

Learning Commercial Letters App to Improve Students' Learning Outcomes

A Useful Android Based Learning Media in the Covid-19 Era

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ABSTRACT

Before the COVID-19 pandemic, the development of information and communication technology had influenced the use of instructional media where teachers required to be creative in utilizing technology optimally. Therefore, this research aims to produce android-based learning media products to improve student learning outcomes. Now among the Covid-19 pandemic, learning media products that were developed can be a choice. This research and development use a modified Borg and Gall Research and Development model. The data analysis technique used is the descriptive percentage and independent sample t-test. The results of this research and development are android-based learning media on correspondence subjects called Learning Commercial Letters which have been declared to be very valid and suitable for use in correspondence learning by media experts, material experts, and 6 small group trial students and are proven to improve student learning outcomes significantly in large group trials. Hence, it can be concluded that Learning Commercial Letters is feasible and effective as a learning media to improve student learning outcomes in correspondence subjects.

Keywords: *research and development, learning media, android, learning outcomes, correspondence*

1. INTRODUCTION

During the last few years, the rapid development of information and communication technology has had an impact on education (Hrynko, 2019), (Fajriah & Churiyah, 2016), (Büyükbaykal, 2015). The government has made efforts to update the education curriculum and fulfil technological facilities to improve the quality of teaching and learning in schools (Buabeng-Andoh, 2012). The implementation of education which initially used traditional methods became integrated with technology (Hrynko, 2019). The use of instructional media was affected, teachers were required to be creative in teaching and

learning activities by utilizing technology optimally (Fajriah & Churiyah, 2016).

Learning media itself plays an important role in the learning process where learning media was able to help teachers deliver the material taught (Ramdhani & Muhammadiyah, 2015). Besides, the use of instructional media was also expected to be able to increase students' understanding of the material taught by teachers (Fajriah & Churiyah, 2016). Some previous research has even proven that learning media can increase learning independence, students' conceptual understanding, and effectively improve student learning outcomes, (Arista & Kuswanto, 2018), (Irawan & Djamika, 2018), (Ahmar & Rahman,

2017), (Kocakoyun & Bicen, 2017), (Ulfa et al., 2017). The learning media referred to in this research are android-based learning media, where android-based learning media are found to be able to overcome the limitations of space and time in teaching and learning activities (Irawan & Djamika, 2018). The ability of instructional media in overcoming the limitations of space and time was certainly useful in the among of COVID-19 pandemic which causes education to be conducted without direct face-to-face activities (Abidah et al., 2020), (Mailizar et al., 2020), (Azzahra, 2020)

Some researchers have been developed an Android-based learning media before the COVID-19 pandemic occurred, where the learning media developed contained subject matter in chemistry, general administration, English, mathematics, (Arista & Kuswanto, 2018), (Ulfa et al., 2017), (Jatmiko et al., 2018), (Irawan & Djamika, 2018), (Zheng et al., 2018), (Kularbphettong et al., 2015). Based on this research, it can be concluded that the development of an Android-based learning media can be a breakthrough for teachers in conducting technology-integrated teaching and learning activities before, during, and after the COVID-19 pandemic ends.

However, the results of interviews with teachers at Vocational High School Muhammadiyah 3 Singosari in the time before pandemic occurred, it was found that student learning outcomes in correspondence subjects were still lacking and needed to be improved. Teachers being dealt with tend to use learning media in the form of less varied PowerPoint slides, whereas correspondence subjects in Indonesia are class X subjects of Office Management Automation with a long enough face-to-face duration, which is 5 JP (225 minutes) each week. This certainly causes students to tend to be bored and less enthusiastic about the teacher's explanation that seems monotonous. The role of the learning media was also sometimes less than optimal given the limited number of facilities in the form of LCD projectors at the school, while

the facilities owned by all students at the school namely android smartphones are still not optimized as learning media. Whereas with the large number of students using Android smartphones, the utilization of Android smartphone facilities in the learning process is a good opportunity (Saputra et al., 2018). The ability of an android smartphone is easy to carry anywhere and its ability to display text, images, animations, audio, video and multimedia enables android as a learning medium that displays abstract learning material to be more concrete (Eliza et al., 2019). Besides, the content of this Android-based learning media can be freely designed by the teacher according to the needs in learning (Chaiyasit et al., 2015). The selection of android-based learning media is also, in fact, appropriate for use in correspondence subjects. This is evidenced by previous research that can present examples of identical letters studied in correspondence subjects into the learning media application developed so that the shape of the letter being studied does not only exist in the shadow of the student but can be seen through an android smartphone (Bonita et al., 2017). The accuracy of the use of this learning media supports the success of the learning process (Eliza et al., 2019) so that the learning outcomes of correspondence that are still lacking can be improved for the better.

Another advantage gained from the use of Android-based learning media is that students can learn subject matter whenever and wherever they want without having to wait for learning in class (Bonita et al., 2017), (Kurniawan & Kuswanto, 2019), (Irawan & Djamika, 2018). Moreover, the existence of the Google Play Store on every android smartphone enables android-based learning media that has been made more easily disseminated to students and other teachers as users of android smartphones. When a developer uploads a learning media application update they made, the update will be quickly available and can be downloaded by all android users at no cost to the developer (McIlroy et al.,

2016). Therefore, this research aims to produce android-based learning media products that have been tested for their suitability and effectiveness in improving student learning outcomes in correspondence subjects for Class X Office Management Automation in Vocational High School Muhammadiyah 3 Singosari which benefits the user, where the learning media produced are not only able to display each sample format of various commercial letters but are also able to display examples of commercial letters that have been analyzed and are equipped with information related to the constituent components of each sample letter displayed to support learning correspondence independent. Also, this learning media is designed with attractive and varied appearance, consisting of elements of text, images, animations, videos, and provides interactive questions so that learning media content becomes more complete and learning becomes more interesting. This Android-based learning media is also available at the Google Play

Store for free so that it can be accessed anytime, anywhere, and by any android user who needs it without worrying about being charged anything.

Learning media development research usually utilize Adobe Flash (Ulfa et al., 2017), (Arista & Kuswanto, 2018), (Anjarwati et al., 2016), Appypie (Irawan & Djamika, 2018), Intel SDK (Ahmar & Rahman, 2017), and Ispring Suite (Nurwijayanti et al., 2019). However, the development of instructional media using Ispring Suite in previous research is not based on Android. Besides, the development of Android-based learning media on the same subject has also been done before, but the software used in the research was Adobe Flash with material that is loaded limited to official Letters material (Bonita et al., 2017). Based on this, the researchers made a breakthrough by using Ispring Suite in developing Android-based learning media, where the learning media in this research focused on other correspondence learning material, namely commercial Letters.

2. METHODS

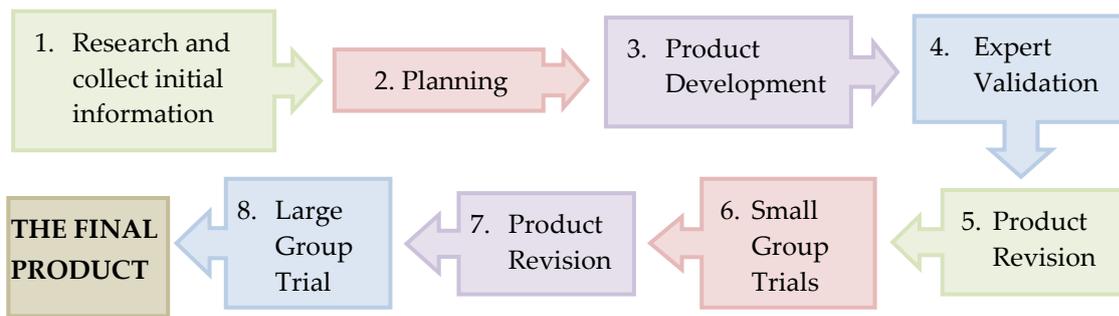


Figure 1. Research Steps

This research applies the Borg and Gall Research and Development model which has been modified into eight steps to shorten the time and minimize costs (Mastumasari et al., 2017). Besides, researchers also feel that the purpose of the research is to produce products, find out the feasibility of the product, and find out the

differences in learning outcomes of students who use those or do not use the products that are developed, can be achieved in the eighth stage.

In the first step, researchers collect information related to problems that occur in schools through interviews and observations. In the second step, researchers design learning media products that

will be developed and can be a solution to the problems found in the initial information gathering step. In the third step, researchers began to make learning media according to the design that was determined in the previous step. In the fourth step, the media produced by researchers is tested for eligibility by validators, namely one media expert and one material expert. The fifth step, the product that has been validated is revised based on input and suggestions both verbally and in writing that is listed on the questionnaire assessment sheet material experts and media experts. In the sixth step, the revised product was tested on 6 students of class X OTKP 1 who became the experimental class in this study. The determination of the experimental class and the control class is based on the midterm grades in the school, where the class that has a lower average grade will be the experimental class. The seventh step, the product that has been tested on a small group is revised according to student input both verbally and in writing that is printed on the small group trial questionnaire results sheet. In the eighth step, the revised product was then tested on a large group involving 27 students of class X OTKP 1 as the experimental class and 26 students of class X OTKP 2 as the control class. Products that have passed a large group trial become the final product in this research.

The data generated in this research include qualitative data and quantitative data, where qualitative data is obtained through drawing conclusions based on general opinions, suggestions, and criticisms from material experts, media experts, and 6 small group trial students. While quantitative data consists of data from the validation of material experts, data from media validation results, data from small group trial results, and student learning outcomes data. Data validation results from material experts, media experts, and small group trials were analyzed using descriptive percentage methods to indicate the feasibility of instructional media. While student learning outcomes data were analyzed using independent sample t-test to show differences in student learning outcomes of the experimental class and the control class.

3. RESULTS AND DISCUSSION

The product produced in this research and development was an android-based learning media on a correspondence subject called Learning Commercial Letters which was available for free on the Google Play Store. Learning Commercial Outline consists of menu buttons which are explained through Figure 2 below:

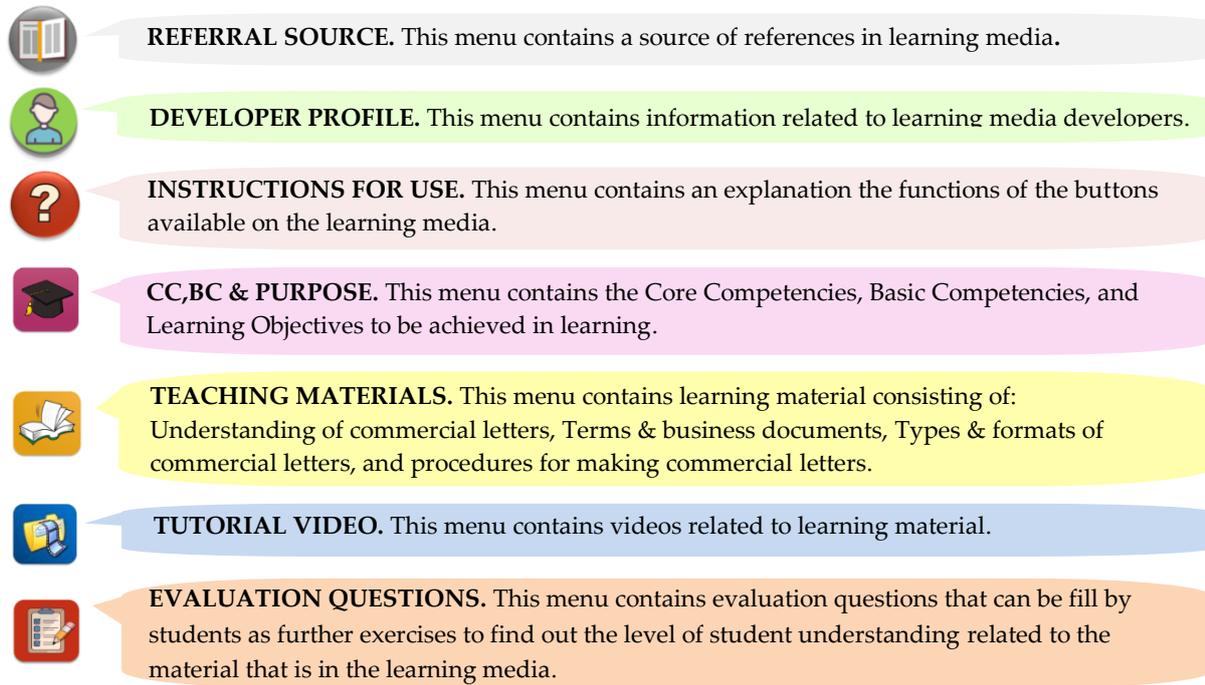


Figure 2. Menus in the Learning Commercial Letters Application

The results of the validation of the Learning Commercial Letters application by material

experts, media experts, and small group trials students, all are presented in Table 1 below:

Table 1. Results of overall validation data

No	Validation	Percentage	Criteria Validity
1.	Material Expert	97,83%	Very Valid
2.	Media Expert	99,04%	Very Valid
3.	Students Trial Small Group	89,88%	Very Valid
	Average	95,58%	Very Valid

The table used by permission ©Nirmala, Rari Nitya. 2020. Overall validation data.

Based on Table 1, it was known that the average percentage of validation as a whole is 95.58%, so it can be concluded that the learning media developed by researchers, namely Learning Commercial Letters, was stated as "Very Valid" and was suitable for use in Correspondence learning at Vocational High School Muhammadiyah 3 Singosari. This was in line with previous research, where the results of the validation of material experts, media experts and

small group trials were used as the basis for determining whether learning media developed were feasible or not used in learning (Nurwijayanti et al., 2019), (Lubis & Ikhsan, 2015), (Irawan & Djamika, 2018).

The feasibility of learning media Learning Commercial Letters was based on the attractiveness of the design of the Learning Commercial Learning application display, the attractiveness of the presentation of material, and

the accuracy of the concept of presenting the material in the Commercial Learning application (Ulfa et al., 2017). Examples of letters in the Commercial Learning application are not merely displayed just like in previous research (Bonita et al., 2017). The Commercial Learning Application presents information buttons that can display

details of each section of the commercial letter and emphasizes sentences that indicate the conditions or characteristics of each type of commercial letter, so students can be helped in analyzing the constituent components of each type of commercial letter. Display the letter section of the information button can be seen in Figure 3 below.

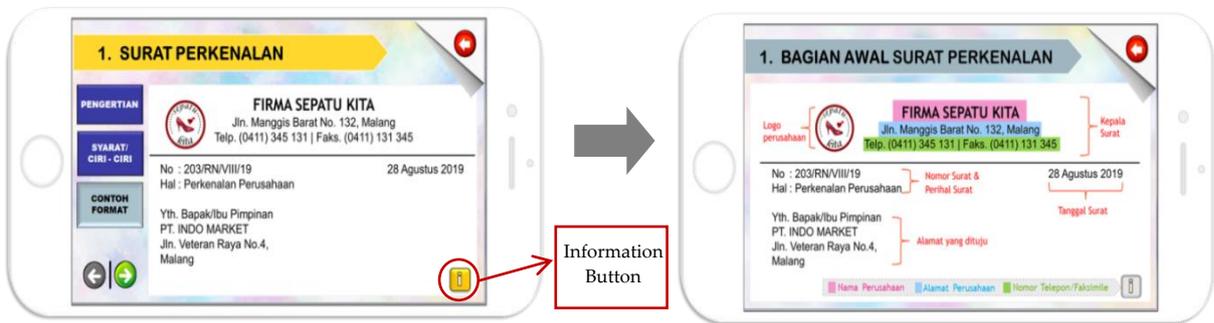


Figure 3. Display the letter section of the information button

While the results of the independent sample t-test on the learning outcomes of the control class and experimental class are presented in Table 2 below:

Table 2. Independent sample t-test results

		Independent Samples Test								
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Student learning outcomes	Equal variances assumed	.446	.507	4.648	51	.000	5.3953	1.1607	3.0650	7.7256
	Equal variances not assumed			4.650	50.992	.000	5.3953	1.1602	3.0661	7.7245

The table used by permission ©Nirmala, Rari Nitya. 2020. Results of sample-test independence.

Based on Table 2 it was known that the Equal variances assumed Sig. (2-tailed) of 0,000 <0.05, so

it can be concluded that there was a significant difference (real) between the learning outcomes of

experimental class students and the learning outcomes of control class students (Nuryadi et al., 2017). This significant difference in student learning outcomes proves that the use of instructional media developed by researchers can effectively improve student learning outcomes (Sumiati et al., 2020). This was in line with previous studies (Irawan & Djamika, 2018), (Bonita et al., 2017), (Lubis & Ikhsan, 2015), (Kularbphettong et al., 2015).

Significant improvement in student learning outcomes in this research is due to the interactive evaluation questions menu that was able to display the results of student evaluations and send the evaluation results to the teacher via email integrated with the learning media. So

students can find out more quickly what needs to be improved and what should be learned next (Bachore, 2015). Students were found enthusiastic in working on the evaluation questions and try to continue to improve the results of the evaluation until they were declared to have passed the evaluation in the learning media. Students can work on the evaluation questions and relearn the material that they have not understood independently, anytime and anywhere without having to be bound by face-to-face activities at school. This was supported by research as in previous research (Rahmawati & Partana, 2019). Display evaluation results in the Learning Commercial Letters application can be seen in Figure 4 below:

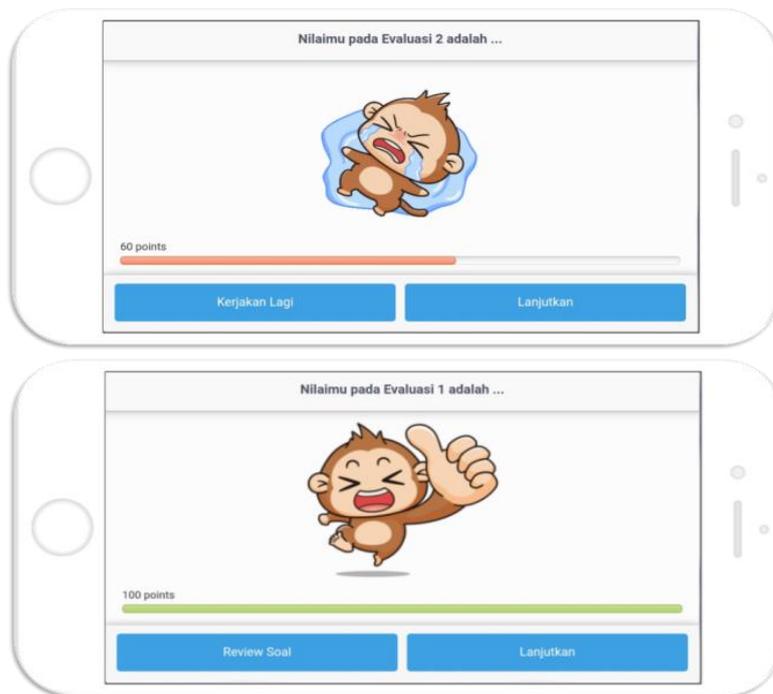


Figure 4. Displays the evaluation results in the Learning Commercial Letters application



Figure 5. Displays the application of Learning Commercial Letters in general

Besides, there were evaluation questions, display design of learning media Learning Commercial Letters that were interesting, colorful, present moving animation and images with good quality, as well as good quality video and audio display, found to be able to make the experimental class more enthusiastic and interested in listening teacher's explanation. Clear images and good audio quality in mobile content enable users to continue to come back and enjoy new segments (Suki & Suki, 2007). An approach that combines text, graphics, audio, and animation allows the text to be presented in a variety of ways that attract attention and have an impact on student learning outcomes (Lee et al., 2014). Display applications Learning Commercial Letters, in general, can be seen in Figure 5.

Improved student learning outcomes are also caused by the presence of information buttons that utilize the technique of highlighting text learning, namely marking on potentially important parts as material to be learned when reading text (Dunlosky et al., 2013). This button was able to speed up the process of analyzing commercial letters. Students of the experimental class were found to be faster and easier to remember and understand the components of the commercial letter, whereas in the control class students tended to have difficulty in dissecting and remembering the important components in

each type of commercial letter. This was because highlighting text can make marked portions of text more memorable than unmarked text (Yue et al., 2015) or commonly referred to as The Isolation Effect or Von Restorff Effect (Yik et al., 2018). Also, highlighting text in this learning media uses bright and attractive colors, where colors can influence student attitudes and learning outcomes (Kumi et al., 2013). Color affects the level of attention and also raises emotional arousal which contributes to the control process which will later improve memory performance and play a positive role in influencing students' cognitive retention (Dzulkifli & Mustafar, 2013).

4. CONCLUSIONS

This research and development resulted in an Android-based learning media using Ispring Suite Pro to improve student learning outcomes in correspondence subjects, which contained commercial learning materials for class X OTKP at Vocational High School Muhammadiyah 3 Singosari. This learning media was called Learning Commercial Letter and can be downloaded for free at the Google Play Store.

The learning media in this research have been declared 'Very Valid' and were suitable for use in correspondence learning through validation by

material experts, media experts, and small group trials. Also, this Learning Commercial Letters application has been proven effective in improving student learning outcomes in large group trials based on the results of the independent sample t-test. This application also allows learning anytime and anywhere, even independently without having to be bound by face-to-face activities at school, so this application was useful when learning cannot be done face-to-face directly as during the COVID-19 pandemic.

Learning application letters only focuses on commercial business material and were limited to the android operating system, so it is hoped that further researchers will develop learning media on other operating systems such as iOS and present other subject matter such as English correspondence.

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