

CHAPTER V

CONCLUSIONS AND SUGGESTIONS

5.1 Conclusion

Based on the research conducted, several conclusions can be drawn as follows:

1. Functional evaluations via Black Box Testing demonstrate that the educational game prototype, developed using the Multimedia Development Life Cycle (MDLC) methodology within a Unity 2D environment, operates optimally without any unintended technical failures across menu initialization routines, screen transitions, and typewriter dialogue text rendering animations.
2. The architectural design of the single-player interaction system successfully integrates Branching Narrative mechanics with three distinct mini-game variants (Lexical Filtering in Stage 2, Timing Calibration Bar in Stage 4, and Quick Time Events/QTE in Stage 5), effectively simulating the dynamic evolution of peer harassment conflicts via the real-time feedback loops of the Finite State Machine (FSM)-powered Emotional Meter system.
3. The embedded anti-bullying pedagogical framework demonstrates a highly effective capacity to significantly enhance students' affective empathy levels. This outcome is statistically validated by the Normalized Gain (N-Gain) analysis, which achieved an average score of 0.70 (Moderate growth category) with a substantial mean score increase from a baseline of 50.8 to a terminal post-test value of 84.7. Furthermore, the user experience (UX) evaluation metrics conducted via the GUESS-18 scale achieve a cumulative feasibility rating of 88.6%, placing the application securely within the Very Feasible operational index.

5.2 Suggestions

Based on the empirical findings and architectural constraints identified during the study, the following suggestions are proposed for future development:

1. It is recommended to further optimize the user interface (UI) design layout and scale up the game execution architecture toward mobile operating platforms (Android and iOS). This deployment expansion will enable students to access this interactive learning medium with greater flexibility outside the physical constraints of school computer laboratories.

2. Future iterations should expand the depth of the narrative structure by incorporating a wider variety of storyline pathways, complex internal character monologues, and additional choice nodes within the branching narrative framework, thereby enhancing the game's overall replayability and encouraging deeper exploration of divergent narrative endpoints.
3. Advanced security methods or end-to-end data encryption protocols should be implemented within the automated data logging scripts that manage data transmissions to the Cloud Data Manager (Google Sheets pipeline). This mechanism is crucial to safeguard student evaluation report logs against potential unauthorized access, data manipulation, or external file tampering.