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## Application based Android as a Development of German Learning Media at Level A1 and its Effectiveness

### Abstract

*This research aims to develop German learning application, namely Deutschlernen which can be downloaded on Playstore. In addition, this research also aims to know the validity, practicality, and effectiveness of German Language Learning Media based on Android's Deutschlernen. The research method used in this application is a research and developing method ADDIE Model with 5 Steps like analysis, design, development, implementation and Evaluation to improve the language ability to guess an available answer through pictures, vocabulary, expressions, dialogue, grammar, practice questions, quizzes and puzzles that use German. All German learning materials for beginners will be packaged in an application (Deutschlernen) which can be accessed and downloaded by using Playstore in a smartphone, so that this research can be used not only for German language students, but also for the general public who wants to learn German. Through the educational game Deutschlernen, German learners will be enabled to improve their vocabularies, to memorize some useful expressions, to understand the rule of German grammar by mastering German language learning material at level A1 help the students to improve their German language skills quickly and easily. Based on the result of the research, it can be known that the Deutschlernen Android application contains level A1 German learning materials, featuring grammar, vocabulary (Wortschatz) and useful phrases (Redemittel) and is a very flexible learning medium because it can be accessed anywhere via the Playstore.*

**Keywords:** Deutschlernen as German Learning Media, Learning German as Foreign Language, Level A1 German Learning Materials.

### Introduction

In the era of globalization happening all over the world, the ability to speak foreign languages is a very important. In the era of globalization happening all over the world, the ability to speak foreign languages is a very important (De Soto, 1989) Someone who is able to speak a foreign language will find it easier to get new information and to communicate with people around the world and enable to work abroad. German is a foreign language that is also in great demand because it provides great opportunities in the world of work. In learning

German, people should knowing the range of vocabulary input because that is an important thing. Without knowing sufficient vocabulary, one cannot communicate in German. One of the efforts that can be made to overcome this problem is the use of appropriate learning media by students and teachers alike. Someone who is able to speak a foreign language will find it easier to get new information and to communicate with people around the world and enable to work abroad. German is a foreign language that is also in great demand because it provides great opportunities in the world of work.

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The German Language Education Study Program at the Faculty of Language and Arts of the State University of Medan, as one of the institutions that organizes German language learning, has around 310 Students of those more than 40% have not learnt German before, that is why the abilities of each student are different, the knowledge of vocabulary and grammar in German may be quite low.

In learning German, people should know the range of vocabulary input because that is an important thing. Without knowing sufficient vocabulary, one cannot communicate in German. One of the efforts that can be made to overcome this problem is the use of appropriate learning media by students and teachers alike.

Successful usage of media is one of the factors supporting the achievement of learning objectives (Dewi, 2018, Haryanto et al., 2018 and Marini et al, 2019). According to Syah et al (2021), the function of learning media is to overcome the limitations of space and time; media allows direct interaction between students and the environment, and motivates and stimulates students to learn. This is related to the use of appropriate and varied media in the learning process so as to increase learning motivation.

The very rapid development of technology today causes almost all human activities to be influenced by the application of science and technology (Begley, 1996). With the development of science and technology, an effort is needed to make it easier to find out about these knowledge (Nasution et al, 2018). Therefore, the German Language Education Study Program also combines technological developments in its teaching, namely the use of technology-based media, by combining technology with a new application named *Deutschlernen's* include educational game innovations into a smartphone application.

Currently, students tend to prefer learning while engaging in playful or game like activities. Therefore, the presence of an educational game application *Deutschlernen* is the answer as a solution to the problem of (1) students who tend not to be confident about communicating in German and (2) the students' overall ability to speak German, especially in mastering German vocabulary.

The research method used in this application is a research and developing method ADDIE Model with 5 Steps like analysis, design, development, implementation and Evaluation to improve the language ability to guess an available answer through pictures, vocabulary, expressions, dialogue, grammar, practice questions, quizzes and puzzles that use German. All German learning materials for beginners will be packaged in an application (*Deutschlernen*) which can be accessed and

downloaded by using Playstore in a smartphone, so that this research can be used not only for German language students, but also for the general public who wants to learn German.

Through the educational game *Deutschlernen*, German learners will be enabled to improve their vocabularies, to memorize some useful expressions, to understand the rule of German grammar. By mastering German language learning material at level A1 help the students to improve their German language skills quickly and easily.

## Literature Review

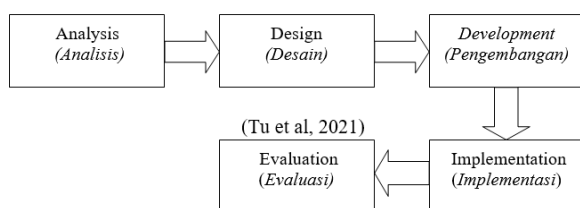
### Playstore

On Android smartphones, all applications on mobile phones to meet standard needs such as calls, sms, photos, calculators, and so on are found in the Playstore (Cahyono, 2019). Then how can other people or children communicate with other people, with relatives without using credit? that is using an application that can be downloaded via the playstore. Playstore is like a shop, if you buy a car, your car comes with standard features, if you want to buy window film, bigger wheels, audio, etc. then go to a spare parts shop that's roughly the meaning of playstore. There are lots of apps in the playstore. If you want to edit photos, edit videos, want to play any type of games, maybe you can find them on the Playstore, and most of these applications are free. just download and be able to enjoy it on the phone.

When you buy an android phone, you can't directly download the application on the playstore. However, create a google account first and login if you already have one. Google is a large company that creates systems on mobile phones whether the brand is Asus, Sony, Samsung, LG, or other brands even if the system is android then it is made by google. Currently an email account is really needed, even children also need an email (Musfiroh, 2008). There are so many android smartphone users, which as Android users must have a google account that is used as access to open the Play Store (Avenhaus & Canty, 2012). And to have a google play store account on an android smartphone, the solution is to create a Gmail email. To create a Gmail email on an Android phone, you don't need to open a browser, because you can do it directly on the system application provided by the Android operating system. Even the Gmail application is already available on the Android operating system. Users only need to update in the play store if there is an update, and even then it runs automatically as long as it is connected to the internet network.

## Research Method

In this study, a development method is used to develop Android-based learning media. This study uses the Borg and Gall development model. The data collected is level A1 vocabulary contained in the Studio A1 Express book for students at the German Language Education Study Program State University of Medan, Indonesia. This research was conducted in the German Language Education Study Program, State University of Medan. This research procedure uses the ADDIE research and development model, described 5 research steps, namely, analyzing, design, development, implementation and evaluation.



**Figure 1.**

*The steps of ADDIE Model*

### 1. Data Collection

At this stage, field observations were made to find out information about student needs and then a needs analysis would be carried out. Based on the needs analysis, media will be developed in accordance with the learning objectives.

### 2. Planning

The planning stage begins with determining level A1 German vocabulary by selecting vocabulary, word equivalents, Redemittel (utterances or expressions), collecting valid data sources and materials, determining grammar level A1 materials, determining the location and tools used in developing the application *Deutschlernen*.

### 3. Product Development

The development phase begins with the process of creating the *Deutschlernen* application. Make pictures that match the vocabulary and context of sentences, make grammar exercises and German expressions (Redemittel) and pronunciation (Aussprache) activities.

### 4. Validation

The *Deutschlernen* application that has been developed will be validated by a learning

media/computer expert. At this validation stage, suggestions and input will be obtained from media experts, so that the results can be developed better.

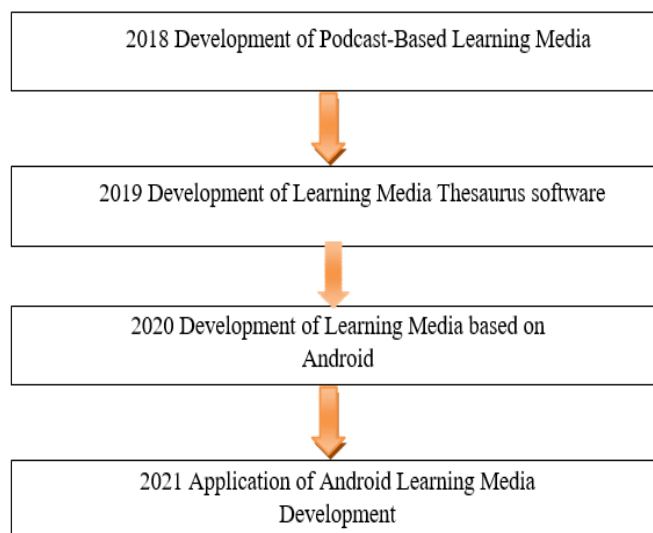
### 5. Trial

After the product of the *Deutschlernen* application learning media is validated, it will then be tested in the field against students of the German Language Study Program.

### 6. Revision

This stage is the final step, namely the refinement and revision of learning media that have been tested so that a product that is suitable for use as a learning media application is produced and then uploaded to the Playstore.

The roadmap for the research "Development of German Language Learning Media based on Android *Deutschlernen*" is as follows in Figure 2:



**Figure 2.**

*Research Roadmap*

## Results and Discussion

### (1) Research Results

- ***The Process of Developing German Learning Media based on Android Deutschlernen***

The research carried out is a type of research development (research and development), namely the development of German Language Learning Media based on Android *Deutschlernen* which will be uploaded to Playstore. The development method uses R & D (research and development), which was developed by Borg and Gall. Borg and Gall explained 10 research steps, namely, research

and data collection, planning, developing a preliminary form of product, preliminary field testing, revising the results of the trial. (main product revision), field testing (main field testing), product improvement of field test results (operational product revision), field testing (operational field testing), final product revision, dissemination and implementation (dissemination and implementation).

In this study, the researcher limited the research steps to a small scale, namely, 1) information/data collection, 2) planning / design, 3) product development, 4) validation, 5) field trials and 6) revision. The six phases or stages will be carried out systematically. The product of the results of this research is the development of Android *Deutschlernen*-based learning media uploaded to Playstore on German language learning that can be accessed anywhere. The following shows the stages of developing German language learning media based on Android *Deutschlernen*.

### a. Data Collection

#### 1) Field Needs Data

The first step that must be taken is to collect data on field needs. By collecting data on field requirements, it can be insured that the media design that will be developed is about the content to be made. The needs analysis was carried out by surveying 13 lecturers in the German Language Education Study Program during the COVID 19 pandemic.

**Table 1.**

*Results of Field Needs Data Collection*

No	Question	Answer
1	Do you use media learning German based on Android?	Yes: 0 No: 13
2	Do you think it is important to use German learning media based Android <i>Deutschlernen</i> ?	Yes: 13 No: 0

Sources: Data process (2021).

Based on the survey results above, it shows that as many as 13 lecturers do not use German language learning media, and as many as 13 lecturers consider it important to use German language learning media based on Android's *Deutschlernen*. The survey results indicate that it is necessary to develop German language learning media based on *Deutschlernen*.

#### 2) Material Data

At this stage, a survey of learning materials will be made. The material to be made is material for level A1 which contains vocabulary (Wortschatz) pictures, grammar, quizzes, dialogues and so on which are packaged in the

form of a game. The A1 level material was chosen because it was to facilitate basic learning that students could use to strengthen the basic German language, especially semester 1 students.

### b. Planning/Design

After completing the material concept, the next step is to design learning media. At this stage the learning media format has been prepared. The structure of the German language learning media based on Android *Deutschlernen* developed in this study is as follows.

#### 1) Initial Display

Initial display on Android-based German learning media. *Deutschlernen* is as seen in the image below.



Sources: Development Process Result (2021)

**Figure 3.**

*Initial Display of Android-based Learning Media*

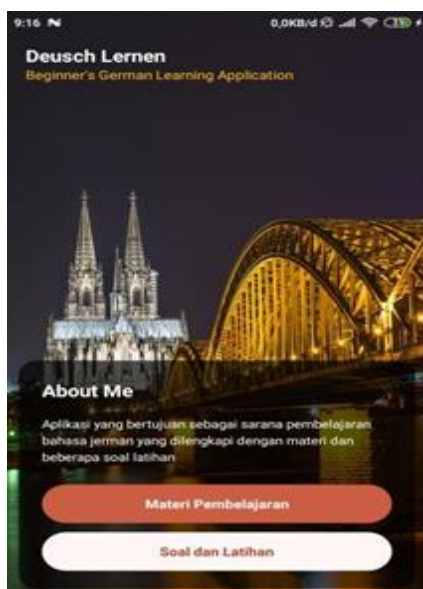
The German language learning media based on Android's *Deutschlernen* is designed to be as simple and attractive as possible. In the initial display shown in the image above, you can see an open book image. This image is a logo or a symbol of this media that will be available on a Smartphone when downloaded. After clicking on the image, the user will be faced with the initial page of this media which contains information about the application and the learning menu which consists of learning materials and questions and exercises. The learning material menu is a menu that contains level A1 learning materials regarding both grammar, vocabulary

(*Wortschatz*) and useful phrases (*Redemittel*). and quizzes related to the learning material.

Here are some pictures of the material listed on the learning material menu.

## 2) Contents

As has been explained this learning media contains level A1 learning material on grammar, vocabulary (*Wortschatz*) and useful phrases (*Redemittel*). The content of this learning media consists of the main menu and the material menu. Here is the main menu view.

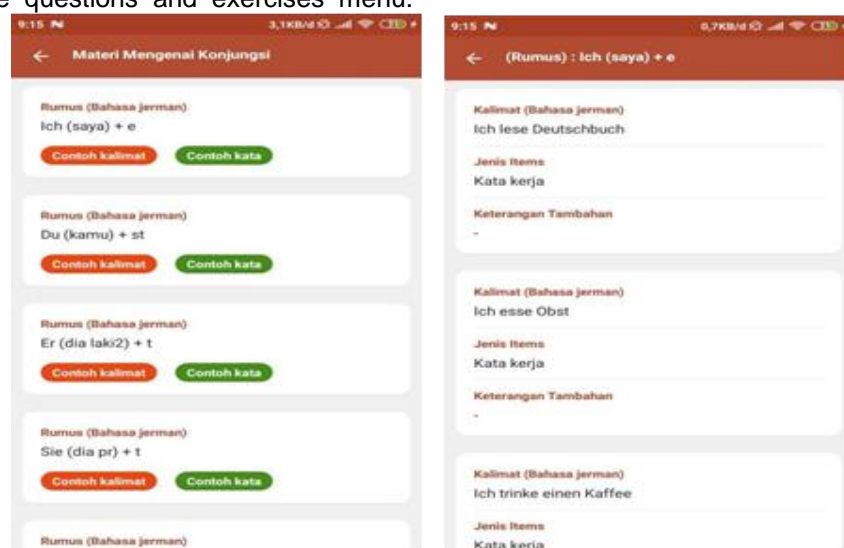


Sources: Development Process Result (2021).

**Figure 4.**

*Main Menu Display of Android-based Learning Media Deutschlernen*

In the display above, the user will be given menu options, namely the learning material menu and the questions and exercises menu.



Sources: Development Process Result (2021).

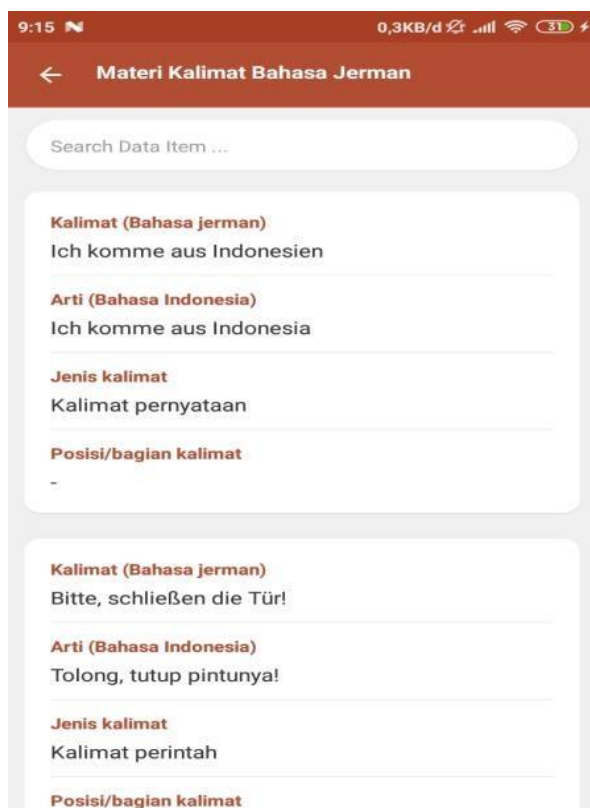
**Figure 6.**

*Grammatical Material Menu Display*



### 3) Evaluation

After completing the learning material, the user will be faced with the questions and exercises menu. This menu is an evaluation of all the materials listed on the German Learning Media based on Android's *Deutschlernen* which contains quizzes or questions and exercises that are organized into an interesting game. The following is an image of the questions and exercises menu.



Sources: Development Process Result (2021)

**Figure 7.**

*Display Questions and Exercises*

### c. Product Development

After the design of the learning media has been completed, the next step is the development stage, where the designs that have been made are processed through trials by experts. This aims to find out whether the design that has been produced is feasible or not. If the design that has been tested is successful, it will be developed to further improve it. The learning media development process will involve instructional media design experts.

### d. Validation

The validation stage will be carried out by instructional media experts. Validation aims to determine the opinion of learning design experts about the accuracy of the design, aspects of the types of learning facilitated and the correctness of the content, media and learning design. Learning design experts validate the product on aspects of learning design including the feasibility aspect of content which consists of the quality of the learning design, the presentation aspect which consists of the quality of information design and the quality of interaction, and the graphic aspects which consist of presentation quality and presentation design quality. The validation results are in the form of an assessment score of the learning media components.

### e. Field Trial

The field trial phase will be tested on three students as an initial stage. German language learning media based on Android's *Deutschlernen* will be given to students for further comments regarding the media design that has been prepared previously. The response format given by students is arranged according to several assessment indicators including interest, language material and graphics.

### f. Revision

The revision stage will be carried out as soon as possible after the German language learning media based on Android's *Deutschlernen* has been validated by instructional media experts.

## (2) Discussion

The effectiveness of German language learning media based on Android's *Deutschlernen* will become evident after the entire development process has been carried out systematically. The research "Development of German language learning media based on Android *Deutschlernen*" had the following stipulated outcomes: Through the mobile application, users can also access a number of important information using a smartphone connected to the internet service. The main advantage of the mobile application is that it makes it easy for users to get information portable without using a PC or netbook and its use in obtaining up to date information is fulfilled without being hindered by the time and place of where mobile device users are and whose area

can be reached by internet communication networks (Heriyanto, 2018). The hardware used by mobile devices is the main platform on which mobile applications can run, therefore it is necessary to pay attention to several parts related to limitations on mobile devices, namely: the speed of executing processes depends on the speed of the processor, the main memory capacity is only in a certain size, the resolution and size of each screen is different, the input is faithful mobile devices have their respective drawbacks, as well as durability and the battery capacity of each mobile device is different

## Conclusion

The conclusion from the research "Development of German Language Learning Media based on Android *Deutschlernen*" is as follows.

1. The *Deutschlernen* Android application contains level A1 German learning materials, featuring grammar, vocabulary (Wortschatz) and useful phrases (Redemittel).
2. The *Deutschlernen* Android application is a very flexible learning medium because it can be accessed anywhere via the Playstore.
3. Suggestions from the research "Development of German Language Learning Media based on Android *Deutschlernen*" are as follows.
4. The German language learning media based on Android's *Deutschlernen* is expected to be further developed and improved in order to attain additional features in future versions.
5. The German language learning media based on Android's *Deutschlernen* is expected to be useful as has been stated in the research objectives.

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