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# Assessment of Students' Absorption of Printed Graphic Design Material Using the Blended Learning Model

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## A B S T R A C T

This research is motivated by the problems that researchers encountered in the field, namely the student absorption of Printed Graphic Design, is still lacking. Therefore, there is a need for a learning model that can help improve students understanding of the material combining vector-based image and text. One of the alternatives used by researchers to overcome this problem during the Covid-19 period is by using a blended learning model. This study aims to prove the doubts about student' understanding ability of Printed Graphic Design materials. To achieve good results participants used the class action research method from Kurt Lewin, which states that in one cycle there are four main steps, namely (1) planning, (2) action, (3) observation, (4) reflection. The learning outcomes of the first cycle were not in line with expectations because students who scored ≥ 75 is only 22.86%, while the expected value if students who scored ≥ 75 had achieved completeness ≥ 75%. Meanwhile in cycle II, there is an increase in learning outcomes where the results are in accordance with expectations because students who score ≥ 75 are more than 75% of the total number of students, which is 100%.

## A R T I C L E   I N F O

# 1. INTRODUCTION

2020 has been a tough year, and Indonesia is still being hit by the Covid-19 pandemic. Covid-19 is an infectious disease caused by acute respiratory syndrome corona virus 2 (server acute respiratory syndrome corona virus 2 or SARSCoV -2). This virus is a family of Corona viruses that can attack animals. When attacking humans, Corona viruses usually cause respiratory tract infections, such as flu, MERS (Middle East Respiratory Syndrome), and SARS (severe acute respiratory syndrome). Covid-19 itself is a new type of corona virus that was discovered in Wuhan, Hubei, China in 2019.

The Covid-19 case in Indonesia was detected on March 2, 2020, when two people were confirmed to have contracted it from a Japanese citizen. Until now, 15 June 2020, Indonesia has reported 39,294 positive cases, so it ranks second in Southeast Asia after Singapore and before the Philippines. Covid-19 has had many good and bad impacts on all living things and the universe. The government has made every power and effort to minimize the transmission of Covid-19, including limiting school offline activities.

One form of alternative learning that can be implemented during the Covid-19 emergency is online learning (Moore *et al.,* 2011). Online learning is learning that uses internet networks with accessibility, connectivity, flexibility, and the ability to bring up various types of learning interactions. Research conducted Zhang *et al.* (2004) shows that the use of the internet and multimedia technology can change the way knowledge is conveyed and can be an alternative to learning that is carried out in traditional classrooms.

Online learning in its implementation requires the support of mobile devices such as smartphones, tablets and laptops that can be used to access information anywhere and anytime (Gikas & Grant, 2013). The use of mobile technology has made a major contribution in the world of education, including the achievement of distance learning goals (Korucu & Alkan, 2011). Various media can also be used to support the implementation of online learning. For example, virtual classes use Google Classroom, Edmodo, and Schoology services (Enriquez, 2014) and instant messaging applications such as WhatsApp (So *et al.,* 2016). Online learning can even be done through social media such as Facebook and Instagram (Kumar, 2018).

Based on official letter by Indonesia' Ministry of Education Number 4 of 2020 Concerning the Implementation of Education Policy in an Emergency Period of the Spread of Corona virus Disease (Covid-19) point 2, namely the learning process from home, is carried out with the following conditions:

(i)     Learning from home through online/distance learning is carried out to provide a meaningful learning experience for students, without the burden of completing all curriculum achievements for class promotion and graduation.

(ii)    Learning process can be focused on life skills education, including regarding the Covid-19 pandemic.

(iii)   Learning activities and assignments carried out at home can vary between students, according to their individual interests and conditions and should also consider the gap in access/study facilities at home.

(iv)   Evidence or productivity of learning from home is given qualitative and useful feedback from the teacher, without being required to give a quantitative score/value.

This results in the process of teaching and learning or learning which is usually carried out in the classroom, must be carried out in their respective homes through the virtual world, so it becomes more of a challenge for students and educators to reach goals from the learning itself, especially vocational learning, such as the subject of Printed Graphic Design. Students

find it difficult to receive practical material because no one directs or instructs the learning itself.

Each lesson must have learning objectives, learning objectives are a behavior that students want to achieve or can carry out according to their competence. Several factors that must be considered in implementing the teaching and learning process, based on Dewey's theory (Romiyadi, 2009) include the following: (i) The presentation of the concept must prioritize understanding; (ii) The implementation of the learning process must pay attention to intellectual readiness; and (iii) Students' absorption of the material presented.

Sudirta (2006) states that absorption is one aspect to measure student learning completeness. Indonesian student has obstacles to achieving learning mastery because the absorption capacity is still low in several subjects. In addition, based on the results of the CAR carried out Kartiningsih (2019), the reasons for low student learning outcomes can be influenced by the following factors: (i) Use of inappropriate learning approaches; (ii) Less varied teaching methods; (iii) Students' thinking skills are less than optimal; and (iv) Utilization of the environment, teaching aids and learning support is not optimal.

Based on the explanation above, it is known that students' absorption power and teaching methods that are less varied are several factors that influence student learning outcomes and the achievement of learning objectives.

The learning method is one part of the learning model. If the approaches, strategies, methods, techniques, and tactics of learning have been assembled into a unified whole then what is called a learning model is formed. The learning model used in the teaching and learning process has an important role in determining the success of learning. Therefore, teachers are required to be able to apply effective and efficient learning models so that they can increase student participation in teaching and learning activities. Thus, to overcome the problems above, it is necessary to have a learning model. One alternative learning model that can be used is Blended Learning.

One of the learning methods that can be applied during the Covid-19 pandemic is the Blended Learning method. The blended learning model combines various teaching methods and strategies that utilize virtual technology. This model can be applied effectively by adjusting the conditions agreed upon by all parties. With this blended learning model, learning takes place more meaningfully because the learning materials provided are designed in such a way that students understand them more easily. This model can be carried out not only during the face-to-face learning process, but also during non-face-to-face activities, both in the school environment, at home, and in other places with internet access (Dobrzański & Brom, 2008).

Using learning with a blended learning model can increase student learning time. This allows students to repeat their learning material. Students can improve their mastery of subject matter by repeating learning material several times, practicing questions both independently and in groups. In addition, this blended learning simplifies and speeds up the process of non-stop communication between teachers and students. One way that can be used to carry out the learning process online is to use Google Classroom. Utilization of Google Classroom can be done through multiplatform, namely through computers and through mobile devices.

Through the Google Classroom, it is assumed that learning objectives will be more easily realized and full of meaning. Therefore, the use of Google Classroom makes it easier for teachers to manage learning and convey information precisely and accurately to students (Hakim, 2016). Through learning with blended learning, students feel comfortable and active in constructing their knowledge. Teachers can take advantage of various features found in

Google Classroom such as assignments, grading, chats, and course archives. This research is also expected to provide a solution to the method that has been applied in class so far, namely the conventional method where lecturers dominate learning activities either by lecture method or assignment method. Implementation of learning with Google Classroom makes it easier to evaluate the implementation of the teaching and learning process both in class and outside the classroom. Learning can be combined between conventional methods and e-learning or often called Blended Learning.

Based on the explanation above, the writer is conducting research at one of the Vocational High Schools in the city of Bandung entitled "Assessment of Student Absorption of Printed Graphic Design material using the Blended Learning Model".

## 2. METHODS

This study contains an explanation of research methods, research plans and procedures. The research method is a scientific way to obtain data with specific goals and uses. While the research procedure is a series of activities carried out regularly and systematically to achieve research objectives.

This study has the main objective, namely, to prove against doubts about students' absorption abilities. This research is a Classroom Action Research (Blended Learning) which is conducted to solve learning problems in the classroom. To obtain good results, participants used the class action research method from Kurt Lewin, which stated that one cycle consists of four main steps, namely (1) planning, (2) action, (3) observation, (4) reflection (Vera & Hambali., 2021).

The procedure for this Classroom Action Research uses a form of collaboration. A teacher becomes a collaborator who carries out observations in class. Researchers carry out learning designed by researchers themselves and are fully responsible for this Classroom Action Research (Dewi, 2017).

## 3. RESULTS AND DISCUSSION
### 3.1. Pre Action-Data Exposure

Preliminary study on Monday, September 3, 2020. Researchers held a meeting with the Principal, Deputy Principal, Deputy Head of the Expertise Program and the MM-DGP class Homeroom Teacher. During the meeting the researchers conveyed their intention to conduct research at SMK Negeri 4 Bandung. The principal welcomed the researcher's wishes and gave permission to carry out the research. Furthermore, the Head of School assign the Deputy Head of the Expertise Program to emulate further plans. On this occasion, the researcher and the other Multimedia Teachers discussed plans for research activities to be carried out and agreed on several important matters.

The sample was the students of Class XI MM-DGP which consisted of 35 students and were the research class themselves. The implementation time is on the days and hours of Multimedia lessons according to the schedule that has been prepared by the school. This is done so as not to interfere with the learning process of other subjects. In this case, the researcher acts as a teacher or executor of the action.

In this study, the authors collaborated with a design teacher, Ivan Irianto, S.S. This collaboration aims to facilitate the learning process of Multimedia with the topic of Making Vector-Based Text Combination Image Designs. Researchers carry out learning activities based on the Learning Implementation Plan (RPP) that has been prepared previously.

### 3.2. Data Display of Cycle I

Classroom Action Research (CAR) was carried out in two cycles with two meetings in each cycle. The 1st meeting was held on Monday, 07 September 2020 and the 2nd meeting was held on Monday, 14 September 2020. The material discussed at the 1st meeting was about the concept of a combination of vector-based images and text, both in terms of meaning and the purpose of making it, as well as the steps for creating a combination of images and text.

At the 2nd meeting, an explanation was given on how to complete the drawing design and demonstrated how to use the tools that would be used to complete the text combination drawing design. At the 2nd meeting an assessment was held of the activities of students and teachers towards the process of teaching and learning activities carried out by two observers.

The following will explain the planning stages of the actions carried out and the stages in implementing the actions (see **Table 1**).

### 3.2.1. Action Planning Stage

The action planning stage carried out in this study consisted of: Develop a Learning Implementation Plan related to the material, designing learning scenarios that can activate students, and designing a data collection tool in the form of a Practice Assessment Sheet which can be seen in the attachment section of this PTK.

### 3.2.2. Action Implementation Stage
3.2.2.1. Meeting 1

Meeting 1 was held on Monday, September 7, 2020. The class started with the student using Corel Draw. Students immediately make drawing designs even though they are only monitored via Google Meeting. The time used is 45 minutes (one hour lesson). After the design is complete, students examine the design that has been made according to the correct sequence of work steps.

3.2.2.1. Meeting 2

Meeting 2 was held on Monday, September 14, 2020. The competencies discussed were how to complete drawing designs and how to use right tools based on student' questions. Students then are assigned exercises using Corel Draw. When finished, students design a text and image combination, using insert images feature and decorate text. The teacher's activities, apart from presenting the material, are guiding students in completing image designs through WhatsApp group media, as well as observing student activities in completing design assignments. In general, student activities in cycle I consisted of:

(i) Preliminary activities: Students prepare materials in the form of Corel Draw file (.cdr) in making drawing designs, the researchers also provide download links for students as well as other material about making text and image combination to make it easier for students when practicing drawing designs later, the researcher conveys the learning objectives regarding the completion technique of vector-based text combination image designs. However, due to online conditions, the researchers instructed them to divide the groups in making the design, especially since some participants did not have supporting facilities such as laptops and Corel Draw program, and give appreciation to student who ask questions and answers.

(ii) Core activities: Students together with their friends discuss the designs that have been made, and how to use the right tools and text. The students then complete the design in digital form.

(iii) Final Activity (closing): Students collect the results of the designs they have completed in accordance with a predetermined time and students make a list of group names and group members, whose groups have completed the assignments.

### 3.2.3. Reflection

After the learning process in cycle I was completed, the researcher and the observer teacher discussed the results of the observations to determine the success rate of the research. Discussion of the results of observations was carried out to find the advantages and disadvantages contained in cycle I. Reflection was carried out by looking at the entire process of student practice activities. Following are the results of the evaluation of activities in cycle I:

### 3.2.3.1. Meeting 1

At meeting 1, namely during the equipment preparation process, student errors were found, namely when downloading the Corel application which could not be installed so it could not be used for designing. In this preparation process, many of the students did not have facilities such as laptops as tools for designing.

### 3.2.3.2. Meeting 2

At meeting 2, students are assigned to one design of images, combined with text. Researchers prepare and provide pictures and templates to facilitate student. At this meeting, there were still many students who designed without using appropriate tools so that the comparison of design drawings did not match the predetermined sizes.

**Table 1.** Learning Outcomes Cycle I

| Number of Student | Average Value | Value ≥ 75 | Value < 75 | Finished Study | Not Finished |
|---|---|---|---|---|---|
| 35 Person | 72.86 | 8 Person | 27 Person | 22.86% | 77.14% |

### Information:

Passing grade: 75, Average value = (Total student scores: Number of students) = 2550: 35 people = 72.86. Completed Learning = Number of students with passing grade scores x 100% = 8 x 100% = 22.86%. Students who scored ≥ 75 (Passing Grade) were 8 students, resulting in 22.86% of the population. Students who scored <75 were 27 students, resulting in 77.14% of the population. Based on these student learning outcomes, this is not in line with expectations because students who score ≥ 75 only achieve 22.86%, while the expected value is if students who score ≥ 75 have achieved mastery ≥ 75%.

### 3.3. Data Display of Cycle II

Classroom Action Research in cycle II was held in two meetings, namely on Monday, 05 October 2020, and Monday 12 October 2020 with the following description (see **Table 2**):

### 3.3.1. Meeting t 1

Classroom Action Research in cycle II was held in two meetings, namely on Monday, 05 October 2020, and Monday 12 October 2020 with the following description:
Meeting 1 in cycle II consists of:
a. Preliminary activities, namely:

(i) The researcher conveys the learning objectives: To make design images according to the specified criteria.

(ii) The researcher's appreciation reminds students to prepare equipment for designing text and images combination, such as laptops and Corel Draw program.

(iii) The researcher assigned students to see several online references about making vector-based images as a reference when designing.

b. Core activities, namely:

(i) Students check the completeness of their respective equipment before starting to design with the guidance of the teacher.

(ii) Students design images according to the specified criteria.

(iii) The teacher guides students in designing pictures.

(iv) Students finish up the designs that have been made.

c. Final Activities, namely:

(i) Students write a description as an analysis of the drawing design.

(ii) Students are assigned to prepare materials and add text and image objects to complete the design at the next meeting.

### 3.3.2. Meeting 2

Meeting 2 was held on Monday, 12 October 2020 consisting of:

a. Preliminary activities, namely:

(i) Learning begins by discussing the results of the design and check the materials used for the text combination drawing finishing technique.

(ii) Each group representative takes turns reading the analysis of the design drawings that have been made (± 20 minutes).

b. Core activities, namely:

(i) The teacher assesses the results of the student's design analysis.

(ii) Students complete the drawing design with the guidance of the teacher.

c. Final Activities, namely:

(i) The teacher announce the results of student designs.

(ii) Students are assigned to finish up the designs that have been completed and are ready to be assessed.

### 3.3.3. Reflection

After the entire learning process in cycle II was completed, the researcher and teacher observers discussed the results of observations to determine the success rate of the research by referring to the tasks that had been completed by students in accordance with the passing grade score of 75.

During the learning process in cycle II, students looked active, and the designs made were in accordance with the right techniques using the right tools. In addition, in this second cycle, students can complete design drawings according to the correct technique and on time.

**Table 2.** Learning outcomes cycle II

| Number of Student | Average Value | Value ≥ 75 | Value < 75 | Finished Study | Not Finished |
|---|---|---|---|---|---|
| 35 Person | 81.43 | 35 Person | - | 100% | 0% |

**Information:**

Passing grade: 75, Average value = (Total student scores: Number of students) = 2850: 35 people = 81.43. Completed Learning = Number of students with passing grade scores x 100%

= 35 x 100% = 100%. Students who scored ≥ 75 (passing) were 35 students, with 100% completeness. Students who scored < 75 as many as 0 students, with 0% incompleteness.

Based on these student learning outcomes, in cycle II there was an increase in learning outcomes where the results were in accordance with expectations because students who scored ≥ 75 were more than 75% of the total number of students, namely 100%.

### 3.4. Discussion

The discussion that will be presented is an analysis of the data obtained by researchers during research where the data analysis techniques used include analysis of test data by conducting tests to determine student abilities so that the writer can plan actions to be taken in improving the learning process. Learning outcomes data obtained based on competency tests in the form of practice questions, each item is given a weight according to the level of difficulty of the item with a scale of 0 to 100. Using this analysis, it can be determined the results and level of student learning completeness as contained in the table in sheet attachment 1 and has been briefly presented in **Tables 2** and **3**.

From the data in **Tables 2** and **3** it can be analyzed at the level of development of learning outcomes from cycle to cycle based on cognitive values, data analysis will be shown in **Table 3**. From the data in Table 3, there is an increase in student learning outcomes from cycle to cycle. In addition to using test data analysis, researchers also used observation data analysis. Observation data was taken from observations during the learning process using practice assessment sheets.

**Table 3**. Analysis of the development of learning outcomes from cycle to cycle.

| Learning Outcomes | Quantity |
|---|---|
| Increase | 35 Person |
| Still | - |
| Decrease | - |

From the two **Tables 4 and 5**, in the first cycle of activities the aspect that has the lowest percentage lies in the technical aspect of using the tool. This supports the results of observations made that many students do not use the equipment properly, for example when using tools to make design plans. However, in the second cycle, there has been an increase in the accuracy of tool placement, although not too significant. Based on these data, it is hoped that continuous improvements can be made to these aspects in the future.

**Table 4**. Practice assessment sheet Cycle I.

| No | Assessment Aspect | Assessment Criteria | | Weight | | % |
|---|---|---|---|---|---|---|
| | | Complete | Not Completed | Max Score | Gain Score | 100% |
| 1 | Planning | | | | | |
| | - Preparation of tools and materials | | | 5 | 3.82 | 76.54 |
| | - Usage Technique | | | 10 | 6.09 | 60.91 |
| 2 | Process (How it Works) | | | | | |
| | - Design according to the topic | | | 30 | 22.05 | 73.48 |
| | - Manufacturing Technique | | | 25 | 19.59 | 78.36 |
| 3 | Results | | | | | |
| | - Completion Technique | | | 20 | 13.86 | 69.92 |
| | - Neatness | | | 10 | 6.18 | 61.82 |
| | **Total** | | | **100** | | |

**Table 5**. Practice assessment sheet cycle II.

| No | Assessment Aspect | Assessment Criteria | | Weight | | % |
|---|---|---|---|---|---|---|
| | | Complete | Not Completed | Max Score | Gain Score | |
| 1 | Planning | | | | | |
| | - Preparation of tools and materials. | | | 5 | 4 | 80 |
| | - Usage Technique | | | 10 | 6.59 | 65.91 |
| 2 | Process (How it Works) | | | | | |
| | - Design according to the topic. | | | 30 | 23.77 | 79.24 |
| | - Manufacturing Technique | | | 25 | 20.27 | 81.09 |
| 3 | Results | | | | | |
| | **Total** | | | **100** | | |

## 4. CONCLUSION

Based on the research that has been done, it can be concluded that: (i) Giving continuous assignments can improve students' designing skills; (ii) Each task given must be collected on time and checked carefully; (iii) The lack of equipment for designing, as well as the use of tools that are not appropriate can hinder the smooth creation of drawing designs; and (iv) The proportion of objects used to design the image is adjusted to the right size according to the task given.

## 5. AUTHORS' NOTE

The authors declare that there is no conflict of interest regarding the publication of this article. The authors confirmed that the paper was free of plagiarism.

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