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AN IMPROVEMENT OF METHOD FOR DIFFICULTY ADJUSTMENT BASED ON PROCEDURES IN THE GAME "LOST LABYRINTHS: ROGUE'S ODYSSEY"

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ABSTRACT

The 2D platformer genre enjoys widespread popularity within the video game industry due to its engaging and enjoyable gameplay. However, maintaining an optimal difficulty level for players of varying skill levels presents a significant challenge for developers. This study investigates the implementation of a dynamic difficulty adjustment system within "Lost Labyrinths: Rogue's Odyssey," a 2D action platformer utilizing procedural content generation (PCG) for level design. Initial research identified key challenges, including maintaining consistent difficulty and ensuring long-term player engagement. To address these, a dynamic difficulty adjustment system was integrated alongside new game mechanics. Player feedback on an "Expert" game mode incorporating this system was collected. Results demonstrated the effectiveness of the dynamic difficulty adjustment system, with players expressing high satisfaction with the "Expert" mode. Features such as the "Fog of War" significantly enhanced the challenge and suspense, providing a more immersive and rewarding gameplay experience. This study highlights the potential of dynamic difficulty adjustment to significantly enhance the quality and player experience in 2D platformer games, offering a compelling solution for maintaining player engagement and extending game longevity.
Keywords: *Difficulty Adjustment, Fog of War, Expert Mode, Game 2D Platformer, Lost Labyrinths: Rogue's Odessey*

1. INTRODUCTION

In the world of gaming, the 2D platformer genre has a large fan base because it provides exciting and entertaining gameplay experiences. One of the challenges in developing a 2D platformer game is to ensure that the difficulty level remains engaging and satisfying for players. Thus, focusing on developing game mechanics that enhance difficulty can be a crucial step in improving game quality. When players choose an easy difficulty level, the game will have low overall difficulty for gameplay. The problem arises when players, after playing several times, acquire the skills to master the game. Consequently, what was once an easy difficulty now becomes too dull because the challenges are not sufficiently difficult [1].

Difficulty adjustments in games is a concept designed to adjust the difficulty level of the game automatically. Difficulty adjustment uses an automatic system to adjust the difficulty level, so players do not have to choose a difficulty level that suits their abilities but the difficulty level will be adjusted as the level increases. The goal is that the game can be enjoyed by various levels of players from beginners to experienced players. Based on research [2] states that difficulty adjustments must be made and implemented in such a way that users do not feel the difficulty of the game changes. Video game difficulty adjustments depend on game data as different games require different features. Difficulty adjustments can be designed to incorporate common game features (such as score, time, etc.).

As in other games, it does not have difficulty levels or at least the player does not have the option to change the difficulty level of the game. Games like Dark Souls 4 or Mario Odyssey 5 are both different games of different genres but without game difficulty settings. That is the way the game is meant to be experienced, but with this

complexity, it can have many other players who without a level of difficulty they feel comfortable with, will most of the time lose and get frustrated or even bored at some point if the game is not challenging enough [3]. The fun factor in games depends on three factors, namely challenge, fantasy, and curiosity. Creating an adequate level of challenge is not easy when players with varying skills are pitted against each other. When the opponent is defeated easily, the game will look boring [4].

In some cases, the game's difficulty is related to the content or assets used. For example, when jumping between platforms, the size of the platforms and the distance between them affect the difficulty if the player's speed, jump height, and gravity remain constant. An adaptive methodology for creating educational games that spans multiple dynamic generations of story and dynamic structure. But in this case, the goal is to achieve balancing adaptive difficulty in a more general way through the use of procedural content generation (PCG). A technique for generating new content and assets that meet game requirements in real-time [5].

Therefore, in this research, the game "Lost Labyrinths: Rogue's Odyssey" as a 2D platformer game has the potential to be improved in terms of game dynamics, level design, and other aspects that influence the level of difficulty. In this context, game mechanic updates may include adjustments to character movement patterns, the addition of more challenging obstacle elements, and level settings designed to test the player's skills in different ways. Then in this development, there will also be a new difficulty which is assessed based on the items obtained, the number and type of enemies defeated, and the damage received during the level. By paying attention to these aspects, developers can create a more immersive gaming experience, motivating players to keep trying and improving their skills.

As competition in the 2D platformer game market increases, developing game mechanics that focus on difficulty adjustment in "Lost Labyrinths: Rogue's Odyssey" will not only provide new challenges for players but can also maintain the game's appeal and sustainability in the long term.

2. RELATED WORK

Here are several studies that are relevant to this research. For instance [6] discusses the growing interest in creating procedural content for games, which has led to the need for assessing difficulty levels. This research investigates the factors that influence difficulty in procedurally generated game levels. The study identifies factors related to player experience and develops a model to predict difficulty. It focuses on 2D platformers, with the development of a test-bed for data collection and analysis. The identified game and player metrics are evaluated using Multi-Layer Perceptron, J48, and Random Forest classification methods from WEKA. The results provide initial insights into the metrics for developing a perceived difficulty classification model [7]. Discusses the development of procedural content generation, where games use this method to create different experiences each time they are played. However, the results do not always guarantee adequate gameplay variation. This study uses the example of the game Pac-Man. In this research, Pac-Man mazes are generated with difficulty levels based on the number of intersections and specific elements. The mazes are generated at nine difficulty levels, can be created within 40ms, and are playable. This approach is practical and suitable for real-time game applications [8]. Aims to create a tower defense game that can adjust its difficulty level according to the player's abilities. In this game, the difficulty level will be dynamic and adjusted based on the player's life, enemy health, and the passive skill choices made by the player. This aims to provide a varied gaming experience, where a high difficulty level is set if the player employs effective strategies, while a lower difficulty level is set for players with less effective strategies. The outcomes of this research include a tower defense game with dynamic difficulty levels, a document detailing the dynamic difficulty adjustment (DDA) process, and gameplay results for the best, average, and worst strategy cases.

3. LITERATURE

3.1 Game Platformer

Platformer games, also known as running and jumping games, present action through interaction with an avatar that jumps and falls around obstacles. Movement in platformer games occurs in all directions (e.g. up, down, left, and right) compared to other genres that keep the player on the ground and allow movement along the X and Z axes [9]. Game platformers can be divided into 2 types, namely 2D platformers and 3D platformers. 2D platformer is a genre of video games where players control a character moving across horizontal levels, jumping over obstacles, and overcoming challenges to reach objectives while exploring a world created in two dimensions. On the other hand, a 3D platformer is a type of game where players explore a three-dimensional world,

facing platform challenges, performing jumps, and collecting objects to achieve goals. Platformer games are one of the popular game genres, such as Hollow Knight (2017), Celeste (2018) for 2D Super Mario 3D World + Bowser's Fury (2021), and Astro's Playroom (2020) for 3D.

3.2 Procedural Content Generation

Procedural Content Generation is a concept or paradigm where all pieces of content can be generated with some well-written code. PCG can be applied to almost all aspects of a game through scripting. What's interesting about PCGs is that the computer can take on some of the designer's responsibilities by being given some instructions and letting it create parts of the game world independently. PCG can also come in several convenient forms. Content can be generated from scratch, such as textures, or assets can be generated from a series of pre-made parts, such as generating a tavern scene from pre-made props such as tables, chairs, barrels, and chests. Another option is to give players the tools to take a role in creating content. The players creating the content are not always PCGs, but PCG systems have been created that now take user input as parameters.

3.3 Difficulty Adjustment

Difficulty adjustment is defined as a process that involves the search for adequate policies for selecting game properties, to provide an optimal balance in the gaming experience. Implementation of difficulty adjustment must be done carefully so that changes in difficulty level are not too obvious to the user. Difficulty level adjustments in video games are based on analysis of game data that includes the various features required by each game, remembering that each game has unique needs. Adjusting variables within the game itself such as difficulty levels, or varying the number of enemies faced. In some cases, the game's difficulty level is related to the content or assets used. For example, when jumping between platforms, the size of the platforms and the distance between them affect the difficulty if the player's speed, jump height, and gravity remain constant. The aim is to achieve adaptive difficulty balancing in a more general way through the use of procedural content generation (PCG), a technique for generating new content and assets that meet the game's requirements in real time [4].

4. METHODOLOGY

The waterfall development method was chosen as the methodological framework in this research. This approach is known as a structured linear process, where each development stage has clear and predefined steps. The goal of applying the waterfall methodology in this research is to ensure that the game development process using the difficulty adjustment method in level creation runs smoothly. This methodology is illustrated in Figure 1 below.

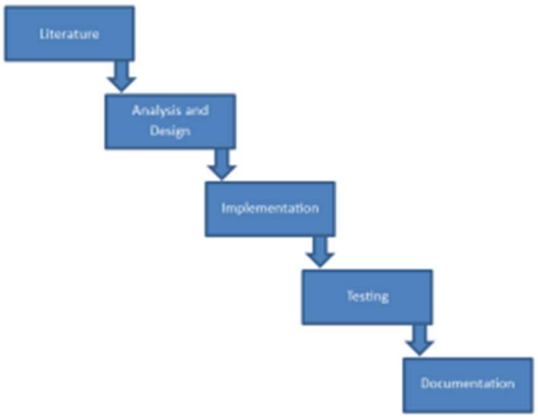

Figure 1: Waterfall Development

4.1 Analysis and Design

In this stage, the analysis of requirements and needs in the research is conducted. Additionally, the design of the development flow of the "Expert" game mode with the difficulty adjustment method is also carried out.

4.1.1 Problem analysis

First, a deep understanding of the challenges and issues faced in the development of the game "Lost Labyrinths: Rogue's Odyssey" implementing difficulty adjustment and a 2D platformer game is required. In this stage, several main issues arising from this background are as follows:

1. Consistent Difficulty Levels
   One of the main challenges faced in the development of 2D platformer games is maintaining a difficulty level that remains engaging for various skill levels of players. There is a risk that more skilled players will become bored with difficulty levels that are too easy after mastering the game. This poses a problem in sustaining player interest in the long term.
2. Use of Procedural Content Generation (PCG)
   The use of PCG to randomly generate levels in games can be an intriguing solution, but it also presents challenges in ensuring that the difficulty levels and gameplay quality remain

consistent. There is a risk that randomly generated levels may not always provide an optimal or challenging gameplay experience.

3. Sustaining Long-Term Appeal
With increasing competition in the 2D platformer game market, it is important for developers to not only focus on offering new challenges but also on maintaining the long-term appeal and sustainability of the game. This requires innovation in level design, gameplay mechanics, and ongoing difficulty adjustments.

4.1.2 Requirement analysis

Based on the presented problem analysis, the following are some requirements that can be identified to enhance the gaming experience of "Lost Labyrinths: Rogue's Odyssey" by implementing difficulty adjustment and addressing challenges faced in the 2D platformer genre in general:

1. Dynamic Difficulty Adjustment
A dynamic difficulty adjustment system is needed to accurately measure the player's abilities and skills throughout the game. This allows for automatically adjusted difficulty levels to maintain adequate challenges without making the game feel too easy or too difficult for the player.
2. Dynamic Level Design
Dynamic and varied level design is necessary to maintain diversity in the gameplay experience. This includes the use of procedural content generation (PCG) to create randomly generated levels, while also considering aspects such as the balance between challenges, asset distribution, and evolving difficulty levels as the player progresses.
3. Addition of Gameplay Mechanics
Additional gameplay mechanics need to be introduced to provide variety and depth to the gameplay. This could include new obstacle elements, special skills for characters, or new features that affect the difficulty level. The use of innovative gameplay mechanics can enhance the game's appeal and provide a more engaging gaming experience.

4.2 System Architecture Design

At this stage there is an overview of the work plan for the game development system "Lost Labyrinths: Rogue's Odyssey" using difficulty adjustment to create a new game mode. The following is the flowchart that was created which can be seen in the figure below.

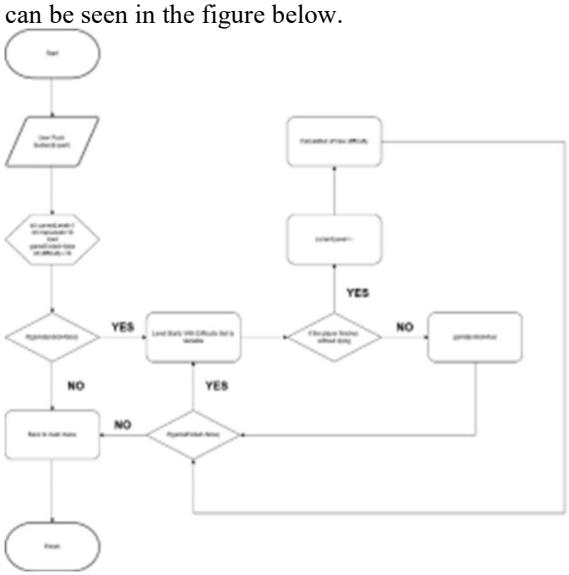

Figure 2: Flowchart

4.2.1 Influence of difficulty

The level begins with a pre-set difficulty variable, which is an integer type data with a range of 0 to 100. Difficulty can affect the appearance of the following elements: the number of rooms, the number of obstacles, the quantity and variants of enemies, the number of treasure rooms, and the rarity of items appearing in the shop. The higher the difficulty, the greater the number of elements influenced.

4.2.2 Calculation of New Difficulty

The calculation evaluates how well the player performs at the level they traverse. The assessment will be divided into 3 aspects:

1. Items obtained from the shop or treasure.
2. The number and types of enemies defeated.
3. Damage incurred by the player during the level.

In all three aspects, some calculations need to be made:

a. Item Evaluation Calculation

Each item has a rarity, and each rarity has a different weighting for evaluation.

Table 1: Multiplier Rarity Item

Rarity	Multiplier
Common	1
Rare	1.5
Legend	2.5

In Table 1 above, evaluation is conducted by comparing the value of the items obtained in the level with the maximum possible value of the items that could be obtained in that level. There are 3 formulas in this evaluation as follows:

$$maxTreasureScore = treasureRoomCount * 2{,}5 \quad (1)$$

$$maxShopScore = 3 * 2{,}5 = 7{,}5 \quad (2)$$

- "3" means there are 3 items in 1 shop.
- "2.5" is obtained from the maximum rarity of items in the shop.

$$maxItemScore = maxTreasureScore + maxShopScore \quad (3)$$

- maxTreasureScore: Maximum score value of treasures obtained.
- treasureRoomCount: Number of treasure rooms in the level.
- maxShopScore: Maximum score value of items obtained from shops.
- maxItemScore: Maximum score value of items obtained.

Next, the calculation of the score value of items obtained by the player is as follows:

$$itemS = (commonIG * 1) + (rareIG * 1{,}5) + (legendIG * 2{,}5) \quad (4)$$

- itemScore(itemS): Score value of items obtained.
- commonItemGet(commonIG): Number of common items obtained.
- rareItemGet(rareIG): Number of rare items obtained.
- legendItemGet(legendIG): Number of legendary items obtained.

To assess how well the player collects items in the level, the formula is as follows:

$$itemScorePercentage = \frac{itemScore}{maxItemScore} \quad (5)$$

- itemScorePercentage (0-1): Percentage score of items ranging from 0 to 1.

b) Enemy Defeat Assessment Calculation

Each enemy has a type, and each type has a different weighting for assessment.

Table 2: Enemy Type Multiplier Table

Type	Multiplier
Normal	1
Elite	1.5
Boss	2.5

In Table 2 above, evaluation is conducted by comparing the value of enemies defeated in the level with the maximum number of enemies present in that level. To determine the maximum value of enemies that can be defeated, the formula is as follows:

$$maxES = (enemyNC * 1) + (enemyEC * 1{,}5) + (enemyBC * 2{,}5) \quad (6)$$

- maxEnemyScore(maxES): Maximum score value of enemies that can be obtained.
- enemyNormalCount(enemyNC): Number of normal enemies in the level.
- enemyEliteCount(enemyEC): Number of elite enemies in the level.
- enemyBossCount(enemyBC): Number of boss enemies in the level

Next, the calculation of the total score value of enemies defeated by the player is as follows:

$$enemyS = (enemyNK * 1) + (enemyEK * 1{,}5) + (enemyBK * 2{,}5) \quad (7)$$

- enemyScore(enemyS): Score value of enemies defeated.
- enemyNormalKilled(enemyNK): Number of normal enemies killed.
- enemyEliteKilled(enemyEK): Number of elite enemies killed.
- enemyBossKilled(enemyBK): Number of boss enemies killed.

To assess how well the player kills enemies in the level, the formula is as follows:

$$enemyKP = \frac{enemyS}{maxES} \quad (8)$$

- EnemyKilledPercentage(enemyKP) (0-1): Percentage score of defeating enemies ranging from 0 to 1.

c) Calculation of Player Damage Received Assessment

To assess how well the player avoids damage from enemies in the level, the following formula is used:

$$damageTP = \frac{currentH}{maxH} \quad (9)$$

- damageTakenPercentage (damageTP) (0-1): Percentage of damage received by the player from enemies
- currentHealth (currentH): Remaining health or HP of the player after completing the level
- maxHealth (maxH): Maximum health or HP of the player

From these three assessments or aspects, a new difficulty for the next level can be calculated. There are variables to be set to determine the new difficulty as follows:

Variables: maxLevel = 10, maxDifficulty = 100

- maxLevel: Maximum level in the mode
- maxDifficulty: Maximum difficulty value in the mode

These variables will be used to calculate the new difficulty using the following formula:

$$\Delta levelD = \left(\frac{enemyXP+itemSP+damageTP}{3} + 0.5\right) * \left(\frac{100-currentLD}{maxL-currentL}\right) \quad (10)$$

- ΔlevelDifficulty (ΔlevelD): The amount of difficulty value obtained from the completed level, which will be used to determine the difficulty for the next level.
- currentLevelDifficulty (currentLD): The difficulty value for the completed or currently running level.
- currentLevel (currentL): The level currently being played.

Next, the calculation of the new difficulty will continue with the formula:

$$newLD = currentLD + \Delta levelD \quad (11)$$

- newLevelDifficulty (newLD): The difficulty value for the next level.

4.2.3 Enemy types and variants

In this research, several enemy types will be encountered in the levels, such as:

1. Normal Enemies

This type of enemy is the most common and easiest to defeat. They do not have any unique effects in their attacks. In this game, there are two normal enemies: the archer, who can perform both ranged and melee attacks, and the dog, who only performs melee attacks. Normal enemies are marked with the color white.

2. Elite Enemies

This type of enemy is a variation of the normal type with unique effects in its attacks. For each variant of the normal archer and dog types, there are 2 of each as follows:

a) Archer:

- Red Archer: The red color on the elite archer has a burning effect on enemies hit by its attacks, changing the color of the affected enemy to red.
- Blue Archer: The blue color on the elite archer has a slowing effect on enemies hit by its attacks, changing the color of the affected enemy to blue.

b) Dog :

- Red Dog = The red color on elite dogs has a bleed effect on enemies hit by their attacks.
- Yellow Dog = The yellow color on elite dogs has a stunning effect on enemies hit by their attacks.

Table 3 below shows the effects of elite enemies

Table 3: Elite Enemy Effects Table

Effect	Duration	Damage
Burn	5 Seconds	3
Slow	4 Seconds	0
Bleed	6 Seconds	2
Stun	1 Second	0

3. Boss Enemies

This type of enemy is a variation of normal enemies but with more HP and greater damage output. Additionally, the size of boss enemies is larger than that of normal enemies. There is only one boss enemy per level, and defeating the boss is a requirement to advance to the next level. Similar to normal enemies, the boss type includes archers and dogs, which are randomized for each level.

4.2.4 Fog of War

To implement Fog of War, a grid, and tilemap will be used. The grid is a tool that helps place tiles within a coordinate system. The tilemap is a layer for placing tiles on the grid. In this research, a tilemap named "map tilemap" was created. This tilemap is used to place white tiles in rooms that are not walls, which will serve as the map display in the game.

The implementation of the fog of war is illustrated with the following steps:

1. Hide all white tiles in the tilemap at the start of the level.
2. Track the player's location at all times.
3. Determine the radius of the fog of war.
4. Reveal tiles in the map tilemap within the previously determined radius around the player.

4.3 Testing Plan

The testing will be conducted by creating a questionnaire using Google Forms, targeting playtesters who frequently play or have experience with video games and have played the game mode created by the researcher. The questionnaire will be divided into 3 categories. The first category will cover features or aspects of the game related to difficulty adjustment. The second will include categories about the effectiveness of adding fog of war. The last one will focus on players' overall experience impressions of the gameplay.

5. IMPLEMENTATION

5.1 "Expert" Game Mode In The Game "Lost Labyrinths: Rogue's Odyssey"

The "Expert" game mode in this game is a game mode developed by researchers by adding difficulty adjustment to provide a more balanced playing experience for beginners and experienced players. This game mode was created to improve the game mechanics to make it more challenging as well.

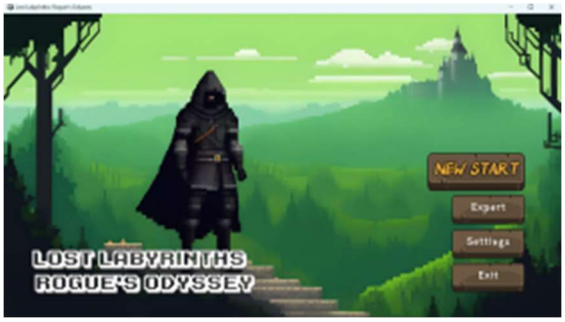

Figure 3: Main Menu "Game Expert"

Figure 3 above shows the menu display in the game with the addition of the "Expert" game mode. When the "Expert" game mode starts, the levels will be randomly generated with a low level of difficulty to make players learn the mechanics of playing this game first. Usually at the initial level players will only face normal type enemies and there are only a few obstacles available in the level. Different from normal mode, in this mode there is a fog of war feature to add to the challenge of playing

In this game mode, several types of enemies and variants can be encountered. In this game, there are archer enemies that attack from a distance and close and there are also dog enemies that attack from close range only. In this game, there are 3 types of enemies, namely normal enemies, elite enemies, and boss enemies, usually normal enemies will be found at the level the game starts. Then elite enemies will be found in the middle of levels such as level 3 and above. But it all depends on the player's performance in playing the level that is passed, the better the player's performance, the more difficult the level that will be passed next. Elite enemies have several variants, including the red archer which has a burn effect, the blue archer which has a slow effect, the red dog which has a bleed effect, and the yellow dog which has a stunning effect. Then at each level, there is a boss enemy which is the goal or condition for completing the level.

5.2 Test Results by Sample

The researcher gave access to 9 people to play the game that the researcher had created. All sample members were familiar with and experienced in playing video games. After the sample tried playing the game and saw all the features that had been developed by the researcher, the sample was given a questionnaire about their playing experience and also the features in the "Expert" game mode which had implemented the difficulty adjustment method in its creation.

The first category questionnaire discusses game aspects related to implementing difficulty adjustments in the "Expert" game mode

Table 4: Table of Game Aspect Questionnaire Results Related to Difficulty Adjustment

Aspect	Result					Total	Average	Conclusion
	5	4	3	2	1			
Difficulty transition for each level	7	2	0	0	0	43	4.778	Very good
Balance the rate of appearance of items from the shop and treasure	1	5	3	0	0	34	3.778	Good
Balance the rate of appearance of the number and type	5	4	0	0	0	41	4.556	Very good

of enemies								
New enemy variations	6	3	0	0	0	42	4.667	Very good

From the table above regarding aspects of the game that involve difficulty adjustment in its creation, it can be seen that the conclusion shows very good results (5), except for the aspect in the item appearance section from the shop which gets good results (4).

Then the second category of questionnaire questions discussed the effectiveness of implementing "Fog of War" in the "Expert" game mode.

Table 5: Table of Questionnaire Results for Assessment of the Effectiveness of the Implementation of "Fog Of War"

Aspect	Result					Total	Average	Conclusion
	5	4	3	2	1			
"Fog of War" adds another level of challenge	8	1	0	0	0	44	4.889	Very good
"Fog of War" provides the suspense of anticipation exploring the map area	7	2	0	0	0	33	4.667	Good

The results of the second questionnaire which is displayed in the table above regarding the effectiveness of "Fog of War" give very effective results (5) which shows the conclusion that "Fog of War" adds challenge and tension to playing.

Table 6: Table of Questionnaire Results for Assessing How Challenging the "Expert" Game Mode is

Aspect	Result					Total	Average	Conclusion
	5	4	3	2	1			
How challenging is the "Expert" game mode	8	1	0	0	0	44	4.889	Very good

Table 7: Table of Questionnaire Results for Overall Satisfaction Level Assessment "Expert" Game Mode

Aspect	Result					Total	Average	Conclusion
	5	4	3	2	1			
Overall satisfaction level	8	1	0	0	0	44	4.889	Very good

The table above shows the player's impression and player satisfaction with the "Expert" game mode which has very challenging results (5) and very satisfied (5) with the impression of playing.

Based on all the results of these three questionnaire categories, it can be concluded that the "Expert" game mode which implements difficulty adjustment in the game "Lost Labyrinths: Rogue's Odyssey" has very satisfying results with a very high overall survey score.

5.3 Differences from Prior Work

Previous research on difficulty adjustment has not fully captured the complexity of perceived difficulty, which is inherently subjective and varies among individuals based on their experience, preferences, and gaming skills. This study introduces a novel approach to difficulty adjustment, presenting an innovative method that enables a more dynamic gameplay experience tailored to the player's abilities. By enhancing difficulty adjustment mechanisms, this research contributes to improving player satisfaction and

engagement by ensuring that challenges align with individual skill levels and preferences.

A procedural approach is employed to adjust difficulty levels, providing a more systematic and quantifiable method in game design. Focusing on Lost Labyrinths: Rogue's Odyssey, this study offers a concrete example of the proposed method's implementation, highlighting its practical relevance and effectiveness in real-world applications.

Overall, this research makes a significant contribution to game design by proposing an improved difficulty adjustment method that enhances both the gameplay experience and player engagement.

6. CONCLUSION

Based on research conducted on the development of procedural difficulty adjustment methods in 'Lost Labyrinth: Rogue's Odyssey' and feedback from experienced players, several key conclusions can be drawn:

1. Increased Challenge and Player Satisfaction: The implementation of difficulty adjustment successfully provides more varied challenges to players based on their performance, as evidenced by the positive feedback received.
2. Effective Difficulty Scaling: The difficulty adjustment aspects of the "Expert" game mode were well-received by players, indicating that the automatic difficulty scaling mechanism was effectively implemented.
3. Enhanced Gameplay Experience: The "Fog of War" feature in the "Expert" mode was highly effective, adding a refreshing layer of challenge and tension to the gameplay.
4. High Player Satisfaction: Players expressed high overall satisfaction with the "Expert" game mode, finding the challenging difficulty level to be rewarding.

These findings demonstrate that the procedural difficulty adjustment methods successfully enhance the game's challenge and player satisfaction, particularly within the "Expert" game mode of 'Lost Labyrinth: Rogue's Odyssey'.

7. RECOMMENDATIONS

Recommendations based on this research are as follows:

1. Develop additional game modes or other variations that can attract players with diverse skill levels, thereby expanding the fan base and increasing the overall appeal of the game.
2. Continuously conduct testing and updates based on player feedback, ensuring that "Lost Labyrinths: Rogue's Odyssey" remains relevant and competitive in the evolving 2D platformer game market.
3. The created game can still be expanded, such as adding additional story modes and introducing new content like characters, enemies, or obstacles to enrich the gameplay experience and maintain game diversity.

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