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Design of the Android-Based Puzzle Game "Mindful Maze" Using Construct 2 and the Game Development Life Cycle (GDLC) Methodology

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ABSTRACT

An Android puzzle game can provide short, structured entertainment, but its potential cognitive effects must be distinguished from measured outcomes. This study describes the design, implementation, and initial user evaluation of Mindful Maze, developed in Construct 2 using six Game Development Life Cycle (GDLC) phases: initiation, pre-production, production, testing, beta, and release preparation. The game combines six maze levels, pre-level questions, enemy avoidance, fruit-themed item collection, character selection, and sound controls. All 11 specified functional test scenarios were reported as successful. Beta testing involved 21 students from the D4 Informatics Management program at Universitas Negeri Surabaya, representing the 2023 and 2026 cohorts. Eighteen respondents (85.7%) indicated that gameplay met their expectations, while 15 (71.4%) and 14 (66.7%) gave the highest ratings to game features and design, respectively. An additional post-game item showed that 14 respondents (66.7%) chose agreement ratings of 4 or 5 when asked whether they felt calmer after playing. These responses describe perceived calmness, not an experimentally measured change in stress or concentration. The findings support the functional implementation of Mindful Maze and indicate favorable initial playtesting feedback.

1. INTRODUCTION

Digital games provide interactive opportunities for problem solving, planning, and entertainment. Recent research identifies game-design choices as relevant to enjoyment [1], while smartphone-game evaluation also considers controls, feedback, and platform-specific interaction [2]. In the D4 Informatics Management program at Universitas Negeri Surabaya, students manage practice-oriented coursework and may seek brief recreational activities between classes. The initial questionnaire reported in the thesis provided a local rationale for developing a mobile maze-and-puzzle game; it did not establish that gameplay reduces academic stress.

Mindful Maze is a two-dimensional puzzle game developed with Construct 2 for Android. Players navigate a maze, collect fruit-themed puzzle items, avoid snake enemies, and complete a question prompt before entering the selected level. The game uses a six-level progression, on-screen directional controls, limited lives, and menus for settings, character selection, and pausing. The term "mindful" denotes a design intention to encourage attention during play, rather than a tested psychological intervention. Recent reviews examine games in mental-health settings but do not justify inferring such outcomes from this project [3], [4]. Sound settings are also a game feature; no effect of in-game audio on player experience was independently measured [5].

This paper aims to (i) describe the application of the six-stage Game Development Life Cycle (GDLC), (ii) explain the game mechanics and implementation documented in the final project, and (iii) analyze functional tests and descriptive beta feedback. Previous studies applied GDLC to game development [6], [7], while another study

implemented an Android educational game in Construct 2 [8]. Mindful Maze contributes a documented application that combines six maze levels, pre-level questions, fruit-item collection, enemy avoidance, and simple mobile controls for university students. Its contribution concerns this configuration of mechanics and its reported user evaluation, rather than a new development methodology or a demonstrated psychological intervention.

2. LITERATURE REVIEW

2.1 Puzzle Games and the Mindful Maze Concept

Puzzle and maze games organize explicit rules, obstacles, and collection objectives into tasks requiring decisions by players. Recent game-development studies illustrate related applications of GDLC [7] and Construct 2 [6], [8]. In Mindful Maze, puzzle items are distributed across maze routes and must be collected before the exit can be used. Its implementation further combines pre-level questions, enemies, and limited lives instead of relying on a single puzzle interaction.

The design concept of Mindful Maze emphasizes deliberate navigation rather than a race against a timer. Although reviews discuss the possible mental-health applications of digital games [3], [4], the thesis does not report a validated intervention, a guided breathing exercise in the released game, or before-and-after measures of attention or stress. Accordingly, calmness and improved focus are treated as design aims, not experimentally established outcomes.

2.2 Android and Construct 2

Android was selected as the target platform based on the intended student audience and the pre-development survey, in which 86.7% of respondents reported using a smartphone most often to play games. Construct 2 was used for its visual 2D layouts and condition-action event sheets [8]. The thesis reports an HTML5-to-APK packaging workflow using VoltBuilder, but does not give a systematic compatibility matrix for different phone models or measured frame rates.

2.3 Game Development Life Cycle (GDLC)

The project followed six GDLC phases also used in recent game-development research [7], [9]: initiation, pre-production, production, testing, beta, and release. Initiation established the concept and intended audience; pre-production specified menus, characters, mazes, enemies, and collectible assets; production implemented game assets and event logic; testing examined defined functions; beta gathered user responses; and release prepared the Android APK. The original project did not quantify the number of iterative development cycles.

2.4 Playtesting and Game Assets

Playtesting and functional testing address different questions. Functional testing checks whether a specified game action produces the expected result, while game usability studies and player-experience research examine controls, interaction, and subjective experience [10], [11]. Research on software testing in games also distinguishes the scope of testing methods and their coverage [12]. The thesis used a project-specific questionnaire rather than a validated player-experience instrument, such as approaches investigated with GUESS-18 or GEQ [13], [14]. Its individual percentages should therefore not be interpreted as standardized usability or mental-health scores. Functional correctness also does not establish broader software quality [15].

3. RESEARCH METHODOLOGY

This applied game-development study adopted six GDLC phases as its principal development framework [7], [9]. Evidence comprised design documentation, an 11-scenario functional test record, a pre-development questionnaire about gaming preferences, and a post-development beta questionnaire. The intended participants were D4 Informatics Management students at Universitas Negeri Surabaya. The beta group consisted of 21 students from the 2023 and 2026 cohorts. The study did not employ a randomized intervention or a matched before-and-after assessment of psychological outcomes.

3.1. Research Workflow

Figure 1 summarizes the six development phases. Initiation identified the concept of an Android maze puzzle; pre-production produced interface wireframes and level scenarios; production used Construct 2 layout and event-sheet features to create interactive behavior; testing examined 11 game functions; beta gathered user ratings; and release prepared an Android application package. The thesis describes these stages as the organizing workflow rather than an intervention study.

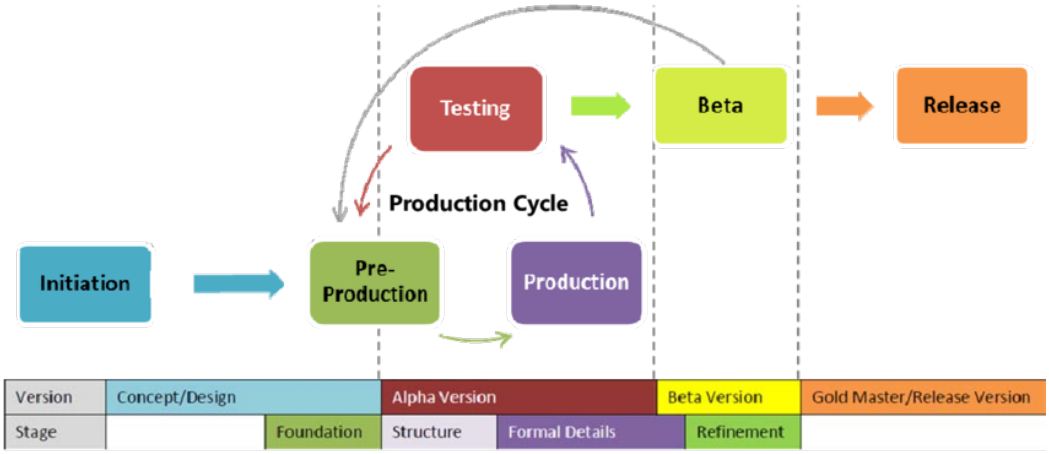


Figure 1. Six-phase Game Development Life Cycle workflow

3.2. Hardware and Software Requirements

The requirements analysis covered the development workstation, the intended Android environment, graphics and audio assets, local previews, and APK packaging. Tables 1-3 summarize specifications and tools documented in Chapter III of the thesis. The Android device requirements are proposed targets; the report does not include comparative device benchmarks to establish measured minimum performance thresholds.

1. The game was developed using an HP-series laptop with an Intel Core i5-10210U processor, an NVMe solid-state drive, and Windows 10 or Windows 11 (64-bit), as specified in the thesis. Memory and graphics options are reproduced as reported rather than asserted as exact configurations used in every test (Table 1).

Table 1. Reported Development Computer Specifications

Development laptop component	Reported specification	Intended role
Device	HP-series laptop	Main development workstation
Processor	Intel Core i5-10210U (10th generation; 1.60-4.20 GHz)	Game logic and project compilation
RAM	8 GB / 16 GB DDR4 (as reported)	Multitasking during design and development
Storage	512 GB NVMe M.2 SSD	Project and asset storage
Graphics	Intel UHD Graphics; optional dedicated GPU	Two-dimensional graphics rendering
Operating system	Windows 10 / Windows 11, 64-bit	Construct 2 development environment

2. Table 2 reproduces the target Android requirements given in the thesis: Android 5.0, at least 2 GB RAM, and a 720 x 1280 display as proposed minimums. These values should not be mistaken for empirically validated compatibility limits because comparative device testing was not presented.

Table 2. Proposed Android Device Requirements

Android component	Proposed minimum	Proposed recommended
Operating system	Android 5.0 (Lollipop)	Android 10 or later
RAM	2 GB	3-4 GB or more
Processor	Quad-core 1.2 GHz	Octa-core 1.8 GHz or higher
Screen resolution	720 x 1280 pixels (HD)	1080 x 2400 pixels (FHD)
Free storage	At least 100 MB	At least 500 MB
Touch input	Capacitive touchscreen	Multi-touch screen

3. Construct 2 served as the primary engine. Figma was used for two-dimensional asset design, Pixabay was listed as a source for audio assets, browsers supported local game previews, and VoltBuilder was used to package an Android application (Table 3). Pixabay was used as an audio-asset source, not as an audio editor. The reported condition-action event-sheet workflow is consistent with recent Construct 2 game-development applications [8].

Table 3. Supporting Software and Development Tools

Category	Tool	Role in development
Game engine	Construct 2	Two-dimensional layouts, gameplay logic, and event sheets
Graphics editor	Figma	Creation and editing of sprites, maze blocks, backgrounds, and UI assets
Audio asset source	Pixabay	Source listed for background music and sound effects; not an audio editor
Web browser	Google Chrome / Mozilla Firefox	Local preview and initial functional checks
APK packaging	VoltBuilder	Packaging the exported game into an Android application file

3.3. Interface and Level Design

Pre-production produced wireframes for the main menu, level selection, maze, player, enemy, and collectibles. Six playable level scenarios were specified. Level 1 required collecting three banana items, level 2 four watermelon items, level 3 five papaya items, level 4 six strawberry items, level 5 seven apple items, and level 6 eight melon items. The layouts and enemy challenges varied by level; these design specifications are documented in Chapter III of the thesis. The game also included level-specific question prompts before maze play.

3.4. Functional Testing and Playtesting

Chapter IV of the thesis reports 11 functional scenarios covering the main menu, level selection, correct and incorrect quiz answers, character controls, collectible items, enemy collision, level exit, pausing, sound settings, and game over. All 11 rows were marked "Berhasil" (successful) in the reported test table. This is an 11/11 pass rate for the listed scenarios, not evidence that every possible game condition or Android device was tested. In addition, the beta phase collected direct gameplay feedback from student testers [10]-[12].

3.5. Descriptive Data Analysis

The pre-development and post-development questionnaires were summarized with response counts and percentages. Pre-development percentages are consistent with approximately 15 responses (e.g., 60.0% corresponds to 9/15 and 86.7% to 13/15), although the source report does not explicitly record the initial sample size. The beta questionnaire involved 21 students from the target study program. Most post-development questions used five response levels with item-specific anchors: character controls (1 = very difficult, 5 = very easy), playing comfort (very uncomfortable to very comfortable), enemy consistency (very inconsistent to very consistent), enemy response, visual design, and features (very poor to very good), level challenge (very low to very challenging), puzzle collection (neutral to very satisfied), and pre-level question difficulty (very easy to very difficult). Perceived calmness was assessed with agreement responses from 1 (strongly disagree) to 5 (strongly agree); gameplay smoothness used separate categorical options. Because the response meanings differ between items, percentages are described per question rather than combined into a single usability or mindfulness score. A formal sampling method and respondent age or gender distributions were not documented.

3.6. Beta Testing and Release Preparation

During beta testing, 21 students of the D4 Informatics Management Study Program at Universitas Negeri Surabaya, from the 2023 and 2026 cohorts, played Mindful Maze and then completed a questionnaire. The questionnaire addressed character controls, playing comfort, enemy consistency and responsiveness, gameplay smoothness, level challenge, game design, puzzle-collection experience, game features, question difficulty, and self-reported calmness after play. Participants were drawn from the intended student audience; the available research report does not specify a formal recruitment or sampling procedure. The release phase prepared an Android APK and project documentation, and the thesis appendix includes photographs of students testing the game on mobile phones. Public app-store distribution was not documented.

Table 4. Summary of Beta Testing and Release Activities

GDLC Stage	Activity	Reported output
Beta	Playtesting by 21 students from the 2023 and 2026 cohorts; collection of item-specific user responses	Questionnaire counts and feedback for refinement
Release preparation	Preparation of the Android application package and final project documentation	Android APK and documentation; public store release not documented

4. RESULTS AND DISCUSSION

4.1. Game Implementation

The implemented game follows a sequence from main menu and level selection to a pre-level quiz, maze navigation, fruit-item collection, and completion or game over. The player uses directional buttons and must avoid enemy collisions, which reduce the number of lives. The exit becomes available when the item-collection requirement is met. The six levels have different maze paths and targets: three bananas, four watermelons, five papayas, six strawberries, seven apples, and eight melons, respectively. The main menu and a gameplay example are shown in Figures 2 and 3, both drawn from the final project documentation.



Figure 2. Main menu of Mindful Maze

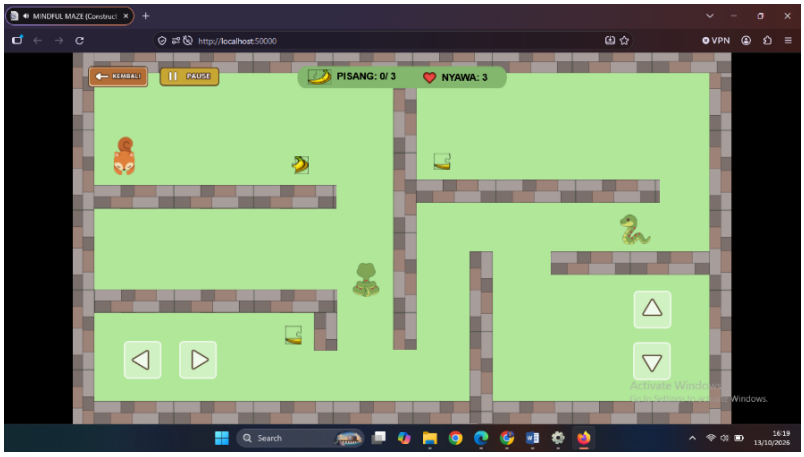


Figure 3. Example of Mindful Maze gameplay

Construct 2 event sheets implement the loading screen, main menu, level selection, six pre-level question screens, settings, character choice, puzzle collection, collision detection, enemy interactions, level completion, and game-over actions. The reported level logic checks the required collection total before opening the exit. The source documents functionality through event-sheet illustrations rather than source-code listings. Table 5 reports the observed outcomes of 11 functional test cases documented in Chapter IV.

Table 5. Functional Test Cases Reported in the Final Project (11/11 Passed)

Function	Expected behavior / scenario	Result
Main menu	Start button opens the level-selection menu	Passed
Level selection	An unlocked level opens its question screen	Passed
Quiz - correct answer	Player can proceed to the maze	Passed
Quiz - incorrect answer	System displays a response to an incorrect answer	Passed
Character movement	Character follows directional input	Passed
Puzzle collection	Contact collects an item and increments the total	Passed
Enemy collision	Player loses one life upon collision	Passed
Exit gate	Exit opens after all required items are collected	Passed
Pause	Gameplay stops temporarily and pause menu appears	Passed
Sound controls	Volume changes according to settings	Passed
Game over	Game-over screen appears after all lives are lost	Passed

4.2. Playtesting and Beta Questionnaire Results

Table 5 summarizes the 11 functional test scenarios reported as successful in the final project. A separate post-development questionnaire was answered by 21 students. Table 6 reports one explicitly defined response category per question, with the original respondent counts and corresponding percentages. Most of the numeric rows report the proportion selecting rating 5; perceived calmness instead combines responses 4 and 5 because the question measures agreement, while gameplay smoothness uses a categorical answer.

Table 6. Corrected Post-development Beta Questionnaire Results (n = 21; item-specific response categories)

Evaluation aspect	Selected response	Percentage
Gameplay smoothness	18 of 21: gameplay met expectations (category)	85.7%
Game design	14 of 21: rating 5 (very good)	66.7%
Game features	15 of 21: rating 5 (very good)	71.4%
Ease of character controls	12 of 21: rating 5 (very easy)	57.1%
Playing comfort	12 of 21: rating 5 (very comfortable)	57.1%
Enemy behavior consistency	8 of 21: rating 5 (very consistent)	38.1%
Enemy responsiveness	6 of 21: rating 5 (very good)	28.6%
Challenge across Levels 1-6	11 of 21: rating 5 (very challenging)	52.4%
Satisfaction after difficult puzzle collection	13 of 21: rating 5 (very satisfied)	61.9%
Pre-level question difficulty	9 of 21: rating 5 (very difficult)	42.9%
Perceived calmness after play	14 of 21: rating 4 or 5 (agreement)	66.7%

Among the 21 beta respondents, 18 (85.7%) selected the categorical answer that gameplay met expectations, whereas three (14.3%) identified a less attractive visual presentation. For five-point rating questions, the highest rating (5) was selected by 15 participants for game features (71.4%), 14 for game design (66.7%), 12 for character controls (57.1%), and 12 for playing comfort (57.1%). Eight participants rated enemy consistency 5 (38.1%) and six rated enemy responsiveness 5 (28.6%), although most selected ratings 4 or 5 for these items. Eleven participants (52.4%) rated the level challenge as very challenging, 13 (61.9%) rated satisfaction with difficult puzzle collection as 5, and nine (42.9%) rated pre-level questions as very difficult. These values are per-item top-category responses, not overall accuracy or user-satisfaction percentages. In particular, a high challenge or difficulty rating should not be interpreted as evidence of optimal game balance [10], [11], [13].

An additional post-game item asked whether respondents felt calmer after playing Mindful Maze than beforehand. Twelve of the 21 respondents (57.1%) selected rating 4 and two (9.5%) selected rating 5, giving 14 of 21 (66.7%) in the agreement range. Six selected rating 3 (28.6%), one selected rating 2 (4.8%), and none selected rating 1. These answers reflect self-reported perceived calmness on a single retrospective question; they do not quantify an observed pre-to-post change or establish that the game reduced stress. The 57.1% figure refers only to rating 4, not to the combined ratings 4 and 5. These findings should therefore be interpreted as perceived calmness rather than a demonstrated intervention effect [3], [4].

In the initial preference survey, whose percentages correspond to approximately 15 responses, 60.0% reported sometimes playing games between lectures, 73.3% selected gaming as an activity to relieve boredom or stress, and 86.7% used smartphones most often for gaming. In addition, 46.7% cited imbalanced difficulty and 40.0% repetitive gameplay as reasons for losing interest in puzzle games. These preferences informed the choice of a mobile game with six levels; they do not establish that Mindful Maze reduced stress, which would require an appropriately designed evaluation [3], [4].

4.3. Release Preparation

The project produced an Android APK and development documentation, and the revised thesis includes photographs documenting mobile-device playtesting. However, systematic compatibility or performance benchmarks across different Android models were not reported. Passing defined functional test scenarios should not be conflated with a broader game-quality assessment [15]. Related studies include a GDLC maze game built with Unreal Engine [16], a GDLC puzzle platformer [17], an Android educational game for preschool children [18], and a Construct 2 Android educational adventure [19]. Mindful Maze differs in its combination of six progressively specified mazes, fruit-item collection, pre-level questions, and enemy avoidance for university students; this is a distinction in application context and mechanics, not a controlled comparison demonstrating superiority.

5. CONCLUSION

Mindful Maze was implemented in Construct 2 according to the six GDLC stages: initiation, pre-production, production, testing, beta, and release preparation. The Android-oriented puzzle game incorporates six progressively specified levels, pre-level questions, maze navigation, enemy avoidance, and item-collection

requirements, together with character selection, sound settings, and pause functionality. The final project recorded 11 successful outcomes among 11 defined functional test scenarios.

The post-development beta questionnaire involved 21 students from the 2023 and 2026 cohorts. Eighteen (85.7%) indicated that gameplay met expectations; 15 (71.4%) assigned the highest rating to game features, 14 (66.7%) to game design, 12 (57.1%) to controls, and 13 (61.9%) to the satisfaction of completing difficult puzzle collections. For an additional calmness item, 14 respondents (66.7%) selected ratings 4 or 5 when asked whether they felt calmer after play. This item documents perceived calmness but does not establish a causal effect on stress or concentration, because validated paired psychological measurements were not performed.

Future development should consider additional levels and character variations, progress saving, improved balancing of level challenges and question difficulty, and further attention to visual quality. Replicated testing across Android devices would support compatibility claims. If psychological outcomes are to be studied, future work should use a validated instrument and clearly defined pre- and post-play measurements rather than relying solely on a retrospective question about perceived calmness.

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REFERENCES

[1] L. Caroux and M. Pujol, "Player enjoyment in video games: A systematic review and meta-analysis of the effects of game design choices," International Journal of Human-Computer Interaction, vol. 40, no. 16, pp. 4227-4238, 2024, doi: 10.1080/10447318.2023.2210880.

[2] R. S. Iyer, C. Ndulue, S. Meier, and R. Orji, "Smartphone games heuristics (SmGH) - Towards a standard set of platform-centric heuristic for smartphone games evaluation," International Journal of Human-Computer Interaction, vol. 41, no. 8, pp. 5057-5078, 2025, doi: 10.1080/10447318.2024.2356911.

[3] C. Vié, K. Govindin-Ramassamy, D. Thellier, D. Labrosse, and I. Montagni, "Effectiveness of digital games promoting young people's mental health: A review of reviews," Digital Health, vol. 10, art. 20552076231220814, 2024, doi: 10.1177/20552076231220814.

[4] A. Wols, M. Pingel, A. Lichtwarck-Aschoff, and I. Granic, "Effectiveness of applied and casual games for young people's mental health: A systematic review of randomised controlled studies," Clinical Psychology Review, vol. 108, art. 102396, 2024, doi: 10.1016/j.cpr.2024.102396.

[5] E. Heikkilä, A. Danso, and G. Luck, "Sound and music in video games: A systematic review of player engagement and a meta-analysis of positively valenced player experience," PLOS ONE, vol. 21, no. 10, art. e0361519, 2026, doi: 10.1371/journal.pone.0361519.

[6] A. D. Suci, D. Hendriawan, and R. N. Arzaqi, "Pengembangan game edukasi melalui Construct 2 sebagai media alternatif pengenalan keaksaraan anak usia dini," Murhum: Jurnal Pendidikan Anak Usia Dini, vol. 5, no. 1, pp. 740-751, 2024, doi: 10.37985/murhum.v5i1.654.

[7] M. E. Andriansyah, U. A. Rosyidah, and L. Handayani, "Perancangan game Nusan Guesser bertema sejarah berbasis Android menggunakan metode Game Development Life Cycle," Explore IT: Jurnal Keilmuan dan Aplikasi Teknik Informatika, vol. 17, no. 1, pp. 26-33, 2025, doi: 10.35891/explorit.v17i1.6082.

[8] S. Nurhalizah, N. Nugroho, and G. U. Pratama, "Game edukasi penyelamatan bumi dari sampah berbasis Construct 2 sebagai media pembelajaran," Computer Based Information System Journal, vol. 13, no. 2, pp. 57-68, 2025, doi: 10.33884/cbis.v13i2.10635.

[9] D. Zaliluddin, A. Bastian, and R. A. Afrenda, "Penerapan metode UX Honeycomb dan Game Development Life Cycle pada game Future Warfare," INFOTECH Journal, vol. 12, no. 1, pp. 59-66, 2026, doi: 10.31949/infotech.v12i1.16914.

[10] N. F. Abdul Jalil, U. A. Hasran, S. F. Mat Noor, and M. H. Norman, "The usability of digital game-based learning for low carbon awareness: Heuristic evaluation," International Journal of Advanced Computer Science and Applications, vol. 14, no. 5, 2023, doi: 10.14569/IJACSA.2023.0140535.

[11] N. Ballou, A. Denisova, R. Ryan, C. S. Rigby, and S. Deterding, "The Basic Needs in Games Scale (BANGS): A new tool for investigating positive and negative video game experiences," International Journal of Human-Computer Studies, vol. 188, art. 103289, 2024, doi: 10.1016/j.ijhcs.2024.103289.

[12] A. Roque, J. P. Sotomayor, D. Santiago, and P. J. Clarke, "A literature review of software testing practices and frameworks in the video gaming industry," Software Testing, Verification and Reliability, vol. 35, no. 2, art. e70001, 2025, doi: 10.1002/stvr.70001.

[13] G. Mittmann, V. Zehetner, I. Krammer, and B. Schrank, "Translation, adaptation and validation of the German version of the Game User Experience Satisfaction Scale (GUESS-GA-18) for adolescents," Behaviour & Information Technology, vol. 43, no. 7, pp. 1401-1415, 2024, doi: 10.1080/0144929X.2023.2212807.

[14] M. Rebhi et al., "Reliability and validity of the Arabic version of the Game Experience Questionnaire: Pilot questionnaire study," JMIR Formative Research, vol. 7, art. e42584, 2023, doi: 10.2196/42584.

[15] D. I. Carrión-León et al., "Evaluating interaction capability in a serious game for children with ASD: An operability-based approach aligned with ISO/IEC 25010:2023," Computers, vol. 14, no. 9, art. 370, 2025, doi:

10.3390/computers14090370.

[16] S. Syarif, T. Hasanuddin, and M. Hasnawi, "Perancangan game puzzle labirin menggunakan metode Game Development Life Cycle (GDLC) berbasis Unreal Engine," Buletin Sistem Informasi dan Teknologi Islam, vol. 3, no. 1, pp. 34-41, 2022, doi: 10.33096/busiti.v3i1.582.

[17] M. Adam and I. F. Anshori, "Perancangan game puzzle platformer Ploop menggunakan model Game Development Life Cycle," Jurnal Nasional Komputasi dan Teknologi Informasi, vol. 6, no. 1, pp. 34-48, 2023, doi: 10.32672/jnkti.v6i1.5560.

[18] A. Prasetya, N. I. Alan, A. Josi, and S. Andriyanto, "Pengembangan game edukasi untuk meningkatkan kemampuan motorik halus anak prasekolah berbasis Android," TEKNIMEDIA: Teknologi Informasi dan Multimedia, vol. 6, no. 1, pp. 44-51, 2025, doi: 10.46764/teknimedia.v6i1.242.

[19] N. Fitriyani, S. Auliana, and M. Darip, "Perancangan aplikasi game edukasi petualangan berbasis Android menggunakan Construct 2 di SD Negeri Kragilan 3," INFOTECH Journal, vol. 11, no. 2, pp. 158-165, 2025, doi: 10.31949/infotech.v11i2.14863.

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