

CHAPTER I

INTRODUCTION

1.1. Background of the Study

The development of digital technology in the 21st century has had a significant impact on various areas of life, including education. The utilisation of technology in the learning process is not only limited to the use of presentation media or e-learning platforms, but has also developed through interactive media such as educational games. Educational games are seen as capable of integrating entertainment aspects with learning functions, so that students can learn in a more enjoyable, immersive, and participatory way [1]. Game-Based Learning (GBL) is a method used to increase student motivation and engagement [2]. The effectiveness of GBL lies in its ability to combine entertainment elements with pedagogical objectives, which ultimately has a positive impact on student learning outcomes [3].

One of the fields that require learning media innovation is the history subject. The history learning process generally still uses lecture methods and static presentation media [4]. This condition makes students less actively involved in understanding the cause-and-effect relationships of an event, and not encouraged to explore the values and meanings contained therein. History has an important role in instilling national values, patriotism, and critical thinking skills in the younger generation [5]. Therefore, an alternative learning medium is needed that is capable of presenting a more interactive and meaningful history learning experience.

One of the important historical events to be introduced to the younger generation is the Battle of Puputan Margarana which occurred on 20 November 1946 in Bali. This event was led by Lieutenant Colonel I Gusti Ngurah Rai along with the Ciung Wanara troops who carried out a puputan or an all-out war against the Dutch troops with a larger force [6]. The event is not only historically valuable, but also full of moral messages regarding bravery, sacrifice, and struggle strategies. However, in learning practices in schools, the history of post-independence battles is often delivered briefly without providing the opportunity for students to understand the dilemmas, strategies, and consequences faced by the heroes. This

causes students' understanding to tend to stop at a mere rote level, without deeper internalisation of values.

The 2D Action Role Playing Game (RPG) genre is the right choice to raise the historical theme of the Battle of Puputan Margarana in an educational game. The use of RPGs in learning is proven to increase learning motivation, historical understanding, as well as students' critical thinking skills [9]. In the Action RPG genre, the player acts as a character and controls the character directly in real-time combat so that success is determined by the player's skills and reflexes [10]. The game loop of the Action RPG genre consists of exploration, combat, and quests [11]. This makes the Action RPG genre relevant to representing the history of the Battle of Puputan Margarana interactively and engagingly. A two-dimensional visual approach with a top-down perspective provides field-of-view clarity that supports exploration and combat mechanics [10]. Research by Fauzan et al. [12] proved that a history-themed Action RPG genre game obtained a feasibility score of 93% with a "Very Good" category, confirming that this genre is highly demanded by players and is suitable as a historical educational game genre.

To enrich the interactive dimension of history learning in the game, Branching Narrative is applied as the storytelling method. The branching storyline structure allows players to make decisions that influence the course of the story, so players not only receive information passively, but are also actively involved in the learning process [13]. The narrative pattern in Branching Narrative provides space for players to explore various choices and understand their consequences [14]. Research by Grasse et al. [15] proved that Branching Narrative-based educational games are more effective compared to linear web-based learning, because it significantly increases learning engagement ($p = 0.029$) and moral reasoning abilities ($p = 0.004$). This shows that educational games with Branching Narrative are capable of deepening material understanding while simultaneously training students' critical thinking skills.

Besides the storytelling method, the Stealth Minigame is applied as a gameplay variation that differs from the main game mechanics and is placed at important events in the historical flow. Historically, before the attack on the Tabanan Barracks, there was an intelligence mission to deliver information to a

Netherlands Indies Civil Administration (NICA) Captain who sympathised with the Balinese fighters [16]. This event becomes the historical basis of the Stealth Minigame in the game. Stealth mechanics require the player to move undetected through planning and observing enemy patrol patterns [17]. The stealth mechanic in the game trains carefulness, tactical planning, as well as decision-making based on limited situations, thus providing the player with an understanding of action consequences [18]. Research by Adetiya et al. [19] has proven that the stealth mechanic is highly effective in training player tactics and carefulness, but its application is still limited to the realm of entertainment games and has not been adapted for the educational game context.

Several previous studies have shown the potential of historical educational games. Khamzah et al. [20] developed a national hero recognition game, but the flow is still linear, thus providing less room for decision-making. Azizah et al. [21] raised the theme of local culture through an RPG game, but the presented narrative is still linear. Hilmawan and Yuniati [22] developed an RPG game with the theme of the Bubat War, but have not applied a Branching Narrative. Meanwhile, research by Fauzan [12] proved Action RPGs are highly demanded for history learning but the narrative is still linear, not yet facilitating decision-making, and research by Adetiya et al. [19] proved the Stealth mechanic is highly interactive but has not been adapted for the educational game realm. In addition, there is no research specifically raising the historical event of the Battle of Puputan Margarana in an educational game.

Departing from the limitations of previous studies, this research aims to develop a 2D Action RPG genre educational game about the history of the Battle of Puputan Margarana. The innovation of this research lies in the application of the Branching Narrative and Stealth Minigame methods in a historical educational game. The developed Puputan Margarana game is expected to be capable of improving players' understanding related to the history of the Battle of Puputan Margarana, and providing an enjoyable playing experience.

1.2. Problem Formulation

Based on the background of the study that has been described, the problem formulation in this research is :

1. How to develop an educational game on the history of the Battle of Puputan Margarana with a 2D Action RPG genre, Branching Narrative method, and Stealth Minigame ?
2. How is the effectiveness of the educational game on the history of the Battle of Puputan Margarana in improving historical understanding ?
3. What is the level of user experience satisfaction towards the educational game on the history of the Battle of Puputan Margarana ?

1.3. Research Objectives

In line with the problem formulation that has been explained, the objectives of this research are as follows :

1. To develop an educational game on the history of the Battle of Puputan Margarana with a 2D Action RPG genre, Branching Narrative method, and Stealth Minigame.
2. To measure the effectiveness of the educational game on the history of the Battle of Puputan Margarana in improving historical understanding.
3. To analyse the level of user experience satisfaction towards the educational game on the history of the Battle of Puputan Margarana.

1.4. Significance of the Study

This research is expected to provide contributions both theoretically and practically. The benefits of this research are :

1. For researchers, this research provides direct experience in developing and evaluating a historical educational game using a Branching Narrative, as well as adding to academic contributions in the field of educational games.
2. For players, the developed game can present a more interactive and engaging history learning, thus helping to improve material understanding and critical thinking.

3. For schools, this game can become an innovative alternative learning media to support the teaching process, making the delivery of historical material more lively, participatory, and easily understood by students.

1.5. Scope and Limitations

In order for this research to be more focused, the author determines the scope of the problem as follows :

1. The historical material raised in the game is limited to the history of the Battle of Puputan Margarana.
2. The storyline uses the Branch & Bottleneck narrative pattern.
3. The developed game is intended for the Windows desktop platform..
4. The genre of the developed game is 2D Action RPG.
5. The game is developed using Unity version 2022.3.62f2.