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Allegorical Gameplay Design: Developing The 2d Platformer Game 'Remember' To Represent Adolescent Mental Health Challenges

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Abstract

Mental health is a crucial yet often overlooked aspect, particularly among adolescents navigating the "storm and stress" developmental phase. In Indonesia, this demographic is pivotal to the nation's demographic bonus, yet the prevalence of mental health disorders within this group remains significantly high. This research aims to address the gap in mental health promotion programs by exploring the potential of serious games as a medium to increase awareness and foster empathy. The specific objective is to design and develop a game prototype titled "Remember," tailored specifically for adolescents. The development methodology utilizes the Unity Game Engine as the primary framework, Visual Studio Code for C# scripting, and Libresprite for 2D pixel art asset creation. "Remember" is designed as a 2D story-based platformer, presenting an allegorical narrative of an adolescent protagonist (Elina) navigating an imaginative world to recover lost diary pages, which represent the process of healing from trauma and grief. The output of this project is a playable prototype featuring core mechanics such as character movement, dashing, wall jumping, and a non-NPC, trigger-based dialogue system for narrative delivery. This project concludes that games employing strong narratives can be effective tools for mental health awareness, provided the design process carefully balances engaging gameplay with a sensitive and accurate representation of emotional experiences

Keyword: Allegorical Gameplay Design; Platformer Game; Adolescent Mental Health

INTRODUCTION

Mental health is a foundational component of human well-being, defined as a state that enables individuals to manage life's pressures, realize their potential, and contribute effectively to their community (World Health Organization, 2022). Conversely, poor mental health, characterized by disturbances in thought, emotion, and behavior, is a leading cause of disability globally (Kemenkes, 2018). The World Health Organization (WHO) reported that in 2019, nearly one billion people were living with a mental health disorder, and over 700,000 individuals die annually from suicide, a tragedy often linked to severe mental distress (World Health Organization, 2022). Despite these figures, global efforts in mental health promotion and prevention remain suboptimal. A 2021 WHO atlas revealed that of 572 promotion programs identified across 167 countries, only 73% were deemed functionally qualified, indicating a significant gap in effective mental health advocacy (World Health Organization, 2025).

This gap is particularly concerning when considering the adolescent population. Adolescence, the period of transition from childhood to adulthood (approx. 12-21 years), is famously characterized by "storm and stress". During this phase, individuals undergo rapid cognitive and emotional changes, coupled with high curiosity, making them uniquely vulnerable to negative influences and mental health challenges. In Indonesia, this demographic is critical to

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the impending demographic bonus (peak 2020-2035). However, recent data indicated that 1 in 20 Indonesian teenagers experienced a mental disorder post-pandemic, with individuals in their productive years (20-54) accounting for the majority of mental disorder cases (Center for Reproductive Health, University of Queensland, & Johns Bloomberg Hopkins School of Public Health, 2022).

Traditional awareness campaigns often fail to engage this demographic effectively. This paper explores an alternative medium: video games. Far from being solely negative, studies indicate that games can be potent tools for stress relief, emotional management, and the development of soft skills like problem-solving and creativity. This aligns with the academic concept of "Serious Games," which are games designed for a primary purpose other than pure entertainment, such as education, simulation, or health (Susi, Johannesson, & Backlund, 2007). Research in this area (e.g., McCallum, 2012; Fleming et al., 2017) has demonstrated the efficacy of serious games in delivering health interventions, improving health literacy, and reducing stigma. By leveraging narrative and interactive gameplay, serious games can foster empathy and understanding in ways static media cannot.

This study focuses on the design and development of "Remember," a 2D story-based serious game prototype. The research aims to answer two primary questions: (1) How can a game be designed to effectively raise awareness about mental health? and (2) What is the potential impact of such a game on player awareness?. The objective is to produce a playable prototype that uses allegorical gameplay and narrative to represent the internal challenges of adolescent mental health, thereby fostering empathy and awareness in the player.

2. METHOD

This research employed an adapted Game Development Life Cycle (GDLC) methodology (Ramadan & Widyani, 2014), structured around phases of Analysis (Initiation), Design (Pre-Production), Development (Production), and Iterative Testing, which aligns with the project's work schedule

2.1. Analysis Phase

This initial phase involved identifying the core problem (aforementioned gap in adolescent mental health awareness) and conducting a literature review to establish the theoretical foundation. The review focused on Game Thinking, distinguishing Serious Games from Gamification and Games for entertainment. This confirmed the viability of using a serious game to address complex topics like depression and anxiety in teenagers.

2.2. Design Phase

Based on the analysis, a design concept for "Remember" was formulated.

- Genre and Platform: A 2D pixel art narrative platformer was selected. The platformer genre provides a familiar structure of navigating obstacles, which serves as a strong metaphor for overcoming personal challenges.
- Narrative Design: A central narrative was crafted focusing on Elina, a teenager grappling with loss and trauma. The core objective—finding lost diary pages that contain reminders—was designed as an allegory for the process of healing and cognitive self-discovery.

- Art and Aesthetic: A 32x32 pixel art style was chosen, using Libresprite . The protagonist Elina was designed with a hood to visually represent grief and isolation. The environment was designed to transition from white (clarity) to black (despair), reflecting the protagonist's mental state.

2.3. Development and Implementation Phase

The design was implemented using a specific set of tools.

- Engine: Unity Game Engine was the primary development environment.
- Scripting: C# was used within the Visual Studio Code environment to program the game's logic.
- Asset Creation: All 2D visual assets were created using Libresprite.
- Core Mechanics: Development focused on creating responsive player controls, including horizontal movement (Input.GetAxisRaw("Horizontal")), jumping (OnJumpInput()), and dashing (OnDashInput()). Advanced platformer mechanics, such as wall jumping, were also implemented to enhance engagement. Physics and collision checks (OnGroundTime) were crucial for regulating these mechanics.
- Narrative System: A non-NPC (Non-Player Character) narrative system was developed. Narrative text is displayed when the player enters invisible trigger zones, creating a narrator effect that guides the player and delivers the story without interrupting gameplay.

2.4. Testing and Evaluation Phase This phase involved constant testing and fixing of the prototype. This iterative process focused on debugging, polishing particle effects, and ensuring the mechanics felt responsive. The current prototype is playable but acknowledged to be in an ongoing development process with known bugs.

3. RESULT AND DISCUSSION

The development of the "Remember" prototype provides a foundation for discussing the efficacy of allegorical game design in the context of mental health awareness. The discussion is organized into three areas: the interpretation of gameplay as a psychological allegory, the game's role as a "Serious Game" for adolescent engagement, and the critical design challenges encountered.

The primary result of this project is a functional, playable prototype of the 2D serious game "Remember". The game runs on the Unity engine, with assets created in Libresprite . In its current state, the player controls the protagonist, Elina, using keyboard inputs (A/D for movement, Space for jump, X for dash. The prototype successfully implements core platforming mechanics, including a wall jump, and an attack function (E key). The objective is to navigate environmental obstacles to find the missing diary page, completing the stage. The narrative is delivered through the integrated trigger-based text system, as shown in the game's user interface.

3.1 Gameplay as Psychological Allegory

The central hypothesis of this project is that abstract psychological concepts—specifically depression and anxiety—can be translated into tangible gameplay mechanics to foster empathy.

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- Representing Depression: The literature review defines depression as a state of feeling "lost," "sinking," and "hopelessness". "Remember" models this internal state through several deliberate design choices.

    1. Narrative & Character: The protagonist, Elina, is motivated by a profound sense of loss. Her visual design—a hooded figure with a "wearier tired run and jump animation" —is a non-verbal representation of withdrawal, grief, and the psychomotor retardation often associated with depressive episodes.

    2. Environment as Mindscape: The environmental design functions as a direct allegory for the protagonist's mental state. The level begins "white," representing clarity or a baseline, but progressively "gets darker" as the player advances, eventually becoming "all black". This shift visually confronts the player with the encroaching "sinking" feeling of despair that is difficult to describe with words alone.

    3. Core Mechanic as Therapy: The gameplay loop itself—searching for lost diary pages —is a mechanic of recovery. It is an active, goal-oriented process that mimics cognitive therapeutic approaches, where an individual learns to identify and reconnect with positive memories or "reminders" to challenge a negative mindset. The re-emergence of the "white colour" at the level's end provides immediate, positive feedback, reinforcing the concept of hope.

- Representing Anxiety: The literature defines anxiety as a state of "fear," "worry," and "uneasy" feelings.

    1. Externalizing the Threat: The "dark force" that Elina faces is a personification of her internal, unstable mental state. This design choice externalizes an abstract internal feeling. The anxiety is no longer a vague sensation but a tangible *obstacle* that must be actively navigated, avoided, or confronted (via the attack mechanic).

    2. Modelling Social Anxiety: The narrative triggers, such as the text "I don't know why but they start to distence [sic] me for some reason...", are explicit representations of social anxiety. This models the rumination and worry over social perception that is a common stressor for adolescents

3.2 "Remember" as a Serious Game for Adolescent Engagement

This project positions "Remember" as a "Serious Game," which is defined by its primary purpose of education or training rather than pure entertainment. This approach is particularly suited for the target demographic—adolescents.

- Active vs. Passive Engagement: Adolescents are in the "storm and stress" phase, characterized by high curiosity and identity formation. Traditional, passive mental health interventions (e.g., pamphlets) may not be engaging. "Remember" leverages the "Power of Play" by framing awareness as an "active, problem-solving activity". This aligns with studies, such as the one on *Minecraft: Education Edition*, which show that game-based learning improves engagement and knowledge demonstration.

- Navigating Stigma: Mental health issues are often stigmatized. A narrative game provides a "safe space" for exploration. By playing as Elina, the user can experience a proxy version of these challenges, fostering empathy without the personal risk of disclosure.

The game avoids being "preachy" by embedding its message within the story, making it more acceptable to an age group that is often resistant to overt instruction

3.3 Design Challenges and Methodological Reflections

The development process itself yielded critical insights, as reflected in the author's suggestions.

- Trivialization vs. Representation: A significant challenge in this genre is to "reflect real emotional experiences without minimizing them". The author's suggestion to "Understanding the topic" is paramount. The choice of an *allegorical* design, rather than a direct, realistic simulation, was a deliberate strategy to avoid this pitfall. It allows players to engage with the *emotions* (loss, fear, hope) without making simplistic or potentially harmful claims about the clinical experience of a specific disorder.
- Managing "Scope Creep": The suggestion to avoid "Scope Creep" is a key methodological reflection. The initial conflict in the documentation (3D vs. 2D) and the unpolished state of the prototype suggest the project's ambitions were constrained by time and resources. A more focused scope, as recommended, would lead to a more polished final product

3.4 Limitations and Future Directions

The development of this prototype supports the conclusion that interactive, narrative-driven games can be powerful tools for mental health awareness. By allowing players to *experience* an allegorical representation of mental health struggles rather than just reading about them, the game fosters empathy and understanding.

However, the project has limitations. The prototype is not a finished product; it remains in development and requires significant polishing and bug fixing. The suggestion regarding "Scope Creep" highlights a common development challenge that must be managed. Furthermore, the effectiveness of the game as an awareness tool has not yet been empirically tested on the target audience. Future work should involve user testing with adolescents to measure the actual impact on their understanding and empathy regarding mental health

The primary limitation is that this study presents a *proof-of-concept*, not an empirically validated tool. The conclusions are based on *design analysis*, not user data. The prototype's actual impact on adolescent awareness and empathy is, as of now, untested.

Future work must move from development to evaluation.

1. Usability Testing: The prototype must be polished and subjected to usability testing to identify and fix bugs and improve the player experience.
2. Empirical Validation: A formal study involving the target demographic (adolescents) is required. A pre-test/post-test methodology could be used to measure changes in mental health literacy and stigma scores after playing the game.
3. Content Expansion: The current prototype serves as a single level or chapter. A full game would require expanding the narrative to cover the complete arc of Elina's recovery, introducing new mechanics that parallel the healing process.

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4. Conclusion

This research detailed the design and development of "Remember," a 2D serious game prototype aimed at raising mental health awareness among adolescents. By integrating a theoretical framework of adolescent psychology (depression and anxiety) with specific game design choices, the project demonstrates how abstract psychological concepts can be translated into tangible, interactive mechanics and allegorical narratives.

The project concludes that:

1. Games can effectively impact mental health awareness by using storytelling and interactivity to foster empathy.
2. Creating such a game requires a thoughtful balance of engaging gameplay with a sensitive and accurate representation of real emotional experiences.

"Remember" serves as a proof-of-concept that serious games are a viable and potent medium for addressing complex social and health issues.

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