Online Learning Model To Improve Student's Practical Skills In Batik Course

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Article Info	Abstract
	Batik course is practical learning which effectively applies by face-to-face learning method. However, batik learning activities cannot run effectively during the disaster (covid-19) period. This study aims to determine the improvement of students' batik skills with an online learning model in batik courses at the Faculty of Engineering, State University of Semarang. This research is a type of research and development. The development procedure in this study adapted from the ADDIE model, which includes the analysis phase of preliminary studies and literacy, drafting of learning models, development of learning models, application of learning models to research subjects, and product revision. The data analysis technique used in this research is descriptive statistics. The research subjects consisted of an experiment group of 10 students and a control group of 10 students. Based on the results of the expert validation of the learning model, all indicators approve with some improvements. Analyzed the effectiveness based on trials was through the impact of student learning outcomes in batik subjects. The average learning outcomes of the experiment group had a relatively higher score of 85.3, and the control group was 80.1. In comparison, the N-Gain value is 64%, which means that the online learning model of batik learning is quite effective in improving learning outcomes and solutions for implementing practical knowledge during disaster periods.

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INTRODUCTION

The proximity of batik to Indonesian society makes batik not just a piece of cloth, but batik enters every side of people's lives. The development of batik begins with the culture, beliefs, and religion that forms specific patterns and embodies batik's art form. Batik is Indonesia's cultural wealth poured explicitly into a cloth made traditionally with various decorative motifs with particular patterns made using the barrier dyeing technique with batik wax or wax (Saefurrohman, 2015). Batik was designated as a humanitarian heritage for oral and non-material culture (Masterpiece of the Oral and Intangible Heritage of Humanity) by the United Nations Educational, Scientific, and Cultural Organization (UNESCO) in 2009. It was followed by a Presidential Decree on October 2, 2009, as a national batik day (Maulana, 2018). Along with UNESCO's recognition of batik as an intangible cultural heritage of Indonesia, if Indonesia is not able to present it to the world as an identity that deserves to be recognized and has the right to continue to live as a living cultural expression, that status can be revoked (Feria, 2013).

The importance of the introduction and preservation of batik for the community is a supporting factor for batik education and training. Universities have a target to produce graduates who can become development and reform actors in a society with high morals, science and technology. The competence of batik subjects is assessed through three aspects, namely knowledge, skills, and attitudes. Indicators of ability that must master include: (1) the history and philosophy of batik; (2) various kinds of tools and materials; (3) different kinds of batik motifs; (4) the process of batik; (5) multiple types of batik innovations; and (6) batik colouring. Practical batik skills are skills with hands, tools, or technology to create a work. Students are required to master various indicators of batik competence, such as drawing motifs, granting, mixing colours, and making batik stamps.

Batik learning at the State University of Semarang has been running through face-to-face lectures. In general, batik training and education are carried out offline because they have to practice directly and are guided by instructors who can demonstrate the batik-making process. The batik learning materials presented ranged from the history of batik, various batik motifs, tools, and materials to product manufacture and exhibitions of batik works. Effectively students are expected to be able to create products that have selling power. However, batik learning during this disaster experienced problems because of applied distance learning. The impact of exposure to the COVID-19 pandemic has affected the education sector.

Starting April 17, 2020, it is estimated that 91.3% or around 1.5 billion students worldwide are unable to attend school due to the emergence of the corona pandemic (UNESCO, 2020). This number includes approximately 45 million students in Indonesia, or about 3% of the total student population affected globally (Central Bureau of Statistics, 2020).

Based on a pre-survey of researchers on May 11, 2020, to students of the fashion education study program, they stated that they were disappointed because they could not join in learning batik and mastering batik competencies. Solutions to support learning activities from home include various applications, including Google Grouproom, Zoom, Google Meet, WhatsApp, Google Teams, and even Skype. Some colleges and schools also already have an information system for online learning in the form of a personal website developed according to need. Efforts to facilitate distance learning are supported by developing learning models with 21st-century skills, namely Computational thinking, Creative, Critical thinking, collaboration, communication, and compassion (Dwi, 144).

This study develops an online learning model for practical batik courses. Online learning is distance learning that utilizes electronic media to deliver learning (Nurdyansyah, 119). Online learning will undoubtedly be less meaningful without the synergy between appropriate learning strategies and methods. Batik courses teach skills, so there must be proper methods and media to teach online.

Previous research relevant to this research is the research conducted by Muchlas (2013), which concludes that the online learning model for practicing digital techniques with blended learning strategies modifier improves student learning outcomes. The difference between this research and previous research is that this research develops an online learning model with an online learning strategy. Where starting from the delivery of material to the evaluation is done online.

METHODS

1. The Model Development Method

This research is a type of research and development, the development procedure in this study was adapted from the ADDIE model by Dick and Carry (Arofah, 36). The research and development chosen were following the purpose of this study, namely to produce online learning model products in practical courses. The research procedures include Analysis, Development, Design, Implementation, and Evaluation. Educational development research consists of the development process, product validation, product testing, and evaluation.

a. Analysis

The analysis phase is carried out to analyze material requirements, program analysis, specification, and functional analysis needed in developing a learning model for batik courses. Conducted a needs analysis was to determine how the conceptual model will be used for online learning. The development of education is adjusted to the curriculum of batik courses.

b. Design

Online learning for batik courses is compiled by the batik curriculum (PBK), batik module (PBK), and supporting learning media, using learning media in the form of a website containing tutorial videos, materials, and evaluations. The design of this online learning model is expected to train students' batik practice skills. So those students are declared competent through certification activities.

c. Development

The development stage of the researcher realizes the conceptual design produced in the previous step. At this stage, the model was developed and then consulted with the supervisor and made improvements. Then validation by experts, which aims to determine the feasibility of the learning model set. The validation results are used to measure the feasibility of the product, as well as suggestions from the validator. The model and its supporting tools are then revised based on advice and input from the validator.

d. Implementation

The conceptual model developed is implemented in an actual situation, namely in the grouproom. This model is applied to batik learning in the Department of Family Welfare Education, the State University of Semarang, to determine the effectiveness of the products developed. Aspects of force are measured from student learning outcomes tests. The research subjects were the experiment group with ten students and the control group with ten students.

e. Evaluation

After going through the implementation stage, I obtained the assessment result from users and the effects of student's absorption of the material. At this stage, an evaluation is carried out related to product development, aiming to revise the product according to the evaluation results and unmet needs. Formative evaluation is carried out in the development stage, which aims to develop learning models, validation, and revision. The constructive review seeks to ensure that the model's objectives are achieved and revise the learning model. Conducted the summative evaluation to determine the effectiveness of the online learning model.

RESULTS AND DISCUSSION

Model development

a. Analysis

The analysis is a stage of gathering information that can use in developing products. The product of this research is an online learning model. The analysis consists of (1) analysis is carried out on students' problems in understanding and mastering competencies; (2) analysis of learning model needs, based on observations of students being unable to master batik skills during this pandemic due to several factors, including (a) the absence of an appropriate online practical learning model, (b) practical learning should be carried out by demonstration directly, (c) the limitations of batik tools and materials when learning online.

b. Design

The design stage is carried out to design the learning model that will be developed. This online learning model was developed from Anderson's online learning model. This model consists of three main parts, namely introduction, learning process, and assessment. At this design stage, a conceptual model was developed based on problem analysis and literature study. This conceptual model is also called a theoretical model because it is composed of academic studies and frameworks of thought.
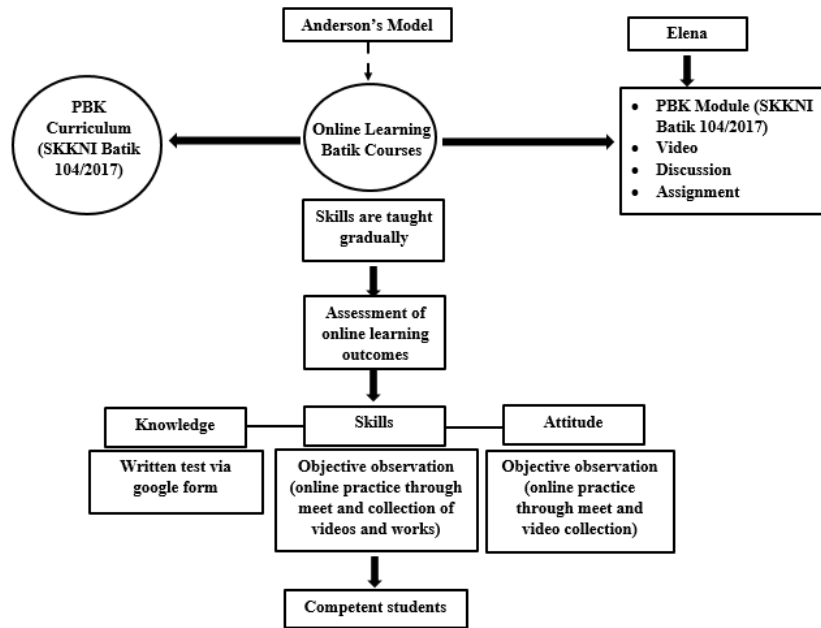
Figure 1. Conceptual Model of Online Learning for Batik Course

c. Development

This stage aims to assess the feasibility of the online learning model for batik courses. The development phase consists of: (1) developing a learning model to improve students' batik skills using the PBK curriculum and website media equipped with discussion, assignment, and video conference features. This model is expected to enhance the ability of students' batik skills during the pandemic. As a manifestation of 21st-century learning, (2) model expert validation is carried out to determine whether this learning model is feasible to implement. The validation results show that the online learning model for batik courses is viable; (3) product revision, after the learning model validation process, is revised based on model experts' criticism and suggestions.
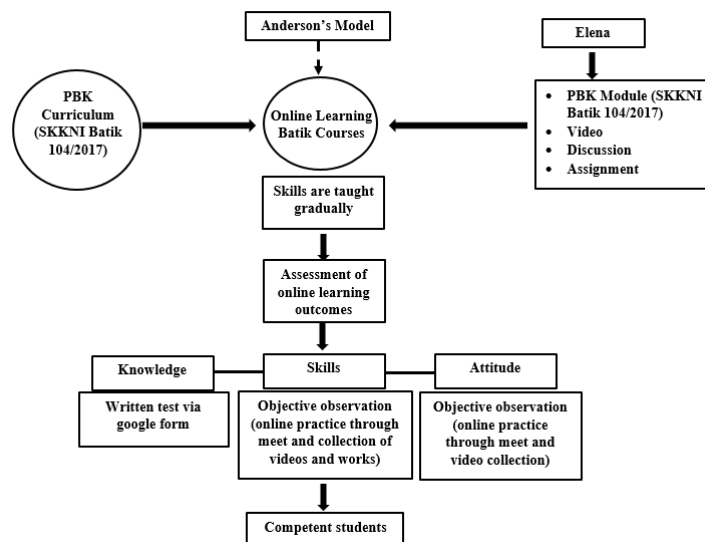

Figure 2. Validated Batik Course Online Learning Model

d. Implementation

The implementation phase is carried out if the results of the feasibility test have met the appropriate criteria. The implementation of this learning model involved ten experiment group students and ten control group students who took batik courses majoring in Family Welfare Education. The stages of implementing the model include: (1) initial practice is carried out for both groups to determine the initial state of students before being given treatment. In the initial practice, students were asked to make contingent on cloth. The next stage is applying the online model in the experiment group, while offline learning is carried out in the control group. They carried out the final practice for both courses. They have carried out this practice to determine the effectiveness of the

learning model through the impact of student learning.

The online learning model is applied through the Semarang State University learning website, namely elena. This learning utilizes the zoom meeting application, which is one of the learning facilities in elena. The trial steps of testing the online learning model for batik courses can be seen in the following picture.
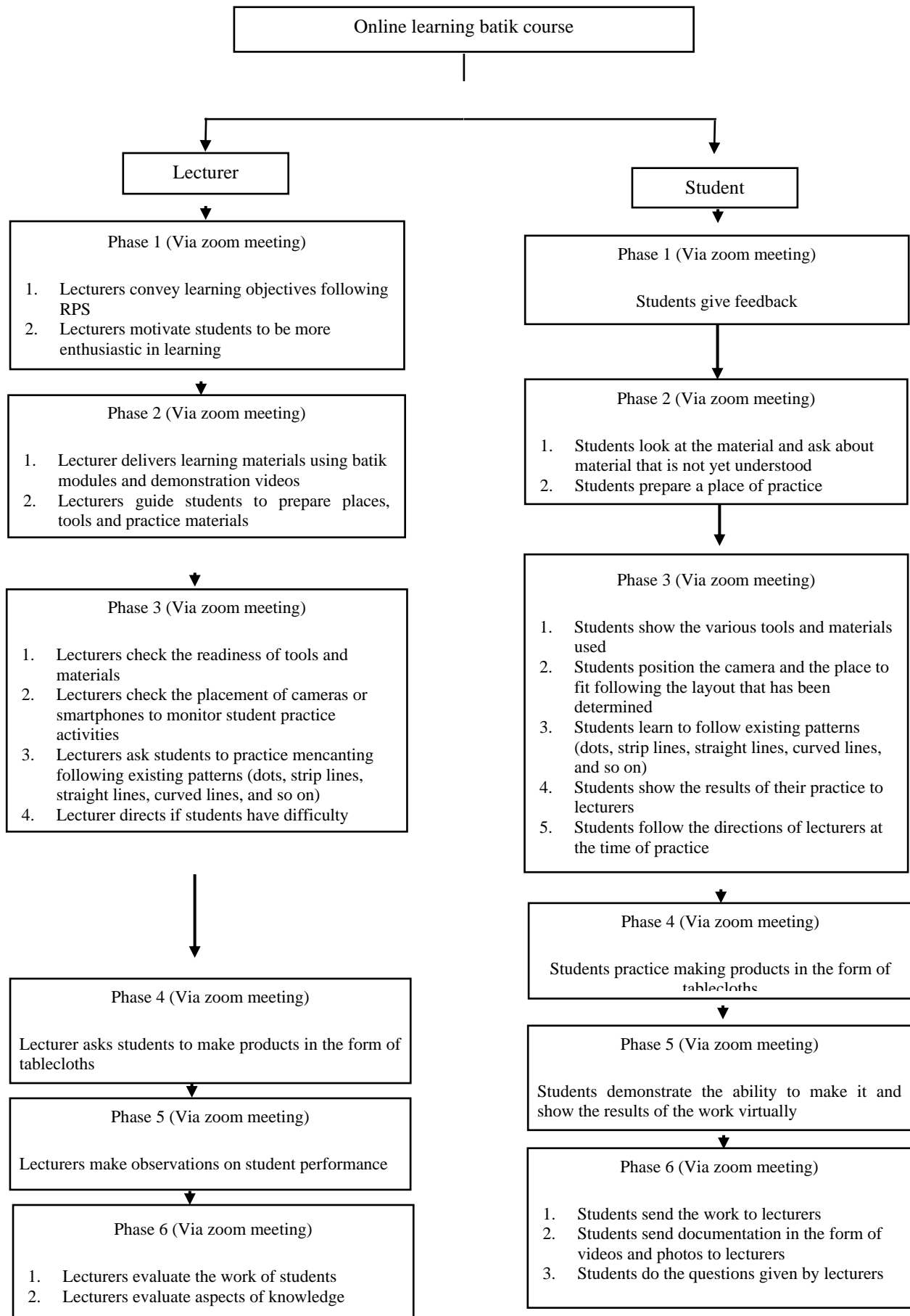

Figure 3. Test Steps for Online Learning for Batik Courses

e.   Evaluation

After going through the application stage, the results of assessments from users and the results of material availability by students. At this stage, an evaluation is carried out related to product development that aims to revise the product according to the evaluation results and unmet needs. Formative evaluation is carried out in the development stage, which aims to develop learning, validation and revision models. The formative evaluation aims to ensure model objectives are achieved and to revise the learning model. Summative evaluation is carried out to find out the effectiveness of online learning models.

Data Analysis Results

Test data analysis requirements are required to find out whether we can continue data analysis for data testing in research or not. This prerequisite test is also required on some data analysis techniques. In the analysis of the effectiveness test (t test), the data must come from normally distributed populations and homogeneously compared groups.

The normality test aims to determine whether the data used is normal or not, both in control and experiment groupes. The significance level used is 0.05, so if the score is significant > 0.05, then the data is normal distribution, while if the significant score is < 0.05, the data is distributed abnormally. The normality test in this study was conducted with IMB SPSS 16.0 software using Kolmogorov Smirnov and Shapiro Wilk. Here are the data of post-test normality test results between the experiment group and the control group:

Table 1. Normality Test of Student's Batik Practice Learning Results

Group		Sig. Kolmogorov-Smirnov[a]	Sig. Shapiro-Wilk
Pre Test	Experiment	0.200	0.531
	Control	0.200	0.327
Post Test	Experiment	0.156	0.065
	Control	0.146	0.130

Based on Table 1, the normality test results of student learning outcomes have a significance score (Sig.), as shown in the table above, so that it can be concluded the significance score > 0.05, which means normally distributed data.

The homogeneity test in this study used the homogeneity of variances test with a significant = 0.05. If the score is significant > 0.05, the acceptance criteria are considered homogeneous, while if the significant score is < 0.05, the data is said to be not homogeneous (Setyawarno, 2016: 27). Here are the post-test homogeneity test results data between the experiment group and the control group:

Table 2. Homogeneity Test of Student's Batik Practice Learning Results

	Group	Levene Statistic	Sig.
Pre test	Based on Mean	0.361	0.555
	Based on Median	0.355	0.559
	Based on Median and with adjusted df	0.355	0.560
	Based on trimmed mean	0.344	0.565
Post test	Based on Mean	0.115	0.739
	Based on Median	0.284	0.601
	Based on Median and with adjusted df	0.284	0.603
	Based on trimmed mean	0.137	0.716

Based on table 2, the homogeneity test results based on the mean pre-test show a score of 0.555 which means the data > 0.05, so it can be concluded homogeneous data. At the same time, the score based on the mean post-test shows a significance score of 0.739, which means the data is> 0.05, so we can conclude that the data is homogeneous.

The Effectivity of the Model

The effectiveness of the online learning model in this study was assessed from the aspect of differences in student learning outcomes of the experimental and control groups on knowledge competence, attitude competence, and skill competence. Field trials were conducted to obtain information on the impact of learning so that the final revision of the product could be carried out. The research subject, namely the experimental group, was given learning treatment with an online learning model. Materials and demonstrations are provided online through video conferencing facilities. After passing the treatment, an assessment of the impact of learning aspects of

knowledge through a google form, attitudes, and skills through online practice observations and student work.

While the control group uses an offline learning model, materials are provided face-to-face, and lecturers conduct demonstrations. Effectiveness test analysis is done by analyzing comparisons between the experiment group and the control group. We can conclude that online learning models can increase student learning outcomes by paying attention to this learning outcome data.

The N-gain test is calculated based on the difference in pre-test and post-test scores. The N-gain test on this study was conducted with the help of the SPSS program. The N-gain score in percentage form (%) is contained in the appendix of the N-gain test output table.

Table 3. N-Gain test

	Experiment Group	Control Group
	N-gain Score (%)	N-gain Score (%)
Average	63.69	49.29
Minimum	38.78	30.23
Maximum	87.5	80

Based on the calculation of the N-gain score, the average N-gain score for the experiment group is 63.69 or 64%, with an N-gain score of at least 39% and a maximum N-gain score of 87%. Meanwhile, the control group is 49.29 or 49%, with a minimum N-gain score of 30% and a top N-gain score of 80%. The score is then interpreted with an interpretation table of the effectiveness of N-gain. It means that the online learning model of batik courses is effective enough to improve students' skills.

Table 4. T-Test Results for N-Gain Data

Data	Levene statistic	T test	Taraf signifikansi
NGain_Persen	0.472	1.740	0.099

The T-test is used to determine whether there is a significant difference between the post-test score in the experiment group and the control group. The independent test results of the T-test sample can be seen in the appendix of the separate test output table of the T-test sample.

Based on the output table above, the significance value (Sig) of Levene's Test for Equality of Variances is 0.472 > 0.05. Then it can be concluded that the variance of N-Gain (%) for the experiment and control group is the same or homogeneous.

Based on the results of the calculation obtained the value T count N-gain_Persen = 1,740 with the score T table on (df = 18; a = 5%) is 1,734. Because the T count is larger than the T table, so what can conclude that before being given treatment using the batik course online learning model, the state of the two groupes is no different.

The independent test sample T-test knew sig value (2-tailed) is 0.099 > 0.05. Thus, there is no significant effectiveness difference between the use of online learning model batik courses with offline learning methods.

The online learning model of batik courses was developed from Anderson's online learning model by utilizing the website platform for the learning process. The design of online learning batik courses was initiated by identifying students' learning needs during the disaster (covid-19 pandemic). Where students still have to be equipped with motor skills, namely the skill to reach the CPL that has been determined. The learning model is developed based on the conditions of the research environment, where the learning process has not utilized existing modules and media.

This online learning model contains six components, namely: (1) online learning batik courses; (2) PBK curriculum (SKKNI Batik 104/2017); (3) Elena; (4) assessment of online learning outcomes; (5) knowledge; (6) skills; (7) attitude; and (8) competent students. The PBK curriculum and Elena support this online learning process as a learning website equipped with various learning facilities in uploading and downloading materials, messages for discussion, teleconference media, and assignments. What carried out the learning activities gradually and repeatedly following the theory of Charles Allen Prosser. Learning outcomes are reviewed through three aspects: knowledge, attitude and skills. After going through the assessment, whether the student is competent through competency tests can be concluded.

The feasibility of product development needs to be studied to evaluate the success of development activities. The feasibility study of model development results is based on expert observation sheets of learning models. A product's

validity can be determined based on the results of validation activities (Azwar, 2014). The validity of the learning model developed is reviewed from the development background, model components, and the flow of an implementation of the learning model.

After a validation test, what concluded that the online learning model of batik courses has become the final product and is very feasible to use by students to increase the effectiveness of online learning. The conclusion of whether or not this learning model is obtained from the validation of 2 expert learning models. Based on the data that has been presented in the results of the study, the two validators agree on the online learning model of batik courses. It can conclude that the online learning model is feasible and valid with improvements and worthy of continuing the trial of the learning model in batik courses.

The implementation of this online learning model includes theoretical learning and practical learning. Theoretical learning is carried out through a zoom meeting that is connected to the website, namely Elena. In the first stage, students explain to the lecturer the definition of written batik and the process of making written batik, such as making reng-rengan, klowongan, ngiseni, nerusi, nutup and mopok. Introduction of tools and materials used to make batik writing and check the quality of batik writing results. The explanation process by the lecturer is equipped with PBK module facilities (concentration of making batik) and video demonstrations on how to make batik. Students use the rise hand and chat facilities to conduct discussions during the learning process with the zoom meeting. After the learning activities with the zoom meeting are over, students use the chat facility on elena.

Practice learning is carried out through zoom meetings connected to elena. Students prepare tools and materials to make batik tulis (tools and materials sent from the batik laboratory of Semarang State University). The students in their respective homes determine the location of the practice place. Students design the position of the workplace and the camera according to a predetermined layout. Students use aprons to protect themselves during practice activities. The practice starts from turning on the stove, heating the night, choosing the size of the canting, chalking the night on the cloth, adjusting the stability of the night heat, and checking the results of the cantingan. Lecturers monitor every process carried out by students by showing the results of their cantingan on camera.

The student's knowledge assessment was done hammering the google form uploaded to Elena. At the same time, the evaluation of attitudes is assessed directly along with skills during the practice process. The results of student work are sent to lecturers to get assessment and input from lecturers. In the application process, this online learning model occurs interaction between lecturers with students, students with students and students with materials.

The learning outcomes of the experimental and control group skills in each student's initial and final practice experienced a relatively high increase. The average student learning outcomes in the experiment group amounted to 62.8 and increased after treatment with the online learning model of batik course to 85.3. While in the control group, the initial skill score of the practice amounted to 63.4 and increased to 80.1. Study outcomes in the experiment group had relatively higher scores compared to control types. It is because practical group students can access the material anytime and anywhere to learn more optimally. Experiment groups use their tools and practice materials, so they have no trouble storing tools, conditioning the workplace and applying practical work attitudes. Students of the experiment group have their tools at home, and students can freely practice at any time. While the control group students only practice during learning hours only when in the village. At the practice process, experiment group students can focus and develop creativity because they can condition the workplace as they wish in their homes. Control group students must share tools with other students when practising in the village, leading to a lack of focus.

This study proves an increase in student learning outcomes between the experiment group and control group, thus showing that the products developed can impact students' academic achievement in the practice of sedation. The effectiveness of learning outcomes in aspects of skills was demonstrated through the results of the N-Gain test in experiment group by 64% and control group had an average of 49%, which means the online learning model of batik course is effective enough to improve students' skills. Meanwhile, the independent T-test results showed that the experiment and control groups were homogeneous or the same. Before being given treatment using the online learning model, there was no difference between the two groups. In this study, the data distributed after the T-test concluded that it was quite effective and insignificant.

CONCLUSION

Based on the research results, it can be concluded that the online learning model of batik courses is worth using and effective enough to

improve practical skills for students. The results of this study agree with research conducted by Anggita (2020) that online learning in microbiology practicum courses during the covid-19 pandemic is quite effective. However, there is no significant difference in effectiveness compared to offline learning. To get maximum learning results, should use a combination of online and offline learning or blended learning.

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