby limiting the learning potential (Tennyson & Jorczak,

2008). In this rising age of video games, it can be one of the media that shapes our comprehension and understanding of the world. The agenda in game-based learning is to learn while playing, when the learner likes the game they get hooked to it, and invested in the content. They learn faster and recall better. Learning through playing can enhance students' cognitive development processes (Mohamad Ashari et. al, 2013), especially in interactive media. Education these years needs technology to deliver Islamic Education lessons effectively and interestingly that is suitable for modern-day education (Jasmi et. al, 2012).

Normally, there are a lot of students in a classroom. Most of them are dependent on teachers. However, not all students get equal attention as needed. The student's role in the traditional learning environment is as a passive receiver of information. Students learn in an individualistic and competitive manner in which phenomena are disseminated through a set of rules, rituals, and routines established by the instructor and field of study (Diane Sevening EdD & Mark Baron, 2003). Due to this issue, some students are unable to receive enough direct feedback from their teachers. The fundamentals of Islam should be learned with guidance to truly understand the topic to avoid any misunderstandings. Nonetheless, games, provide students with more constructive feedback allowing them to express their views through a collaborative environment (Limniou & Mansfield, 2018). With the integration of games, little to no students will be left in their studies.

The current school curriculum in national schools does include the fundamentals of Islam in Pendidikan Islam subject. The time allocated for Pendidikan Islam subjects in national schools is only 96 hours a year. In December 2018, Ex-Prime Minister Dr Mahathir Mohamed said to reduce the school's Islamic Education curriculum hours and focus more on subjects that will produce quality students. Due to time constraints for the subject, students are unable to learn with detailed explanations and understandings. They must be in line to finish the syllabus in time. Students must study & learn independently at their own pace. Nowadays, many students play (computer) games in their leisure time, thus acquiring skills that can easily be utilized when it comes to teaching more sophisticated knowledge (Kai Erenli, 2013). With game-based learning, they can learn while playing anywhere on their own time. Video games can be used to create an interactive learning process to enhance their motivations. With this, video games can be a learning support tool for Islamic education thus making Islamic Education fun and interactive creating a whole new better perspective of Islam by the community and other religions. Many students play (computer) games in their leisure time, thus acquiring skills that can easily be utilized when it comes to teaching more sophisticated knowledge.

Game-based learning (GBL) is an environment where game content and gameplay improve knowledge and skills acquisition where games involve problem-solving and challenging activities (Kirriemuir & McFarlane, 2004). Game-based learning uses teaching through repetition, failure and the accomplishment of goals concept. Game-based learning and gamification is a trend that has been implemented in many settings including workplace training, education and social media (Pho & Dinscore, 2015). For this study, Game-Based Learning will be implemented in bringing the fundamentals of Islam in the form of educational games to students so that they can learn, engage and understand without losing interest. This project aims to provide another way of interactive learning on the fundamentals of Islam. Game-based learning (GBL) allows students to develop critical thinking and motivates them to learn and progress more. From another perspective, this product of GBL can fill their free time with something beneficial. Plus, this can also prove that Islamic education is not outdated and can be taught with updated technology.

2. Literature Review

Islam began with the prophet Muhammad PBUH. Islam is derived from the Arabic principle that carries the meaning of peace and submission (to Allah, the almighty). Its central article of faith is that "There is no god but Allah, and Muhammad is his messenger". Islam is also a religion that includes rituals and spiritual values like the Hajj pilgrimage, Solat and fasting. The pillars of Islam which are part of the Fundamentals of Islam must be understood properly as a value of ritual as well as spiritual, which must be transformed into our life, in the form of civilized human resources (Fajar, 2017). However, Islam is not a cult, it is universal.

Followed by more than 1.8 billion people today, Islam is the fastest-growing religion and will soon be the world's largest. Islam is the dominant religion in Central Asia, the Middle East and some other parts of Asia. The country with the largest Muslim population in the world is Indonesia, with 229 million Muslims. In Malaysia, 61.30% of

our country's population are Muslim and that is more than 16 million of our country's total population as of 2020. While the world's population is projected to grow 32% in the coming decades, the number of Muslims is expected to increase by 70% – from 1.8 billion in 2015 to nearly 3 billion in 2060 (Lipka & Hackett, 2017).

In general, the first category can be referred to as the Five Pillars of Islam, Muslims must observe and practice the pillars of Islam. They consist of the Shahadah (declaration of faith), 5 Prayers, the fast of Ramadhan (sawm), almsgiving (zakat) to the needy and pilgrimage (Hajj) to those who are able.

The Shahadah is a declaration of faith where there is no god but Allah and the prophet Muhammad pbuh is his messenger. Although it is a statement that needs to be said once and believed in, however, the reason why it is included in pillars is that a Muslim has to put it into practice in their conduct. The 5 Prayers (Solat) are required for Muslims daily. It will be one of the first things to be asked on the Judgment Day. The third pillar is the Fasting (sawm) of Ramadhan, all healthy adult Muslims are required to abstain from food and drink, as well as smoking and lust-related actions between sunrise and sunset. Through this temporary deprivation, they renew their awareness of and gratitude for everything Allah has provided in their lives. The word zakat means both "purification" and "growth". Muslims are supposed to donate some of their property to charity. Zakat is calculated upon a certain amount of money or personal belongings such as gold or silver saved for a certain period. The fifth pillar is Pilgrimage (Hajj). This is an obligation only for those who are physically and financially able to do so. The annual Hajj begins in the twelfth month of the Islamic lunar year. Pilgrims wear simple garments that remove distinctions of class and culture, meaning all stand equal before Allah.

Islamic education has existed since the birth of Islam itself (Zakaria, 2002). Islamic education continues throughout our lives in both formal and informal ways. The term "Islamic Education" has a broad meaning, but society today assumes Islamic Education is the school subject or knowledge of Islamic religion in school. Among the goals of Islamic Education is clearly to produce beings who are righteous, believing and compassionate. Islamic Education is towards building good and healthy behavior. Furthermore, the purpose of Islamic Education is also to be righteous to Allah, develop good morals among humans, care about the importance of religion and provide awareness in terms of the physical and spiritual self.

Islamic Education is a compulsory subject for every level of school. This is in line with the statement that Islam is a federal religion in the Malaysian constitution (Ahmad, 1996). The Islamic Education curriculum consists of three aspects which are Beliefs (Iman), Issues of Islam (Shariah) and Morals. The Six Pillars of Faith (Rukun Iman) are placed inside the Beliefs category. The Shariah section covers all matters related to human deeds in daily life that are guided by the laws of Allah in regulating human relations with Allah and between mankind. The Morals section is a practice that complements both beliefs and Shariah aspects and educates students on how to interact in community life. The three aspects stated will then form the pillars of Islam, pillars of faith and morality.

The focus of Islamic Education in school is first, on the basic education in the Quran. Second, the formation of beliefs and guidance of the Fardhu 'Ain Foundation. Next, the adoption of Fardhu 'Ain and Fardhu Kifayah practices demanded by Islamic Shariah. Fourth, the application of manners based on Islamic morality to the students. The fundamentals of Islam can be found in the second category inside the 'Ulum Syar'iah section where the pillars of Islam and pillars of faith are taught to students. It begins by cultivating the foundations of the Islamic faith based on monotheism. Starts with the Six pillars of faith (Rukun Iman) then followed by the Five pillars of Islam (Rukun Islam). The fundamentals of faith are then nurtured and strengthened by the Naqli and Aqli arguments and their impact on life (Ahmad, 1996). Strengthen the beliefs of Allah's angels and messengers by providing an understanding of their facts and duties. This goes the same for the teaching on the holy books that Allah has sent by discussing their contents and purpose.

Worship in Islam has a broad and deep meaning, it includes prayers, fasting, zakat and more. Prayers (Salah) are Muslims' main channel to connect to Allah rather than other worshipping methods because prayers are not the only ones that will be accounted for on the Final Day but other deeds depending on the perfection it is. Because prayer (Salah) is the main worship and compulsory for every Muslim, students are also taught how to perform it in critical conditions or situations, for example, war and unhealthy body conditions. Next, students were taught about fasting (sawm) in both Fardhu and Sunat including its benefits, exceptions and penalties.

Then, the education of zakat and its importance in Islamic society. Zakat educates us on the sacrifice of property. Lastly, the concept of Hajj is taught including its importance and history. During this section, students also taught about slaughter, sacrifice and aqiqah.

The teachings of Islam emphasize that its people will always excel in life here and in the hereafter. Islamic Education is still being taught now from primary school to universities but the teaching methods in schools may not be interactive to students. Teachers are required to help students engage and maintain motivation, game-based learning has been established to promote a positive attitude toward learning and to develop memory skills together with its potential to connect students and help them to develop self-constructed learning. Islam has never shied away from the latest technologies and developments to produce the best education. However, the method of teaching and learning that was practiced by Rasulullah Pbuh must be taken as a reference and guidance (Jasmi & Tamuri, 2007).

Game-based learning refers to the borrowing of gaming principles and applying them to real-life settings to engage users. Game-based learning and gamification is a trend that has been implemented in many settings including workplace training, education and social media (Pho & Dinscore, 2015). Game-based learning uses teaching through repetition, failure and the accomplishment of goals concept. Most video games are built on this method. Usually, a well-designed game for learning will offer suitable difficulty to keep it challenging but easy enough for the player to win.

Game and learning modules are combined because to traditional method of learning is less interesting or interactive and game-based learning can improve students' motivation to learn. Students' concentration is higher when in the flow state of play (Squire, 2008).

Game-based learning (GBL) has been quite popular in education research in the past years. Videogames can stimulate an increase in midbrain dopamine which is linked to a higher ability to store and recall information (Howard-Jones et. al, 2014). With the help of GBL, games can help students develop a better understanding of mathematical concepts, students engage with the media and it can be used as a learning support tool (Katmada et. al, 2014). This is because video games have great entertainment value that can boost players' motivations and understanding. As listed by (Al-Azawi et. al, 2016) below are some of the reasons why games can be a useful tool in teaching and learning:

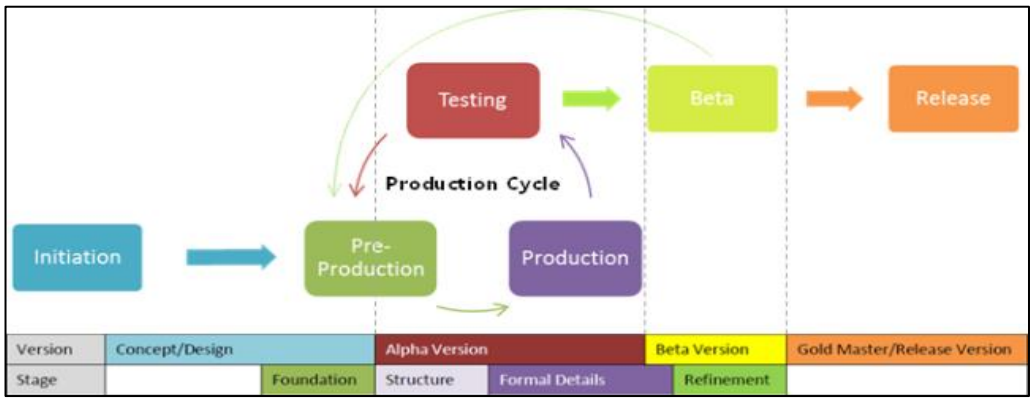
- Able to assist children in setting goals and providing feedback.
- Allow players to experience curiosity and challenge that may stimulate learning.
- Games can be used for research and measurement tools.
- Games may help in developing IT skills among students.

In addition, Game-Based Learning also offers creativity among players and generates critical thinking skills including decision-making and problem-solving.

3. Methodology

The Fundamentals of Islam game project methodology will be using the Game Development Life Cycle (GDLC) model as the project methodology. Game Development Life Cycle (GDLC) is a framework to build a video game. It is similar to the Software Development Life Cycle (SDLC) but with few adjustments and its main objective is to entertain the users. GDLC focuses on the traditional standardized concepts of engineering to build a stable software infrastructure. There is a great field of intersection between SDLC and GDLC, so the GDLC models implicitly inherit the benefits given by SDLC (Patel et al., 2017). The reason for using the GDLC model is that GDLC is typically appropriate for any form of game creation, the GDLC model uses iteration in the key development process for a higher degree of flexibility towards adjustments during development.

Figure 1: GDLC Model



(Source: Ramadan & Widyani, 2013)

The GDLC model starts with getting ideas on the Initiation phase, then proceeds to plan in the pre-production phase. Next, start the development in the Production phase. GDLC allows iteration in the development process that links the Pre-Production phase, Production and Testing phases. However, in this project, the cut-off point is the testing phase. This project does not process to the beta and release phase because the goal is to create a proof-of-concept prototype only.

4. Results and Discussion

A use case is a list of actions or steps in any software and systems engineering that typically define the interactions between a role and a system to achieve a goal. Figure 2 below shows this project's use case diagram.

Figure 2: Game Use Case

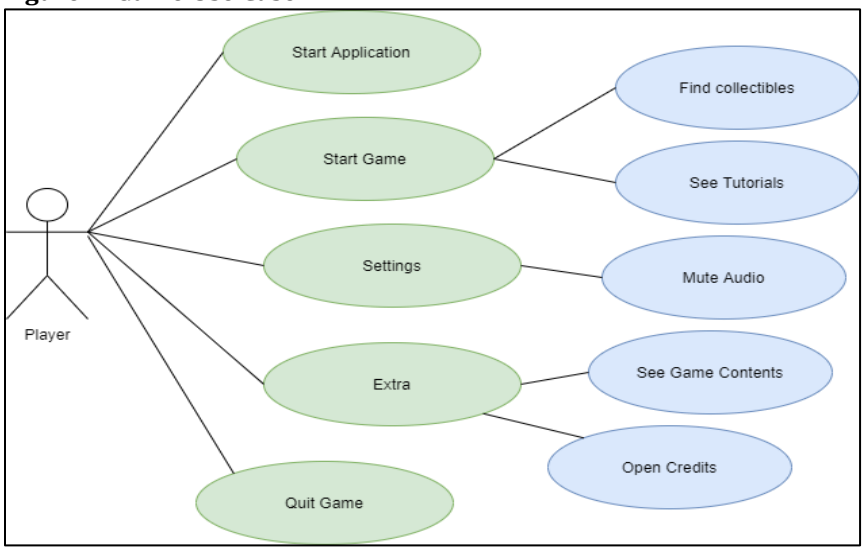
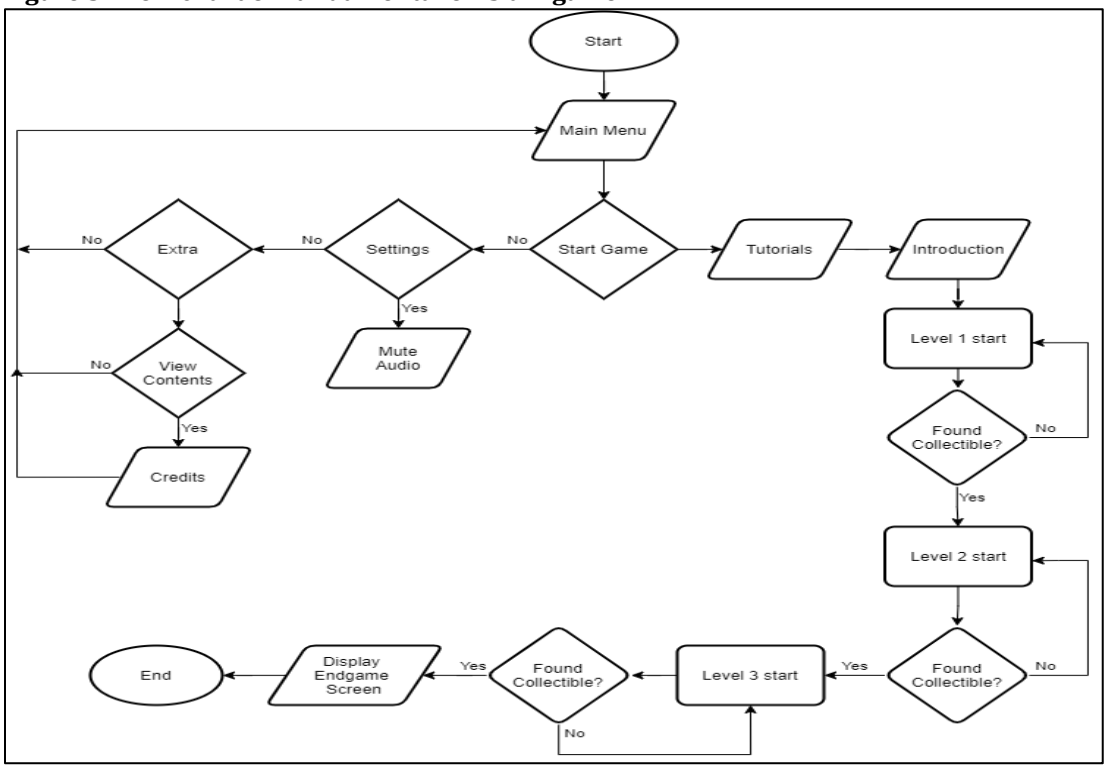


Figure 3 shows the flow of the Fundamental of Islam game. It tells how the gameplay starts till the end. When the player launches the game, a simple game logo will be shown then go to the game's main menu. In the main menu, players can find a few button options for them to select. Start the game to begin the game, Settings to go into settings and View Intel to see the intel from the game. When the player chooses to start the game, the game will start with a background story of the game and explain the objectives. For Settings, the player will be given the option to adjust game audio. Players also are given the option to view the contents of Fundamentals of Islam from the game in the main menu on the Extras page.

Figure 3: Flow chart of Fundamental of Islam game



Once the player starts the game, the player will be put into the first chapter of the game, player needs to find the contents of Rukun Islam scattered around the map as a challenge. Once they find all the contents in the corresponding level, they will proceed to the next chapter of the game. In the second chapter, the player needs to find the contents of Rukun Iman. The player then proceeds to level 3 of the game to find the contents of the Rukun Solat. If they manage to find all of them, the game will show the end scene and the game is over.

The implementation of the game inside this project will be based on the GBL Design model. The model consists of several criteria including goals, fantasy, interactions, challenges and sensations. Game goals are the objectives that need to be found by the players. They are scattered around the 3 maps. Before the game starts, an interface will brief the player regarding the objectives including the total number of them to be found. Figure 4 shows the introduction page to brief the player about the objectives. The game's objective is hidden and scattered around each of their corresponding map as shown in Figure 5. The player needs to collect all of them.

Figure 4: Introduction Page

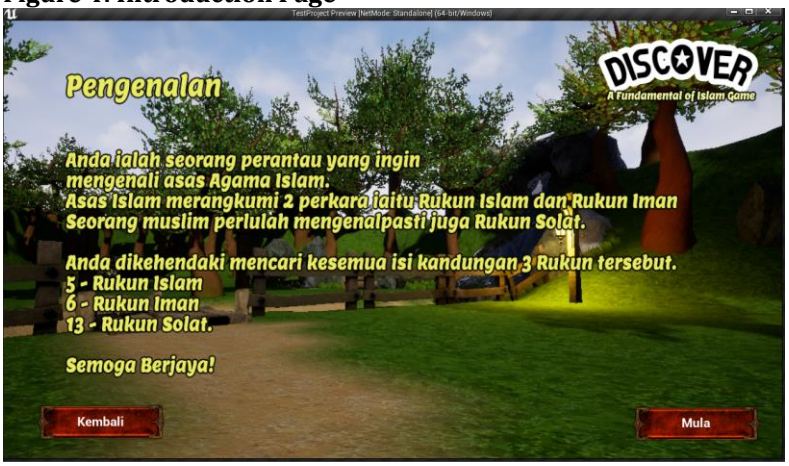
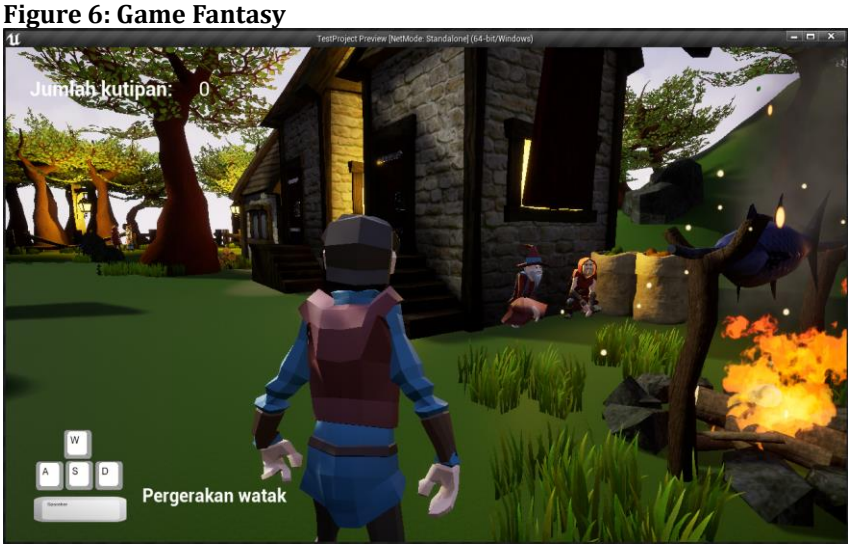


Figure 5: Collectible Objective



In the Discover game, the world environment is a medieval theme where the buildings and characters appear in medieval-like clothing and architecture. This helps the player feel attracted and interested through the game as shown in Figure 6.

Figure 6: Game Fantasy



In this game, the player's objectives are to collect all the contents of the Fundamentals of Islam which were scattered around all the maps. The challenge for the player is the collectibles are hidden and some are placed in higher places. This can be tough for some players due to the game's open-world formula. This game only includes simple player interaction because it is targeted at younger player age which is in primary school. The interaction is the player movements, menu navigation and collecting the objectives as shown in Figure 7.

Figure 7: Player Interactions



In terms of menu navigation, the player can interact with the buttons provided in the menus as shown in Figure 8. This allows players to navigate to other menu pages for example the settings or the extras page.

Figure 8: Menu Navigation



Player feedback was recorded after they finished the game via questionnaire. The feedback was from the selected group of young players. Figure 9 shows the player's opinion regarding the learning content of the game. Majority of the players somewhat agree with the learning content inside the game. From the chart in Figure 10, the game interface opinion has mixed results from the players. However, the majority of them understood the game's Interface. Figure 11 shows the players' opinion on the game interactivity function, most of them are somewhat satisfied with the simple game interactivity.

Figure 9: Opinion on Learning Content Chart

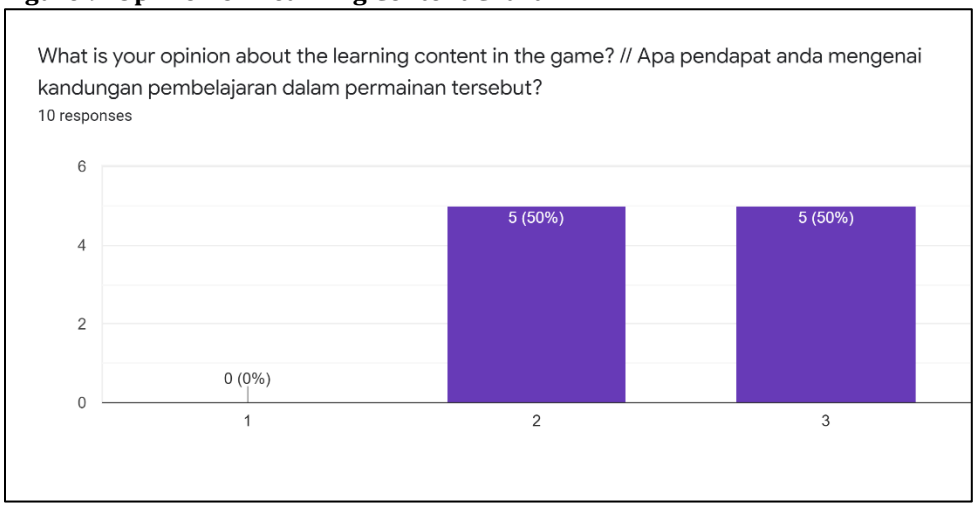


Figure 10: Opinion on Game Interface

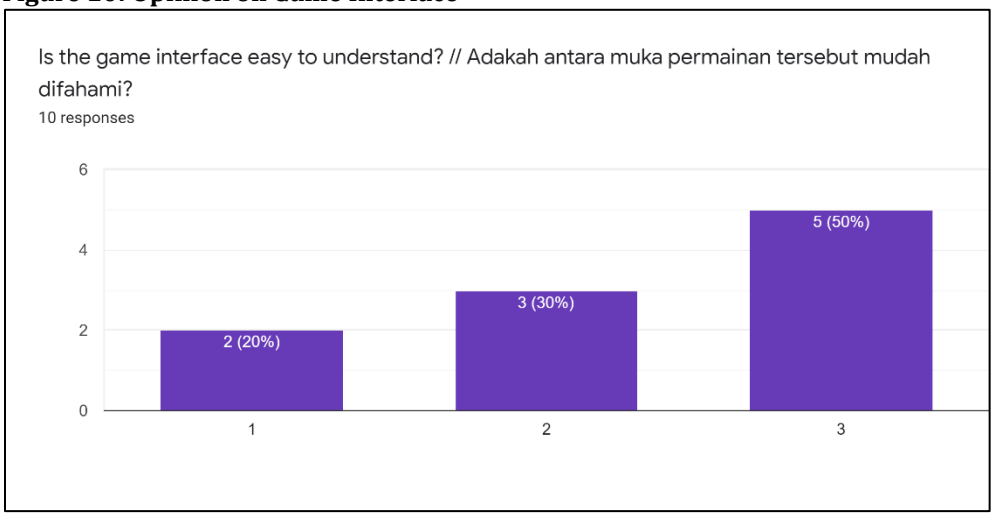
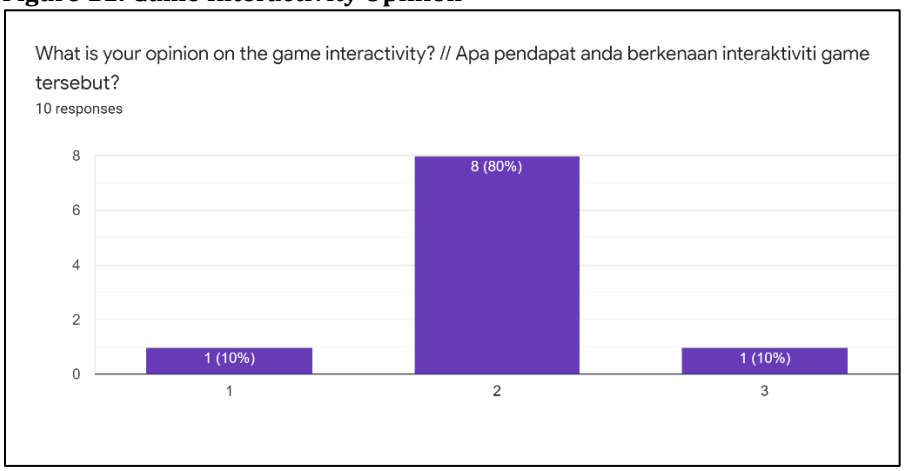


Figure 11: Game Interactivity Opinion



5. Conclusion and Recommendations

It is important to educate and share knowledge with others especially among other Muslims regarding the Fundamentals of Islam alongside its' other important points as the Rukun Islam, Rukun Iman and Rukun Solat are the main pillars of becoming a proper Muslim. However, as technology evolves through the years, new generations often forget the three main points. This is due to the traditional learning method is less interactive and engaging enough for the students to learn with passion. Plus, some students are slow and are left behind among their classmates. By using the Game-Based Learning approach, the said students can catch up and learn in a fun and interactive way. Results that have been achieved from usability testing show that the majority of users are satisfied and enjoy the game. Most importantly, they were able to learn and refresh about the Fundamentals of Islam through the game. This proves that games can be an alternative way to education. Overall, all objectives that have been stated have been successfully achieved.

Recommendations

The Fundamental of Islam game project was designed for students who are learning Pendidikan Islam. To maximize the student's satisfaction when playing the game, changes in this project are important as the game is in the school. In that scenario, to enhance the game, fresh features and elements need to be applied to the project:

Adding a graphic setting into the game

This is to allow the user to select their optimal graphics settings according to the PC specification that they used. If the user has a low-end pc, the user needs to change the graphics settings for the best performance and gaming experience.

Add Language Option

The available language in the game is only in Bahasa Melayu, it might be troublesome for non-Malay speakers to understand the interface and game flow. With other languages included at least English, non-Malay speakers can understand the game better. This addition can increase the chance for the game to be in the public market.

Add More Interactivity

Even with the available interaction that can be made in the game, more interactivity would be a good addition to make the game more fun to play. More interactions mean more player engagements.

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