LIAA

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THE VALIDATION OF LIAA (LINGUISTIC INTELLIGENCE ASSESSMENT ANDROID) DEVELOPMENT IN ELEMENTARY SCHOOL

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Abstract

This study provides an overview of the validation results of teachers and media experts to assess the LIAA (Linguistic Intelligence Assessment Android) application, using the research and development method. This method is used to develop a product and tests its effectiveness. However, this article is just for developing and designing LIAA. The results of the study showed response proportion: 78% for the teacher's language use, 84% for ease of application, 75% for final clarity of assessment, 84% for the presentation, 72% for the average of the final assessment test. Validation from media experts to assess the appropriateness of using the LIAA application with an average of 88% (very valid category). So it is concluded that the LIAA application can be applied on a wide scale in measuring the linguistic intelligence of elementary school students.

INTRODUCTION

The world is entering an industrial revolution 4.0 era with many disruptive changes in many fields. The disruption brings new patterns in human life into information technology-based life (Subekti, 2018). An expansion of the internet influences the development of this technology, namely androids, which are increasingly popular in Indonesia (Kurniaman et al., 2020). Life becomes more flexible, faster, and more tech-savvy. Those lifestyles also affect in the field of education. The Androids ease of use has been attracting more-and-more users from different levels of age (Islam, 2019).

In light of the education technology, the rapid change would have an enormous influence, with the latest technology it would facilitate information exchange and make learning more comfortable so that learning becomes more effective (Karmiani, 2018). The education sector also gets the impact of technology, so that the education sector has started to develop learning, evaluation, and learning media that use technology to make it easier for teache[17]o provide learning material (Septyanti et al., 2020). Since e-learning was introduced, the use of information and communication technology for learning has

grown, this has happened with the idea of developing the idea of the Internet of Things (IoT) (Bakri: 2018). Internet of Things (IoT) is an idea of combining computer and communication technology in education. Various technologies are used to create smart devices and equipment that would make learning easier and make it more useful (Noviana, Kurniaman, & Huda, 2018).

Recently, there are many Android-based apps for learning (Kurniaman, Noviana, Pratiwi, Maharani, & Afendi, 2020). In this study, technology developed to measure linguistic intelligence for elementary school students to make it easier for teachers to detect students in the field of linguistic intelligence, which is one of the most critical intelligence for every student as a connector intelligence to other ones (Armstrong, 2002). Linguistic intelligence in elementary school is intelligence consisting of the ability to read, write, speak, and listen as assets to solve problems and be able to think critically in all fields (Kurniaman, Maharani, Noviana, & Afendi, 2020).

Linguistic intelligence is the intellectual ability of students to use words effectively both orally and in written form. Besides, linguistic intelligence is also referred to as language intelligence and communication intelligence, which includes the ability to speak, interpret and express language as well as the ability to listen to and understand the words of others both orally and in writing (Maharani et al., 2019). The purpose of the development of LIAA (*Linguistic Intelligence Assessment Android*) is to develop an assessment-instrument of is the development of a linguistic intelligence based on Android apps. The application would be available in the play store so that it is easy to install. The aspect of linguistic intelligence for elementary school students consists of four skills: writing skills, reading skills, speaking skills, and listening skills. The LIAA application is an assessment instrument so that the teacher only checks the statements that appear, and at the end of the assessment, each student's score would appear.

Teachers' perceptions of the need for technology in elementary schools are fundamental, and very much needed to facilitate work (Kurniaman, Noviana, Munjiatun, Zufriady, & Kurniawan, 2020). Following the reality on the ground that technology in testing linguistic intelligence does not yet exist. So that the development of the LIAA can provide convenience in testing students on a large scale with the help of Android technology, linguistic intelligence should be measured when children enter school, to measure children's intellectual capacity (Becker, 2003; Chase, 2005). This intelligence develops with increasing age along with mentality behaviour that cannot be separated from the intelligence possessed by children (Saeidi, & Mazoochi, 2013). The linguistic intelligence test is made into four main menu displays; after a menu appears, the teacher can create a class by inputting the names and NIS (National Student ID number) of students. Then, the teacher creates and starts the class. Returns to the initial menu by selecting which part would be tested first by clicking/pressing the selected menu and starting to test the students by assessing with a display on the instrument that each indicator appears.

Furthermore, we already know that every technology developed for learning is imperfect since it is just a human product. Each of these technologies has advantages and disadvantages and need further development. The result of this would have an impact on learning, be it a positive impact or a negative impact. Consequently, it is necessary to conduct a review in the field for each learning technology product that is created for assessing the effectiveness, usability, and ease of accessibility before its dissemination. After all, it would depict the assessment results of using this product of learning technology.

METHODOLOGY

This research is an R and D (Research and Development) method to develop Android-based learning products and evaluate the effectiveness of the products (Sugiyono, 2015). The method used Four-D models. The Four-D development model consists of 4 main stages, namely: Define, Design, Develop and Disseminate. This method and model was chosen because it aims to produce products in the form of learning technology applications. The product developed is then tested for its feasibility with validity to determine the extent of the feasibility of this learning technology media. The extent to which learning technology can impact or provide benefits to the educational process, especially in elementary schools. The subjects in Assessing the Validation of LIAA development in Class II Elementary Schools, with four experts and four practitioners.

In this study, authors used the following data collection techniques:

a. Validation Questionnaire

The validation questionnaire was given to the validators, namely instructional media experts, linguistic material experts, linguists, and class II teachers before field trials. The aim is to get an assessment and input about the LIAA application developed so that the LIAA application is valid and feasible to be tested on a limited basis.

b. Teacher Response Questionnaire

Teacher response questionnaires were distributed to class II teachers to determine the response and appropriateness of using the LIAA application as well as responses about the ease of measuring linguistic intelligence for elementary school children. The purpose of using this questionnaire is to obtain teacher response data to the LIAA application, which later be used to determine whether the quality of the LIAA application.

Data management in this study was carried out after the data was collected. The collected data were then analyzed using descriptive statistical analysis techniques. According to Sugiyono (2017), Descriptive statistics are statistics used to analyze data by describing or describing the collected data as it is without intending to make general conclusions or generalizations. This analysis technique uses formulas that have been determined based on instruments that have been carried out by previous authors.

The data in this study then were analyzed using descriptive analysis techniques which aim to describe the validation results provided by the validator after the validation stage. The validation aspects assessed by the validator using the Likert scale with a score of 1-4. This scale gives flexibility to each validator to assess the LIAA application developed. The validity of the LIAA application product determined by the average score given by the validator. The assessment categories are shown in the Table 1:

Table 1. Evaluation Categories by Validators

Rating Score	Category
4	Strongly Agree
3	Agree
2	Disagree
1	Strongly Disagree

(Source: Sugiyono, 2017)

The validity results are calculated using the average score formula
The validity criteria can be seen in the Table 2:

Table 2. Interval of Validity Criteria

Average Score Interval	Category
81-100%	Very Valid
61-80%	Valid
41-60%	Valid Enough
21-40%	Not Valid
0-20%	Very Not Valid

The teacher response questionnaire after the product validation of the linguistic intelligence assessment instrument and limited trials of fifth-grade students was then distributed to 10 teachers to see how the teacher's response as a practitioner in using the product developed. The response data be analyzed under the assessment guidelines that have been developed. The following are the assessment categories contained in the teacher response questionnaire (see Table 3):

Table 3. Categories of Teacher Response Questionnaire Assessment

Rating Score	Category
4	Strongly Agree
3	Agree
2	Disagree
1	Strongly Disagree

The response criteria can be seen in the Table 4:

Table 4. Response Criteria Interval

Average score interval	Category
81-100%	Very Practical
61-80%	Practical
41-60%	Quite Practical
21-40%	Impractical
0-20%	Very Impractical

(Source: Modified Riduwan, 2011)

RESULT AND DISCUSSION

The results of this study are the results of validation from experts and practitioners to assess developing LIAA in Class II Elementary Schools. The research stage is carried out at the Development stage, which describes the feasibility of making the LIAA application. The LIAA application design is shown in the image below:

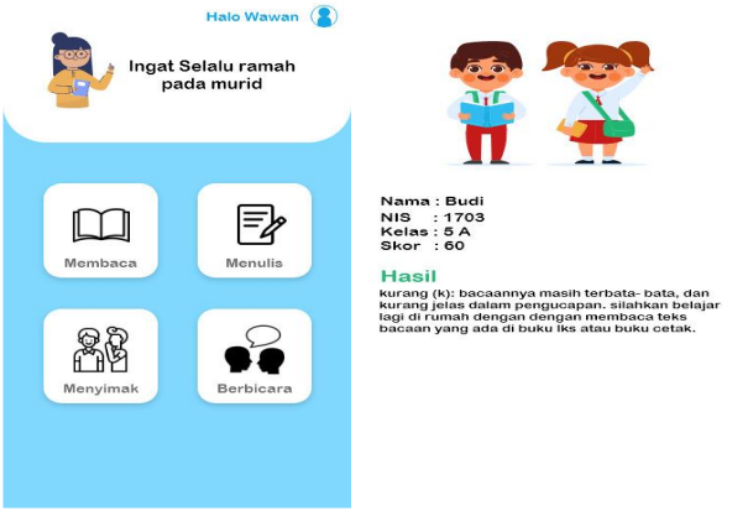

Figure 1. Initial LIAA Application Design

The LIAA application is a development of a linguistic intelligence assessment instrument in the form of an application (software) on an android which is entered into the play store making it easier for teachers to install this application anytime and anywhere. Teachers can use this application to assess students' linguistic abilities (reading, writing, listening and speaking). After the teacher installs the application in the Playstore, the teacher can open it and register first. Then login or register with a Gmail account. The appropriateness of using the LIAA application in measuring linguistic intelligence assessed by experts and practitioners can be seen in Table 5 on teacher responses in language use, content, and display presentation.

Table 5. Practitioner Validation Assessment

No	Indicator	Score		Explanation
		Initial Score	Final Score	
1.	Use of language in LIAA	56%	78%	Practical
2.	Ease of use of the LIAA application	58%	84%	Very Practical
3.	Final clarity of the assessment of student abilities	60%	75%	Practical
4.	Presentation display	50%	84%	Very Practical
5.	The contents of the presentation of linguistic intelligence	54%	70%	Practical
6.	Conclusion description of the results of the assessment of linguistic intelligence with the LIAA application	56%	72%	Practical

Following the teacher's response to the use of the LIAA application, the proportional results of the use of language at the initial value with an average of 56% after correcting it

to 78% on average of the responses given to application assessments. The ease of use of the application average was 58% and increased to 84% in the "very practical" category. The clarity of the final score on the students' ability on the initial average of 60% to 75% has increased with the practical category, for presentation in the display at the initial response of 50% has increased to 84% with the very practical category. The content indicator in the presentation with an average teacher response was 54% with an increase of 70% with the practical category, and the conclusion of the final result of the assessment of the average teacher response rate of 56% had an increase of 72% with the practical category. The results of the LIAA feasibility in measuring linguistic intelligence can be seen in Table 6.

Table 6. Validation Data for Media Experts

No	Assessment Aspects	Per cent Average	Validation Category
1	Content eligibility	90%	Very Valid
2	Language	85%	Very Valid
3	Presentation	87%	Very Valid
4	Graphics	90%	Very Valid
	Average Eligibility	**88%**	Very Valid

In accordance with the assessment of the validation of media experts, it is seen the results of the application The results obtained were 88% with very valid category So that the LIAA can be disseminated so that it can make a very positive contribution in making it easier for teachers to measure linguistic intelligence which is considered by teachers to be very difficult and requires much time (Mcbride, Brewer, Berkowitz, & Borrie, 2013). Teachers need to know that students who have linguistic intelligence have the advantage of mastering other languages besides their mother tongue or the language that is commonly used every day. Those who are good at word processing have a vast vocabulary (Andro, 2020). With technology that almost 100% of teachers and students have Android, it makes it easier for teachers because they are familiar with the use of Android (Kurniaman, Noviana, Munjiatun, Zufriady, & Kurniawan, 2020) so that with the development of the LIAA application they can provide convenience and be able to detect quickly in measuring students' abilities in linguistic intelligence.

Internal factors that affect linguistic intelligence include psychological aspects are interests, motivation, and learning styles. Linguistic intelligence is often referred to as student verbal intelligence, which is multiple intelligence which involves sensitivity to spoken and written language, the ability to learn the language and the ability to use language to adapt (Aminatun, Ngadiso, & Marmanto, 2018). LIAA can detect the early potential of students intelligence. This intelligence would affect spoken and written language, which is influenced by left-brain function (Mubasyira, 2014). Children who have good linguistic intelligence would be able to understand the sequence, meaning, and sound of words or sentences (Campbell, & Campbell, 1999). The use of language in expressing ideas, desire can provide a clear picture (Fraenkel, & Wallen, 2007). The ability of students to process meaning becomes the main asset for students in determining interpersonal competence so that they have confidence in dealing with other people (Sumarta, 2016). Increasing student abilities can be achieved through learning activities. Currently learning is no longer centred on the teacher, but more as a guide and facilitator in student learning activities. Teachers should pay attention to aspects that can support the optimization of student abilities, one of which is to understand the strengths and weaknesses of students (Hajhashemi, Ghombavani & Amirkhiz, 2011; Tirri & Nokelainen, 2012; Pradana, 2018).

The success of students in life depends on understanding our intelligence (Ellis, 2008; Hassaskhah, 2009) defines linguistic intelligence as a mental activity directed at adaptation to the real-world environment that is relevant to someone's life (Nima, 2007). Students who acquire very high linguistic intelligence or their better level would be able to follow classroom learning and be able to adapt to new situations using current skills. Every student is born to have unique learning-characteristics; when they are in the classroom they would develop their respective intelligence, this means that each child would have strengths and weaknesses in learning information provided by the teacher or material that has been presented in their way. Influenced by the learning style determined by the classroom (Timmins, 1996). Even so, teachers can show students how to use more to develop intelligence in helping to understand subjects or friends in the school environment (Lazear, 1999). LIAA is a technology to measure intelligence that can be used by teachers.

CONCLUSIONS

The conclusions in this study are seen from the teacher's response to the LIAA application experiencing the convenience and seen from the results; there is an increase in positive responses with the LIAA. The judging results from media experts, the LIAA application is very valid to be used in measuring linguistic intelligence and is also very valid to be tested on a large scale.

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