

# The Development of Teaching Materials Based on Schoology Applications Using the Addie Development Model

Heni Pratiwi, Trisnaningsih, Sugeng Widodo.

*Magister Program of Social Study Education, University of Lampung, Indonesia*

**Abstract:** The development of teaching materials based on the Schoology application of the Indonesian Ethnic Diversity Material. **Purpose:** This study aims to develop dynamic teaching materials by utilizing technology in the form of a Schoology application that can improve student learning outcomes. **Methods:** This study uses a development method by using the ADDIE model development steps, with data collection techniques in the form of product feasibility tests and student learning outcomes tests. **Results:** Teaching materials with Schoology application-based were suitable as teaching materials for learning in schools and were effective in improving student learning outcomes by increasing the average score of 30 students from 54 to 85. **Conclusion:** Schoology application-based teaching materials were a good choice as a supporting media in the learning process at school.

**Keywords:** Teaching materials, schoology applications, development research.

## I. INTRODUCTION

The development of the 21st century is marked by the use of technology and communication in all areas of life. This includes education and learning. The context of the use of information and communication technology in the world of education has been proven by the narrowing and melting of the "space and time" factors, which have been the determining aspects of the speed and success of science by human [3].

The development of technology in education makes it easy for both teachers and students to support the learning process. The presence of the Schoology application in the world of education facilitates 21st century learning, learning becomes more effective, because it can be done anywhere, without the limitations of space and time. Currently, many LMS are available free of charge, but they are underutilized.

Technology is part of learning, therefore teachers are required to be able to use it as a tool or media in a dynamic learning process, teaching materials based on the Schoology application which is specially designed by the teacher will make it easy for students to understand the material. For the education world, the development of technology is one of the innovations, which is able to offer effectiveness in the learning process which is implemented in the delivery and search of an increasingly diverse range of information, which is no longer limited to the use of books, but through the internet network. (Sudjana, 2005). With the Schoology

application, teachers can develop teaching materials that can be accessed by students easily, so that teaching materials can be richer. Schoology is also an online learning of classroom management, and social networking platform that attempts to enhance learning through better communication, collaboration, and increased access to curriculum and additional content, innovative approaches and tools on the Schoology website facilitate both teachers, students, and parents to build collaborative communities of students to fulfill education goals in the 21st century [4].

The use of technology-based teaching materials is important, but currently its procurement has not been sufficiently developed by teachers.

Based on the problems described above, the use of technology-based media in schools is still limited, the available media is less practical, so alternative and efficient media need to be developed [8]

Based on the problems that have been described above, the use of teaching materials by utilizing technology is still limited. Currently teaching materials must be combined with technology, because currently students need practical teaching materials. This research is to develop teaching materials based on the Schoology application.

## II. LITERATURE REVIEW

### A. Schoology Application-Based Teaching Materials

Schoology is one of the LMS (Applications) that the system is ready. So users don't need to develop their own system, they just need to do a little arrangement and create classes very easily, but for content, users must develop their own, what is meant by content here is teaching materials and test materials [5].

The Schoology application is very practical to use to develop teaching materials. The features contained in the Schoology application are very supportive for teachers to develop teaching materials, besides that teachers do not need to have special skills to be able to use them.

Schools, students and teachers can start using it immediately without training. The flexibility of Schoology is also very attractive to Children. it is easier and faster for Schoology to

implement improvements based on our needs "(Finding a Learning Management System that is Easy to Implement. [2]

Currently the education world has developed from traditional learning to more modern learning. Schoology facilitates both teachers, students, and parents to build collaborative communities of students to fulfill educational goals in the 21st century [4]

### B. ADDIE Model

The ADDIE model is one of the most commonly used models in the field of learning design guides to produce effective designs. This model is an approach that helps instructional designers, any content developer, or even teachers to create efficient and effective teaching designs by applying the ADDIE model process to any instructional product. [1]

The ADDIE model is a practical development model, and every step is easy for teachers who want to develop teaching materials.

The important components in the ADDIE model in the process of making instructional designs, namely Analysis, Design, Development, Implementation, and Evaluation. Each phase in the ADDIE model is linked and interacts with one another. [1]

### C. Student Learning Outcomes

A good learning process will definitely have an impact on students. The use of teaching materials based on the Schoology application is expected to solve student problems in the form of low score student learning outcomes.

Learning outcomes are results that have been achieved by individuals as a direct experience. Improved learning outcomes can include three aspects, namely affective, cognitive, and psychomotor in a certain period of time. [7]

This is in line with the scientific approach used in the 2013 curriculum.

The cognitive domain is a domain that includes mental (brain) activities. According to Bloom, all efforts related to brain activity are included in the cognitive domain. [9]

## III. METHOD

This study uses the ADDIE model research and development method. In this development, the product developed is a teaching material based on the Schoology application on the material of Indonesia's ethnic diversity. The feasibility of this teaching material is validated by material experts, media experts and linguists. The development of teaching materials with the ADDIE model development steps are carried out in some steps such as analysis, design, development, implementation, and evaluation. Data collection is carried out through tests and questionnaires. The implementation of the use of teaching materials based on the Schoology application is carried out with an experimental design, with a pre-test and post-test design. This study uses one-sample test. The subjects

in this research and development are carried out in one school, namely Muhammadiyah Ahmad Dahlan Metro Junior High School with a total of 30 students.

## IV. RESULTS AND DISCUSSION

### A. Analysis Phase

The first idea of developing teaching materials based on the Schoology application was by conducting needs analysis, the analysis being carried out such as curriculum analysis, student and teacher needs analysis, social studies material analysis, and potential analysis.

Problem analysis was carried out to find the obstacles faced by students when learning social studies. The obstacle found in this analysis phase was that there were still many students whose grades were below the KKM (minimum completeness criteria) on the subject of Indonesia's ethnic diversity.

### B. Design Phase

Prior to the product-making phase, first was design phase. It was necessary to have a product sketch at the design step, namely in the form of determining the learning tools to the content of the product. The design phase was carried out in step starting from setting learning objectives, designing scenarios/ learning and teaching activities, designing learning tools, designing learning materials and learning outcome evaluation tools.

### C. Development Phase

There were two activities carried out at the development phase, namely realizing the product design and producing it. After the product had been successfully made, the next phase was that the product must be tested to determine its feasibility. The test was carried out by experts, namely the material expert test, the design expert test, and the linguist test. Based on the results of the test material experts get a feasibility score of 81%, media experts get a score of 90%, and linguists get a score of 85%, and these results indicate that the teaching material was suitable for use in school learning

Table 1. Assessment of teaching materials by media experts, material experts and linguists.

	Score Obtained	Maximum Score	Percentage	Validation Criteria
Design expert	65	72	90	Valid
Material Expert	52	64	81	Valid
Linguist	44	52	82	Valid

Source. Research data processing of 2020.

After the material test, design test and language test had been carried out, there were usually suggestions for improvement. Suggestions and input from these experts will later be used to revise the product. After the product had been repaired, the product could be tested on a small scale.

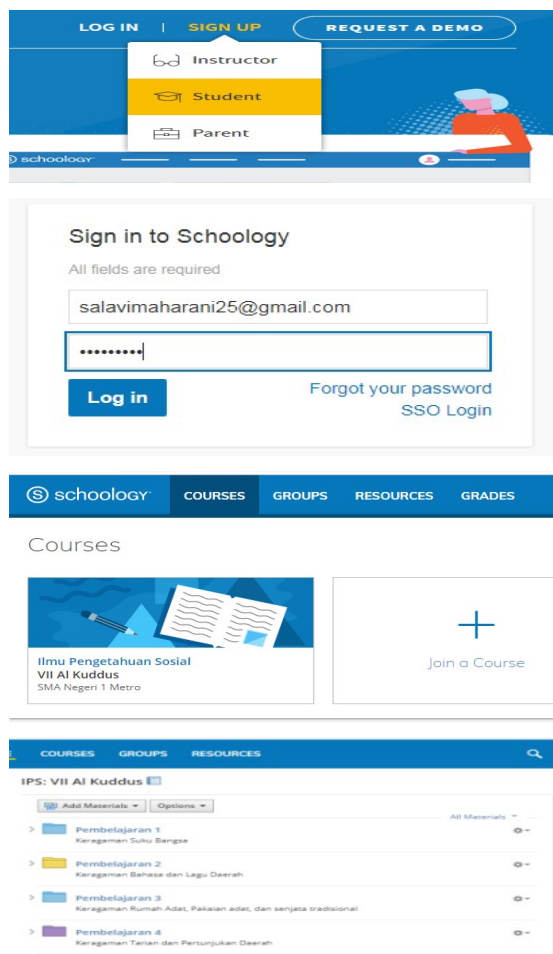


Figure 1. Teaching materials developed.

#### D. Implementation

Experiments were carried out by applying the media to one or two students, small groups and actual groups after the experts state that the media was worthy of being tested. Weaknesses found in application trial was revised to obtain an effective and efficient form of learning media [11]

The implementation phase was carried out to apply the learning products that had been made. There were several things that need to be considered at this phase, including:

##### a. Get started to use the new products in learning

There were things that need to be done before the product was used, namely the product needs to be validated by experts (design experts and material experts). A material expert was an expert in the field of education who was familiar with the materials used in the development of teaching materials, while a design expert was an expert in the field of product design who understands the design of good teaching materials. Furthermore, after being declared feasible by material experts and design experts, the next step was to test it on a small scale first (Test 1-1). Small-scale trials will be carried out on 3 students of VII grade at Muhammadiyah Ahmad Dahlan Junior High School who have low, medium, and high abilities.

Each student will be asked to assess the design, so that further weaknesses and strengths can be found, and also to get input and suggestions for product improvement.

##### b. Revisiting product development goals.

After conducting product trials on 3 students who were the samples in the study, a researcher must go back to see the original purpose of product development. at this phase the product can be given to students for learning activities.

#### E. Evaluation

The things that need to be considered on the evaluation phase were as follows:

##### a. Looking back at the impact of learning

Evaluation was needed to see to what extent the products that had been produced can be used to solve the problems of students in Al Kuddus VII grade.

##### b. Measure the achievement of product development goals

The achievement of product development goals must also be measured through field tests. Products that had been declared feasible for testing by experts team, then it will be tested on 30 students of Al Kuddus VII grade. The development trial was carried out with a one-group-pretest-post-test experimental model, this experimental research had 2 measurement data, namely the pre-test ( $O_1$ ) and the post-test ( $O_2$ ) measurement. The data analysis technique selected was one sample t- test.

30 students of Al Kuddus VII grade will use teaching material products based on the Schoology application. then they will be given an evaluation questionnaire regarding the teaching material. Questionnaire evaluation results will be used as a guide in revising the product. After that, the suitable teaching materials for students were produced.

##### c. Measure target achievement.

To obtain data on the achievement of targets that had been determined by the conditions in the field. This phase was functioning to see the suitability or feasibility of a product in achieving the effectiveness of learning using teaching materials based on the Schoology application. Testing of teaching material products based on the Schoology application was carried out in Al Kuddus VII grade at Muhammadiyah Ahmad Dahlan Junior High School.

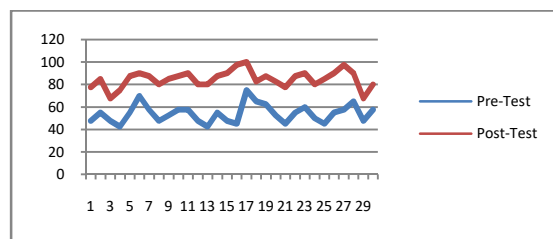


Figure 2. Comparison of the pre-test and post-test results of Al Kuddus VII grade students on the material of Indonesia's ethnic diversity. Source: data processing results.

Table 4.13 Results of the Mean Difference Test of Pre-test and Post-test Al KuddusVII Muhammadiyah Ahmad Dahlan Metro Junior High School

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval Of The Difference				
				Lower	Upper			
Pair 1 PRE TEST - POST TEST	30,8333	7,35003	1,34193	33,57788	28,08879	22,977	29	,000

Source: SPSS output processed 2020.

Based on Figure 2, it could be seen that there was an increase in the average pre-test and post-test scores of Al Kuddus VII grade students in the experiment of using teaching materials based on the Schoology application. This analysis used one-sample t test. The results of the calculation show that the significance value (sig.2-tailed) was  $0.000 < 0.05$  so that  $H_0$  was accepted, so this showed that there was significant difference between the social studies learning outcomes of Indonesian ethnic diversity in the pre-test and post-test data. The significant difference between the students's pre-test and post-test scores was due to the use of teaching materials based on the Schoology application, resulting in an increase in students's post-test scores on the material of Indonesian ethnic diversity.

Schoology could create dynamic educational support for teachers and students, empower teachers by creating collaborative learning environments, advancing academic achievement and success in schools (Biswas, 2013)

opinion Greenhow, Robelia, & Hughes (2009) which stated that the demand for fast communication, the ability to seek information and answer questions, and the creation of innovation for everything in life. Hence, the link between social networking learning and 21st century skills had been proven.

## V. CONCLUSION

Teaching materials based on the Schoology application were effective teaching materials used for learning based on the calculation of the significance value (sig.2-tailed) with a t-test value of  $0.000 < 0.05$ , this indicated that there was a significant difference between the students's pretest scores before using the Schoology-based teaching materials and students's post-test scores after using Schoology-based teaching materials. The mean score of students during the pre-test was 54 while during the post-test the mean score of students increased to 85. Based on the results of the product feasibility test, it showed a score of 81% on the material test, 90% on the media test, and 85% on the language test. These results indicated that the Schoology application-based teaching materials were effective for improving learning outcomes at school as had been shown in trials in Al Kuddus VII grade.

## REFERENCES

- [1] Aldoobie Nada. 2015. Addie Model. American International Journal of Contemporary Reseach. Vol 5 No 6.
- [2] Alvin. 2015. Development of a problem-based learning model via a virtual learning environment. Philippines: International Journal of Education and Research. Vol. 3 No. 1
- [3] National education standards agency.2010. the nation education paradigm of the XXI century. Nation Education Standards Agency Version 1.0. Retrived February 15,2016, From [HTTP://www.bsnp-indonesia.org/id/wpcontent/L\\_Reports\\_BNSP\\_2010.PDF](http://www.bsnp-indonesia.org/id/wpcontent/L_Reports_BNSP_2010.PDF)
- [4] Biswas,Shampa.2013. Schoology Social networkwhich is very useful for teachers and students. [Online].available: <http://fatkoer.wordpress.com/2013/04/25/Schoology-jejaring-social-yang-very-useful-for-teachers-and-students>.Retrieved February 12,2019
- [5] Greenhow, C., Robelia, B., & Hughes, J. (2009). Learning, Teaching, and Scholarship in a Digital Age: Web 2.0 and Classroom Research: What Path Should We Take Now? Educational Researcher, 38, 233-245.
- [6] Komalasari, Kokom. 2013. Kontextual Learning: Concepts and Application. Bandung: Refika Aditama.
- [7] McClune, B., & Jarman, R. (2011). From aspiration to action: A learning intention model for promoting critical engagement with science in print-based media. Research in Education Sciences, 41 ( 5), 691-710.
- [8] Sagala , Syaiful. 2013.Concept and Meaning of Learning. Bandung: Alfabeta.
- [9] Sudjana, Nana. 2005. Basics of The Teaching /Learning Process.. Sinar Baru Algensindo.
- [10] Zhang, H., Gao, X., Wu, P., & Xu, X. (2016). A Cross-Media Distance Metric Learning Framework Based on Correlation Mining and Matching. Multi-view. World Wide Web, 19 ( 2),181-197.