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FILIPINO MYTHOLOGY

THROUGH INTERACTIVE PLAY

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Digital Learning Activities, Educational Games, Filipino Methodology, Game-Based Learning, Gamification of Learning, Interactive Storytelling, Role-Playing Games (RPG), Simulation Games

INTRODUCTION

In recent years, the gaming industry has seen a surge of interest in culturally diverse and rich narratives, with a growing demand for games that not only entertain but also educate and immerse players in various cultural contexts. One such untapped wellspring of inspiration lies within the vibrant and multifaceted mythology of the Philippines.

Anyone who grows up learning and reading Greek mythology cannot avoid asking and searching for their own myths, since what they studied feels too distant from their native lore. The stories of ancient Philippine mythology include deities, creation stories, mythical creatures, and beliefs. Ancient Philippine mythology

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varies among the many indigenous tribes of the Philippines.

Philippine mythology seeks to explain the nature and functioning of the world through various stories revolving around gods, mortals, and other mythological creatures. The majority of these myths were passed down through oral tradition and preserved through the aid of community spiritual leaders, shamans, priests, and village elders. The Philippines boasts a diverse tapestry of myths, legends, and folklore deeply rooted in its history and culture. These tales, passed down through generations, are infused with themes of heroism, adventure, and the supernatural, offering a glimpse into the collective imagination and belief systems of its people.

Some groups during the pre-Spanish conquest era believed in a single Supreme Being who created the world and everything in it, while others chose to worship a multitude of tree and forest deities known as diwatas. The term *diwata* comes from the Sanskrit word *devata*, which means "deity," and reflects one of the several significant Hindu influences in the pre-Hispanic religion of ancient Filipinos.

The name "Bathala" is widely believed by scholars to have its roots in the Sanskrit word *bhattara* or *bhattaraka*, signifying "noble lord." This connection suggests a historical cultural exchange with the Indian subcontinent, as cognates of this term appear in other Southeast Asian languages, such as the Indonesian and Malay *Batara* and *Betara*, which also denote deities or holiness.

Tala holds the esteemed position of the goddess of the morning and evening star within Tagalog mythology. Her origins are diverse, with a prominent theory suggesting a connection to the Hindu goddess Tara. This link is further supported by the discovery of the Golden Tara, a Majapahit-era gold statue, in Agusan in 1918. Despite this potential external influence, Tala's origins also vary depending on the specific region within the Philippines.

Hanan is a significant deity in Tagalog mythology, primarily recognized as the goddess of morning or dawn. She also holds the distinction of being considered the Filipino goddess of the New Year. According to written texts, Hanan, sometimes referred to as Ana, is associated with new beginnings and the break of day.

The name "Sitan" in Philippine mythology has its origins in the Hebrew word "Satan," which was adopted by Arab traders as "Shaitan" and subsequently entered the Tagalog language. This linguistic connection is similar to the Swahili term

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"Shetani," which also refers to the devil.

Manggagaway is recognized as a specific type of bewitchment within Tagalog culture. The renowned Filipino scholar Jose Rizal categorized manggagaway as those who employ diabolical arts, such as the use of voodoo dolls, to inflict harm upon their victims. In the hierarchy of malevolent beings, the manggagaway is often depicted as one of the four underlings serving Sitan, the ruler of the underworld, and is considered a goddess of disease with the power to bring about death.

The term *mangkukulam* refers to the Filipino version of a sorcerer or witch. Its name is derived from the Tagalog word *kulam*, which literally means bewitchment or magic spell. The Spanish terms *brujo* for warlocks and *bruja* for witches are also used to refer to similar figures. Belief in the manggkukulam is particularly strong in regions such as the islands of Siquijor and Talalora in Western Samar, as well as the province of Sorsogon.

Some historical perspectives suggest a connection between the manggkukulam and the pre-colonial babaylan, who were the indigenous shamans of the Philippines. The babaylan held a position of high regard in their communities, serving as spiritual guides and healers, and were even considered more influential than the king and queen.

Despite the richness and depth of these mythological narratives, Philippine mythology remains largely underrepresented in mainstream media, including the gaming industry. Games are one of the three most popular applications in Southeast Asia, as confirmed by the Global Mobile Consumer Survey, which shows that 47% of the population in Southeast Asia play games through their smartphones.

Several factors contribute to the popularity of gaming in Southeast Asia. For starters, the widespread availability of smartphones and low-cost mobile data plans has increased access to gaming for a wider range of people. With smartphones becoming more accessible and internet availability improving across the region, more individuals are able to enjoy gaming on their devices.

The high acceptance of mobile gaming in Southeast Asia reflects the region's young demographic, technological improvements, and cultural passion for gaming. As the gaming industry continues to evolve and innovate, Southeast Asia will remain an important force in shaping the future of gaming on a global scale.

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One important feature of mobile gaming applications in education is their potential to make learning entertaining and participatory. These applications can transform monotonous instructional content into engaging gaming experiences by introducing elements such as challenges, rewards, and progression systems. This gamified approach not only keeps users interested but also motivates them to persist in their learning endeavors.

Mobile game applications have also been proven to contribute to improved learning outcomes and increased student motivation. According to research, parents often tell their children that they can play video games after they complete their homework. However, imagine a world in which playing video games becomes the assigned homework itself, as first suggested by Celeste Pilegard.

Video games, now considered the largest entertainment industry in the world, can be seen as a form of contemporary mythology. However, saying that video games are myth is significantly easier than actually attempting to study them as myth.

The interactive element of video games adds a new level of complexity to their examination as myth. Unlike passive forms of media such as books or films, video games encourage players to actively engage with the story. Players explore virtual worlds and create their own unique experiences within the game. Understanding how this interactive element affects the mythological features of video games requires a thorough examination of player agency, immersion, and narrative structure.

Games are also a potential tool to support learning activities, as they provide strong motivation for students to participate. Games offer a transformative approach to education by leveraging the human drive for play, exploration, and discovery. Well-designed educational games can significantly increase student motivation and engagement while fostering a sense of accomplishment.

By immersing learners in interactive scenarios, games make abstract concepts more concrete and relatable. This active participation promotes deeper understanding and knowledge retention compared to passive learning methods. Furthermore, games can provide personalized learning experiences by adapting to individual progress and offering targeted feedback.

The gamified environment also creates a safe space for experimentation and risk-taking, encouraging learners to try different approaches without fear of

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failure. This iterative process of trial and error reinforces learning and problem-solving skills. Moreover, multiplayer games can foster collaboration, teamwork, social learning, and communication skills.

Finally, game mechanics such as points, badges, and leaderboards provide positive reinforcement and a sense of progress, further motivating learners to achieve their educational goals.

An example of a successful mythology-based game is Sinag, the first 1v1 fighting game that combines the allure of Philippine mythology with deep and engaging gameplay mechanics, developed by Ranida Games. It offers players a journey of cultural immersion while paying homage to the beauty and diversity of the Philippines.

Recognizing the educational and cultural potential of interactive entertainment, Southern Luzon Technological College Foundation Pio Duran Incorporated, established in 2009 and located in Purok 3, Pio Duran, Albay, has embarked on an exciting project titled *"Filipino Mythology Through Interactive Play."*

This innovative game seeks to introduce players to the rich tapestry of Philippine mythology through the engaging medium of a fighting game. It features a diverse roster of characters inspired by heroes from Philippine folklore, each possessing unique fighting styles and special abilities rooted in their legendary origins. The game's narrative delves into the captivating stories and legends of Philippine mythology, providing players with an immersive and educational experience while promoting Filipino heritage.

"Filipino Mythology Through Interactive Play" plunges players into a world on the brink of destruction. Sitan, the evil ruler of the underworld, has unleashed his minions throughout the land, corrupting righteous souls and seeking total dominance over existence. Chaos spreads as his agents bring destruction, pushing the world into despair.

Bathala, the ultimate creator and protector, firmly resists the destruction of his handiwork. With divine power flowing through him, he stands against Sitan and his wicked forces, determined to restore order and safeguard humanity. As the embodiment of virtue, Bathala battles monstrous enemies, faces cunning warriors, and defies fate itself to ensure that light prevails over darkness.

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The epic tale of the game is one of battles between gods and the forces of evil—of gallantry, selflessness, and unyielding justice. Only Bathala's strength and wisdom can defeat Sitan and rescue the world. Will he be victorious, or will evil triumph? The destiny of the universe lies in the hands of those brave enough to fight.

This study addresses the underrepresentation of Philippine mythology in the gaming industry by focusing on three key challenges: the public's lack of exposure to this rich cultural source material in digital entertainment, the risk of misrepresentation or oversimplification of Philippine deities in video games, and the difficulty of balancing cultural authenticity with engaging gameplay mechanics in a culturally themed game.

The study aimed to develop and create "Filipino Mythology Through Interactive Play" that would help everyone to appreciate the Philippine mythology. Furthermore, it aimed the following:

1. To develop a game that inspired by the Philippine Mythology.
2. To develop a game that will utilize Philippines God and Goddesses.
3. To evaluate using the ISO 9126-1 criteria, in terms of:
    - 3.1 Functionality
    - 3.2 Reliability
    - 3.3 Usability
    - 3.4 Efficiency
    - 3.5 Maintainability
    - 3.6 Portability

The overarching aim of this study was to introduce the rich tapestry of Philippine mythology to high school students, fostering a deeper connection with their cultural heritage. By delving into the vibrant narratives and timeless legends of Philippine folklore, this research sought to illuminate a cultural landscape often overshadowed by more widely recognized mythologies, such as Greek mythology. Through this exploration, high school students not only gained a newfound appreciation for the unique stories and characters of their own culture but also developed a sense of pride and identity rooted in the rich traditions of the Philippines.

METHODS

In this research development, the developers used Agile Kanban approach as our major research technique. During the Agile Kanban development phase, the

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developers used a variety of software equipment and tools to help the project go forward.

The criteria listed below explain the tools and resources required for the project's effective development.

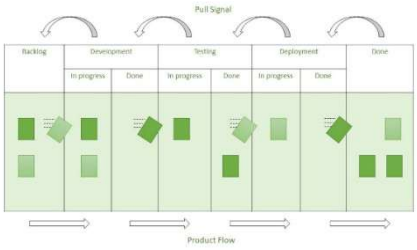

Figure 1.0 Agile Kanban Methodology

The Kanban methodology has five phases that guided the developers in developing the "Filipino Mythology Through Interactive Play" which are Backlog, which include Planning, Development to loop on Backlogs, testing to loop on Development, Deployment to loop Testing, as shown in *Figure 1.0*.

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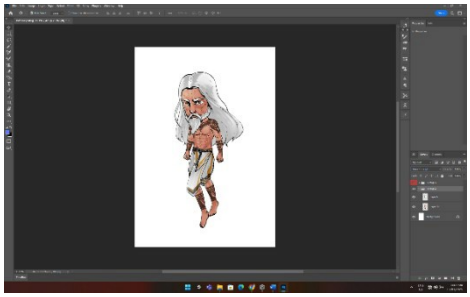

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Figure 1.1 Making of Character profile

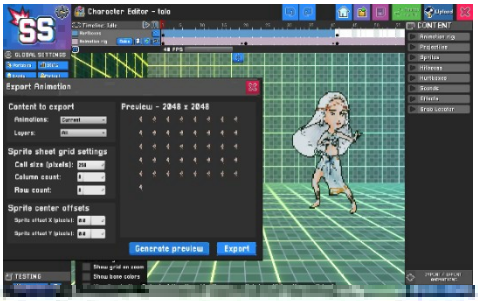

Figure 1.2 Sprite Animation Backlog

The developers of "Filipino Mythology Through Interactive Play" discussed about the set of tasks that have been delivered. Planned the goal that must be accomplished.

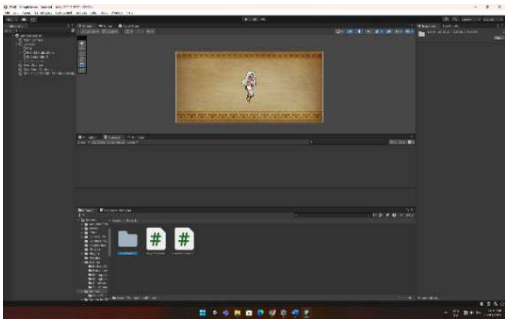

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Figure 1.3 Unity Game Development

Figure 1.3 shows the development process of characters in the Unity software. The software was use to add “assets” then set behaviors of the characters, terrains and settings of the game.

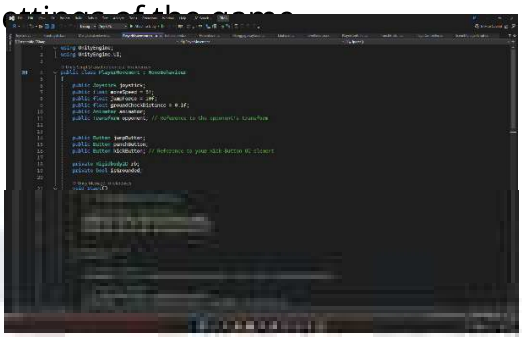

Figure 1.4 Visual Studio C# Script

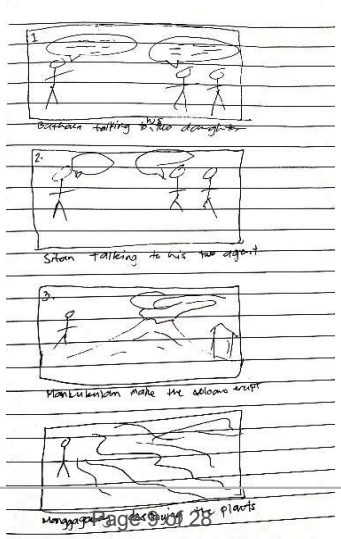

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Figure 1.5 Sketch of the possible scenario

Development

This is where the actual development took place. In *Figure 1.1*, the developers utilize Adobe Photoshop to create a character profile and sprites, which were then loaded into SmackStudio, as shown in *Figure 1.2*, to create character animations and export to a spreadsheet. *Figure 1.3* shows the start of the offline game creation, with the developers using Unity and Visual Studio, which is shown in *Figure 1.4* as IDEs for C# scripts. Before-hand the developer created the storyboard game on the PowerPoint, the developers create the storyboard from scratch, which uses pens and paper to pictured the entire game progression, which was seen in Appendix A.

The developers started the game development in conceptualizing the story boarding by sketching all the possible scenario of the game. The Figure 1.5 shows the initial concept of the game. The game was offline and run in Android-based phones.

The following were the software and hardware recommended requirements used by the developers.

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HARDWARE REQUIREMENTS
System Unit: 3.3 GHz (guaranteed base clock) to 4.2 GHz (Turbo) 8GB RAM Peripherals: Mouse, Keyboard
MOBILE SPECIFICATIONS
Mobile processor: 3.8 GHz or Higher RAM: 2 GB or Higher Any Model

Table 1.0 Recommended Hardware Requirements

Table 1.0 shows the needed or recommended hardware equipment for the development of the system or the development of the game is a 3.3 GHz (guaranteed base clock) to 4.2 GHz (Turbo) of system unit, computer peripherals include mouse and keyboard, Mobile processor of 3.8 GHz or Higher and 2GB RAM or Higher.

SOFTWARE REQUIREMENTS
Adobe Photoshop 2022 Smack Studio PowerPoint 2021 Unity 2022.3.17f1 Visual Studio 2022 C#
FOR DEVELOPMENT
Windows 11 X64-based PC
FOR MOBILE
Android 5.1 or Higher

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Table 2.0 Recommended Software Requirements

Table 2.0 shows the list of the software to develop the game. These requirements were part of what was needed to build the system. In developing the Game, the researchers use Adobe Photoshop for the Sprite, SmackStudio for the animation and export to spreadsheet. The researchers uses Unity and C# script for the behavior and control of the game. Researchers also used Microsoft PowerPoint for the game's storyline scene presentation. The game was developed in Windows 11 Operating System and run in Android 5.1 or Higher Mobile Operating System

Testing

Developers tested the game to the end-users. Feedback and reviews are crucial at this stage and most bugs, issues, and alterations were addressed during this stage. Testing is crucial in the development for quality assurance and Player experience.

Deployment

Deploying the built game into a live production environment. The deployment phase involved intensive scale testing, technical documentation, issue tracking, final customization, and system simulation. Teams also spend time debugging the game and running final updates and maintenance tasks before going live.

Done

The final stage of Agile Kanban Methodology in which the project has already been completed.

RESULTS

This presents the developed game and results obtained through the process

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of the development of “Filipino Mythology Through Interactive Play”.

Figure 2.0 Game Main Menu

Figure 2.0 shows the main menu presents various navigation options or buttons that allow players to access different sections of the game. The option includes Play, Settings and Quit.

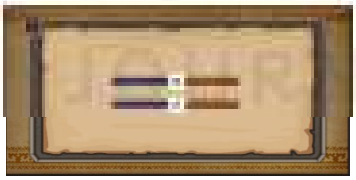

Figure 2.1 Customization of Background Music and Sounds.

Figure 2.1 shows the settings content, slider that allows player to customize the volume of background music and sound effects. Music and Backgrounds was the free assets in the Unity Game Engine Software.

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Figure 2.2 Characters of the game

Figure 2.2 player can select a character to play. However, in order to select all character, player must have to unlock all the characters.

Figure 2.3 Description of Selected Character.

Figure 2.3 shows the description of the character selected. Showing its role as a God/Goddess.

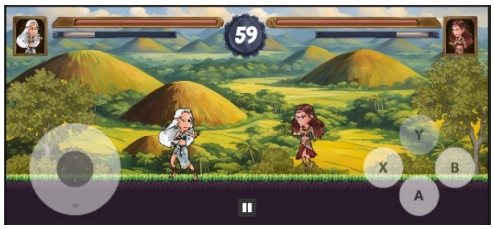

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Figure 2.4 Conversation of characters

Figure 2.4 shows the chats of two characters that will fight after their conversation.

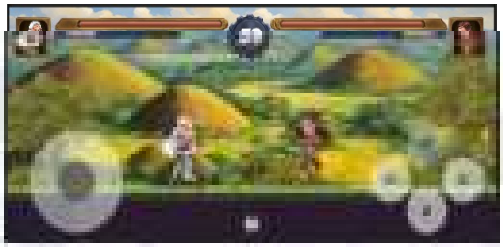

Figure 2.5 Fighting scene

Figure 2.5 shows the fighting scene of the game that uses the tourist spots of the Philippines as background.

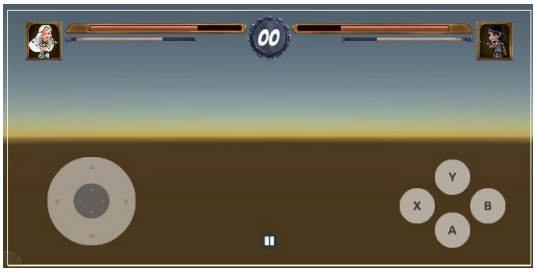

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Figure 2.6 Controller UI.

Figure 2.6 shows the controller. The controller on the left is the joystick that can move the character left and right. On the other side is the fighting moves. 'A' button is the punch, 'X' button is the kick, 'B' button is jump and 'Y' button is the power of the character that will be use if the power bar is full.

Figure 2.7 Quiz about the Philippine mythology.

Figure 2.7 shows the quiz after winning the fighting. This contains of questions about the Gods and Goddesses. If the answer is correct the player will gain extra life on the next fight. If not the health from previous fight will remain.

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Figure 2.8 Game over Scene

Figure 2.8 shows the game over text that will appear if the player loses the fight.

Figure 2.9 Congrats scene

Figure 2.9 shows a congratulations text and next button. This will appear after winning all stages and move to the next level.

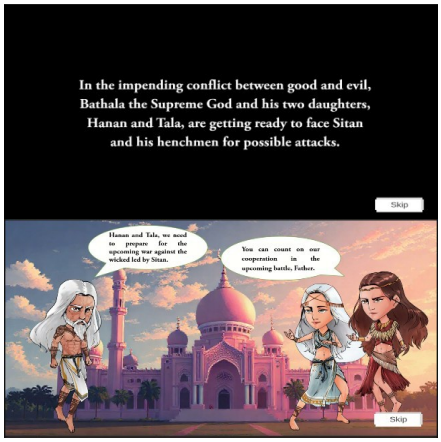

Figure 2.10 Story of the Game

Figure 2.10 depicts the game's story, which will be displayed at the beginning

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of the game.

System Testing

In this phase, after the developed system had been coded, it was tested to ensure that it met the specified requirements. The system was tested through trial and error to ensure that it met the exact software requirements, hardware requirements, and system requirements of the developed system.

The concept of statistical frequency was used to determine the most dominant variable/s in data, such as the current methods used, the problems encountered, and potential solutions. The developers used ranking to determine the order of priority of the variables, as well as a scaling system and weighted mean to monitor the respondent's interpretation of facts. The weighted mean was calculated using the following formula:

Weighted mean

$$= \frac{F_1(1) + F_2(2) + F_3(3) + F_4(4) + F5(5)_{\square}}{F_1 + F_2 + F_3 + F_4 + F_5}$$

Where: F1 = Total number of respondents who answered Absence of the expectation

F2 = Total number of respondents who answered

Less than what is expected

F3 = Total number of respondents who answered

Presence of the expectation

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F4 = Total number of respondents who answered

More than what is expected

F5 = Total number of respondents who answered

Far more than what is expected

The numerical rates were the following:

(1) not applicable, (2) slightly applicable, (3) applicable, (4) very applicable, (5) highly applicable) = Overall Satisfaction.

The average response in the system was described and interpreted using an interval with a scale. The scale was utilized to quantify the system's level of user satisfaction. The following evaluation rubric was used:

Table 3.0. – The Evaluation Rubric

Interval Scale	Description	Interpretation
4.1 – 5.0	*Highly Applicable*	The system efficiently and effectively satisfied all quality model characteristics in terms of functionality, reliability, usability, speed and maintainability
3.1 – 4.0	*Very Applicable*	The system efficiently and effectively satisfied some of the quality model characteristics in terms of functionality, reliability, usability, speed and maintainability.
2.1 – 3.0	*Applicable*	The system minimally satisfied all quality model characteristics in terms of functionality, reliability, usability, speed and maintainability.
1.1 – 2.0	*Slightly Applicable*	The system hardly satisfied the quality model characteristics in terms of functionality, reliability, usability, speed and maintainability.
1.0 or less	*Not Applicable*	The system did not meet the quality model characteristics in terms of functionality, reliability, usability, speed and maintainability.

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During the testing process, evaluations were also conducted. The system was evaluated in accordance with ISO 9126. The developed system's functionality, reliability, usability, efficiency, maintainability, and portability were all evaluated. The results were presented in series of tables below.

The two (2) groups of respondents provided insight into the system's overall quality. These respondents were 5 (five) I.T. professionals or I.T. experts and 10 (ten) end users, they are Lindsey M. Datos, Cris John M. Ramirez, Jansen C. Nodo, Jeffrey B. Carison, Mark Ian Vibar. Respondents evaluated the system on a five-point scale, with one (1) being the lowest and five (5) as the highest.

Table 3.1 – Table of Verbal Interpretation

Mean	Verbal Interpretation
0 – 1.0	Absence of the expectation
1.1 – 2.0	Less than what is expected
2.1 – 3.0	Presence of the expectation
3.1 – 4.0	More than what is expected
4.1 – 5.0	Far more than what is expected

Table 3. 2 – System Functionality

FUNCTIONALITY

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Number	Evaluators	Average	Mean
5	IT Experts	4.45	4.42
10	Users/ Stakeholders	4.38	

Table 3.2 reflects the results of the evaluation of the different respondents. With an overall mean of 4.42, the system was deemed "Far more than what is expected" in functionality.

Table 3. 3 - System Reliability

RELIABILITY			
Number	Evaluators	Average	Mean
5	IT Experts	4.20	4.45
10	Users/ Stakeholders	4.7	

Table 3.3 shows the result of the evaluation of the different respondents in

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terms of system reliability. With an overall mean of 4.45, the system was rated "Far more than what is expected" in reliability.

Table 3. 4. – System Usability

USABILITY			
Number	Evaluators	Average	Mean
5	IT Experts	4.75	4.63
10	Users/ Stakeholders	4.5	

Table 3.4 illustrates the result of the evaluation of the different respondents in terms of system usability. With an overall mean of 4.63, the system was rated "Far more than what is expected" in usability.

Table 3. 5. – System Efficiency

EFFICIENCY			
Number	Evaluators	Average	Mean
5	IT Experts	4.3	4.4
10	Users/ Stakeholders	4.5	

Table 3.5 displays the result of the evaluation of the different respondents in terms of system efficiency. Respondents agreed that the system was efficient and was rated "Far more than what is expected" with an overall mean of 4.4.

Table 3. 6. – System Maintainability

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MAINTAINABILITY			
Number	Evaluators	Average	Mean
5	IT Experts	4.25	4.38
10	Users/ Stakeholders	4.5	

Table 3.6 reflected the result of the evaluation of the different respondents regarding the system's maintainability. With an overall mean of 4.38, the system was rated "Far more than what is expected" in maintainability.

Table 3. 7. - System Portability

PORTABILITY			
Number	Evaluators	Average	Mean
5	IT Experts	4.35	4.48
10	Users/ Stakeholders	4.6	

Table 3.7 shows the result of the evaluation of the different respondents in terms of portability. With an overall mean of 4.48, the system was rated "Far more than what is expected" in portability.

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In Table 3.8, seen on Appendix B on page 22 shows the IT experts' view on the developed system. Among the five (5) IT experts, five (5) gave a general rating of four (4), which means that the developed system is "Far more than what is expected".

In Table 3. 9, seen on Appendix B on page 22 shows the reflects the rate given by the users and stakeholders of the developed system. All of them gave the highest rating. Therefore, the system can serve its intended purpose.

In Table 3.10, seen on Appendix B on page 23 shows the Overall Evaluation of the Developed System. It provides an overall evaluation of the system as expressed by the various respondents consulted by the researchers. According to the respondents, the system was rated 4.50, which interpreted as "Far more than what is expected". The overall evaluation includes the scores under Functionality with 4.42, Reliability with 4.40, Usability with 4.74, Efficiency with 4.6, Maintainability with 4.38 and Portability with 4.48.

DISCUSSION

Summary

The game entitled; "Filipino Mythology Through Interactive Play" was primary developed in integration of the Philippine Mythology. This was primarily used for students in understanding about the Philippine mythology. Philippine mythology is a rich tapestry of beliefs, featuring diverse gods and goddesses who represent natural forces and ancestral spirits. These deities, like Bathala the creator, played central roles in ancient Filipino understanding of the world, with stories passed down through oral tradition.

The developers address the difficulties encountered by students with the lack of understanding about Philippine mythology specially Gods and Goddesses of the Philippines and lack of sources of information about what is Philippine mythology, some of the students are only familiar with Bathala the creator, most of them are not familiar of other gods and goddesses of Philippine mythology.

Filipino Mythology Through Interactive Play is a single player game that is composed of three levels. Each levels have different opponent to encounter that is based on the storyboard to proceed to the next level.

The mobile game helped the gamer identify and understand about

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Philippine mythology and its characters by clicking the pictures on each character in the game. This provides gamers understanding about Philippine Mythology through the game.

Findings

Since more students often engage in playing mobile games, this game showed a substantial improvement in their understanding about Philippine Mythology. The mobile game “Filipino Mythology Through Interactive Play” proved to be a valuable tool for enhancing learning outcomes. Based on the system evaluation conducted by the developers, both IT experts and User/stakeholders rated 4.45 and 4.38, with the total score of 4.42, interpreted as “Far more than what is expected”.

Conclusion

As a conclusion, the development of a mobile game for Philippine Mythology proved to be highly beneficial. The game proved an interactive and immersive learning experience, allowing the gamers to grasp complex concepts and practical skill more effectively. The developers concluded that the Game called Filipino Mythology Through Interactive Play can address the lack of familiarization of the Philippine mythology. The mobile game offered simulations and interactive exercises to strengthen understanding and knowledge retention.

The study was rated 4.4 in Efficiency, means it is very efficient, 4.42 in Functionality, means it is very functional, 4.45 in Reliability, means it is very reliable, 4.63 in Usability, means it is very usable, 4.38 in Maintainability, means it is very maintainable and 4.48 in Portability, means it is very portable.

Recommendations

The developers would like to recommend the following to the next developer or future developer and administrator.

1. The developers recommend that “Filipino Mythology Through Interactive Play” be implemented and be used by the student. The system is a huge help to students when it comes to learning about Philippine Mythology.
2. The developers recommend that “Filipino Mythology Through Interactive Play” can be upgraded into multiplayer game to develop collaboration.
3. The game could be made available online for more interactive use by other people from different places.
4. The developers recommend that “Filipino Mythology Through Interactive Play” regularly be update with new content, challenges, skins for characters

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and features to keep users more engaged and promotes continued learning.

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