

# Implementation of Android-Based English Conversation Educational Game Using MDLC Method

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## Abstract

Many Indonesian students face significant challenges in learning English, particularly in speaking skills. Despite early exposure to English in schools, active speaking remains a struggle for many learners. The advancement of technology has opened new opportunities for educational innovation, including the use of educational games as engaging and interactive learning media. This study aims to develop an Android-based educational game that focuses on improving English conversation skills using the Multimedia Development Life Cycle (MDLC) method. The game is specifically designed to assist school children who experience difficulties in basic English speaking. Through an interactive and enjoyable approach, this game is expected to enhance students' learning motivation, strengthen their vocabulary acquisition, and improve their ability to construct simple sentences. The research follows six stages: concept, design, material collection, assembly, testing, and distribution. Black box testing results indicate that all menu functions and interactive features operate correctly, providing users with seamless access to tutorials, level-based challenges, and an engaging assessment system. This educational game serves not only as an alternative learning tool but also as a means to improve English literacy among students. By integrating gamified learning, the application fosters an immersive and enjoyable learning experience, contributing to more effective English language acquisition. Ultimately, this innovation has the potential to support students' communication skills, increase their confidence in using English, and contribute to the broader goal of enhancing English proficiency in Indonesia.

*Keywords:* Educational Games; English; MDLC; Interactive Learning.

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## Introduction

An educational game is a game that has been designed to teach players about a particular topic, expand concepts, reinforce development, understand a historical or cultural event, or help them learn skills as they play (Mewengkang & Tangkawarow, 2018; Putra et al., 2016). The emergence of various types of games, including educational games, is also influenced by the increasing development of technology around us (Suryadi, 2018; Vitianingsih, 2017). The application of games as a learning medium commonly called educational games began with the very rapid development of games so that they could be used as an alternative medium for learning activities (Fathahillah et al., 2023; Widayastuti & Puspita, 2020). Therefore, this educational game must be developed and the game should not only be fun but also educational (Agustia, 2023; Juniarti, 2021; Muhajarah & Rachmawati, 2019). Seeing the popularity of the game, it is hoped that educators will think about using game design components and applying them to learning that is tailored to the curriculum (Kharisma, 2021; Shaliha & Fakhzikril, 2022; Susanto, 2021).

English is a Germanic language that was first spoken in England in the early Middle Ages and is now a very common language used throughout the world (Manalu, 2020; Mappiasse & Sihes, 2014; Nurdiansyah et al., 2024). English is spoken as a first language by the majority of the population in various countries, including the United Kingdom, the United States, New Zealand, South Africa, and many other English-speaking countries (Bermúdez-Otero & McMahan, 2006; Brutt-Griffler, 2006; Donoghue, 2008; Smith, 2005). English has also become an official language in almost more than 60 sovereign countries (Adya, 2019; Wikipedia, 2023). After Mandarin and Spanish, English is the third most widely spoken native language in the world (Mcarthur, 2005; Nuraeni, 2021; Pemad, 2024).

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English has become an important skill in various fields such as medicine, business, science, education, and computing (Lubis et al., 2024; Sari et al., 2024). So the impact is that billions of people in this world can speak English at least at a basic level (Fauziah et al., 2024; Maulida et al., 2024). And English is one of the six official languages of the United Nations (Ashari, 2017; Wikipedia, 2025; Yusiku, 2024). For Indonesians who have had a different mother tongue since birth, there are still some who experience several obstacles in speaking English (Andara, 2023; Azhar, 2017). Fortunately, nowadays English has become one of the subjects taught since Elementary School, at least to master a little vocabulary (Apipudin & Saputra, 2023; Kurniawan, 2024; Oktavia et al., 2023). But in reality, there are still some who find it difficult to speak English actively (Awaliah & Rahmawati, 2024; Dalilah & Sya, 2022; Fitriani et al., 2022; Sormin, 2018).

As technology develops, in carrying out learning activities, just reading books is not enough. However, it can be filled with games so that children do not get bored and get bored quickly (Ahmadi, 2017; Widiasworo, 2018). Therefore, it would be interesting if there was a game that was not only fun but could also help children in learning English. With this educational game, it is expected that students will not feel bored and quickly get bored in learning English. This educational game is interactive and does not make you feel bored quickly throughout the game. This game was made using the Construct 2 game engine because this game was made in an Event Sheet consisting of Events and Actions, so developing a game with Construct 2 does not require mastery of difficult programming languages. This study will build an English Conversation Educational Game using the MDLC method.

## **Method**

In making this educational game, the researcher used the Multimedia Development Life Cycle (MDLC) method which consists of six stages. The first stage is the concept, where the purpose of the application, potential users, and general specifications are determined, including basic design rules such as application size and design. Furthermore, at the design stage, detailed specifications are made regarding the architecture, appearance, and material requirements so that the next stage can run without new decisions. After that, the material collecting stage is carried out by collecting various multimedia elements such as images, photos, animations, videos, and audio according to the design that has been designed. This material collection can take place in parallel with the next stage, namely assembly, where all multimedia elements are arranged and assembled according to the storyboard, flowchart, and navigation structure that have been previously designed.

After the assembly is complete, the testing phase is carried out to evaluate whether the application is functioning as expected. This testing includes checking the buttons, features, and performance of the application before it is distributed. If errors or inconsistencies are found, then corrections are made before proceeding to the final stage, namely distribution. At this stage, the application is saved to storage media and packaged according to the distribution method, such as via CD/DVD, download, or other digital platforms. The distribution phase also functions as an evaluation for further development, where the evaluation results can be input for the concept stage in the next project.

## **Results and Discussion**

The results of this study indicate that the educational game application developed aims to be a learning medium for school children who are still not fluent in basic English. This application is designed with a simple conversation concept using fictional characters to be attractive to children, although it does not rule out the possibility of users from adults or children who are not in school. The application design is made as simple as possible with a dominance of white and light blue to maintain the comfort of the user's eyes. In addition, background music and sound effects are added to increase user engagement and reduce boredom while playing.

The development process of this application includes collecting learning materials, such as images, audio, and fonts, obtained from various free material provider sites on the internet. The images obtained are then modified using Adobe Illustrator and GIMP, while audio in the form of background music and sound effects are also obtained for free. The design implementation is carried out using Construct 2 software, where each animation is equipped with sound effects and each application page has background music to enhance the user's learning experience. The appearance of the

application interface is designed to be interactive and interesting for children in learning English conversation more fun. The following is a part of the appearance of the English Conversation educational game application interface:



Figure 1. Main menu page

In Figure 1, the main menu page in the game contains the title of the English Conversation game application and the start, how to play, and exit navigation buttons. The start button will take the player to the game, the how to play button will take the player to the how to play page, and the exit button will take the player out of the game application.



Figure 2. How to play page

In figure 2 the how to play page, this page will appear when the player presses the how to play button on the main menu page. On the how-to-play page, a tutorial on how to play this game is displayed complete with pictures. There are several

buttons that have different functions. The left arrow button functions to shift the tutorial page back to the previous page, the right arrow button functions to shift the tutorial page to the next page, and the close button to close the tutorial page.

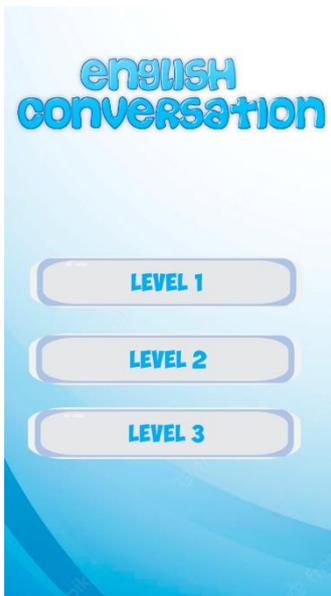


Figure 3. Level page

In figure 3 level page, this page will appear when the player has pressed the start button on the main menu page. On the level page in this game, several level options or levels of game difficulty are displayed that can be selected according to the user's wishes. There are three levels, starting from the easiest, namely level 1 to the most difficult level, namely level 3. Each level has 10 different questions. When one of the levels is pressed, the user will be taken to the game.

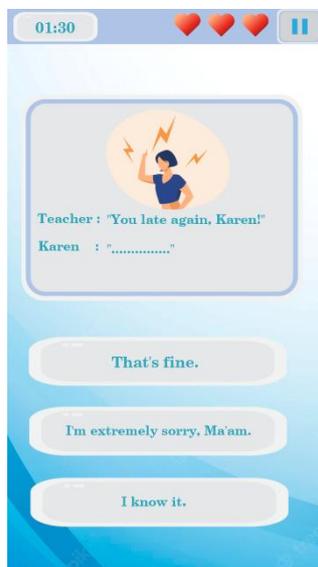


Figure 4. Question page

In the picture 4 of this question page, there is a large box containing questions that must be answered. Below it, there are three answer choices that can be chosen, but only one answer choice is correct. Then at the top there is a bar. The bar displays the remaining time to answer the question, there is a pause button to temporarily stop the game or exit the game, and a heart icon that functions as a life system in the game. When the player chooses the wrong answer, the heart icon will decrease and can end the game forcibly or game over when the player's heart or life icon runs out.

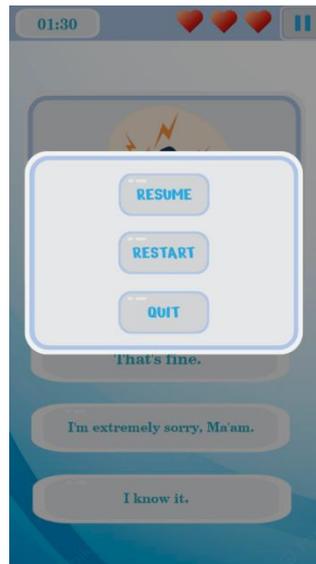


Figure 5. Pause page

In Figure 5 the pause page, this page will appear when the pause button is pressed. On this pause page, there are several buttons that have their respective uses. The resume button functions to continue the game, the restart button functions to repeat the game from the beginning, and the quit button functions to exit the question page and return to the main menu page.

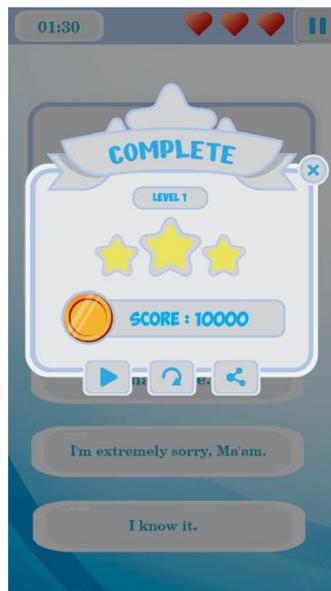


Figure 6. Score page

In figure 6 the score page, this page will appear after completing the game level. This page will display the score that has been achieved by the player. Players will get 3 stars and a perfect score if they answer all the questions correctly. And there are 4 buttons on the score page that have different functions. There is a play button to continue the game to the next level, then a restart button to repeat the game level, then a share button to share the game score results to social media, and finally a close button to end the game.

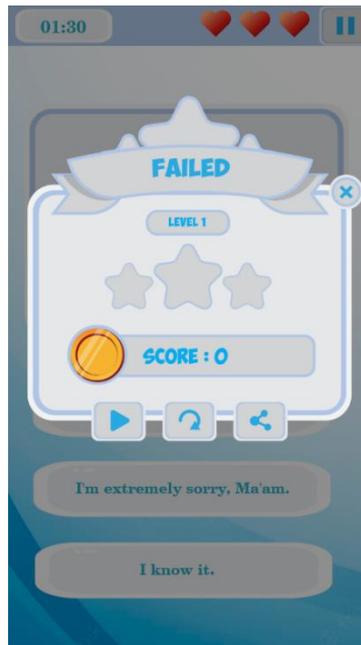


Figure 7. Game over page

In Figure 7 game over the page, this page will appear when the player fails to choose the correct answer in the game for three times. The player will not get stars according to the player's mistakes and scores. Players can press the resume or restart button to repeat the game, the share button to share the game results to social media, and the close button to exit the question page and return to the main menu page.



Figure 8. Exit page

In Figure 8 exit page, this page will appear when the user has pressed the exit button on the main menu page. There is a warning text that informs whether the player is sure they want to exit the game application or not. The check button

functions to agree to the warning and will take the player out of the game application. The cross button will take the player out of the exit warning page and back to the main menu page.

After the application can be run, testing will be done to ensure the application functions properly. The technique used to test this application is blackbox testing. Here are the test results from this stage:

Table 1. Blackbox testing results

Input	Process	Output	Results
Open the application	Showing application loading animation	Loading animation	In accordance
Start button	Displaying the level page	Level page	In accordance
Level button	Displaying the question page	Question page	In accordance
How to play button	Showing how to play the page	How to play page	In accordance
Pause button	Showing pause page	Pause page	In accordance
Answer selection button	Answering questions	True or false answer	In accordance
Restart button	restart the game from the beginning	Question page from the beginning	In accordance
Share button	Displaying the shared page	Share page	In accordance
Resume button	Resume a paused game	Question page	In accordance
The quit button in the pause page	Displaying the main menu page	Main course	In accordance
Exit button	Closing the application	Exit the application	In accordance

The last is the distribution stage, this stage is the process of saving the game application into storage media. This stage is the final process where the game application is ready to be used or published. This English Conversation educational game application is made using Construct 2. After the game application is created, the game application will be exported into a file with the .apk format, so that this game application can be uploaded or published to the Play Store and can run well on Android devices.

## Conclusions

From the results of the research and discussion that has been done, it can be concluded that the Android-based English Conversation educational game application has been successfully created using the Multimedia Development Life Cycle (MDLC) method. Testing using the Blackbox Testing technique shows that all functions and buttons in the application operate as they should. With this application, it is expected to be an alternative effective learning media for school children in recognizing vocabulary, and sentences, and improving their ability to speak English, so that the learning process becomes easier and more enjoyable.

However, the author realizes that this educational game application still needs a lot of improvement, especially in terms of graphics, features, and appearance which are still simple. Therefore, the author suggests that further research focus on developing a more modern and attractive user interface (UI), as well as adding features that make the playing experience more interesting and interactive. In addition, increased comfort in playing is also expected by displaying various characters, adding appropriate animations, music, and sound effects, and including a leaderboard to increase user engagement.

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