

CHAPTER I

INTRODUCTION

This chapter comprehensively discusses the background underlying the research, including the problems encountered and the urgency of the proposed solution. Furthermore, the problem formulation, objectives, and scope of the research are outlined to provide a clear overview of the study's focus. Finally, the expected benefits of this research are presented from both academic and practical perspectives.

1.1. Background

The rapid advancement of information technology has now expanded into various sectors, including education and child psychology. Technology is no longer merely perceived in relation to the operational mechanics of tools or systems, such as machinery development. Instead, it has shifted toward serving as a strategic medium for embedding character values. In the context of modern education, leveraging digital technology is crucial to creating learning environments that resonate with the characteristics of digital natives, specifically students of Generations Z and Alpha [1]. This utilization is deemed capable of bridging the communication gap between educators and students when conveying sensitive materials related to social behavior.

However, in field practice, character education and school counseling services (BK) predominantly rely on conventional methods. These conventional approaches include one-way lectures, verbal advice, or the display of appeal posters. Such methods are often perceived by students as boring, outdated, and unimpressive [2]. This teacher-centered approach tends to solely transfer cognitive knowledge (knowing what is wrong) while failing to engage the students' affective domain (feeling that it is wrong). Consequently, the internalization and cultivation of moral values progress slowly, leaving students struggling to apply them in real-world situations.

One of the most urgent moral crises requiring a novel approach is the issue of bullying. This phenomenon has shown an alarming upward trend in Indonesia. According to data from the Indonesian Education Monitoring Network (JPPI), there was a surge in educational violence cases from 285 cases in 2023 to 573 cases in 2024, representing an increase of over 100% [3]. This condition is further underscored by a report from the National Criminal Information Center (Pusiknas) of the Indonesian National Police Criminal Investigation Department (Bareskrim Polri), which recorded an 18.7% increase in the number of child protection crime victims up to November

2025, reaching a total of 14,512 victims. Geographically, East Java Province ranks highest in the number of bullying cases nationwide. These figures serve as a loud alarm that educational environments, which ought to be safe spaces, are currently in a vulnerable state that demands more massive, measurable, and creative preventive actions.

The problem becomes increasingly complex as bullying manifests in various interconnected forms. Combined data from KPAI and JPPI indicates that physical bullying dominates at 55.5%, followed by verbal or psychological bullying at 29.3%, alongside a cyberbullying surge of over 100% according to the 2024 GoodStat report. The Junior High School (SMP) level represents one of the most critical inflection points, contributing to 25% of the total national cases. The multifaceted nature of bullying, spanning from verbal intimidation to physical violence, necessitates an educational medium capable of simulating this entire conflict spectrum. Through simulation, students can deeply experience the emotional impacts without undergoing real-world risks, which is expected to suppress the rising rates of bullying.

Furthermore, the root cause of bullying behavior frequently stems from low levels of empathy among students, defined as the capacity to share and understand the feelings of others. Teaching empathy cannot be achieved solely through theory; rather, empathy must be cultivated through experiential learning. The inherent challenge lies in the difficulty of providing real-world experiences of being a victim without endangering or negatively impacting students. Therefore, a safe virtual simulation is required, allowing students to explore the perspectives of both victims and perpetrators without risk.

Consequently, the Game-Based Learning (GBL) approach is selected as a solution to address this challenge. This approach leverages game mechanics for educational purposes, establishing an environment that enhances student motivation and emotional engagement [5]. Through role-playing mechanisms, games enable students to position themselves within another person's perspective. Other studies demonstrate that in-game interactions trigger stronger emotional responses compared to passive media like videos or books, thereby proving more effective in altering attitudes and behaviors [6].

In developing GBL media for social intervention, utilizing the Unity engine with a 2D narrative visual style serves as a strategic choice. The 2D visual style, resembling comics or visual novels, is highly popular among elementary and junior

high school students, making it more easily accepted. Unity 2D also facilitates an emphasis on character expressions and storylines, both crucial for conveying emotional messages, while remaining lightweight enough to run smoothly on available school devices [7].

To ensure the simulation feels realistic, implementing a Branching Narrative method becomes an essential element to grant players the freedom to make decisions that alter the storyline and game ending [8]. In the context of bullying prevention, this feature trains students' decision-making skills when confronting dilemmas, whether to act passively or actively, and allows them to witness the direct consequences on the character's fate.

Nevertheless, the majority of current bullying educational games remain linear or consist only of static narratives and simple quizzes that poorly represent the complexity of real-world bullying situations. The primary flaw is the absence of measurable instruments to evaluate emotional impacts in real-time [9]. This makes it difficult for players to grasp the psychological toll that every action or word inflicts on a victim's mental health.

Therefore, this study develops an educational game that integrates Branching Narratives with various game mechanics specified according to the conflict types. The deployment of Focus Mini-games to represent cyber harassment, Panic Control for emotion management simulation, and Quick Time Events (QTE) for responses to physical intimidation aims to provide a valid simulation experience. All of these interactions will be validated by an Emotional Meter system that reacts directly to player choices, thereby creating a more technical, measurable, and immersive educational medium.

1.2. Problem Formulation

Based on the background described, several problems are formulated to define the focus of this study:

1. How can the Multimedia Development Life Cycle (MDLC) methodology be implemented to develop a Unity 2D-based bullying educational game?
2. How can a single-player interaction system be designed to integrate Branching Narrative mechanics with various mini-games tailored to the types of bullying?
3. How effective is the game in enhancing students' empathy, and what is the level of user experience (UX) satisfaction with the developed medium?

1.3. Research Objectives

Based on the formulated problems, the objectives of this research are as follows:

1. To develop a bullying educational game built using the Unity engine following the standard Multimedia Development Life Cycle (MDLC) methodology.
2. To implement a variety of interactive game mechanics synchronized with branching narrative pathways and the Emotional Meter System to enhance players' emotional engagement.
3. To evaluate the game's effectiveness in enhancing students' empathy using pre-test and post-test methods, and to measure the level of user experience satisfaction using the GUESS-18 instrument.

1.4. Research Benefits

This research is expected to provide significant benefits for researchers, students, and educational institutions regarding learning media:

1. Contributing to the development of technology-based learning methods through the application of Branching Narratives and the Emotional Meter System feature to measure emotional responses.
2. Providing a reference for future research in the field of educational game development that utilizes character education themes and interactive simulation technology.
3. Developing affective empathy skills and moral decision-making through gameplay that demonstrates the real-world consequences of social actions.
4. Supporting efforts to utilize technology in school counseling services (BK) to improve the quality of character education in schools.
5. Serving as an exemplar for the implementation of interactive media in bullying prevention programs that can be utilized and further developed by other schools

1.5. Research Limitations

To ensure the research remains focused and well-directed, several limitations have been established to define the scope of the study:

1. The study focuses exclusively on specific types of bullying, namely verbal, social, cyber, and physical bullying.

2. The system development methodology utilizes the Multimedia Development Life Cycle (MDLC).
3. The game is built using Unity 2D, targeting Junior High School (SMP) students as the user base.
4. The game content is divided into six stages that simulate the escalation of conflict from verbal, cyber, and social intimidation to physical violence.
5. The interaction mechanisms within the game include various mini-games tailored to the type of conflict, specifically: Focus Mini-game (for cyber harassment), Panic Control (for emotion management), and Quick Time Events (QTE) (for physical responses).
6. The primary feature consists of an Emotional Meter that serves as a parameter for the protagonist's mental health, which is automatically validated by the system.
7. Effectiveness testing is conducted through N-Gain score calculations, while user experience testing is evaluated using the GUESS-18 questionnaire.