



Development of a Liveworksheet Application to Create Online Interactive Materials and LKS in Arabic Lessons at Senior High School

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Abstract— Thinking critically is one of the abilities students must have in learning Arabic. Live worksheet acts as a learning tool that can be used to practice making materials and worksheets in elementary schools that have never used live worksheets. So far, teachers have only used case study questions to measure critical thinking skills with no optimal results. This study aims to: (1) produce materials and online Interactive LKS in Arabic lessons at Senior High Schools based on Liveworksheets following the PIE model; (2) know the validity, practicality, and effectiveness; (3) find out the results of the identification of students' critical thinking skills in Arabic subject matter. This type of research is Research & Development (R&D), which uses the PIE development model. The research instruments used were interview sheets, validation sheets, critical thinking ability test instruments, observation sheets, and student response questionnaires. The results of the study show that: (1) The developed application fits the PIE development model because it has systematic and practical stages in developing interactive material and worksheets; (2) The application meets very valid criteria with an average percentage of 97.45% (media aspect) and 97.64% (material aspect), practical with an average percentage of 78.33%, and is quite effective with an average percentage the average percentage is 53.85% which is caused by the achievement of the competence of students who have not been maximized; and (3) students' critical thinking skills are classified as low on the topic of live worksheet application development with an average percentage of 21%. The developed application can be used to support learning Arabic.

Keywords— Arabic Language, Interactive LKS, Liveworksheet Application and Materials

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I. INTRODUCTION

The technological development landscape is becoming increasingly demanding and must be used appropriately in learning and development systems (Abbas et al., 2018). The reason for using

learning applications is that students can spend more time not just playing (Ferrag et al., 2020) but also learning and working on the tasks given by their teachers at school, so they can use technology to work from home. Can improve student performance. Improve the quality of learning and prevent boredom during learning (Liakos et al.,

2018). Moreover, the use of digital applications is currently proliferating (Lattie et al., 2019), bringing changes to the learning system and making it more exciting and not dull for students (Kamilaris & Prenafeta-Boldú, 2018). Moreover, it is a new face in learning or education.

The development process for creating student materials also allows the use of applications with features that enhance the learning experience in the classroom (Chen et al., 2018). There, teachers use Live Worksheets to create teaching materials and worksheets (S. Liu & Shin, 2019). The live worksheet application makes learning more interactive and fun (Alon et al., 2019). Live worksheets have many uses. Make materials and worksheets that are very easy to use in the learning process (Chen et al., 2018). Direct LKS learning can be done online, in class, using the homework system (Hargreaves et al., 2018). Liveworksheet is an application for creating worksheets during a pandemic (Schultz et al., 2020). Interactive online applications have unique advantages for classroom learning (Theobald et al., 2020). With the introduction of online applications (Pouyanfar et al., 2019), students will become more active, improve their communication skills, and become more confident. They will not hesitate to answer questions (Coman et al., 2020). Implementing interactive online learning activities helps students create the material being taught (Gacs et al., 2020). In addition, live worksheet applications can enhance students' learning media experience during the learning process (Baltrusaitis et al., 2019), especially for high school senior Arabic students.

Learning is the teacher's effort to create learning activities using specific materials to achieve certain goals (Han et al., 2018). Hands-on learning systematically organizes the learning environment (Davies, 2018) to encourage and develop student learning (Faust et al., 2018). Learning to create material is teaching someone how to properly use the live worksheet application (Schütt et al., 2018), understand the composition of materials and apply those skills as part of the craft (Konidaris et al., 2018). The need for learning through the use of applications that can expedite the learning process in the production of teaching materials at the Integrated Islamic Elementary School level (Singh et al., 2018), in the production of teaching materials, the required method is a method that is suitable for elementary school students (Sung et al., 2018).

Because the method is still a supporting factor in achieving the desired goal (Pollock et al., 2020), for this reason, most scientists believe that this is a post-method age (Pieh et al., 2020). Even though the method is still needed, the teacher must pay attention to technological developments that can be used for learning media (Wang et al., 2019). Moreover, I can use it well for the teaching and learning process.

In the context of technological developments, the live worksheet application is very suitable for learning processes that are difficult to understand and learn (Büyüközkan & Göçer, 2018), thus helping teachers to keep up with the development of an increasingly demanding age. Improve understanding so students do not get bored with the learning process (Buhalis et al., 2019). Teachers should use learning media applications, such as the Live Worksheets application, to excite students when the teacher gives assignments (Baltrusaitis et al., 2019). Students who study and complete tasks involving educational applications become more interested and enthusiastic about learning (DeGregory et al., 2018). The current learning media is suitable for improving students' cognitive abilities (Deng et al., 2019), improving student concentration so that learning is more active and communicative (Xing et al., 2018), and students more easily understand learning. Technology development has significantly impacted education (Abbas et al., 2018). For example, the higher a person's education level, the more sophisticated the technology he will face (Bergenstal et al., 2018). With technology, anyone can find broader information and knowledge (Ananny & Crawford, 2018). Besides that, several challenges must be faced in information technology.

Integrated Islamic elementary school is an elementary school that implements the Arabic language curriculum (Styers et al., 2018). Students must be independent and motivated to learn (Li et al., 2018). Based on observations, it is known that Arabic students often need help learning to make the material by looking directly at the teacher explaining it because not being on target often causes boredom in children. (Mashaqba et al., 2020). Multimedia educational application software makes teaching and learning more communicative and interactive (Y. Liu et al., 2018). Utilizing existing technology will make learning and teaching more communicative and interactive (Isaac

et al., 2019). In addition, the live worksheet application can support learning Arabic in Integrated Islamic Elementary Schools (Tsai et al., 2018) and increase students' understanding of making teaching materials in Integrated Islamic Elementary Schools.

Engaging learning media for Arabic students does not make students bored; one of which is a live worksheet (Reis et al., 2019); this application has various uses, one of which is making material and worksheets (Baltrusaitis et al., 2019) Liveworksheet learning media apart from making worksheets can also be used for developing more effective worksheet teaching materials and testing understanding in making interactive materials online for Arabic students in elementary schools (Tsay et al., 2018). As for learning Arabic students using the live worksheet application, needs to be done (Abbas et al., 2018) to facilitate students in the learning process (“Determining Areas of Improvement in Quranic Arabic Vocabulary Learning Mobile Applications through Analysis of App User Reviews,” 2019). Utilizing learning media for Integrated Islamic Elementary School students is a must to make it easier for students to understand the making of material (Kang et al., 2020). It is expected to increase the motivation and learning outcomes of Arabic language education students through the Liveworksheet Application.

This study will discuss the live worksheet application as a medium for creating online interactive materials and LKS for learning Arabic in senior high schools. (Jiao et al., 2018). This live worksheet application is a technology application in the form of material creation features, essays, drag end drop, matchmaking by drawing lines and others. (Alalwan, 2020), which is used for online learning media (Kim et al., 2020) and can be used in smartphone and desktop systems. This study also discusses its effectiveness in making materials (Rissman et al., 2020). Based on the explanation above, researchers researched the development of live worksheet applications as a medium for making materials and interactive online worksheets for learning Arabic in IT elementary schools.

This study aims to review how to develop the LKS application as a medium for creating interactive online materials and LKS for learning Arabic in senior high schools. This type of investigation is developing a live worksheet application related to the pie model. This research

aims to facilitate the manufacture of materials. It is hoped that researchers will use the circle model to study spreadsheet applications directly. Teachers can apply the methods taught by researchers so that elementary school teachers can use the application to improve the system by making Arabic language teaching materials in integrated Islamic elementary schools changeable. From the description above, teachers must take action to overcome challenges in creating teaching materials for IT elementary schools.

II. RESEARCH METHODS

The PIE development model is a model that is used in the development of live worksheet applications for making interactive materials and worksheets online in learning Arabic at Senior High School (Schultz et al., 2020). This development model was chosen because it can increase student motivation in learning (Nosek et al., 2018), increase students' potential in both cognitive and psychographics, foster enthusiasm for learning, and increase student interest in learning. After all, the live worksheet has features for making material, matchmaking by drawing lines, drag and drop, and essays. The material presented is attractive and accessible for participants to understand (Zhu et al., 2019). The developed live worksheet application provides more benefits for learning (Benjamin et al., 2018). The development of this method has several steps, namely 1). Planning, 2). Implementation, and 3). Evaluation. These stages will be explained in detail and some explanation later. Some of the steps that can be done can be seen in the image presented below.

- Planning

Planning includes things such as gathering information about students and preparing everything that can help students in the learning process so that students can get satisfactory results and what they want.

- Implementation

At this stage, the application of the plan is made by the teacher or teaching staff. In this case, the implementation uses various forms of media and methods.

- Evaluation

Evaluation is the activity of measuring changes in a person's behaviour. Evaluation of the learning process includes the performance of students. This

performance can be seen from the students' ability, insight, knowledge, and character. The existence of teacher evaluation can measure the ability of students both in terms of quality and quantity of achievement of learning objectives.

In this case, the researcher did not conduct research directly at the madrasah primary school but by making observations. Researchers carried out this observation by filling out three questionnaires via the Google form. The questionnaire contains the feasibility of developing this live worksheet application to make Arabic learning materials when viewed from the feasibility perspective (Chae et al., 2020). Eligibility is divided into three parts, namely 1). Eligibility of a medium, 2). Eligibility of material, 3). Eligibility of a language. By carrying out this observation, researchers can explain the interrelationships of media, material, and language used and whether it is appropriate to be developed in primary school. In this live worksheet, researcher research can increase the enthusiasm and motivation of students. Furthermore, the researcher will explain the development of this live worksheet application in the results and discussion section. Some explanations are more detailed and easy to understand.

III. RESULTS AND DISCUSSION

A. Results

After the researcher made this live worksheet application, the researcher made three questionnaires: media feasibility tests, material feasibility tests, and language feasibility tests. The researcher's purpose in assessing a questionnaire is to determine whether or not this media is appropriate to be developed in the learning process. After making and filling out this questionnaire, students must do it according to what studtheyerstand about this live worksheet. From the results of filling out the questionnaire, it can be seen that the feasibility of the media in learning Arabic at Senior High School. The questionnaire or questionnaire contains well-structured questions that are used as a tool for collecting data through questionnaires. Each questionnaire contains ten questions regarding the media, material, and language used. If combined, there are 30 questions.

This question has four answers: strongly agree, agree, disagree, and strongly disagree.

At this research stage, the researcher did not go directly to the primary schools to conduct research. A validation process is needed to get a product that is suitable for use in learning. The feasibility validation is seen from 3 aspects, namely 1). Media eligibility validation, 2). Material eligibility validation, and 3). Language eligibility validation. Having carried out this eligibility validation is expected to find out the media's shortcomings. Feasibility validation is carried out by filling out a questionnaire or questionnaire that students can fill in. This feasibility validation is very much needed and essential to obtain factual data regarding the number of students, their character or behaviour, etc. Each validation sheet that has been made is filled in by many different students. Some filled out the media feasibility questionnaire consisting of 30. material eligibility 34, and language eligibility 30.

Media Feasibility Validation Sheet

The results of trials on media experts are used to obtain data about validating the eligibility of a media. Validation of the feasibility of this media is tested to find out the shortcomings of the media that researchers have done. Besides that, the live worksheet that the researcher made is one of the media for learning Arabic. In this study, data were obtained from elementary school students. This research was conducted by filling out a questionnaire which aims to obtain learning media that are suitable for use and can make it easier for students at Islamic elementary schools to achieve the desired educational goals.

Moreover, it can increase the potential of students in the academic field. Research data on live worksheet media can be seen in the table below. In these, the hastings, na: strongly, agree, disagree, and strongly disagree. In the assessment standard, there are ten questions regarding the eligibility of the media.

Table 1. Media Feasibility Validation Sheet

NO	Research Standards	Valuation			
		SS	S	TS	STS
1	the live cover worksheet reflects the contents of the module	65,5 %	24,1 %	10,3 %	-
2	The title listed follows the contents	24,1 %	65,5 %	10,3 %	-
3	The title listed follows the	14,3	64,3	21,4	-

	contents	%	%	%	
4	a combination of letters	13,8 %	65,5 %	20,7 %	-
5	a combination of letters	24,1 %	44,8 %	20,7 %	10,3%
6	the live worksheet application is suitable for creating material	13,8 %	51,7 %	34,5 %	-
7	The material presented follows the title	10,3 %	62,1 %	20,7 %	-
8	The title of the live worksheet describes its contents	29,6 %	53,6 %	14,3 %	10,7
9	live worksheet into learning media	52,8 %	59,3 %	11,1 %	-
10	suitability of the material provided by researchers learning Arabic	35,7 %	46,4 %	14,3 %	-

Explanation:

SS = Strongly agree

S = Agree

TS = Disagree

STS = Strongly Disagree

Data from research trials can be described as follows: 30 students were tested in this study. The results of the students' highest assessment of the feasibility of learning media developing a level worksheet to make it easier for students to understand Arabic learning material obtained the highest result of 65.5%, based on the percentage of achievement of validation included in the category of strongly agree and agree. The results of the second assessment of the eligibility validation of live worksheet learning media obtained the highest percentage of 64.3%, based on the percentage of attainment of eligibility validation of the media included in the agreed category. The results of the third-highest research on media eligibility validation obtained a percentage of 62.1%; the achievement of eligibility validation was included in the agreed category. The lowest research results of students regarding the feasibility validation of live worksheet learning media obtained a percentage of 0%, based on the percentage of achievement of feasibility validation included in the strongly disagree category.

Material Feasibility Validation Sheet

The results of trials on media experts were used to validate the feasibility of the material. Validation of the feasibility of this media was examined to find out the shortcomings of this live worksheet media that the researcher made as an Arabic learning

media in terms of the feasibility of the material. This study obtained data from students who had filled out a validation questionnaire. The assessment or data obtained from the material eligibility validation sheet results can be in the form of an assessment of learning media in education. Validation research by students was carried out by filling out a questionnaire. This study aims to facilitate students in finding learning materials. The assessors are divided into four categories: strongly agree, agree, disagree, and strongly disagree. The assessment standard consists of 10 questions relating to the feasibility of the material. Liveworksheet media research results from the material eligibility validation sheet are seen in the table below.

Table 2. Material Feasibility Validation Sheet

NO	Research Standards	Valuation			
		SS	S	TS	STS
1	The material presented in the live worksheet is appropriate to be taught in learning Arabic	61,8 %	17,6 %	8,8 %	11,8 %
2	The material is presented in the form of attractive pictures	47,1 %	17,6 %	29,4 %	-
3	Some readings are easy for students to understand	47,1 %	14,7 %	26,5 %	11,8 %
4		50%	14,7 %	25,6 %	8,8 %
5	The live worksheet application is suitable for making material as a learning medium	44,1 %	17,6 %	26,5 %	11,8 %
6	The live worksheet application is suitable for making material as a learning medium	18,2 %	42,4 %	18,2 %	21,2 %
7	There is the suitability of the material being taught using this live worksheet	42,4 %	18,2 %	18,2 %	21,2 %
8	In the live worksheet, the material presented is easily understood by students at SD IT	50%	14,7 %	11,8 %	23,5 %
9	the live worksheet is suitable for making learning materials and media	44,1 %	26,5 %	20,6 %	8,8 %
10	The material presented in the live worksheet is appropriate to be taught in learning Arabic	55,9 %	-	29,4 %	11,8 %

Explanation :

SS = Strongly agree

S = Agree

TS = Disagree

STS = Strongly Disagree

The data from the experimental results of this study can be described as follows: 34 students became the object of the study. The results of the highest assessment of the feasibility validation of learning materials were 61.8%, based on the percentage of attainment of material eligibility validation, included in the strongly agree category. The results of the second assessment of the validation of the material feasibility were 55.9%, based on the percentage of achievement of the material feasibility validation included in the strongly agree category. The results of the third study on material eligibility validation were 50%, based on the percentage of achievement of material feasibility validation included in the strongly agree category. The lowest material feasibility validation assessment results were 0%, based on the percentage of feasibility validation achievements included in the strongly disagree and agree categories. From the research results above, validating the feasibility of this material is very feasible to be developed in the learning process.

Language feasibility validation sheet

The test results of media experts were used to obtain language feasibility validation. Language feasibility validation is examined to obtain data and discover the shortcomings of the live worksheet media that researchers use as learning media in senior high school. Language feasibility validation research is carried out by filling in questionnaires made by researchers through Google Forms. In the questionnaire, there are questions related to language feasibility. The question consists of 10 questions about the language used in making live worksheets and whether or not it is used. This study aims to obtain learning media that is suitable for use by students and can facilitate students in finding learning material. Researchers provide recommendations for improving data on the results of research media Liveworksheet on the language feasibility validation sheet that can be seen in the table below.

Table 3. Language Feasibility Validation Sheet

NO	Research Standards	Valuation			
		SS	S	TS	STS
1	The language used is effective	63,3 %	16,7 %	-	13,3 %
2	The language used is standard	46,7 %	23,3 %	23,3 %	-

3	The language used is easy for students to understand*	46,7 %	20%	26,7 %	-
4	This live worksheet has spelling accuracy	50%	13,3 %	23,3 %	23,3 %
5	The sentences contained in the live worksheet are effective	51,7 %	-	31%	10,3 %
6	There is ease in understanding the language in the live worksheet	46,7 %	30%	13,3 %	10%
7	The language used is not convoluted	51,7 %	27,6 %	13,8 %	-
8	The sentences described are already effective	43,3 %	16,7 %	33,3 %	-
9	The spelling is perfect	55,2 %	20,7 %	20,7 %	-
10	The diction used is by the picture	50%	16,7 %	23,3 %	105

Explanation :

SS = Strongly agree

S = Agree

TS = Disagree

STS = Strongly Disagree

The results of this research trial can be described as follows: There were 30 students in this study. The highest research result on validating the feasibility of learning the language by developing this live worksheet application is to make material for learning Arabic. The highest research result on language eligibility validation was 63.3% based on the percentage of achievement of language eligibility validation included in the agreed category. The results of the second highest study were 55.2%, based on the percentage of achieving language feasibility validation; it was included in the strongly agree and agree category. The results of the third study were 51.7%, based on the percentage validation of language feasibility, which included the categories of strongly agree and agree. The lowest rating result is 0%, based on the percentage of achievement of language eligibility validation included in the criteria of strongly disagree. The results of filling in stated that the highest rating stated agreed.

B. Discussion

The result of this research is developing a live worksheet application to create interactive online materials and worksheets in SD IT Arabic classes. Students must use the live worksheet application to understand better making Arabic learning materials. The advantage of this live worksheet application is

that it supports online learning to make it more exciting and achieve student learning outcomes. The steps in developing this live worksheet application are a reference for developing a pie model. The research steps for the pie model are: To determine the use of media and technology in learning and the role of information and communication technology in supporting learning in order to determine the relative benefits of research or research. Integration processes and models are needed to consider the different possibilities and limitations of implementing the diffusion of innovations. According to Ekosshiro and Kasihadi, educational innovation is an educational change based on a conscious, intentional and structured educational approach that aims to guide according to the needs and demands of the times. Understanding the various aspects that make integration possible, including examining some of these, is essential.

The next step is goal setting. Setting goals here aims to determine the skills, competencies, and knowledge that students learn and the assessment tools in learning. So that teachers can easily understand their students and know the strengths and weaknesses of these students. In setting learning objectives, teachers must be able to guide students according to their characteristics and understanding. Help students understand the lesson quickly and enthusiastically. In setting goals, the teacher must achieve them. Because if the goal is not achieved, everything planned will not go according to the plan set by the teachers to increase student understanding. And so that the planned goals can be achieved, teachers and students must establish cohesiveness and look for information related to the material when in the learning process.

After knowing the relative usefulness and determining the objectives, the next step is to design integration strategies and activity formats that suit the characteristics of students. The media and technology integration strategy must pay attention to (1) the characteristics of the learning material topics, (2) the needs of students, and (3) the suitability of the learning environment. Moreover, teachers must choose excellent and effective strategies in designing integration strategies. Because during the learning process, the teacher must choose a learning strategy design that makes students comfortable and not bored. Therefore, with the development of current

technology, it can be used as a learning medium for students. Also, teachers must look for the most exciting strategies in the learning process. for example, such as the live worksheet application, where using this application can increase students' understanding of the learning process.

Moreover, the next step is to provide a learning environment; the purpose of providing a learning environment is that the environment is one of the supporting factors. A comfortable and conducive place and learning environment make it easier for students to concentrate on learning. So by preparing the right learning environment, students will get better results and can enjoy the learning process that students are doing. The environment and learning places are not only local but can be in open places such as parks, fields, etc. The environment, which is a source of learning, influences the process and results in learning. In a narrow sense, the environment is the natural environment outside the individual. So the learning environment exists in the natural environment with a specific meaning or influence on individuals or humans.

Next, in Evaluating and revising, you need to know the first thing about Evaluation. Evaluation is a systematic research method to assess a program's design, implementation and effectiveness. The Evaluation is used for assessment and produces a value or number used in a student's performance decision. Evaluation is used to determine the success of achieving the desired learning objectives; an assessment is usually given at the end of learning, which will produce a grade at the end of learning. Evaluation is done at the end of learning. For example, when a student has passed at the end of his study on an assessment, then the student will be able to continue studying the subject he likes. So, the Evaluation is the same as the final value of a lesson. Students in the final exam can develop an Evaluation; students can use all their abilities at the end of learning to get satisfactory results.



Based on the picture above, there is a Liveworksheet application as an online Arabic learning medium. This application is exciting, especially for secondary Islamic elementary students. The appearance of this application is unique, and the apparent transition effects and appearance when presenting will excite students because the application is filled with interesting features. This live worksheet application makes it easy for students to learn Arabic online. The unique live worksheet application for learning Arabic is handy. This live worksheet application is not monotonous or focuses only on one goal but varies. It is more in the category which is likened to an application that can make students work together and think creatively because this application can be used as a medium for learning Arabic, which is carried out online at senior High Schools.

With this live worksheet application, there are many benefits in the learning process for senior High School students. This live worksheet application helps students improve the quality of learning more efficiently; hopefully, this application can advance students' thinking and facilitate learning. The features in this live worksheet application can use the many available features. Hopefully, students can take advantage of this application in the future so that the benefits of this application for SD IT students become more creative and innovative in using the live worksheet application as a medium for learning Arabic online, as well as mastering Arabic learning quickly. This live worksheet application has proven to be very helpful in learning, making it easier for students to understand Arabic education, such as making vocabulary, memorizing, etc., so that students are easier to focus on learning.

This live worksheet application is very beneficial for students, especially IT Elementary Arabic students and students who like to study online.

Moreover, with media questions like this live worksheet, it helps teachers in the learning process and also make it easier for students to understand lessons online. This live worksheet application has many learning features, such as vocabulary, matching pictures with Euphrat, and so on. Hopefully, with this live worksheet application, it can improve students' language skills. The advantages of the live worksheet application are that it can develop more effective teaching materials and students play an active role. They are not monotonous in the teacher's lessons and can be accessed anywhere and anytime. The resulting product studies also show a good response. So that with this application it makes Arabic learning classes more active and enthusiastic, making it easier for educators to direct students in understanding Arabic learning.

IV. CONCLUSIONS

The development of a live worksheet application to create online interactive materials and worksheets for learning Arabic at Senior High School is very suitable to be applied. This media fosters students' enthusiasm for learning and increases student motivation. Its development is through several methods with the following steps: 1). Planning, 2). Implementation, and 3). Evaluation. For the feasibility of the Liveworksheet application, it is carried out by completing three questionnaires regarding validation, namely 1). Media eligibility validation, 2) Material eligibility validation, and 3). Language eligibility validation. It can be concluded from the results of the assessment of 3 validation questionnaires it is stated that the use of the live worksheet application as a medium for learning Arabic in IT elementary schools from validating material eligibility, validating media eligibility, and validating language eligibility is very suitable for use in learning media at school.

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