

Mobile Games Applications for Learning the Indonesian War National History

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ABSTRACT

Covid19 has proof as a massive disruption technology implementation, where every human life aspect depends on internet technology including in education. However, during the covid19 pandemic, online learning becomes boring since students can not socialize with their friends, face the presentation or video, and answer the quiz assessment with multiple-choice, essay, or case study. In this paper, we proposed the way to apply online learning with more fun and entertainment by applying games as part of teaching and learning, where at the end of the day the students never realize that they are playing games rather than learning subjects. We applied in a history lesson as a sample particularly in Indonesian war national history, wherein some schools, history subjects as a students' favorite subject when the students will have remarkable experiences to set backdate when the story happened. A roleplay simulation game is applied to make fun and entertain historical education for the young generation particularly the history of Indonesian wars to give respect for our founding fathers and heroes who gave independence for this nation. We believe, by adding games in online learning will increase the interest of students to learn and increase the knowledge by something they like about such as games.

KEYWORDS

Mobile games application; Mobile learning application; games history

1 Introduction

There were six countries which as the occupier in Indonesia that came such as Portuguese (1509-1595), Spanish (1521-1692), Dutch (1602-1942), France (1806-1811), England (1811-1816) and Japan (1942-1945). Portuguese and Spanish started their occupation in Maluku islands and there was war between them and made a treaty where the Philippines was under Spanish where Maluku islands were under Portuguese. In the following years, Portuguese was lost from the Dutch army, and stay at east Timor. Dutch with VOC (Vereenigde Oostindische Compagnie) was established in 1602 as the dutch trade union and as the longest occupier. France as the occupier as well when the Dutch fell into Napoleon Bonaparte in 1800 and sent Willem Daendels as Batavia governor and in 1811 France suffered defeat from England and was forced to surrender the archipelago

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into the British colonial administration. England sent Stamford Raffles to become Batavia's governor and recognized as a very kind-hearted and pro-people governor. In 1816, the Nusantara archipelago was returned to Dutch until the coming of Japan's soldier in world war 2 (1942) for only 3 years.

Portuguese came first to Indonesia for did the trade and occupied the Indonesian eastern part such as Maluku.^[1] The inflated prices of spices in the late era of Europe made a connection to the fabled Spice Islands a first for seafaring nations and while pepper, cloves, and nutmeg grew in many parts of Asia, where nutmeg and cloves were only found in Maluku, Indonesia.^[2] The expansion into the maritime spaces in the Indian Ocean played a role in how the Portuguese conducted their operations in Asia. The Portuguese monopolized the spice trade, restricting the operations and has made crucial choices for the local ports.^[3] Meanwhile, as the exponent of local opposition against the Portuguese, Aceh made war with matters of containment and survival. In 1565, the sultan of Aceh named Alau'd-din Ri'ayat Shah Al Kahar, sent an official mission to appeal for assistance from the Ottoman emperor to take Portuguese away from Aceh. The war has been taking place continuously until the Dutch came and took over the occupation.^{[4][5]}

In 1810, the recognized Thomas Stamford Raffles get involved in an Acehnese succession dispute. In 1824, Aceh remained an independent state owing to Raffles' treaty.^[6] In 1873, Dutch forces finally invaded Aceh. The Dutch forces killed the sultan and turned down the capital after months later. However, the new sultan instantly runaway to high lands due to his hunting by Dutch forces in 1903. Many people declare resistance again the Dutch. A new ulama named Daud Beureueh to reform the Acehnese society, by opening resistance schools which challenged the Dutch. In 1939, the group established the organization which they called Persatuan Ulama Seluruh Aceh or Aceh Ulama Association. The association struggles to revitalize the anticolonial agendas and asked to the Japanese's help. Finally, after World War II, the Dutch are not able to recapture Aceh and move back to their land.^[7]

Before Indonesian independence, Japan did forced labor on Indonesians called romusha.^[8] Romusha was told to build a military defense for Japan such as built Japanese caves, bring the canon to the highlands, and make bunkers. In the Japanese colonial era, the condition of the Indonesian people downturned, many people were starving and also died to romusha work in the days of Japan.^{[9][10]} Earlier stage right before the Japanese occupation, there was a young man who gave a speech to burn the spirit of Indonesian youth in Surabaya during British attack, he called "Bungtomu."^[11] At that time, He gathered young people around Indonesia to fight against British colonialism. British known as the most influential country in the world, but it did not make Bungtomu afraid. Even with the massive attack in Surabaya, Indonesian people were strong enough under the Bungtomu's leadership. There are many young people and also kyai influenced by Bungtomu's fighting spirit, but Surabaya still loses and handed over to the Netherlands.^[12] Meanwhile, Hiroshima city and Nagasaki were dropped by the Atom weapon, so Japan surrendered unconditionally. As a result, Indonesian youth gathered and kidnapped the highest leader, such as Sukarno who can influence the people of Indonesia.^{[13][14]} The reason why young people kidnapped him because they want to declare Indonesian independence faster and also secure influential leadership.^[15]

Throughout the war in Asia, Indonesia was granted independence in August 1945 due to the surrender of Japan which previously to secure Japan's position in the countries that they have already occupied, they set up independent administrations in Indonesia.^[16] As Many people know Indonesian independence was proclaimed in Batavia on August 17, 1945, by the Indonesian leaders, Soekarno, and Hatta^[17], along with the youth militant. On that day, Soekarno and Hatta were inaugurated as the first President and Vice-President of the Republic of Indonesia.^[18]

Many people tend to learn the history of Indonesian independence excitingly. Our proposed roleplay simulation game that was inspired by a simulation game called "Desa Maya Budaya Indonesia" or "DayaBaya" for its concept and storyline, and roleplay game called "Final Fantasy" for its virtual character graphic, game mechanism^{[19][20]} and the gameplay. This roleplaying game was created educationally for students at young ages until teenagers because kids in this era love to play smartphone and games. To give educational information is not an annoying way, the game was created entertainingly.



2 Previous Research

There were a simulation game that brought the storyline of Indonesian history through gameplay. The game was “Desa Maya Budaya Indonesia” or “DayaBaya.” “DayaBaya” is a simulation game that has been developed for education.^[21] In the simulation games, where the scope between communications and actions of actors was broadened by using linking to material and technical things through the system resources.^[22] It was developed to support student learning that is often built on a conceptual model to correlate with the real world. Simulation games can represent models or help to mimic real-life situations by mirroring real-life systems.

At the start of the game, the game will display playing field and semantic object model (usually called business objects) from the villages which were selected through the lobby.^[23] The Players are assigned with an initial of one house, several coins, and one of the business objects item which will be used to deploy the village.^[24] “DayaBaya” game goals were to build an object like cultural heritage, human habitat, livelihood, and landscape. The object's size is designed to fit in the mobile screen proportionally.^[25] They have some research through a questionnaire to make sure people improve their knowledge by playing the game “DayaBaya.” From the survey, almost all users agree that the “DayaBaya” game improves their knowledge and there is much information about Indonesian history through the game objects in the game. Through the game, “DayaBaya” expects the player for recognizing and learning the Indonesian culture. Aside from the game “DayaBaya,” there is another education game with a different genre which is “Heroic Battle of Surabaya”.^[26] The game is built in two languages, such as English and Bahasa Indonesia. Enriched with multimedia content, the game provided various trivia games about the Indonesian historical event of 10 November 1945, the day as a memento of the heroic battle in Surabaya.^{[27][28][29]}

3 Proposed Idea

In this paper, we proposed an educational game with the Aceh War as an example to explain the game mechanism, dan the genre of this game as the roleplay simulation game. We choose this genre because by using this game, people can learn through the game as an innovative pedagogical approach for education. This game was developed using the Push Button Engine (PBE) as the primary development tool. We choose Push Button Engine (PBE) because the tool is easy peasy to use and able to deploy a flash-based game. Push-Button Engine (PBE) is usually used in favorite online games such as Pet Society, Restaurant City, Zoo World, and Fish Ville.

Figure 1 shows the use case diagram of this roleplay simulation game which consists of three sub-use cases such as Login, registration, and GamePlay. Moreover, GamePlay uses case activity where the user plays this roleplay simulation game and contains seven subs <<extend>> use cases such as information, notification, setting, shop, account, tutorial, and character as will be explained in the next page.

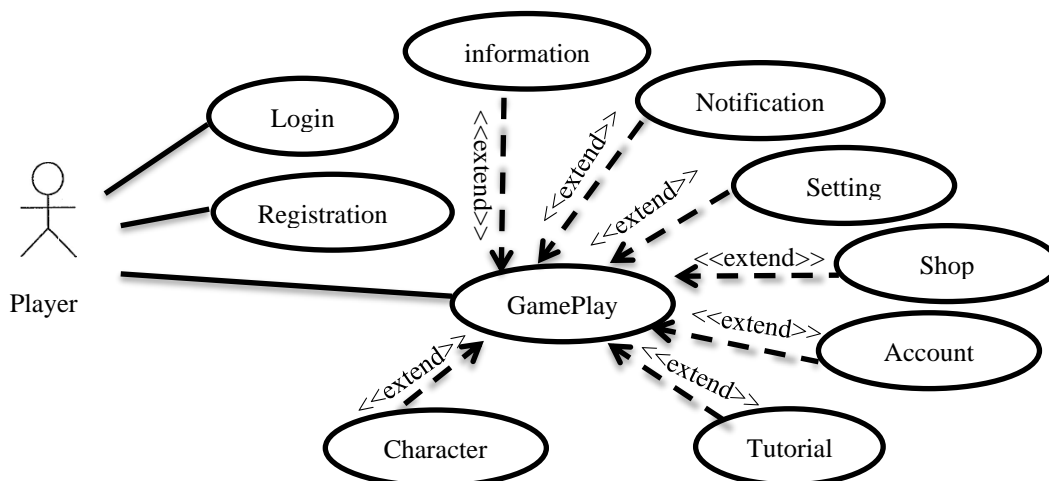


Figure 1: Use Case diagram for proposed roleplay simulation game for learning Indonesian war national history



Figure 2 is a home user interface when the player running this roleplay simulation game which has two options such as login and registration, whereas mentioned in figure 1 then figure 3 shows the login user interface where the user should enter their email and password. Meanwhile, figure 4 shows the registration user interface where the new player should enter their information such as first name, Lastname, email, and password. Currently, for trial purposes then we just only focus on these 4 player's attributes.



Figure 2: Home User interface

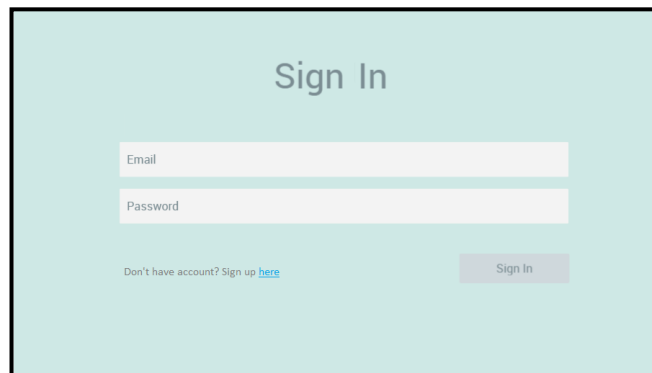


Figure 3: Login User Interface

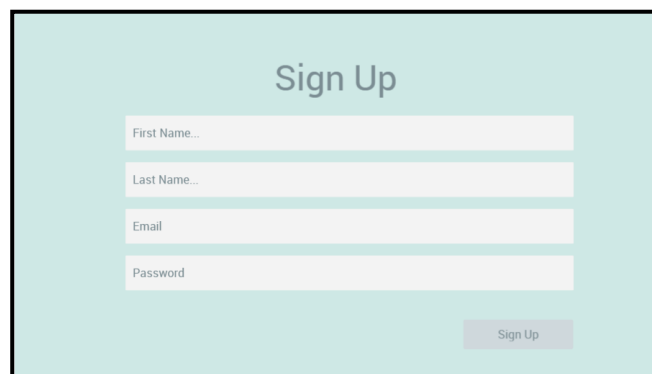


Figure 4: Registration User Interface

After login to the roleplay game simulation then the game will have the main menu as shown in figure 5 as the representation of use case GamePlay which has seven subs <<extend>> use cases as shown in figure 1 such as:



1. Information, where the player can choose to get any information related to the game.
2. Notification, where every log game and news will be provided here.
3. Setting, which includes audio, language, graphic setting, etc.
4. Shop, where the player will be able to upgrade their player's tools such as a weapon, health, and so on, and will be explained detail as shown in figure 11.
5. Account, which related to player account update such as changing password, etc.
6. Tutorial, where the player can exercise regarding with detail game in this roleplay simulation game.
7. Character, where the player can change their character as suitable and available for them.

As shown in figure 5, the player's name will be displayed and when the player ready to play then they can push the start button and figure 6 shows the map of 34 provinces in Indonesia, where the player can zoom the chosen specific province location. After select one from 34 provinces then the screen will list the list of war history which had happened at that selected province.

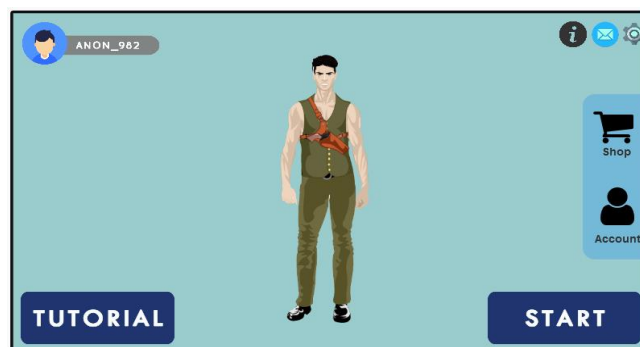


Figure 5: Main Menu User Interface



Figure 6: Map of 34 Indonesian Provinces Selection User Interface

Figure 7 shows the example when the player selects Aceh province at the top left corner of the Indonesian Map, include showing the list of war histories that had happened in Aceh province such as Aceh War I, Aceh War II, Aceh War III and the battle of Batee Iliiek. All these war histories were collected from Indonesian national war history. After that, the player will select which war history that they want to learn and play about it and the game will show the Indonesian national hero from the selected province. Figure 8 shows the example when the player selects Aceh War III and show Indonesian national heroes such as Teuku Umar and Cut Nyak Dhien as real Indonesian national hero who was involved in Aceh War III.

Furthermore, the screen displays the storyline of the chosen story, which shows the pictures of the situation, and the narrator's sayings in that time and event as illustrated in figure 9. The player can also skip the narrator's



story if they want. Each storyline will be divided into three chapters. The progress of each chapter is separated so that each chapter can be played anytime.

The first chapter introduces the main character of the event, which is the real hero who was involved in the event. As the game continues, the narrator will appear and explain the history along with the storyline. The player needs to follow the main character in order to get along with the storyline. The player needs to walk around to understand the situation, as illustrated in figure 10.

The second chapter explains the triggering event and causes war. In this section, the player needs to fight alongside his or her allies, which are the main character and the group. The last chapter is the third one; it closes the story and gives the morale of the story.

After the player finished the story, they will be rewarded with coins (virtual currency) to upgrade their weapon power. The player works as a supporting character that does not belong in real history in order to prevent changing the storyline. So, the player cannot choose the team because the system will automatically arrange the player to team up with the designed group, which is AI (Artificial Intelligence) against the enemies who are also AI.

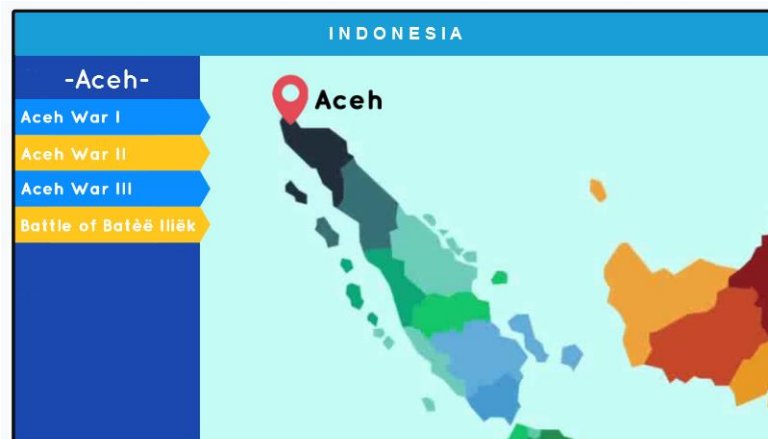


Figure 7: Province Selection example (Aceh Province) User Interface



Figure 8: War Story Selection User Interface



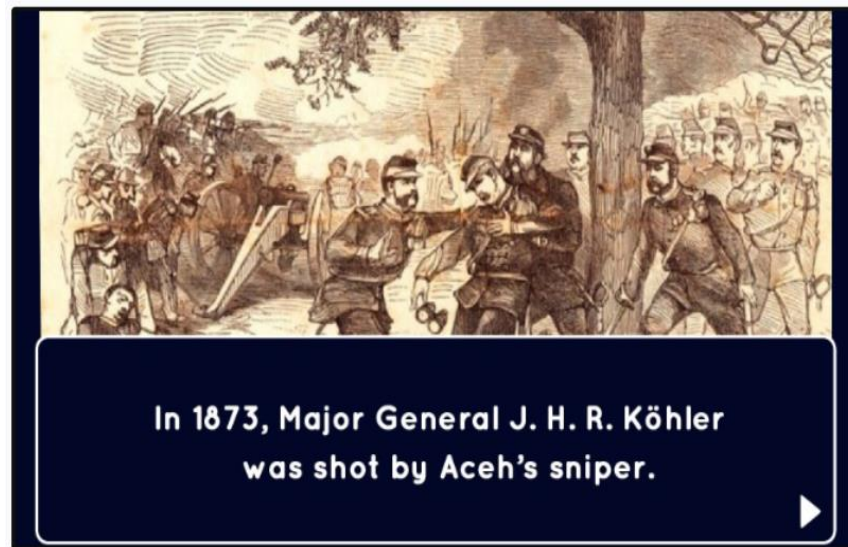


Figure 9: Storyline User Interface



Figure 10: Player point of View User Interface

The summary of the gameplay was listed below as seven points:

1. The player needs to choose a province based on the map.
2. The player needs to choose an event to play based on the previous selection.
3. After the player entered the game, a narrator appeared and explained the story (chapter 1) that introduces the situation of the area, the places, year of the event, the hero along with his or her identity.
4. Going along with the storyline, the player needs to stick around with the main character (the hero) and his or her group.
5. Chapter 1 completed, and then the player moves into chapter 2. Chapter 2 explains the triggering event. After that, the war begins.
6. After the war ended, the player moves into chapter 3. Chapter 3 explains the epilogue of the story and give morale to the story.
7. Players rewarded with coins to upgrade the weapon's power.



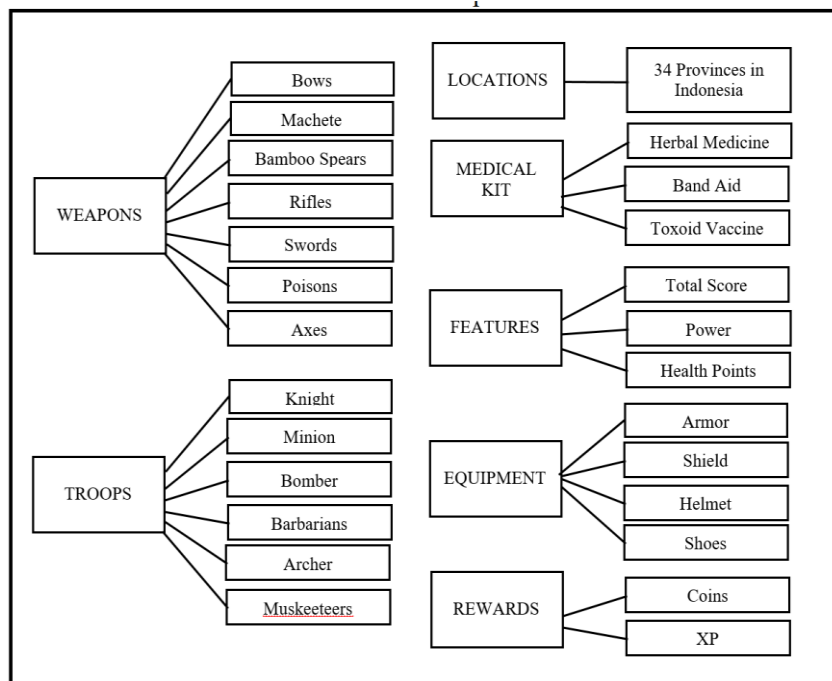


Figure 11: Player's tool options

The game framework was divided into seven parts, such as weapons, troops, locations, medical kit, features, equipment, and rewards, as illustrated in figure 11 such as:

Weapons, the weapons have their powers and can be upgraded later with coins (virtual currency). The weapons are divided into seven kinds of weapons such as:

- a. Bows, a weapon for shooting arrows made of a curved piece of wood.
- b. Machete, a large, heavy knife weapon.
- c. Bamboo Spears, a weapon with a long shaft and a pointed tip made with bamboo.
- d. Rifles, a long-ranged gun with high accuracy.
- e. Swords, a weapon with a long metal blade.
- f. Poisons, a type of dangerous chemical thing.
- g. Axes, a massive tool that able to chop things.

Troops, which are significant here because everything depends on the number of troops. The troops are divided into six kinds of troops such as:

- a. Knight, a moderate single-target melee troop.
- b. Minion, single-target melee troops that usually placed in the defense unit.
- c. Bomber, medium-ranged fragile troops that deal massive damage.
- d. Barbarians, melee troops that can deal with a variety of damages.
- e. Archer ranged single target troops with light armors that cause them to become fragile.
- f. Musketeers, single targeted troops that usually placed in the defense unit.

Locations, which contain 34 Indonesian Provinces.

Medical kit, which is used to heal injured characters or troops. The medical kit is divided into three parts such as:

- a. Herbal Medicine, which made by nearby plants that were proved to the faster healing process.
- b. Band-Aid, which is used to stop the bleeding.
- c. Toxoid Vaccine, which is used to stop status ailments (negative status effect).



Features, which were divided into three parts such as:

- a. Total Score, which was gained from how much time the battle took.
- b. Power, where each weapon and troops have a different power to maintain the balance of the game.
- c. Health Points, where each player needs to keep their troops and their characters to maintain the health points in order to prevent being killed.

Equipment, which is also vital to keep the troops alive. The equipment is divided into four parts such as:

- a. Armor, as the metal coverings, to protect the body.
- b. Shield, as a defensive metal carried in hand.
- c. Helmet, as a defensive metal, to protect the head.
- d. Shoes, as metal shoes, to cover the feet.

Rewards, as were given to the player in order to upgrade their account level and weapon power and they are:

- a. Coins, as the virtual currency used to upgrade weapon power.
- b. XP, the virtual points used to upgrade the account level.

4 Conclusion

This roleplay simulation game was designed and implemented to educate people about the war history in Indonesia, and this game will help the player particularly for children to learn their national history in fun and entertainment ways. This roleplaying game provides storylines based on real history along with the characters. Each character in this game has a different kind of abilities and mission that can be related to history. This roleplaying game uses modern graphics and gameplay to improve the interest of the player to play this game. Some of the player's tool is still the ideas and hope by creating this roleplaying game will attract the encouragement to learn by online using game and particularly in this covid19 pandemic situation where the children can stay at home and learn their history at home in fun and entertainment way where they have never relied on that they learn their national history.

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