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GAME OF MISINFORMATION (GOMI): EDUCATING MISLEADING INFORMATION IN A FUN WAY

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ABSTRACT

Game of Misinformation (GOMI) is an interactive educational game designed to help teenagers aged 14 years old and above identify misleading information in a fun and immersive way. With the rapid growth of the internet, misinformation spreads quickly. An unverified or inaccurate message can lead to confusion and misunderstandings, not only on a personal level but also in society, politics, and national policies. GOMI was developed to address this issue by incorporating learning elements into an enjoyable game format. This study adopts the Agile development methodology, consisting of requirements, design, development, testing, deployment, and review phases, to develop the game prototype. To evaluate the usability and effectiveness of GOMI, a field study was conducted with 30 respondents using the USE (Usefulness, Ease of Use, and Satisfaction) questionnaire. Participants were given a 5-minute gameplay session before completing a structured survey. The results indicate high levels of perceived usefulness, ease of use, and user satisfaction, with most respondents agreeing that the game improved their awareness and ability to identify misinformation. However, the evaluation focuses on short-term usability and perceived learning rather than objective knowledge gain. Future work will incorporate pre- and post-tests to measure learning effectiveness more rigorously. Overall, GOMI demonstrates the potential of serious games to enhance media literacy among youth.

Keywords: Education, educational game, misinformation, information security.

INTRODUCTION

Internet reliance has increased significantly with the continuous advancement of technology. In the absence of internet access, it can feel as if one is disconnected from the world, with life becoming

increasingly difficult. According to Simon Kemp (2024), there were 5.35 billion internet users worldwide in 2024, with 66.2% of the world's population. As of January 2024, Malaysia had a 97.4% internet penetration rate, with 33.59 million internet users, according to Simon Kemp (2024). These figures demonstrate the significant role the internet plays in modern society and highlight the potential dangers associated with the widespread dissemination of unverified or inaccurate information.

Misinformation and disinformation both refer to the spread of false or inaccurate information. But the crucial difference is in intent. According to the American Psychological Association (2025), Misinformation refers to false information shared without intent to deceive, whereas disinformation is deliberately shared to mislead others. News sources, social media, and private discussions are common sources of misinformation. This kind of misinformation is frequently inadvertently shared among friends, family, and co-workers, and even reliable media outlets occasionally disseminate false information. People often spread false information without realising they need to verify its veracity.

According to Pengnate, Chen and Young (2021), media outlets often seek to attract audiences by employing misleading headlines to increase traffic and click-through rates. This action can potentially exacerbate the spread of false information, as the pursuit of higher engagement often takes precedence over ensuring the accuracy of the content being shared. The consequences can be particularly harmful to readers, especially those who lack critical thinking skills. They may believe the misleading information presented in articles and spread radical opinions across the internet. Internet consumers' ability to choose trustworthy sources is hindered by the deluge of information available online.

In this era of advanced technology and the internet, online games are considered entertainment. But still, online games are often looked down upon. These games are frequently criticised and seen as a cause of addiction that wastes time. Excessive gaming has negative effects on teenagers' growth, potentially harming their health, affecting their academic performance, and even weakening communication with family, thereby impacting family relationships. Nonetheless, the positive aspects of online games cannot be completely disregarded.

The research indicates that several games about misinformation have been created, such as Bad News and Go Viral! being some of them. These games are designed to be educational and to help players learn and recognise how misinformation spreads through various means, such as fear appeals, conspiracy theories, or invented 'experts'. Younger people, in particular, become more competent and learn, through playing these games, how to spot false content in the media. This creates an environment in which confidence in the spread of misinformation gradually declines and encourages people to verify the validity of what they have heard or read. Apart from increasing young audiences' understanding of misinformation and disinformation, these games also equip them with the skills to make sense of online content and, therefore, become less vulnerable to deception.

This project aims to develop an interactive game designed to teach players about misinformation and increase awareness of its impact, prevalence, and countermeasures. When consuming or sharing content on social media and news platforms, GOMI seeks to educate players on how to spot misleading information, double-check facts, and make wise choices. Through an entertaining, laid-back approach, it aims to promote a better understanding of information literacy.

BACKGROUND AND RELATED STUDIES

Teenagers are often overlooked, but they face a high risk of exposure to fake news. As so-called "digital natives," they are among the heaviest internet users in the world—71% of teenagers globally use the internet. A 2016 study by CyberSecurity Malaysia and the Ministry of Education Malaysia found that almost 92.5 per cent of hardcore internet users are teenagers aged 13 to 17 years (Harian, 2017). A study by Masaryk and his team found that 41% of teenagers can't recognise whether online health news is real or fake. Even though they have used the internet for a long time, many of them don't know how to determine if the information is true. This shows that teenagers need stronger skills to understand and evaluate online information.

While some of the published online games have achieved notable success in raising awareness of misinformation and enhancing players' ability to verify facts, each game has limitations that warrant attention. Some games rely heavily on text-based gameplay with limited use of visual elements. This design may lead to decreased engagement, as players could feel overwhelmed or disinterested due to the text-heavy format. The lack of sufficient imagery and graphics may also reduce the game's appeal, making it less likely that players will fully immerse themselves in the experience. In contrast, visually driven content is known to capture attention more effectively, as people tend to process images far more quickly than text.

According to Patchara Vanichvasin (2020), visual stimuli greatly improve learning outcomes since images are processed by the human brain about 60,000 times faster than text. Additionally, the picture superiority effect demonstrates that images are more memorable than textual content. Given that 90% of the information transmitted to the brain is visual, incorporating more visually engaging elements in these games could improve player retention and learning.

Several projects have been developed in recent years to address the growing issue of misinformation, using interactive games as a medium to educate users on recognising and combating it. Cambridge University developed BAD NEWS to reduce the impact of false and misleading information by empowering its users to create fake stories (Jon Roozenbeek & Sander van der Linden, 2019). However, this study observes that the game is relatively text-heavy and lacks visual elements, which may reduce user engagement. Similarly, GO VIRAL! is an online game by Cambridge University designed to improve the ability to identify COVID-19 misinformation and the ways it is disseminated (Fred Lewsey, 2020). While the game is effective in delivering educational content, this study suggests that its text-heavy format may affect user engagement. Furthermore, there is a potential risk of misinterpretation, as players may focus on the techniques used to create misinformation without fully understanding the ethical context. Cranky Uncle is an online game developed by John Cook at Monash University, in collaboration with Goodbeast, that teaches players to spot and refute false claims by presenting 14 essential scientific denial strategies, including cherry-picking facts and using phoney experts (Cool et al., 2022). However, this study argues that the game targets a niche audience and has a limited scope.

Compared with existing misinformation games, GOMI introduces several distinct design and pedagogical elements. For instance, BAD NEWS and GO VIRAL! primarily rely on text-based interactions, which may limit engagement for users who prefer visual or interactive learning environments. Similarly, Cranky Uncle focuses mainly on scientific misinformation and targets a more specific audience. In contrast, GOMI incorporates a 3D interactive environment that allows players to explore a virtual world while completing tasks. The use of time-pressure gameplay encourages quick decision-making, simulating real-life scenarios where users must evaluate information rapidly. Additionally, the integration of non-playable characters (NPCs), immediate feedback mechanisms, and a risk awareness meter provides a more immersive and continuous learning experience.

From a Human-Computer Interaction (HCI) perspective, interactive and visually rich environments have been shown to enhance user engagement and learning outcomes (Vanichvasin, 2020). Game-based learning research also suggests that active participation, time-based challenges, and immediate feedback significantly improve knowledge retention and problem-solving skills. For instance, a recent study on a 3D educational escape game demonstrated that features such as automated hints and interactive problem-solving tasks can improve player retention and progression, particularly in exploratory learning environments (El Montaser et al., 2025). These findings highlight the importance of integrating adaptive support and interactive mechanics in educational games.

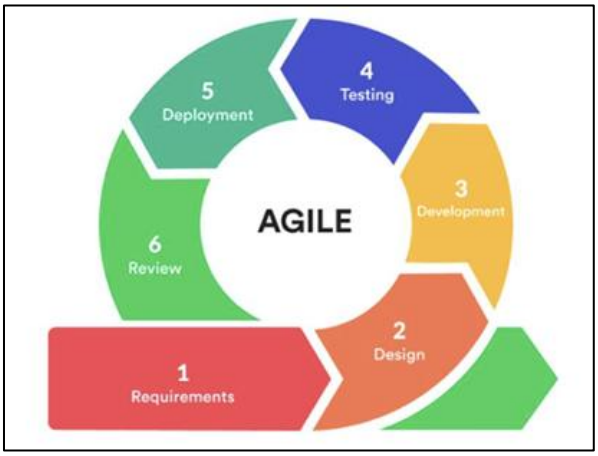
Therefore, the design of GOMI aligns with established principles in HCI and educational game design, aiming to maximise both engagement and learning effectiveness.

METHODOLOGY

In the development of GOMI, the Agile methodology is adopted in the whole system development life cycle. This game uses the Agile methodology because it supports incremental construction, which is necessary in game development, as changes are made regularly. This methodology involves 6 phases: Requirement, Design, Development, Testing, Deployment, and Review. The phases of the Agile model are depicted in Figure 1.

Figure 1

Agile model phases



In the first phase, which is the Requirements phase, this project scope includes the collection on a wider scale, details on the sources of misinformation, spread patterns, and their impact. This includes discussions with stakeholders to understand their expectations about the game. By searching for and analysing this, the team specifies the precise characteristics the game must possess to achieve its educational aims. The expected deliverables are a detailed requirements document that clearly outlines the game's functionalities and design direction.

The Design phase involves developing strategies to gather information about misinformation used in the game's development, across content and mechanics. In addition, the Game Design Document is designed to describe game scenarios, characters, mechanics, and graphics so that the game is not only

informative but also fun and exciting. Additionally, this project specifies evaluation criteria to evaluate if the game has achieved the predefined educational objectives proposed in the third goal. The expected deliverables are a comprehensive GDD, a research design document, and an evaluation plan to guide the development process. The phase focuses on developing the game prototype to meet the requirements and designs developed in previous phases. This encompasses applying research on the misinformation-designed approach, game features, and interactive components designed to support efficient player engagement. This project also includes evaluation tools that enable the collection of player feedback during gameplay.

The Testing phase involves analysing the research data and the game prototype for reliability and effectiveness. The collected data are cross-verified and subjected to internal testing to identify bugs or usability concerns. The deliverables include a validation report that contains conclusions about the reliability of the research data. In the Deployment Phase, this project seeks to broaden the audience by releasing an improved game prototype to garner more evaluations and perspectives. The emphasis was on the requirements meant to promote ease of use and deployment of the game, engagement levels with the game, and changes made in response to the tester's recommendations. The deliverables are a release note summarising the prototype launch and an evaluation report focused on the game's educational effectiveness, which is the third objective. The Review Phase provides clues about the shortcomings that need to be addressed in subsequent work, based on stakeholder input. The deliverables are a record of the review meetings held with stakeholders and their recommendations, as well as the implementation plan for the next stage of the game's development.

DESIGN AND DEVELOPMENT

This section introduces the requirements specification document, which outlines all the game requirements governing development and implementation, as shown in Table 1. Through interactive tasks such as answering true-or-false questions and making quick decisions under time pressure, players learned to think critically and to question the information they see online. The game is designed to be accessible across multiple platforms, including mobile phones, computers, iOS, Android, and web browsers.

GOMI adopts a third-person perspective so that players can control their character and move them around in a 3D street world. To receive their mission, which is about finding a treasure chest and answering a question about misinformation, players need to interact with NPCs (non-playable characters). With each task the player completes, the risk awareness meter is updated based on the number of correct responses, reflecting the player's increasing ability to detect misleading content. The table and figures below cover requirement definitions, use case diagrams, and flow charts.

Each requirement is either a mandatory (**M**), desirable (D), or an optional (**O**).

M – Requirement that the game must do.
D – Requirement that the game preferably do.
O – Requirement that the game may do.

Table 1

Functional Requirements

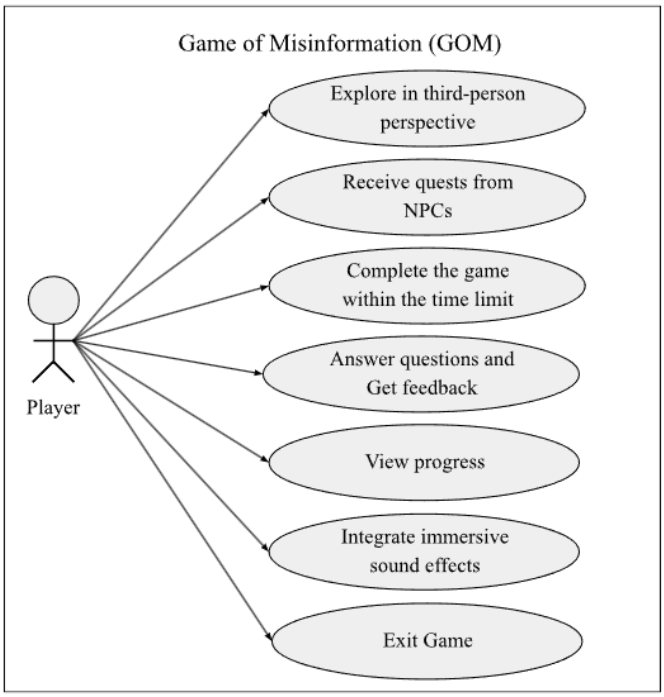
Requirement ID	Requirements Description	Priority
GOM_01	**Explore from a third-person perspective.**	
GOM_01_01	Players can control the character's movement using the keyboard in third-person view.	M
GOM_01_02	Players can navigate through a 3D street environment.	M
GOM_01_03	Players can rotate the camera view with the mouse.	M
GOM_02	**Receive quests from NPCs**	
GOM_02_01	Players interact with the first NPC to start a mission.	M
GOM_02_02	NPC provides instructions to find treasure chests.	M
GOM_02_03	The first NPC provides the scenario and story background.	M
GOM_02_04	Players can interact with additional NPCs to unlock an extra treasure chest for answering more questions.	D
GOM_02_05	Each additional NPC grants access to new misinformation questions.	D
GOM_03	**Complete the game within the time limit.**	
GOM_03_01	Players must complete the game within 5 minutes.	M
GOM_03_02	The timer is displayed on the UI.	M
GOM_03_03	If the timer ends and the player has not answered 7 questions correctly, the game fails.	D
GOM_04	**Answer questions and get feedback.**	
GOM_04_01	Players are presented with a true or false question after opening a treasure chest.	M
GOM_04_02	System checks if the answer is correct.	M
GOM_04_03	Immediate feedback is displayed based on the player's answer.	M
GOM_04_04	When a player selects a wrong answer, an explanation pop-up appears.	D
GOM_04_05	Explanation includes clarification of the misinformation and the correct fact.	D
GOM_05	**View Progress**	
GOM_05_01	Risk awareness meter updates with each correct answer.	D
GOM_06	**Integrate immersive sound effects.**	
GOM_06_01	Background music plays during the game.	M
GOM_06_02	Footstep sounds play when the player character moves.	M
GOM_06_03	Correct/wrong answer sound effects are triggered based on player performance.	D

GOM_07	**Exit Game**	
GOM_07_01	Players can exit the game from the main menu.	O
GOM_07_02	Players can exit the game during gameplay.	O

A use case model for the system consists of 1 actor and 6 use cases, namely: explore in third-person perspective, receive quests from NPCs, complete the game within the time limit, answer questions and get feedback, view progress, integrate immersive sound effects, and exit the game, as illustrated in Figure 2.

Figure 2

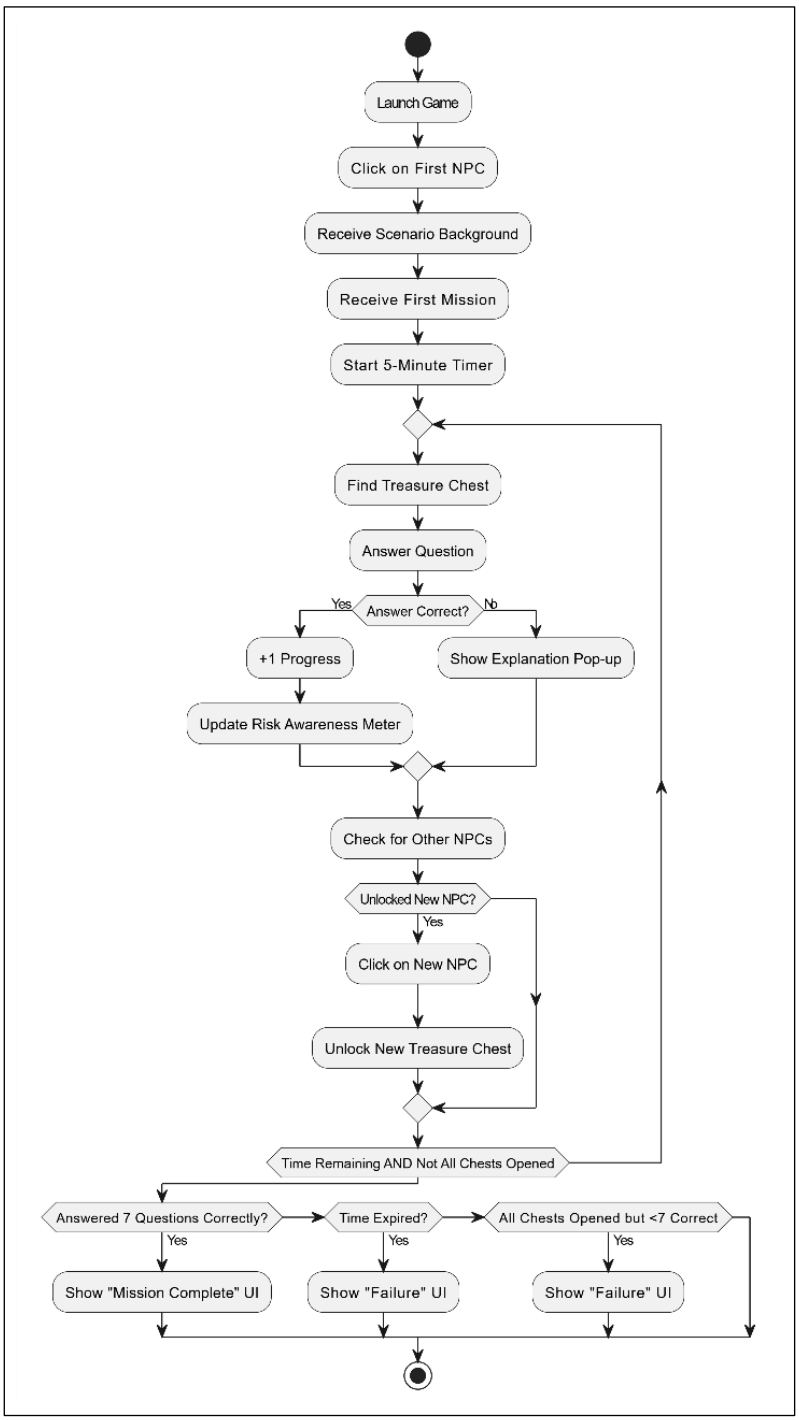
The Use Case Diagram of the GOMI.



A flowchart illustrates the gameplay progression, including how players interact with NPCs, complete missions, answer questions, and receive feedback, as shown in Figure 3.

Figure 3

The Flow Chart of the GOMI.



The requirements were gathered using Competitive Analysis, Literature Review, and Brainstorming Sessions. Through Competitive Analysis, the developer has reviewed existing games and educational tools aimed at combating misinformation, evaluating their strengths and weaknesses to identify opportunities for improvement and innovation in the new game.

The Literature Review involved researching academic studies on misinformation, media literacy, and the effectiveness of educational games, ensuring that the latest findings and best practices in the field

inform GOMI's design. Finally, Brainstorming Sessions were conducted to generate ideas, define core features, and refine the game mechanics, ensuring that the game would meet both educational goals and user expectations.

PROTOTYPE DEVELOPMENT

Figure 4 shows the full Main Menu screen for the application when the player accesses the game. The background image serves as the game's title screen. Players are introduced to the game with this 3D environment as the starting view. The player can press the 'Play' button to start a game. If the player wants to exit the game completely, they can press the 'Exit' button.

Figure 4

Application Main Menu Screen.

Figure 5 illustrates the initial game screen that appears at the start of gameplay. Background music plays during the game. Players can rotate the camera view using the mouse; however, movement is restricted until they interact with the first NPC (non-playable character). A UI prompt labelled 'Click Me' appears above the NPC to indicate that the player should engage with it to receive further information. A UI prompt labelled 'Progress' appears in the top-left corner, displaying a risk awareness meter that updates based on the number of correct answers.

Figure 5

Application Game Screen at the beginning of gameplay.

Figure 6 displays the game screen after players interact with the NPC (non-playable character). The NPC introduce the scenario and provides the story background. The mission details are displayed on the screen, guiding the player to their next objective. After pressing the 'Accept' button, players can control the character's movement using the keyboard in a third-person view.

Figure 6

Application Game Screen with the mission displayed.

After interacting with the NPC (Non-Playable Character), the NPC disappears, and a treasure chest appears for the player to answer a misinformation-related question. When the player controls the character's movement using the keyboard in a third-person view, footstep sounds play to enhance realism. A UI prompt labelled 'Time' appears at the top centre of the game screen, displaying the countdown timer.

Figure 7

Application Game Screen with a displayed treasure chest.

Figure 8 depicts the question UI, which displays the question along with True, False, OK, and Close buttons. Players cannot close the UI before answering the question. After submitting an answer, correct or incorrect sound effects are triggered based on player performance. If the player answers correctly, a

UI prompt labelled ‘Progress +1’ appears at the centre of the screen, indicating a successful response. Simultaneously, the ‘Progress’ UI, which represents the risk awareness meter, is updated.

Figure 8

Application Game Screen with a displayed question.

Figure 9 depicts the question UI, which displays the question along with True, False, OK, and Close buttons. Players cannot close the UI before answering the question. After submitting an answer, correct or incorrect sound effects are triggered based on player performance. If the player answers incorrectly, a UI prompt labelled ‘Explanation: ...’ appears at the centre of the screen, indicating an incorrect response. An explanation of the misinformation is displayed to help the player identify and understand it.

Figure 9

Application Game Screen with a displayed question.

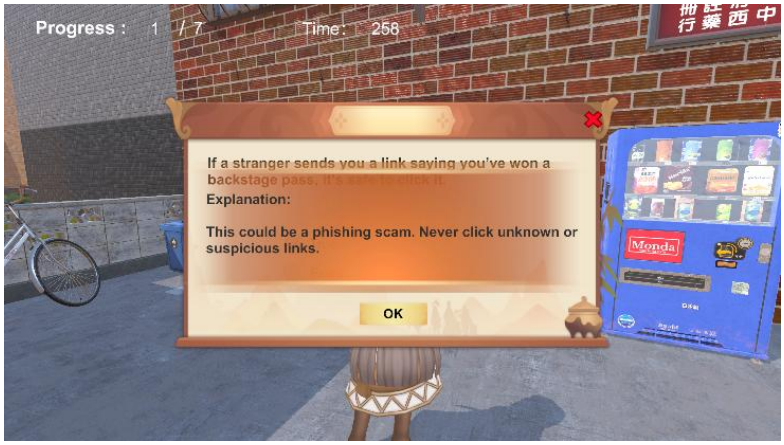


Figure 10 displays the game screen where players can interact with additional NPCs to unlock extra treasure chests. These NPCs are strategically placed throughout the 3D environment to encourage exploration. Each unlocked treasure chest contains a new misinformation-related question, allowing

players to continue testing their knowledge as they progress. The NPCs serve solely as gatekeepers to unlock these chests.

Figure 10

Application Game Screen with an unlock mission.

Figure 11 illustrates the game screen displaying the failure UI. If the timer runs out and the player has not answered 7 questions correctly, the game fails. During this screen, player movement is disabled. The 'Restart' button allows the player to replay the game, while the 'Quit' button exits the gameplay and returns to the main menu.

Figure 11

Application Game Screen with failure UI.

Figure 12 illustrates the game screen displaying the success UI. If the player answers 7 questions correctly, the game ends successfully. During this screen, player movement is disabled. The 'Restart' button allows the player to replay the game, while the 'Quit' button exits the gameplay and returns to the main menu.

Figure 12

Application Game Screen with success UI.

EVALUATION

In the field-testing phase, the evaluation approach used the USE questionnaire to collect player feedback on their experience with the game systematically. The USE questionnaire, created by Lund, A.M. (2001) in "Measuring Usability with the USE Questionnaire," is a standardised tool designed to assess usability across several essential dimensions. A total of 18 questions were used to evaluate players' experiences, focusing on three key dimensions of the USE questionnaire: Usefulness, Ease of Use, and Satisfaction. This structured approach provided measurable data on players' experiences with the game. The feedback helped assess how effectively the game delivered misinformation awareness content, how easy it was to navigate and understand, and how enjoyable the overall gameplay experience was.

Field testing was conducted with 30 respondents. Respondents were selected using convenience sampling, targeting individuals aged 14 and above who have basic experience using digital platforms and online content. This criterion ensures that participants are representative of typical internet users who encounter misinformation in daily life. The evaluation used a questionnaire as the primary research instrument, consisting of a structured set of questions designed to collect data from respondents. This questionnaire was administered online using Google Forms to facilitate easy distribution and efficient data collection. The questionnaire was developed based on the USE model (Usefulness, Satisfaction, and Ease of Use) proposed by Lund (2001). Respondents were asked to rate their level of agreement with various statements using a 5-point Likert scale, where 1 represents "strongly disagree" and 5 represents "strongly agree." The questionnaire consists of 4 sections: Respondent Information, Usefulness, Ease of Use, and Satisfaction.

To assess the game's usability and effectiveness, a structured evaluation was conducted. Respondents were guided through several key steps, from accessing the game to completing a detailed questionnaire based on their experience. Respondents were randomly selected and invited to take part in the study. Respondents played the game (figure 13) on the surveyor's PC for one full session. A 5-minute time limit was set to ensure consistency across all respondents. A 5-minute gameplay session was chosen to simulate short-duration gameplay scenarios commonly found in casual gaming environments. This duration allows users to experience the game's core mechanics while maintaining engagement and

minimising fatigue during the evaluation. During this period, users were encouraged to explore the gameplay, engage with the features, and complete the scenario to experience the game's core mechanics. After finishing the game, respondents were directed to a Google Form that contained the USE questionnaire. Quantitative analysis was conducted to identify trends and evaluate the game's performance in the three dimensions: Usefulness, Ease of Use, and Satisfaction. In addition to descriptive statistics, the collected data were analysed using mean scores and standard deviations to provide a clearer understanding of user responses. These statistical measures allow for a more structured interpretation of the results beyond percentage distributions. The analysed data were interpreted to assess the game's effectiveness and usability. Key insights included areas where the game performed well and areas that may require improvement. These findings help inform future game enhancements.

Figure 13

Respondents are interacting with the application.

The Respondents' Demographic Information

Analysis of the demographic information shows that the highest participation is among the 14-20 age group, with 12 respondents, accounting for 40% of the total respondent base. The second-highest participation comes from the 20 to 30 age group, with 10 respondents, or 33.3% of the total. This is followed by the 30 to 40 age group, with only 3 respondents, or 10% of the total respondent base, and, lastly, the above-40 group, with 5 respondents, or 16.7% of the total respondent base. Of the 30 respondents, 13 were employed, accounting for 43.3% of the total. An equal number, 43.3% of the total respondent base, were students, with 13 respondents. The remaining 4 respondents were unemployed, accounting for 13.3% of the total respondent base.

The respondents' educational backgrounds vary, with a significant portion being high school and university-level students. Specifically, 5 respondents (16.7% of the total respondent base) had completed UPSR, 5 had completed PMR, and 9 (30% of the total respondent base) had completed SPM or STPM. Additionally, 2 respondents held a Diploma or Matrikulasi/Asasi qualification, while 9 held a bachelor's degree. This diverse range of education levels helps to ensure that the feedback reflects the perceptions of players with varying academic experiences.

The highest participation is from the midcore/core group, with 14 respondents or 46.7% of the total respondent base. The second-highest participation comes from the casual group, with 10 respondents. The lowest participation is from the newbie/novice group, with only 6 respondents. Among the 30 respondents, 5 respondents or 16.7% play less than 1 hour per week, 4 respondents play 1–4 hours, 3 respondents play 5–9 hours, and another 4 respondents play 10–19 hours weekly. Additionally, 4 respondents reported playing 20–29 hours per week, 9 reported 30–39 hours per week, and 1 reported

more than 40 hours per week. This distribution shows a diverse range of gaming engagement levels among respondents, from casual to highly dedicated players.

The Usability of GOMI

An analysis was conducted of the respondents' responses in Sections B, C, and D of the post-task questionnaire. This section measures respondents' perceptions of GOMI's usefulness and ease of use. It also measured the respondents' satisfaction towards it. Tables 2, 3, and 4 report responses ranging from Strongly Disagree to Agree Strongly.

Table 2

Usefulness of GOMI

Usefulness of GOMI	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The lack of a login requirement made it easier for me to access the game.	0 (0.00%)	0 (0.00%)	1 (3.33%)	11 (36.67%)	18 (60%)
The game is suitable for teenagers.	0 (0.00%)	0 (0.00%)	3 (10%)	15 (50%)	12 (40%)
The game helped me gain a better understanding of misinformation.	0 (0.00%)	0 (0.00%)	1 (3.33%)	12 (40%)	17 (56.67%)
The game improved my ability to identify false or misleading information.	0 (0.00%)	0 (0.00%)	1 (3.33%)	12 (40%)	17 (56.67%)
The structure of the game (e.g., question flow) is clear and logical.	0 (0.00%)	0 (0.00%)	0 (0.00%)	17 (56.67%)	13 (43.33%)
The interactive format makes the learning process engaging.	0 (0.00%)	0 (0.00%)	1 (3.33%)	14 (46.67%)	15 (50%)

Figure 14

Descriptive Statistics (Mean and Standard Deviation) for Usefulness of GOMI.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Overall Mean	30	3.83	5.00	4.4722	.35580
Valid N (listwise)	30				

The overall mean score for usefulness was high (M = 4.4722, SD = 0.3558), indicating that respondents generally perceived the game as beneficial in improving their understanding of misinformation.

Table 3

Ease of Use of GOMI.

Ease of Use of	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The game interface is intuitive and easy to navigate.	0 (0.00%)	0 (0.00%)	2 (6.67%)	7 (23.33%)	21 (70%)
The game loads quickly and responds smoothly to my actions.	0 (0.00%)	0 (0.00%)	0 (0.00%)	6 (20%)	24 (80%)
The overall layout of the game screen helps me focus on the content.	0 (0.00%)	0 (0.00%)	1 (3.33%)	17 (56.67%)	12 (40%)
I can easily locate the different functions (e.g., start, hints, score) within the game.	0 (0.00%)	0 (0.00%)	1 (3.33%)	15 (50%)	14 (46.67%)
The instructions from the NPC are clear and helpful.	0 (0.00%)	0 (0.00%)	2 (6.67%)	12 (40%)	16 (53.33%)
It was easy to understand the game's current progress.	0 (0.00%)	0 (0.00%)	0 (0.00%)	4 (13.33%)	26 (86.67%)
I had no issues with loading or technical performance during gameplay.	0 (0.00%)	0 (0.00%)	0 (0.00%)	11 (36.67%)	19 (63.33%)

Figure 15

Descriptive Statistics (Mean and Standard Deviation) for Ease of Use of GOMI.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Overall Mean	30	4.00	5.00	4.6000	.36835
Valid N (listwise)	30				

The mean score for ease of use was also high (M = 4.60, SD = 0.36835), suggesting that users found the game intuitive, easy to navigate, and responsive during gameplay.

Table 4

Satisfaction of GOMI.

Satisfaction	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I enjoyed playing the game.	0 (0.00%)	0 (0.00%)	1 (3.33%)	13 (43.33%)	16 (53.33%)
The 3D graphics made the game more engaging.	0 (0.00%)	0 (0.00%)	0 (0.00%)	5 (16.67%)	25 (83.33%)
The balance between learning and fun was appropriate.	0 (0.00%)	0 (0.00%)	1 (3.33%)	17 (56.67%)	12 (40%)
The music and sound effects added to the experience.	0 (0.00%)	0 (0.00%)	1 (3.33%)	10 (33.33%)	19 (63.33%)
I would recommend this game to my friends.	0 (0.00%)	0 (0.00%)	2 (6.67%)	10 (33.33%)	18 (60%)

Figure 16

Descriptive Statistics (Mean and Standard Deviation) for Satisfaction of GOMI.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Overall Mean	30	3.60	5.00	4.5667	.42696
Valid N (listwise)	30				

The satisfaction dimension recorded a strong mean score (M = 4.5667, SD = 0.42696), reflecting that most respondents enjoyed the game and found it engaging.

Based on the evaluation findings, GOMI has scope for wider use. According to survey data, the game is useful and well-received by players. Most respondents agree or strongly agree that the game is easily accessible, appropriate for teenagers, and useful for enhancing their understanding of misinformation. Next, it obtains overwhelmingly positive feedback regarding the game's design and technical performance. Most respondents agree or strongly agree that the game is intuitive, fast-loading, well-structured, and free from technical problems. Lastly, the game was highly rated for entertainment value, aesthetics, graphics, learning value, and overall appeal. Many respondents agree or strongly agree that they enjoyed the game and learning experience, and were willing to recommend it to others, reinforcing its viability as an effective educational resource.

CONCLUSION AND FUTURE WORKS

This study describes the design and development of an interactive educational game application to help teenagers aged 14 years old and above identify misleading information in a fun and immersive way. GOMI enhances the public's critical thinking ability, making them less vulnerable to misinformation. This is important in an age where everyone is constantly consuming information online. As players engage with the game, they become more aware of how different kinds of misinformation operate and feel a greater sense of responsibility for the information they share. This form of education helps limit the spread of misinformation, reduces the polarisation caused by fake news, and promotes healthier interactions on the internet. Such an impact at the community level helps protect the public from being misled by false information that can influence health behaviour, sway opinions, or affect election outcomes. The game encourages players to place more trust in credible and authoritative information sources. This development is essential in building a society that values critical thinking. Such a society plays a key role in maintaining social unity by reducing the influence of fake news. By providing a unique approach to learning about misinformation, the game leads people toward a society that questions, verifies, and values honesty.

This study contributes to the field by introducing a 3D interactive misinformation-learning game that integrates time-based decision-making, immersive exploration, and immediate feedback to enhance user engagement and awareness. Despite the positive findings, this study has several limitations. The evaluation focuses primarily on short-term usability and user perception rather than objective measurement of learning outcomes. Additionally, the 5-minute gameplay duration may not fully capture long-term engagement or knowledge retention. Future research should incorporate pre- and post-assessments as well as longer or repeated gameplay sessions to evaluate learning effectiveness more rigorously.

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