Android game: Education Javanese vocabulary

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Abstract. The research aim to develop android games for use in learning Javanese vocabulary for children age 5 (five) to 6 (six) years. Methods used in android game development use models research and development (R&D) with ADDIE development model. Use 5 stages: analysis (analysis), Design (Design), Development (production), Implementation (Implementation) and Evaluation (Evaluation). The result of this development is an android game named “Sinau Basa Jawa”. Android Game contains interesting features in the form of agency or control, interactivity, feedback, curiosity, challenge, identity, immersion, fantasy. With 2D graphic evolution. The results of this study were tested toward media experts, early childhood education specialists, Javanese language expert, kindergarten teacher. The quality of this media product is seen from the aspect of material and media feasibility. The result with media outcomes that are declared very feasible. Android game “Sinau Basa Jawa” very suitable applied for education Javanese language. android game can help teacher and parents teaching Javanese vocabulary to children.

1. Introduction

Early childhood learning there are still many who use media worksheets. And less use of technology in learning. In language learning in preschool teacher learning strategy is very instrumental in developing aspects of children's language development, especially vocabulary development [1]. in the classroom the teacher interacts with the child, tells stories, tells stories with body language and facial noses that are characteristic so that the child is interested and willing to do the teacher's instruction to engage in the learning methods presented by the teacher [2]. When the child interacts and is willing to issue words to communicate then the teacher can see the achievement of vocabulary development that the child has. children's interactions in the classroom and outside the classroom with adults as well as with peers influence their vocabulary skills [3]. In schools’ teachers communicate using official languages and some schools use international languages as an introduction. This affects the child's ability to master his mother tongue vocabulary. Parents and the community show the importance of children mastering the national language and local language. Local language as a cultural heritage needs to be preserved by applying and learning to students so that they are studied and included in educational programs at the primary and secondary education level [4].

Development of vocabulary media for local languages by using story telling media, worksheets, etc. technology between children so that children are interesting to learn to learn the local language as an alternative [4]. For example, media to local language vocabulary android-based technology so an alternative to know which and interesting for children. Android has an instant, teachers can practice and feedback from the existing sticks directly. Parents can be with a dearth in the academic completion of the child [5]. Android dominates the mobile phone market. Smartphone OS market store
is dominated by android, so android so android more advanced because of 30 million devices [6]. Content can be ihkih in form games. Games are not only entertainment-rant but can be used to make the material more interesting and students who are changed for a better subject. In the era of COVID-19 pandemic there is a change to the digital model including in early childhood. Study the design so that the coolness to learn. Possible cellular usage then media examples, learn from where online and media learning know based so that the learning media should kednuan [7]. Mobile digital technology can support and develop language learning for children at home and in early years education [8].

Media users sense the language especially for vocabulary development at the beginning of the year education has not used digital technology. So far it still uses book media, worksheets. This paper will be an example of a game using android for vocabulary education Javanese at an early age of 5 to 6 years.

2. Methods
Type of research applied is Research and Development with ADDIE development model covering 5 stages: Analysis (Analysis), Design (Design), Development (Production), Implementation (Implementation) and Evaluation (Evaluation) [3]. ADDIE development model suitable for use in developing android game for education Javanese vocabulary [9]. Figure 1 ADDIE models can be seen in Figure 1.

![ADDIE model of instructional design](image)

In the development of android game products Sinau Basa Jawa (Learning Javanese language) using descriptive qualitative data analysis. data obtained from media experts, early childhood education experts, Javanese linguists, kindergarten teachers. Considering the characteristics of the study subjects, early childhood ages 5 to 6 years. By using sampling probability sampling techniques. With the number of research subjects 24 students.

Android game Sinau Basa Jawa using hardware, computers, software, systems, godot engine, android, GD script, programming language, and users. This game have authorization parents may limits game play to children prior to a particular time of day such as bedtime or to a maximum playtime limit according to a secret [10]. The description game android Sinau Basa Jawa for education Javanese language a design, development, and an evaluation experiment of an educational game for learning Javanese language. Use android kit kat 4.4.

Design for this game with the step Unified Modelling Language (UML) diagrams, interfaces, animation, narrative. Hardware and software requirements were also determined. After designing the game, 2D objects were created according to the interface design. After that, the animation and narrative or audio were created on these objects according to the animation and narrative or audio design. The animation given to these objects included translation, scaling, and rotation. To give an action on the objects, ActionScript 3.0 was added on them [11]. The figure 2 show android game Sinau Basa Jawa flowchart.
3. Results and discussion
This media was tested to media experts, early childhood education specialist, Javanese language expert, preschool teachers. The student respondent test after media expert, Javanese language, and early childhood education specialist, and preschool teacher done. There were 30 questionnaires that were divided into five criteria as follows 1) suitability of the material, 2) depth and width of material, 3) language used, 4) media display and 5) implementation. In each criterion there were several different question items. On the material criterion, out of the six items of questions given, four of them have been declared very feasible and two item that has feasible criterion. The second assessment of the criteria of depth and width, out of the five items of questions, two items have feasible criteria, and has three a very feasible criterion. In the third assessment of the language criterion, there are eight items with six very feasible and two feasible criteria. The fourth assessment of the media display criteria consists of nine question items with seven question items that have feasible criteria, and three questions have very feasible criteria. The last assessment was on the implementation criteria that consist of two items of questions with reasonable criteria. Based on the results of questionnaire analysis from media experts, material experts, physics teachers and students, the average score can be obtained as follows. The results of the questionnaire analysis yielded a percentage of 90.25% which is categorized as very feasible. Thus, in terms of the developed display and technical learning media, it is

Figure 2. Flowchart android game Sinau Basa Jawa.
feasible to be applied as a medium of Javanese vocabulary for early childhood on the topic of android game: education Javanese language. Utilization of android media is very effective [1,11]. It can also increase students' motivation to follow the learning activity [10,12].

4. Conclusion
The development of game android for education Javanese vocabulary with android kit kat 4.4 can be done based on the development steps of the analysis of the teaching material needs, designing the framework of learning media program content, creating learning media program, validation on material experts, media experts, preschool teachers, and early childhood education experts. Game android feasible for education Javanese language Use android KitKat 4.4 Sinau Basa Jawa game can improve the ability of children aged 5 to 6 years in adding Javanese vocabulary.

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