



Development of WELIA (Website Linguistic Intelligence Assessment) for Class II Students of Elementary School

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Abstract: The development of technology in the world of education is able to change technology-based education, thus the purpose of this research is to develop WELIA as an application that is able to measure the linguistic intelligence of students in elementary schools. The novelty in the research is designing WELIA (Website Linguistic Intelligence Assessment) which is used to assess or measure the linguistic intelligence of elementary school students using technology. The results showed that the average score of 3 practitioner validators on 11 components showed a figure of 81.81% - 93.18% with a very decent category level. The first practitioner validator gave an assessment with a very feasible category of 11 assessment components, so that a percentage value of 81.81% was obtained for media assessment. Expert validators on 11 components showed a score of 84.09% - 88.63% with a very feasible category level. The first expert validator gave an assessment with a very feasible category of 11 assessment components, so that a percentage value of 84.09% was obtained, it can be concluded that WELIA can be used to assess the linguistic intelligence of elementary school students.

Abstrak: Perkembangan teknologi dalam dunia pendidikan mampu mengubah pendidikan berbasis teknologi dengan demikian tujuan dari penelitian ini untuk mengembangkan WELIA sebagai aplikasi yang mampu mengukur kecerdasan linguistik siswa di sekolah dasar. Kebaruan di dalam penelitian mendesain WELIA (Website Linguistic Intelligence Assessment) yang digunakan untuk menilai atau mengukur kecerdasan linguistik siswa sekolah dasar dengan menggunakan teknologi. Hasil penelitian menunjukkan bahwa rata-rata skor 3 validator praktisi pada 11 komponen menunjukkan angka 81,81% - 93,18% dengan tingkat kategori sangat layak. Validator praktisi pertama memberikan penilaian dengan kategori sangat layak dari 11 komponen penilaian, sehingga diperoleh nilai persentase sebesar 81,81% untuk penilaian media. Validator ahli pada 11 komponen menunjukkan skor sebesar 84,09% - 88,63% dengan tingkat kategori sangat

layak. Validator ahli pertama memberikan penilaian dengan kategori sangat layak dari 11 komponen penilaian, sehingga diperoleh nilai persentase sebesar 84,09%, maka dapat disimpulkan bahwa WELIA dapat digunakan untuk menilai kecerdasan linguistik siswa sekolah dasar.

Keywords : *WELIA, Linguistic Intelligence, Elementary School*

INTRODUCTION

At this time the world is entering a new era called the era of the industrial revolution 4.0. The changes that occur are caused by the development of the times which are increasing rapidly in various fields (Kurniaman, et al, 2020; Fitriani et al., 2022). In the era of the industrial revolution 4.0, it brought changes to the pattern of human life to become information-based (Subekti et al, 2018), this involves increasingly rapid technological developments so that the dissemination of information becomes smoother and more flexible. The use of technology greatly affects life up to the level of education (Rustan, & Munawir, 2020). The development of this technology is influenced by various factors such as the expansion of the internet area, the development of mobile phones or often called androids which are increasingly smart and sophisticated (Wahyuningtias, et al., 2021). This ease of use is very well liked by the community so that the development is so fast and the high use of Android in every community does not look at age in its use (Ningtyas, et al., 2021). Technology in this modern era is something that cannot be separated from human life (Islam, 2019). Looking at the world of education, of course this will have a huge impact, with the latest technology it will facilitate the exchange of information and facilitate learning so that learning becomes more effective (Efnedi, 2021). The education sector is also the impact of the influence of technology so that the education sector has started to develop learning, evaluation, and learning media that use technology to make it

easier for teachers to provide learning materials (Septyanti, et al., 2020).

Judging from the development between education and technology, there has been a long-standing relationship. This began with the introduction of e-learning in the world of education. Since e-learning was introduced, the use of information and communication technology for learning has been growing, 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 the world of education. Various technologies are used to create various intelligent devices and equipment that will facilitate learning and make it more effective (Azuar, 2021). To compensate for these developments at this time many intelligent tools for learning have been created (Dahniar, 2021). In this research, develop technology 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 important intelligences for every student. This is because linguistic intelligence is one of the intelligences that will connect one intelligence with another intelligence (Armstrong, 2002).

Linguistic intelligence is the ability of students' minds to use words effectively both orally and in written form (Kurniaman, et al., 2020). In addition, 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 and understand other people's words both orally and in writing (Maharani, et al., 2019). The development of

WELIA (Website Linguistic Intelligence Assessment) is a development of a linguistic intelligence assessment instrument that uses the web as an application that is easily accessible by anyone. However, you must register first as a teacher so that you can create a class and enter the names of students as students who will take a linguistic intelligence test. Aspects of linguistic intelligence for elementary school students consist of four skills, namely: writing skills, reading skills, speaking skills, and listening skills (Maladewi, 2021). The WELIA application (Website Linguistic Intelligence Assessment) is in the form of an assessment instrument so that the teacher only checks on the statement that appears and at the end of the assessment the value per student will appear automatically to provide convenience in making assessments. No technology created for learning is perfect (Marini, et al, 2022). Each of these technologies has its own advantages and disadvantages (Haq, et al, 2022). The result of this will have an impact on learning, both small-scale impacts and large-scale impacts. For this reason, it is necessary to review the field for each learning technology that is created, this is to see the level of effectiveness of the use of learning technology after it is used thoroughly in a school (Ulfatin, et al, 2022). After this is done, it will show the results of using the technology, so that it will show the level of effectiveness in learning (Tarihoran et al, 2022).

This research is relevant to several studies conducted in the importance of measuring linguistic intelligence as a student's success in life (Nima, 2007). This intelligence is also used by teachers as a solution to provide convenience by teachers in providing treatment according to students' abilities (Izear, 1999). Every student is born to have unique learning characteristics; when they are in the classroom they will develop their respective intelligences (Nikiti, 2020). It means that each child will have advantages

and disadvantages of learning information provided by the teacher or material that has been presented in their own way (Hasanudin, 2020). Influenced by the learning style determined by the class (Hassaskhah, 2009).

The development of technology is increasingly rapid so that it is able to change patterns and treatment in education that prioritizes technology in conducting tests and learning (Hautala, 2020). This 21st century, changes the mindset of researchers to develop several innovations to measure linguistic intelligence in elementary schools with the help of technology to make it easier for teachers or users. Thus providing the purpose of this research to develop WELIA as an application that is able to measure the linguistic intelligence of students in elementary schools.

METHOD

The type of research used in this research is the research and development method. This method is a method used to produce certain products and test the effectiveness of these products (Sugiyono, 2015). In this method, we will use 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 feasibility with validity to determine the extent of the feasibility of this learning technology media. The instruments in this study were product validation sheets and questionnaires. The questionnaire that will be used is the WELIA validation test questionnaire. The validation test questionnaire is a general research description from the validator regarding the WELIA application developed. The validation sheet has a function to determine the feasibility and suitability criteria for the WELIA application that has been designed by the researcher.

a. Define Stage (Defining)

In the context of developing WELIA (Website Linguistic Intelligence Assessment) in grade II elementary school, the definition stage is carried out by:

1) Analysis of Linguistic Intelligence Aspects

At the initial stage, the researcher examines aspects of linguistic intelligence which has four skills that must be measured in the form of reading skills, writing skills, speaking skills, and listening skills. The analysis carried out is useful for determining indicators of linguistic intelligence assessment and what components should be used.

2) Analysis of student characteristics

In analyzing the characteristics of students, the researcher considers the academic ability of the second grade elementary school students. In relation to the development of WELIA (Website Linguistic Intelligence Assessment), it is necessary to know the academic abilities of grade II elementary school students in order to develop WELIA (Website Linguistic Intelligence Assessment) in accordance with the thinking ability of grade II students. The results of interviews with elementary school teachers showed that linguistic intelligence assessment had never been carried out while they were teaching in schools due to the teacher's knowledge of how to measure linguistic intelligence. Teachers are still not able to take measurements, what indicators should be measured. Students in character in learning linguistic intelligence have a variety of different intelligences. The importance of measuring linguistic intelligence is to make it easier for teachers to treat students. So it is necessary to develop WELIA in order to provide convenience in measuring students' linguistic intelligence.

b. Design Stage

At this stage, the WELIA (Website Linguistic Intelligence Assessment) design is carried out. What is done at the design stage is the stage carried out to design products that are adapted to the problems found in the definition

stage. At this design stage, the researcher designs an assessment instrument product to measure linguistic intelligence. The activities carried out at this design stage are:

1) Develop a linguistic intelligence test;

2) Develop linguistic intelligence assessment instruments;

3) Adjusting the assessment rubric with components and aspects of linguistic intelligence.

The product produced at this design stage is called draft I of the linguistic intelligence assessment instrument.

c. Development Stage

The development stage is the product development stage that has been designed in the previous stage, namely in the form of a WELIA (Website Linguistic Intelligence Assessment) application called draft I. At this stage the draft I product is generated from the previous stage. validated by experts and practitioners to see the feasibility of the product. In this study, the validators consisted of linguists, linguists and 3 elementary school teachers as practitioners and field user experts who would use the developed product. At this stage the validator will assess the initial product (draft I) and provide criticism, then the errors in draft I will be analyzed and revised based on suggestions from the validator so that it will produce draft II. Furthermore, draft II will be re-validated by the validator and after being analyzed and revised. After going through a series of product validation stages, the second draft of the WELIA (Website Linguistic Intelligence Assessment) product that has been revised according to the validator's suggestion will be carried out with a limited trial of 21 second grade elementary school students to see if the product developed can measure students' linguistic intelligence. In this article, the Disseminate stage has not been carried out.

The instrument used is a questionnaire response from teachers, and material expert

team to determine the feasibility of WELIA so that it can be used to measure linguistic intelligence. The validation questionnaire instrument was given to validators, namely learning media experts, linguistic material experts, linguists, and second grade teachers before conducting field trials. The aim is to get an assessment and input about the WELIA (Website Linguistic Intelligence Assessment) application that was developed so that the WELIA (Website Linguistic Intelligence Assessment) application is valid and feasible to be tested on a limited basis.

Teacher response questionnaires were distributed to grade II teachers to determine the response and feasibility of using the WELIA (Website Linguistic Intelligence Assessment) 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 WELIA (Website Linguistic Intelligence Assessment) application which will later be used to determine whether or not the quality of the WELIA (Website Linguistic Intelligence Assessment) application is good.

The data in this study were then analyzed using descriptive analysis techniques which aim to describe the results of the validation given by the validator after the validation stage. The validation aspect assessed by the validator is made in the form of a Likert Scale with a score of 1-4. This scale provides flexibility for each validator to assess the WELIA application developed. The validity of the WELIA application product is determined through the average score given by the validator.

RESULTS AND DISCUSSION

This research is a development of the analysis that has been done and seen from the results of relevant research so that it is necessary to use technology as a more practical measuring tool. this development is

the development of linguistic intelligence using WEB so that it is named WELIA. The product assessment was assessed by 3 practitioners and 2 media and language experts. The WELIA design is a measuring tool used by teachers to measure the linguistic intelligence of elementary school students. WELIA design, the steps will be seen in the image below.

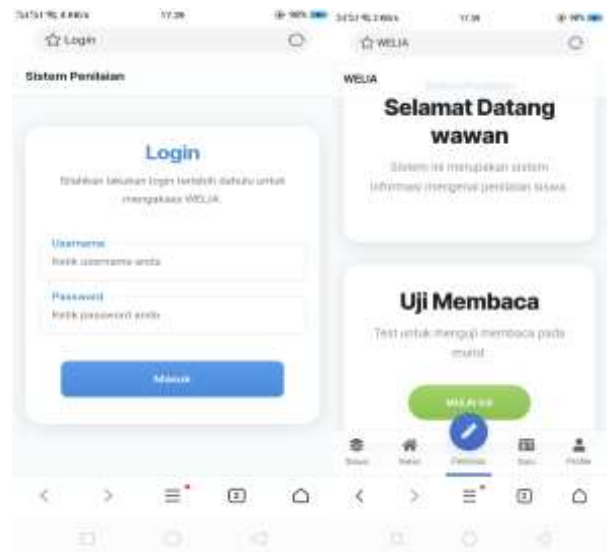


Figure 1. WELIA Front View

Figure 1 shows an image or how to login to enter the linguistic assessment web. Enter the username or the name of the class teacher, then enter the password that has been set or created by the school admin, then click "enter". After successfully entering the web, the next step is to enter the child's data on the student menu. The data entered are the student's full name, student identification number, and class.

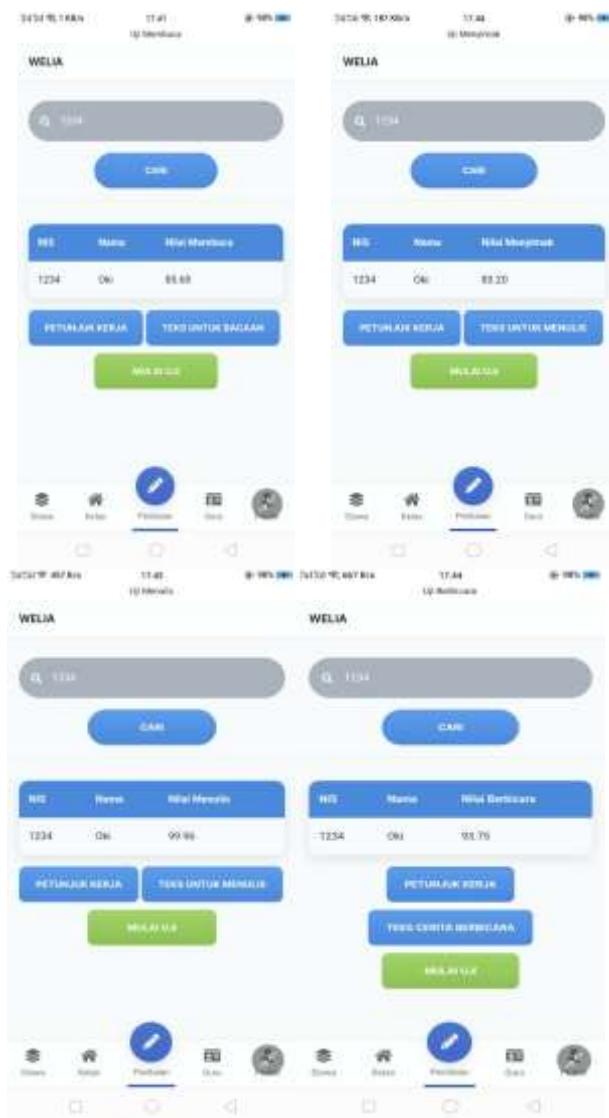


Figure 2. Linguistic Intelligence Assessment Menu on WELIA

Figure 2 shows how the teacher gives an assessment of each student about individual linguistic abilities. The teacher's step is to open the work instructions and read them first. After understanding the work instructions, the teacher can distribute reading and written texts to students who will be tested for their abilities. After that, the teacher can take the next step according to the work instructions

and evaluate students by opening or clicking start test.



Figure 3. Example Menu for Calculating Linguistic Ability Values on WELIA

In Figure 3, this is the method or process of assessing linguistic ability in the aspect of reading ability. After the teacher makes an assessment, the teacher can click count so that the value of the ability of the student being tested appears. Then, click "save" so that the student's score data being tested is stored in WELIA. So whenever the teacher needs the value, the teacher can see it in this WELIA application. Practitioner validation is an assessment by teachers of 3 teachers who have taught in grade II elementary schools with assessment components that have been prepared without leaving the research instrument, making it easier to assess the validation of WELIA (Website Linguistic Intelligence Assessment) products. practitioner's assessment will be seen in table 1 as follows.

Table 1. Practitioner Validation

No	Komponent	V.1	V.2	V.3	Total
1	Media view layout	3	4	4	11
2	Color selection accuracy	3	4	3	10
3	Attractive design	4	3	4	11
4	Attractive design display	4	4	4	12
5	Suitability of font selection	3	3	3	9
6	Suitability of font size selection	3	3	4	10
7	Font color accuracy	3	4	3	10
8	Letter display clarity	3	4	4	11
9	Simple display and easy to understand	3	4	4	11
10	Clarity of work instructions	3	4	4	11
11	Easy-to-understand sentences	4	4	4	12
Total value		36	41	41	118
Average		81.81	93.18	93.18	
Category		very decent	very decent	very decent	

The results from table 1 show that the average score of 3 practitioner validators on 11 components shows the number 81.81% - 93.18% with a very valid / very decent category. The first practitioner validator gave an assessment with a very decent category of 11 assessment components, so that the percentage value was 81.81% for the WELIA media assessment (Website Linguistic Intelligence Assessment). The second practitioner validator also provided an assessment with a very decent category of the 11 assessment components, so that the percentage value was 93.18% for the WELIA (Website Linguistic Intelligence Assessment) media assessment. The third practitioner

validator also provides an assessment with a very decent category of 11 assessment components, so that the percentage value is 93.18% for the WELIA (Website Linguistic Intelligence Assessment) media assessment. Expert validation is an assessment by lecturers of 2 lecturers who have mastered and experienced in terms of media or applications with assessment components that have been prepared without leaving the research instrument, making it easier to assess the validation of WELIA products (Website Linguistic Intelligence Assessment). practitioner's assessment will be seen in table 2 as follows.

Table 2. Expert Validation

No	Komponent	V.1	V.2	Total
1	Media view layout	3	3	6
2	Color selection accuracy	2	3	5
3	Attractive design	3	3	6
4	Attractive design display	3	4	7
5	Suitability of font selection	4	3	7
6	Suitability of font size selection	4	4	8
7	Font color accuracy	3	4	7
8	Letter display clarity	3	4	7
9	Simple display and easy to understand	4	3	7
10	Clarity of work instructions	4	4	8
11	Easy-to-understand sentences	4	4	8
Total value		37	39	76
Average		84.09	88.63	
Category		very decent	very decent	

The results from table 2 show that the average score of 2 expert validators on 11 components shows the number 84.09% - 88.63% with a very valid / very decent category level. The first expert validator gave

an assessment with a very feasible category of 11 assessment components, so that the percentage value was 84.09% for the WELIA (Website Linguistic Intelligence Assessment) media assessment. The second practitioner validator also provided an assessment with a very decent category of 11 assessment components, so that the percentage value was 88.63% for the WELIA media assessment (Website Linguistic Intelligence Assessment). The importance of linguistic intelligence test kits for elementary school students makes it important to know the intelligence that exists in students in order to make it easier for teachers to provide Indonesian language learning tailored to the child's abilities (Fraenkel, & Wallen, 2007; Sumarta, 2016; Hajhashemi, Ghombavani & Amirkhiz, 2011; Tirri & Nokelainen, 2012; Pradana, 2018; Kurniaman, et al, 2020). The intelligence possessed by children is verbal-linguistic intelligence by showing the ability to understand information communication from the interlocutor so that children do not have difficulty in receiving and expressing what they want (Kurniaman, et al., 2020). That is the importance of early detection for students by using WELIA as a linguistic intelligence test tool with the help of technology.

The use of WELIA is able to contribute to students as early detection of linguistic intelligence in the form of information so that teachers are able to provide appropriate learning treatment. Teachers can use the assessment instrument product that has been developed in this study as a tool to assess the level of linguistic intelligence of students in elementary schools.

CONCLUSION

In this study, a WELIA final product has been produced that can be used to assess linguistic intelligence with several assessments from validators so that it is decent to use. The validation results from the experts stated that the WELIA product developed by the

researchers was declared very decent from all components with an average feasibility value of 88.17%. Research recommendations for teachers can use the WELIA product as an assessment that has been developed in this study as a tool to assess the level of linguistic intelligence of students in elementary schools. Teachers can measure linguistic intelligence as a recommendation in improving learning in the classroom.

In this development, it provides convenience in measuring linguistic intelligence with test indicators and the ease of results obtained directly with the WELIA application, the teacher is able to retrieve the result data without difficulty in calculating again.

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