# Analysis User Interface Design of Virtual Reality-Based Mahakarya Vokasi Game Using System Usability Scale

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**Abstract.** Mahakarya Vokasi Virtual Reality (VR) Game is an exhibition of products produced by Indonesian Vocational Education Institutions through strict selection, presented in the form of Virtual Reality games. This study aims to test the user interface (UI) of the Mahakarya Vokasi VR Game in the framework of Vokasi Fest x Kampus Merdeka by involving 16 participants. Data collection was carried out through a questionnaire using the System Usability Scale (SUS). The UI design process adopts the Double Diamond model with the stages Discover, Define, Develop, and Deliver. The results showed that the UI of the Mahakarya Vokasi VR Game in Vokasi Fest x Kampus Merdeka succeeded in achieving a fairly good level of satisfaction, with an average SUS score of 57 and marginal acceptance, so further improvements and enhancements are needed to improve the user experience to interact with the Mahakarya Vokasi game interface.

**Keywords:** Game Virtual Reality, Mahakarya Vokasi, User interface, System Usability Scale, Double Diamond.

## 1 Introduction

### 1.1 Virtual Reality Games

Virtual reality (VR) is an emerging computer technology, considered the next stage in today's digital and information age [1]. VR is defined as an engaging and immersive experience in a virtual environment, which provides an easy-to-understand way for users to view and interact with complex data, especially three-dimensional data [2]. Although VR environments can create immersive effects, a second element is needed to achieve a high level of learning: user interaction with the VR environment. Using VR in games is a natural way to achieve a high level of interactivity [3]. In this regard, one of the most popular applications is educational games, with the general approach of using VR to increase learner engagement and motivation [4]. In research, educational games are defined as games that are created, implemented, and evaluated with the intent to teach, or assist in the delivery of subject matter, or support the learning of specific skills in a formal or informal environment [5]. In this case, the Mahakarya Vokasi VR Game becomes an educational game presented in the form of a VR game that presents a unique and educational learning experience. This game is a place to display products from several Indonesian Vocational Education Institutions.


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In the gaming industry, various approaches to help designers and developers involve designing User Interface (UI), which has an important role in guiding the user's attention to the objects and subjects of the game [6]. The development of UI in Mahakarya Vokasi VR Game uses Three-dimensional User Interfaces (3D UI) that allows users to interact with virtual objects and virtual environments. The existence of 3D UI is very important to be able to fully interact with users when in a virtual environment [7].

From research on guidelines for 3D UI research from Virtual Reality consumers, the problem that arises is that the UI is not fully usable, in the sense that the UI cannot be shifted when in the VR environment. In addition, the controllers used are less responsive and are still in the prototype stage [8]. In designing UI, Mahakarya Vokasi VR Game, tends to improve the UI problem in VR that is less interactive or has a monotonous design, just like the default or existing one. Similar research on evaluating UI guidelines for virtual reality, one of the problems that arise is that the UI is generally placed at the top of the screen to display information such as health, scores, and menus. However, this approach is less effective in VR because it is difficult to focus the eyes on very close objects [9]. Therefore, in designing the UI for the Mahakarya Vokasi VR Game, avoid UI that obstructs the user's vision and consider using a three-dimensional (3D) UI. In research that discusses the design paradigm of 3D UI for VR exhibitions, it is said that poor design of 3D UI can reduce the immersive experience and even cause symptoms of nausea, as well as disrupt the atmosphere of the VR environment [10]. In creating the 3D UI of Mahakarya Vokasi VR Game, it is important to prioritize an immersive UI for the safety of users. In the development of the Mahakarya Vokasi VR Game, the researcher's role is as the main designer of the 3D UI of the Mahakarya Vokasi VR Game which includes designing and developing various UI elements that are easy to use and interactive, with the aim of improving user experience and ensuring maximum engagement. The researcher is responsible for each stage in the design process, from conceptualization to implementation, as well as analyzing the UI based on feedback obtained from user evaluations.

To ensure the quality of UI design direct user participation in its assessment is essential in evaluating the UI's response to user needs and creating a positive user experience [11]. There are several types of UI in the Mahakarya Vokasi VR Game, namely UI graphics, UI pop-ups, UI text bubbles, UI instructions, and UI progress. The UI research in the Mahakarya Vokasi VR Game used the System Usability Scale (SUS) questionnaire developed by Broke (1996). The questionnaire consisted of 10 statements covering various aspects of system usability [12]. The Ministry of Education, Culture, Research and Technology (Kemendikbud Ristek) launched Vokasi Fest x Kampus Merdeka to strengthen superior human resources in vocational education, in line with Merdeka Belajar's innovative policy [13]. At Vokasi Fest x Kampus Merdeka, in the context of UI testing, this step becomes very important in ensuring the success of the Mahakarya Vokasi VR Game on an exhibition scale. The purpose of this research is to analyze the UI in the game, so that it can be a reference for game developers in creating the next UI that is felt to be more attractive to players. Therefore, user interface evaluation measures, such as the use of the System Usability Scale (SUS) questionnaire, are essential to ensure the quality of UI design and create an optimal user experience, as

well as being an important step to evaluate player response and interaction, and identify potential improvements.

## 2 Research Methods

The design applied is the Double Diamond method, a structured framework designed to guide the UI development process. After designing the UI, this research then conducted an evaluation using the System Usability Scale (SUS) to measure the level of user satisfaction with the UI that had been created. Thus, the use of the Double Diamond method and evaluation test with SUS is expected to provide a deeper understanding of the effectiveness and quality of UI in this study.

### 2.1 Double Diamond

Research related to the application of the Double Diamond method to website UI design [14] is relevant to the approach that can be adopted in the design of the Mahakarya Vokasi VR Game UI. The Double Diamond framework can support design and non-design teams in improving processes to create products with better user experience [15]. The UI design of Mahakarya Vokasi VR Game adopts the Double Diamond model to effectively structure and optimize the game UI, in accordance with relevant and appropriate design principles. The Double Diamond is a visual model that breaks down the creative process into four main stages: Discover, Define, Develop, and Deliver. The model emphasizes an iterative approach to go from identifying a problem to finding the best solution [16]. The first diamond focuses on problem generation, while the second diamond is concerned with solution creation.

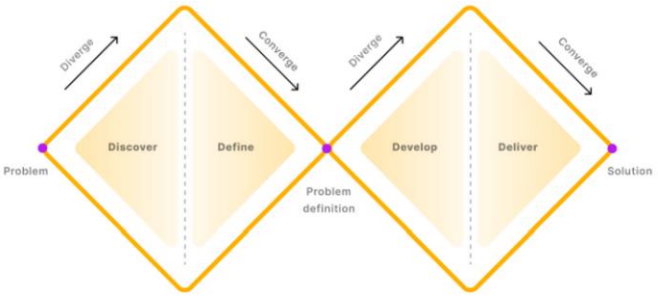


**Fig. 1.** Double Diamond Model

The UI development of the Mahakarya Vokasi VR Game follows the four stages of the Double Diamond model: discover (looking for user needs), define (setting goals), develop (creating prototypes), and deliver (implementing the optimal design). This stage ensures purposeful development, focusing on deeply understanding user needs to create a UI that supports an optimal gaming experience. This process is undertaken because the game project is ongoing, and this research currently covers only level 1 of 10 levels.

### 2.2 System Usability Scale (SUS)

The research uses System Usability Scale (SUS) to analyze UI/UX on the website [17], relevant to the testing method that can be adopted on the UI of Mahakarya Vokasi VR Game. SUS helps to gain a deeper understanding of the usability and user satisfaction level of the Mahakarya Vokasi VR Game UI. SUS is a usability test measurement tool that refers to the user's point of view, developed by John Brooke in 1986. SUS consists of 10 questions with a 5-point Likert scale [18]. The following list of statements is shown in **Table 1.**

**Table 1.** List of System Usability Scale (SUS) Statements on Game UI Testing.

| Item | Statement |
|---|---|
| +S1 | I feel that the UI of the Mahakarya Vokasi Virtual Reality (VR) Game makes me want to always use this game |
| -S2 | I feel that the UI layout of the Mahakarya Vokasi VR Game is very complicated |
| +S3 | I found the UI of Mahakarya Vokasi VR Game easy to use |
| -S4 | I need a technician's help to learn the UI of Mahakarya Vokasi VR Game |
| +S5 | I feel that the features in the Mahakarya Vokasi VR Game are well integrated |
| -S6 | I feel that the UI of the Mahakarya Vokasi VR Game is inconsistent. |
| +S7 | I feel that others will quickly understand how to play the Mahakarya Vokasi VR Game |
| -S8 | I think the UI layout of Mahakarya Vokasi VR Game is very complicated and confusing |
| +S9 | I have no problems while using the Vocational Masterpiece VR Game |
| -S10 | I need to familiarize myself with the UI of Mahakarya Vokasi VR Game |

The SUS evaluation uses a 1 to 5 (x) rating scale for ten questions. Positive questions (1, 3, 5, 7, and 9) are scored with x-1, while negative questions (2, 4, 6, 8, and 10) are scored with 5-x. The total score is multiplied by 2.5 to get the SUS value [19]. There are three perspectives of using SUS as an evaluation, namely, acceptance, adjectival judgment, and value scale. Acceptability consists of three levels: Not acceptable, marginal (low and high), and acceptable. Adjective ratings include levels from worst imaginable, poor, ok, good, excellent to best imaginable. The SUS grade scale has five levels namely, Grade A is above 80.3, Grade B is from the range of 74-80.3, Grade C is from the range of 68-74, Grade D is from the range of 51-68, and Grade F is below 51 [20].

## 2.3 Participant

15 Participants are the optimal sample size for usability research, as it is the smallest number of participants that can detect all usability issues [23]. In this study, 16 participants were actively involved in the UI testing session on the Mahakarya Vokasi VR Game which involved the use of the Oculus Quest 2 VR device. The event took place at Taman Ismail Marzuki, Jakarta on December 11-12, 2023. The participants used this device to enter a virtual world and explored level 1 of the game for about 15 minutes.

These participants were visitors to the exhibition who had diverse backgrounds, so they provided varied responses and experiences during the play session.

# 3 Results and Discussion

## 3.1 Discover

Participant tracking shows the diversity of the community and the diverse character of individuals within it. The data shows that 56.3% of users are female and 43.8% are male, indicating a balance of participation from both genders. The majority of users were aged 18-22 years (50%), with a small proportion (6.3%) from the 41-51 years age group. The duration of play varied, with 50% having played for more than 2 years, 18.8% just starting in the last 3 months, and 18.8% inexperienced. The range of playing time also varies, with 31.3% playing more than 30 minutes, 25% more than 60 minutes, and 31.3% more than 15 minutes, while 12.5% never play games. This variety reflects the diverse needs and preferences among users. This provides extensive development potential to cater to diverse needs and preferences.

**VR Game UI Sketch of Mahakarya Vokasi.** The UI sketch is an initial visual description of the UI design to be created, with a rough level of detail. The following is a sketch that will be applied to the Vocational Masterpiece VR Game UI. This sketch shows the basic layout, positioning of key elements such as menus, buttons, and indicators, and how the user will interact with the UI.

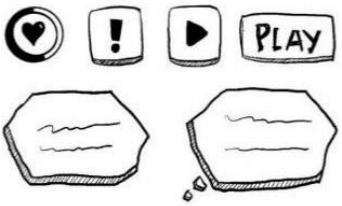


**Fig. 2.** Sketch of Mahakarya Vokasi VR Game UI icons and buttons

The sketch in **Fig. 2** shows the icons, buttons and bubble text. The health bar icon will gradually decrease if the player takes damage. Buttons can be used to interact with NPCs and start the game. Text bubbles are used to get game information.

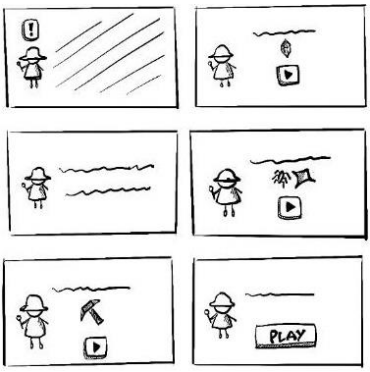


**Fig. 3.** UI on Mahakarya Vokasi VR Game instruction

In **Fig. 3** there is a sketch for instructions at the beginning before playing, players are required to read the instructions first in order to play the Mahakarya Vokasi VR Game clearly.

**Wireframe.** Wireframes are a series of simple drawings that represent the skeleton of a user interface. This wireframe contains the UI of the Mahakarya Vokasi VR Game, especially in the context of using 3D low poly art that matches the environment in the game. This wireframe includes a UI framework that illustrates how users will interact with the Mahakarya Vokasi VR Game. Wireframes help developers understand and visualize how UI elements such as menus, buttons, and other indicators will be placed and function in the game before the more detailed development stage begins.

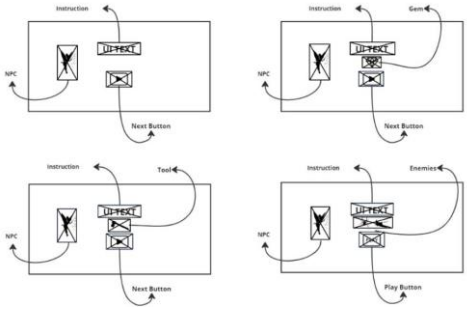


**Fig. 4.** UI on Mahakarya Vokasi VR Game instruction

Most of the UI in current VR applications consists of 2D UI elements that are directly applied into a 3D environment. This approach may not be optimal as humans have different ways of consuming information between 2D and 3D UIs. Therefore, it is not always possible that best practices in 2D user interface design can be applied well in a 3D environment [24]. In order to create a better experience, it is important to create a user UI for the Mahakarya Vokasi VR Game by using 3D low poly art that matches the environment in the Mahakarya Vokasi VR Game. In the UI design of Mahakarya Vokasi VR Game, there is a graphical UI that includes visual elements such as buttons,

icons, text, and images to allow users to interact with the system. Pop-up UI that appears suddenly or conditioned in response to user actions, such as notifications or confirmations and, progress UI that does not block the player's view in displaying information about the progress or status of a process, on health bars and experience points.

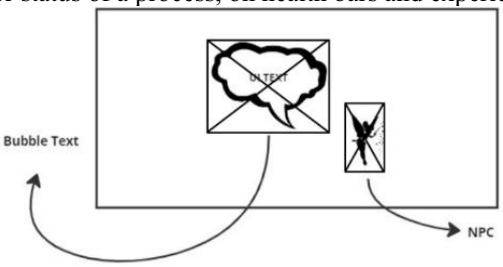


**Fig. 5.** Bubble text on Mahakarya Vokasi VR Game instruction

Bubble text UI plays an important role in the interaction between players and NPCs in VR games. Through these text balloons, NPCs can provide hints, missions, information, or dialog to the player, thus enhancing the immersive experience in the game. By paying attention to visual distractions and communicating information clearly and effectively, conversation balloons become an element that enriches the experience of playing the Mahakarya Vokasi VR Game.

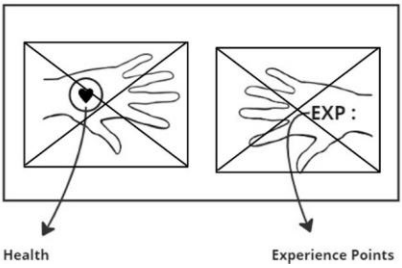


**Fig. 6.** UI health bar and experience point Mahakarya Vokasi VR Game

The UI in the Mahakarya Vokasi VR Game avoids UI that obstructs the user's vision, therefore, the health bar and experience points are placed on the hand. With health bars and experience points placed in the player's hands, the experience becomes more immediate and more realistic. Players feel as if they have direct control over their character's health information and development. This creates a deeper sense of engagement and emotional connection between players and the characters and virtual environments they explore.

**UI Design Concept.** UI icons on the health bar and bubble text in the Mahakarya Vokasi VR Game apply a flat design concept characterized by simple shapes and the use of bright colors and striking contrasts to highlight important elements and facilitate reading of information. It promotes simplicity, with elements such as icons and shapes

appearing without excessive detail, making it easier for users to recognize and understand information quickly. Flat design is not only aesthetic, but also functional [25]. The UI design concept on the Mahakarya Vokasi VR Game button applies an illustration design that is often combined with typography and other elements to create a unique and attractive appearance [26].

**Colors.** In the discussion about color in UI, this aspect has an important role in creating an atmosphere and immersive experience in the Mahakarya Vokasi VR Game. The right use of color can give players a more immersive experience and reinforce the narrative or theme of the game.


**Fig. 7.** The color palette on the UI of Mahakarya Vokasi VR Game

Considering the dark theme atmosphere in the Mahakarya Vokasi VR Game environment, the use of a dark palette and contrasting neon colors can reflect the atmosphere that matches the theme. This can provide an interesting and memorable visual experience for players.

**Font.** The font used in the UI of Mahakarya Vokasi VR Game is Good-Game Regular font, which is included in the bold, decorative, display, gaming category.


**Fig. 8.** Good Game UI Font on Mahakarya Vokasi VR Game

This font has a low poly art style that matches the environment in the Mahakarya Vokasi VR Game. The bold characteristic of this font gives a firm and prominent impression, while the decorative and display aspects make it striking, making it ideal for attracting players' attention in the game UI.

**Icons and Buttons.** Buttons and icons serve to make it easier for users to perform actions and make choices with a single press. **Fig. 9** shows the icons used in the Mahakarya Vokasi VR Game. The icon color is adjusted to the color based on the color palette in **Fig. 7.** The icon and button design applies flat design and illustrative design, created with Adobe Illustrator.

**Fig. 9.** UI on Icons Mahakarya Vokasi VR Game

The application of flat design on this icon emphasizes simplicity and functionality, making it easy for players to recognize and use. One important feature in this UI design is the color change of the icon that indicates the player's health status. As the player's health decreases, the icon color will gradually change from green to gray. This color change not only provides clear visual feedback regarding the player's health condition, but also increases the player's awareness of the situation in the game without the need for additional text.


**Fig. 10.** UI on Buttons Mahakarya Vokasi VR Game

**Fig. 10** shows the buttons used in the Mahakarya Vokasi VR Game. The color of the button is also adjusted to the color palette in **Fig. 7.** The UI on the button applies illustrative design. The design of this button not only focuses on the visual aspect but also considers functionality and user comfort. The colors used on the button are designed to create sufficient contrast, making it easy to recognize and access by players in various lighting conditions and viewing angles. The illustrative designs on the buttons add an aesthetic element that enriches the player's visual experience, making the interface more attractive and pleasant to look at.

### 3.2 Explore Define

In this section, discuss the prototype in the development UI of the Mahakarya Vokasi VR Game. The main focus is on understanding how UI components interact with the player to create an immersive and informative gaming experience.

**Prototype.** Prototypes serve as an early version of the UI or game mechanics. The aim is to evaluate concepts, identify problems, and obtain feedback from users.

**Fig. 11.** UI on Mahakarya Vokasi VR Game instruction

Before the player presses the play button at the beginning of the Mahakarya Vokasi VR Game, the view will be locked in the direction of the displayed instructions, this aims to make the player get clear information. The instructions include details of the mission, the enemies to be faced, and the items that need to be collected during the mission. As such, players can understand their tasks and goals before starting the game, so they can prepare the strategies and focus needed to succeed in the game. The pop-up UI after picking up an item aims to give the player a clear response to the action the player took, while facilitating the immediate and convenient use of the item or related information. Thus, this pop-up UI can increase player engagement in VR games and make navigation and interaction with relevant game elements easier.


**Fig. 12.** Pop-up UI of Mahakarya Vokasi VR Game

The contrasting colors used in the UI outline serve as a strong emphasis tool to highlight certain areas. It aims to grab the player's attention in particular or direct them to important details that encourage the player to continue the game in the intended direction. In other words, the contrasting color of the outline is used to create intense visual focus, helping players to understand important areas or instructions that the game is trying to convey. This can enhance the gaming experience and help players to make more informed and efficient decisions in the game.


**Fig. 13.** Health bar and experience points on the UI of Mahakarya Vokasi VR Game

In games, green is often identified with health points or character health. This is due to the traditional association of the color green with life, freshness, and health. In a health bar icon, the use of green is usually interpreted as an indication of good health or a high level of health in the character. Thus, when green appears on the health bar, players can interpret it as the character's optimal health condition.

### 3.3 Develop Test

Participants will be given instructions regarding the objectives and tasks to be performed during the test session, including an understanding of level 1 of the game. Next, players will put on the Oculus 2 VR headset and start the game at level 1 of the Mahakarya Vokasi VR Game. The participant will execute the rules and tasks in level 1, while the researcher monitors the participant's interaction with the UI as a whole. After completing the game, participants were asked to fill out a System Usability Scale (SUS) questionnaire. At level 1 of the game, the player will receive instructions through NPCs. After starting, the game enters the main stage where the player must avoid enemies and overcome obstacles. Players must survive in the game if they fail, the game ends and the score is displayed. If successfully survived, the player gets a gem as a sign of victory and the score is updated. At the end of the game, players can see the vocational products.

### 3.4 Deliver Listen

To ensure that the delivered product matches user expectations, it is important to not only deliver the desired features, but also to listen carefully to feedback from users. This section will explore the results from the analysis of the SUS questionnaire, which provides a deep understanding of the users' assessment of the VR Game UI of Mahakarya Vokasi level 1 game for about 15 minutes.

**Calculation of System Usability Scale (SUS) Score.** Scores from the SUS questionnaire that have been converted to a Likert scale will be processed according to the guidelines available in the SUS method, the calculation process is in accordance with

the provisions of the System Usability Scale (SUS). Statements S1 to S10 are the sequence numbers of the statements given, while P1 to P16 are the responses or responses given by participants. The following formula is used to generate SUS scores:

$$\text{SUS Score} = \big((S1 - 1) + (5 - S2) + (S3 - 1) + (5 - S4) + (S5 - S6) + (S7 - 1) + (5 - S8) + (S9 - 1) + (5 - S10)\big)x\ 2.5 \quad (1)$$

**Table 2.** The results of the calculation of the SUS Score of 16 participants on the UI of the Mahakarya Vokasi VR Game

| Statement (S)/ | S1 | S2 | S3 | S4 | S5 | S6 | S7 | S8 | S9 | S10 | Total | SUS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| P1 | 3 | 1 | 2 | 1 | 3 | 2 | 2 | 2 | 1 | 1 | 18 | 45 |
| P2 | 4 | 3 | 4 | 0 | 3 | 4 | 4 | 3 | 4 | 0 | 29 | 73 |
| P3 | 3 | 1 | 3 | 1 | 4 | 0 | 3 | 1 | 3 | 1 | 20 | 50 |
| P4 | 2 | 1 | 1 | 1 | 1 | 4 | 4 | 1 | 1 | 1 | 17 | 43 |
| P5 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 2 | 2 | 1 | 24 | 60 |
| P6 | 3 | 3 | 3 | 1 | 3 | 3 | 3 | 3 | 3 | 1 | 26 | 65 |
| P7 | 3 | 2 | 2 | 1 | 3 | 3 | 3 | 2 | 2 | 1 | 22 | 55 |
| P8 | 3 | 3 | 3 | 2 | 3 | 3 | 4 | 2 | 2 | 1 | 26 | 65 |
| P9 | 3 | 3 | 3 | 1 | 4 | 3 | 3 | 2 | 2 | 1 | 25 | 63 |
| P10 | 3 | 3 | 3 | 1 | 3 | 3 | 3 | 3 | 3 | 0 | 25 | 63 |
| P11 | 4 | 2 | 3 | 1 | 3 | 2 | 3 | 2 | 2 | 1 | 23 | 58 |
| P12 | 0 | 0 | 0 | 2 | 0 | 4 | 0 | 4 | 4 | 1 | 15 | 38 |
| P13 | 4 | 1 | 4 | 0 | 4 | 3 | 4 | 0 | 4 | 2 | 26 | 65 |
| P14 | 4 | 1 | 3 | 0 | 2 | 3 | 2 | 3 | 2 | 1 | 21 | 53 |
| P15 | 2 | 1 | 3 | 1 | 2 | 3 | 2 | 1 | 3 | 2 | 20 | 50 |
| P16 | 3 | 3 | 3 | 1 | 3 | 3 | 3 | 3 | 2 | 1 | 25 | 63 |

Calculate the average value of participant assessments using a formula that divides the total participant scores by the number of participants. The average value of the SUS score is as follows:

$$\tilde{x} = \frac{\Sigma\tilde{x}}{n} = \tilde{x} = \frac{905}{16} = \tilde{x} = 57 \quad (2)$$

$\tilde{x}$ = Average value, $\Sigma\tilde{x}$ = Number of SUS values, $n$ = Number of respondents

From the data processing in **Table 2**, the final SUS score is 57 according to the SUS calculation guide.

**Interpretation of System Usability Scale (SUS) Score Results.** Based on the calculation of SUS value, it is found that the average score of Vocational Masterpiece VR Game UI is 57, with the final result being at the Marginal level which falls into the OK

category. Therefore, based on the assessment of 16 participants on the UI of Mahakarya Vokasi VR Game:

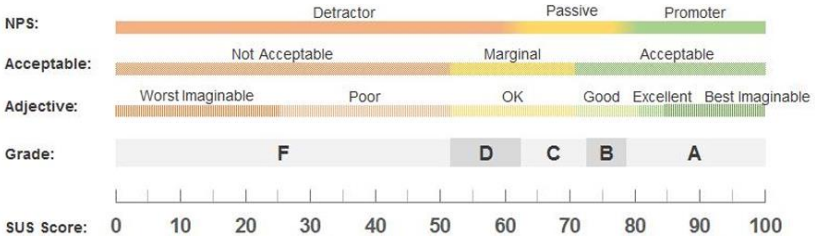


**Fig. 14.** SUS Score Interpretation

1. The average score of Mahakarya Vokasi VR Game UI is 57.
2. The Mahakarya Vokasi VR Game UI grade falls into the D category.
3. The Mahakarya Vokasi VR Game UI Adjective Level is in the OK category.
4. Acceptable UI Grade of Mahakarya Vokasi VR Game is in the Marginal category.

Based on the calculation results from the SUS questionnaire which was attended by 16 participants at Vokasi Fest x Kampus Merdeka to test the usability of the Mahakarya Vokasi VR Game UI, several conclusions can be drawn. The average SUS score of all respondents was 57, indicating a generally good level of usability.

**Analysis.** From the results of the System Usability Scale (SUS) analysis, the S1 odd statement gets the highest response of 63 which is positive, namely "I feel the UI display of the Virtual Reality (VR) Mahakarya Vokasi game, makes me want to always use this game." This shows that users give positive responses to the attractive UI display in the Mahakarya Vokasi VR Game. Meanwhile, even statement S10 received the highest response of 64 which is negative, namely "I need to adjust to the UI display of the Mahakarya Vokasi VR Game." This indicates that the average respondent has not felt comfortable or able to adjust when playing the Mahakarya Vokasi VR Game. This indicates that the average respondent has not felt comfortable or able to adjust while playing the Mahakarya Vokasi VR Game. Although overall the Mahakarya Vokasi VR Game received a fairly good SUS score, it is worth noting certain aspects that may require improvement or enhancement. Further analysis of individual responses can help identify areas that require further focus to improve the overall user experience.

Although the SUS score of 57 indicates a marginal level of usability, users stated that the UI is still considered quite good and acceptable. Various responses and suggestions were seen from several participants as they played the Mahakarya Vokasi VR Game, Participant 3, with gaming experience for more than a year and playing duration of more than 60 minutes in one session, felt a new sensation in playing VR games. Participant 4, who has been playing the game for more than 2 years and plays more than 60 minutes in a session, provided feedback to improve the display controls to be smoother, with additional running features and improved responsiveness of the user interface. Participant 6, who has had gaming experience for more than 1 year and played more than 60 minutes in one session, gave a positive assessment of the Mahakarya

Vokasi VR Game. Participant 9, who has no gaming experience, suggested that the Mahakarya Vokasi VR Game be more user-friendly. Participant 10, who has been gaming for more than 2 years and plays more than 30 minutes in a session, was interested in the potential of VR for dance learning. Participant 11, with more than 2 years of gaming experience and playing more than 30 minutes, suggested visual development in the game. Participant 13, who had been playing the game for more than 2 years and played more than 60 minutes in a session, gave a positive impression and expected further development. Participant 15, who has been playing the game for more than 2 years and plays more than 30 minutes in a session, suggested that the game be developed in 3D.

**Solution.** The results of the System Usability Scale (SUS) evaluation show that the highest response to the positive Q1 and negative Q10 questions shows that there is a need for improvement in the UI in the Mahakarya Vokasi VR Game. To address readability and adaptability issues, steps can be taken such as simplifying UI design, improving design consistency, conducting live user tests, and providing guidance or training to users. Through these improvements, it is hoped that the user experience in using the game UI can be improved, so that users feel more comfortable and efficient when interacting with the Mahakarya Vokasi VR Game for further testing.

## 4 Conclusion

Based on the Likert scale evaluation, users are likely to want to continue using this game, indicating attractiveness and convenience. Participants felt that the UI design facilitated understanding, the UI features functioned well, and the UI was generally easy to use, despite the few obstacles encountered. However, some participants found the UI to be inconsistent, confusing, and somewhat complicated, requiring technical assistance and time to familiarize themselves. In conclusion, while the UI has some advantages that users appreciate, there are still aspects that need to be improved to enhance consistency and ease of use. Based on the analysis using the System Usability Scale (SUS) measurement model on the Mahakarya Vokasi VR Game UI, a score of 57 was obtained with an Adjective Ratings assessment indicating an OK level, Grade Scales with a D value, and Acceptability Ranges which are at the Marginal Low level. Overall, participants assessed that the UI of the Mahakarya Vokasi VR Game is quite comfortable and easy to use, although there is still room for improvement. Thus, the purpose of System Usability Scale (SUS) testing to assess the usability of the Mahakarya Vokasi VR Game UI has been achieved.

For further development, it is recommended that the game content and features be updated regularly, the readability of in-game instructions be improved to reduce the level of confusion, as well as more attention to the needs and preferences of diverse users. In addition, for future research, it is important to conduct a more in-depth evaluation using other evaluation methods to identify more specific issues related to the Mahakarya Vokasi VR Game UI. This is expected to result in more effective improvements

to increase the level of comfort and user satisfaction when playing the Mahakarya Vokasi VR Game.

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