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# PROBLEM BASED LEARNING MODEL BASED ON ONLINE INTERACTIVE MULTIMEDIA TO IMPROVE UNDERSTANDING OF DANCE MOVEMENTS

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## ABSTRACT

The focus of the problem in this research is students' weak understanding, especially understanding of dance movements, which is caused by teachers rarely using learning models during the learning process, so the learning objectives and provision of material are not optimal, resulting in learning outcomes not being by students' actual abilities. This research aims to find out the picture after implementing the online interactive multimedia-based Problem-Based Learning model. The method used by researchers in this research is an experimental method with a quantitative approach. The research design used was one group pretest and posttest. The reason this method was used was that this research only focused on one group, so the treatment given was more intense and obtained maximum results. This research was conducted at SMPN 12 Bandung with 31 students in class VII G. To find out the causal relationship between variables on dance movements after a Posttest was given to determine understanding of dance movements after being given treatment. The use of an online interactive multimedia-based Problem-Based Learning model has been proven to increase students' understanding of dance movements after research was conducted by comparing the results of students' pretest and posttest. The increase in understanding of dance movements can be seen from the difference in the average pretest and posttest scores. This is also proven by the hypothesis test carried out, the results of the t-test analysis show t-count > t-table or 19.2 > 1.697, meaning that H1 can be accepted and H0 is rejected.

## ARTICLEINFO

## 1. INTRODUCTION

Dance learning is one way to achieve changes in behavior for the better in cognitive, affective and psychomotor aspects.

Theoretically, according to(Bloom, 1956)in his book entitled "Taxonomy of Educational Objective: Cognitive Domain" and(Bloom, 1964)"Taxonomy of Educational Objective: Affective Domain", that:

This taxonomy classifies educational goals or objectives into three domains (Area domain): 1) cognitive, relating to aspects of knowledge, reasoning or thought; 2) affective, abilities related to emotional aspects, such as feelings, interests, attitudes, adherence to morals and so on; and 3) psychomotor, related to aspects of skills.

In Bloom's taxonomy there are six levels of the cognitive domain, namely knowledge, understanding, application, analysis, evaluation and creation. Of the six levels, the learning objective in this research is understanding, with the following indicators of understanding: 1) explaining, 2) stating, 3) categorizing, 4) discussing, 5) comparing, 6) exemplifying, and 7) concluding. Students can be said to have high understanding, if students are able to carry out indicators in learning.
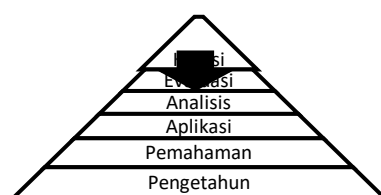
**Figure 1. Levels of Bloom's Taxonomy**

**Table 1. Indicators of Understanding Based on**
Bloom's Taxonomy

| | | |
|---|---|---|
| Estimate | Explain | Categorize |
| Characterize | Detailing | Associate |
| Compare | Count | Contrasting |
| Change | Maintain | Elaborate |
| Interweave | Differentiate | Discuss |
| Dig | Example | Explain |
| Putting it forward | Patterning | Expand |
| Conclude | Predict | Summarizing |
| Explain | | |

**Table 2. Indicators of Understanding Dance Movements**
**Based on Bloom's taxonomy**

| Comprehension Indicator | Understanding indicators dance moves |
|---|---|
| **Explain** | Students are able to explain the meaning of dance movements |

| | |
|---|---|
| **Putting it forward** | Students are able to express the elements of dance movements |
| **Categorize** | Students are able to categorize elements dance moves |
| **Discuss** | Students are able to discuss the elements of dance movement |
| **Compare** | Students are able to compare the elements of dance movements with the movements/activities of everyday life |
| **Example** | Students are able to model movement through dance moves |
| **Conclude** | Students are able to summarize dance movements through simple speech and writing |

The implementation of learning carried out by teachers in schools still does not reach expectations. This is in line with opinion(Kurniawan, 2018)The educational problem he observed in a school was a lack of quality teachers. It can be seen that the learning that is built is less effective, resulting in students getting bored and ultimately not mastering the learning material.

So that the learning process is more effective and efficient, a learning model is needed that can help teachers in delivering the material. This is in line with thinking(Susilana, 2006)"Another important component that must be present in learning is the learning model." The Problem Based Learning model is a learning model that can be applied to support the 2013 curriculum which is included in the information processing model family. This model is also effective for teaching with high-level thinking processes that will help students process information and organize knowledge about the social world and its surroundings.

Not only learning models, teachers also need learning media. The use of learning media can be a communication tool for teachers and students to convey material well. However, there are problems that come from teachers regarding learning media. Limited use of learning media in schools is usually caused by a lack of facilities and the inability of teachers to utilize technological developments so that the existing learning media is less varied and boring.

Online learning is learning that is carried out without face-to-face contact through a platform. Online learning is very useful for overcoming certain situations where students and educators are hampered by face-to-face learning, such as what is currently happening with the COVID-19 pandemic in Indonesia which requires large-scale social restrictions (PSBB). According to(Melania, 2020)"Online learning tends to be responded positively by students because online learning is more relaxed, fun, flexible, efficient, short, practical, fast, precise, safe, easy, time-saving and energy-saving."

Based on the explanation above, the Problem Based Learning model can be an alternative model to support the implementation of the 2013 curriculum assisted by interactive multimedia as a learning medium. In his book(Amir & Taufik, 2009)states that "The Problem Based Learning Model is a useful model for increasing understanding of teaching material". One of the characteristics of the Problem Based Learning Model is that it provides problems related to everyday life, so it is very suitable for learning dance where students will more easily understand things according to the reality of their own lives.

Thus, the online interactive multimedia-based Problem Based Learning model can be used as an alternative in the dance learning process because it can train students to think critically to solve problems according to the material contained in the interactive multimedia created so that students' understanding of dance movements towards the material becomes better in accordance with each other's understanding. This research will be carried out by carrying out online learning to maximize the use of technology in the learning process in this research.

Based on the background that has been explained, this research aims to improve students' understanding of dance movements by implementing an interactive Multimedia-based Online Problem Based Learning Model at SMP Negeri 12 Bandung.

## 2. METHODS

Selecting descriptive qualitative research. The aim is, by means of data analysis, the description of the data collected is in accordance with what is in the field without intending to draw general conclusions. Apart from that, it is used to present an overview in the form of a detailed picture or to describe it systematically, concretely and precisely based on events that occurred when the research was being researched, namely online student dance appreciation learning in the creation process, explaining descriptively the process of optimizing online creative dance learning.

Research design includes research methods and approaches. The research design used in this research is pre-experimental design with a one group pretest - posttest design (one group initial test-final test) which uses experimental methods with a quantitative approach, so that only one group will receive intense treatment and structured to obtain maximum results.

### 2.1 Research Participants

Participants in this research included the Head and Deputy Head of the Curriculum Division of SMP Negeri 12 Bandung, teachers of Arts and Culture subjects of SMP Negeri 12 Bandung and students of class VII G of SMP Negeri 12 Bandung as subjects in the research.

### 2.2 Research Sample

The sampling technique used in this research is Probability Sampling with Cluster Sampling (Area Sampling) classification because it uses classes that have been formed without intervention by researchers in determining the number of members or composition of the class, with an effort to maintain a classroom atmosphere like normal learning.

. The sample in this research was students of SMP Negeri 12 Bandung class VII G with a total of 31 students consisting of 16 female students and 15 male students.

**Table 3. Student data at SMPN 12 Bandung Class VII G**

| Class | L | P | Amount |
|-------|---|---|--------|
| **VII G** | 15 | 16 | 32 |

### 2.3 Data collection technique

Data collection techniques used in this research are interviews, tests, observations, questionnaires and documentation.

First, researchers collected data or information through field studies by interviewing arts and culture subject teachers at SMP Negeri 12 Bandung. This field study was carried out to complete the information in the research. Second, the test in this study is the main data. The data consists of a pretest and posttest to determine understanding of dance movements before and after implementing the Problem Based Learning model based on Interactive

Multimedia online. To measure understanding of dance movements, the tests used in the pretest and posttest are multiple choice questions. The pretest for understanding dance movements consists of 20 questions, while the posttest for understanding dance movements consists of 25 questions. Third, observations were carried out to strengthen data regarding understanding of dance movements before the process and after implementing the online interactive multimedia-based Problem Based Learning model. Data collection using observation was carried out by researchers by observing according to the indicators of understanding dance movements on the observation sheet. Fourth, the questionnaire in this research was used to obtain supporting data. This questionnaire was given to students to obtain learning process assessment data regarding understanding dance movements using an interactive multimedia-based Problem Based Learning model. Fifth, documentation is carried out by researchers by collecting data from recordings, videos, photos and documents in the process of learning dance through an online, interactive multimedia-based problem-based learning model.

### 2.4 Instrument Development

The validity test in this research used the product moment correlation technique proposed by Arikunto (2010, p. 72). The product moment formula is as follows:

$$r_{xy} = \frac{N \sum XY - (\sum X)(\sum Y)}{\sqrt{\{N \sum X^2 - (\sum X^2)\}\{N \sum Y^2 - (\sum Y^2)\}}}$$

**Information:**

$r_{xy}$  = Correlation coefficient
$N$    = Number of respondents
X = Score for each item
$\sum X$  =Total student scores on each question item
$\sum Y$  =The total number of student scores

The interpretation of the validity coefficient is presented in the following table:

**Table 5.Interpretation of Validation Coefficient Values**

| Correlation coefficient | Criteria |
|---|---|
| **0.800 < 1.00**$r_{xy} \geq$ | Very good |
| **0.600 <**$r_{xy} \geq 0,800$ | Tall |
| **0.400 <**$r_{xy} \geq 0,600$ | Currently |
| **0.200 <**$r_{xy} \geq 0.400$ | Low |
| **0.00 <**$r_{xy} \geq 0,200$ | Very low |
| $r_{xy} \geq$**0.00** | Invalid |

The reliability test in this research usesThe calculation technique used in this research is the KR-20 formula.

$$r_i = \left(\frac{n}{n-1}\right)\left(1 - \frac{S_t^2 - \sum pq}{S_t^2}\right)$$

**Information:**

ri     = Reliability coefficient
n      = Number of samples
$S_t^2$     = Total score variance

p       = number of people who answered correctly

q       = number of people who answered incorrectly

These reliability results can be classified into five categories as follows:

**Table 6. Reliability Coefficient**

| | |
|---|---|
| **0.81 − 1.00** | **Very high reliability** |
| **0.61 − 0.80** | High reliability |
| **0.41 − 0.60** | Medium reliability |
| **0.21 − 0.40** | Low reliability |
| **0.00 − 0.20** | Very low reliability |

To determine the level of difficulty of the questions, researchers used the following formula:

$$Tingkat\ Kesukaran = \frac{mean\ item\ soal}{skor\ maksimum\ item\ soal}$$

The classification of levels of difficulty refers to the opinion of Arikunto (2010, p. 210), namely:

**Table 7. Classification of Difficulty Level of Question Items**

| Intervals | Difficulty Level |
|---|---|
| **0.00-0.30** | Hard |
| **0.31-0.70** | Currently |
| **0.71-1.00** | Easy |

## 2.5 Data analysis technique

Data analysis in this research uses statistical calculations and a Likert scale.

First. Statistical Analysis, divided into two, namely descriptive data analysis statistics using *Central Tundency*, namely by calculating the average (mean), middle value (median) and mode.

1. Average (mean)

$$\text{Mean } \overline{X} = \frac{\Sigma X_i}{n}$$

2. Middle value (median)

$$Me = x\left(\frac{n+1}{2}\right)$$

3. Mode, basically is the data that appears most often. There is no special formula for determining the mode in single data, just eye observation is enough.

Furthermore. Inferential data analysis statistics. researchers use parametric statistics, because researchers want to make conclusions or generalizations about the population. The type of statistics used is parametric statistics because the data analyzed in this research is interval data by testing the normality of the data and the t test.

1. Data Normality Test, Data testing in this research was carried out using the IBM SPSS 22 data processing program with the Shapiro-Wilk normality test. This test uses a small sample or a sample size of no more than 50 people.
2. t test, the stages for the t test are as follows:
   1) Determine the average value of the difference between the pretest and posttest on the question of understanding dance movements

   $$t = \frac{\bar{d}}{\left(\frac{s}{\sqrt{n}}\right)}$$

   2) Determining the deviation value of the difference between the pretest and posttest on the question of understanding dance movements

   $$d2 \quad = \frac{\sum d}{n}$$

   3) Determining the pretest and posttest t-count scores on the question of understanding dance movements

   $$s = \sqrt{\frac{n \sum d2 - (\sum d)2}{n\,(n-1)}}$$

   4) Determinetcount

   **If tcount > ttable**So H1 is accepted, and H0 is

Second, Likert scale analysis.The Likert scale is a scale used to measure the attitudes and views of individuals or groups of people regarding the phenomena or symptoms of education management(Kurniawan, 2018).
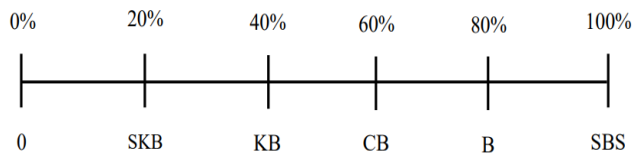


**Figure 2. Questionnaire Result Interval Categories**
(adapted from Sugiyono, 2014, p. 137)

Assessment criteria:
93-100 : If all indicators are achieved (Very Good = A)
84-92    : If one of the indicators has not been achieved (Good = B)
75-83   : If half of all indicators have not been achieved (Adequate = C)
51-74   : If many indicators have not been achieved (Poor = D)
≤ 50     : If all indicators have not been achieved (Very Poor = E)

Furthermore, data analysis techniques in interviews were carried out using a qualitative approach. After the data is collected, the data is reduced to select relevant data and then enters the data presentation stage which aims to combine all the information so that it can be described with existing facts. In the final stage, namely drawing conclusions, after sufficient data has been collected, a provisional conclusion is made, and after the data is completely collected, a final conclusion is made.

## 3. RESULTS AND DISCUSSION

Based on the results of interviews with arts and culture teachers and direct observations during teaching and learning activities, understanding of class VII G dance movements at SMPN 12 Bandung is still low, this is due to the teacher's learning process still being guided by the arts and culture package book and the lack of teacher skills in delivering the material. Apart from that, the learning process in the classroom tends to be monotonous and one-way, so that students will easily get bored and cannot follow the lesson well, which makes students' understanding, especially understanding of dance movements, somewhat lacking.

The results of the interviews and direct observations above are supported by the results of the pretest understanding of dance movements that the researcher carried out. Researchers gave students a test of understanding dance movements in the form of 20 multiple choice questions covering levels and floor patterns in dance movements.

This pretest data analysis was carried out using statistical analysis. The pretest score for understanding dance movements was obtained with an average score of 65, which is in criterion D "Not Good". In reality, during the online learning process teachers only give assignments or distribute material in the form of PDFs to students without providing prior understanding.

The researcher carried out several calculations regarding the mean, median and mode using statistical calculations, described as follows:

**Table 8. Pretest Scores from Lowest to Highest**

Pretest Value

| | | | | | | |
|----|----|----|----|----|----|----|
| 51 | 54 | 54 | 54 | 57 | 59 | 61 |
| 61 | 61 | 61 | 61 | 63 | 63 | 63 |
| 63 | 64 | 64 | 64 | 64 | 66 | 66 |
| 67 | 67 | 69 | 70 | 71 | 71 | 73 |
| 76 | 77 | 86 | | | | |

a. **Mean or average value**

$$\text{Mean}\, \overline{X} = \frac{\sum Xi}{n}$$
$$= \frac{2004}{31}$$
$$= 64.6 \sim 65$$

So, the average pretest score for understanding dance movements in dance learning is 65.

b. **Median or middle value.**

Given: n = 31

$$Me = x\left(\frac{n+1}{2}\right)$$
$$Me = x\left(\frac{31+1}{2}\right)$$
$$Me = x\left(\frac{32}{2}\right)$$
$$Me = x16$$

From the calculation above, it is obtained that the median is x16 or data in the 16th order. To find out the 16th data, look at the tableThe pretest score from lowest to highest is 64.

**c. The mode or value that appears frequently**

Based on the value table*pretest*from lowest to highest, it can be seen that the value 61 is the student's value that appears most often with a total of 5 times.

**d. Many internal classes**

$$K \quad = 1 + 3.3 \log n$$
$$= 1 + 3.3 \ (\log 31)$$
$$= 1 + 3.3 \ (1.49)$$
$$= 1 + 4.91$$
$$= 5.91 \sim 6$$

**e. Range (J)**

$$J \quad =_{max} - Xmin$$
$$= 86 - 51$$
$$= 35$$

**f. Interval class length**

$$c = \frac{J}{K} = \ \sim 6\frac{35}{6} = 5,83$$

**g. Frequency distribution table**

**Table 9. Pretet Frequency Distribution**
**Understanding Dance Movement**

| Class | Pretest Value | Midpoint (xi) | Frequency (fi) | xifi | Cumulative Frequency | Relative Frequency | Real Limits |
|---|---|---|---|---|---|---|---|
| 1 | 51 − 56 | 53.5 | 4 | 214 | 31 | 12.90 % | 50.5 |
| 2 | 57 − 62 | 59.5 | 7 | 416.5 | 31-4 = 27 | 22.58 % | 56.5 |
| 3 | 63 − 68 | 65.5 | 12 | 786 | 27-7 = 20 | 38, 70 % | 62.5 |
| 4 | 69 − 74 | 71.5 | 5 | 357.5 | 20-12 = 8 | 16.12 % | 68.5 |
| 5 | 75 − 80 | 77.5 | 2 | 155 | 8-5 = 3 | 6.45 % | 74.5 |
| 6 | 81 − 86 | 83.5 | 1 | 83.5 | 3-2 = 1 | 3.23 % | 80.5 |
| **Amount** | | 411 | 31 | 2012,5 | 90 | 100% | 393 |

The results of data analysis with statistics can be depicted as follows with a bar chart:
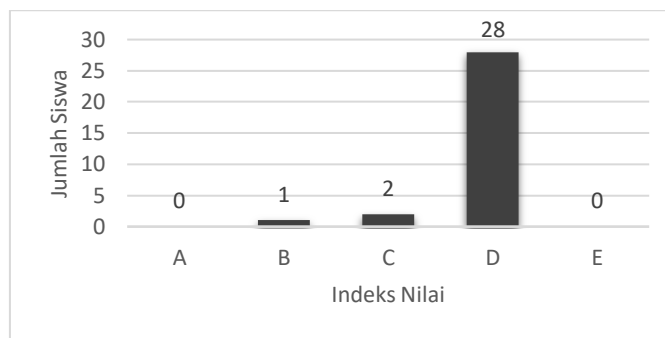
**Figure 3. Pretest Score Diagram**
**Understanding Dance Movement**

It is known from the diagram above that there were no students who got pretest grades A (93-100) and E (≤ 50), whereas 1 student got a grade of B (84-92), C (75-83) as many as 2 students. students and D (51-74) as many as 28 students with an overall average score of D "Not good".

The percentage level of understanding of dance movements before implementing the online multimedia-based Problem Based Learning model can be seen in the diagram below:
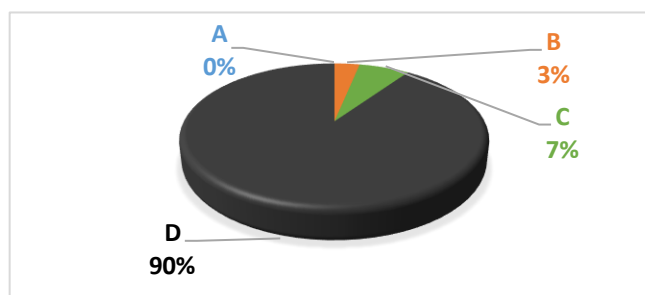


**Figure 4. Percentage diagram of the level of understanding of dance movements during the posttest**

The process of learning dance using an interactive multimedia-based Problem Based Learning model is guided by the lesson plans that researchers have previously created.

The researchers carried out online learning in class VII G of SMPN 12 Bandung using the WhatsApp, Quizziz and Zoom applications.

**Table 10. Implementation of the Problem Based Learning Model based on Interactive Multimedia Online**

| Syntax Project Based Learning Model | Description |
|---|---|
| **Phase I:** <br> **Student orientation to the problem** | The teacher conveys the learning objectives regarding the materialdance movements based on levels and floor patterns and explaining the tasks that will be carried out by students. And students pay attention to the explanation given by the teacher. |
| **Phase II:** | 1. The teacher and students conduct questions and answers related to the problem |

| Organizing students to study | 2. The teacher gives problems in the form of several pictures and videos that will be analyzed by students |
|---|---|
| **Phase III:** <br> **Guiding individual/group experiences** | 1. The teacher asks students to use interactive multimedia to find information about dance movement material based on levels and floor patterns. <br> 2. The teacher asks students to identify the problem that was previously given |
| **Phase IV:** <br> **Developing and Presenting Work** | After identifying it, each student presented it via the Zoom application. While the presentation was going on, other students paid attention. |
| **Phase V:** <br> **Analyze and evaluate the problem solving process** | The presentation that has been shown is then given feedback and reinforcement by the teacher. At this stage the teacher helps students to reflect or evaluate their investigations and the processes they use. |

The dance learning process using the interactive multimedia-based Problem Based Learning model is carried out online in accordance with the syntax proposed by(Ibrahim & Nur, 2000). The syntax in the interactive multimedia-based Problem Based Learning model is a reference for researchers in the learning process that will be carried out. The following is a description of dance learning using an online interactive multimedia-based Problem Based Learning model.

**Table 11. Basic Competencies in Subjects**
**Cultural Arts (Dance)**

| Basic competencies |
|---|
| 3.3 Understand dance movements according to floor level and pattern |
| 3.4 Perform dance moves using levels and floor patterns |

1. **Learning objectives**

    Through models*Problem Based Learning*based on interactive multimedia, it is hoped that students play an active role in learning in class even with distance learning activities and can understand dance movements based on Level and Floor Pattern with a sense of comfort, self-confidence, internal motivation and concern.

2. **Subject matter**

    Perform dance moves based on level and floor pattern.

3. **Stages of the learning process**

    The following is the implementation of the online interactive multimedia-based Problrm Based Learning model to increase understanding of dance movements, which can be seen from the following chart:
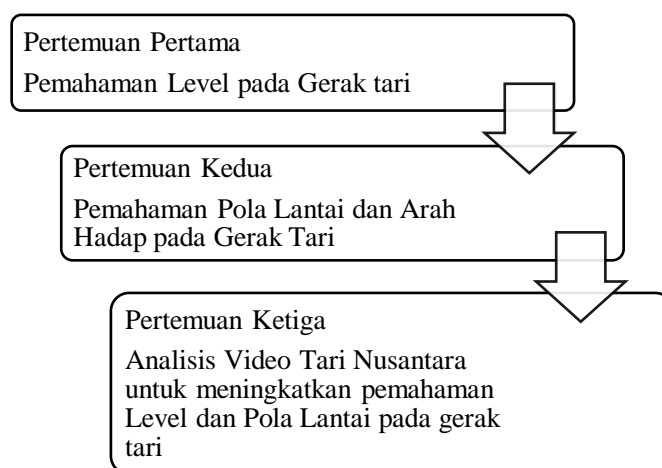
**Figure 5.** Application of the Problem Based Learning model based on interactive multimedia online

After carrying out the learning process during treatment, the researcher conducted a posttest as an effort to find out the certainty of the results of applying the online interactive multimedia-based Problem Based Learning model to students' understanding of dance movements. The instrument used in this posttest was 25 multiple choice questions which were based on the level learning material and floor patterns in dance movements. The posttest carried out by researchers used the Quizizz application.

The average score of students' understanding of dance movements after the treatment process was carried out increased by reaching an average score of 88 and was included in the "B" category, namely good.

**Table 12. Posttest scores from lowest to highest**

| | | | Pottest Value | | | |
|---|---|---|---|---|---|---|
| 83 | 84 | 85 | 85 | 86 | 86 | 86 |
| 87 | 87 | 87 | 87 | 87 | 87 | 87 |
| 87 | 88 | 88 | 88 | 88 | 88 | 88 |
| 89 | 89 | 89 | 89 | 90 | 90 | 91 |
| 91 | 92 | 93 | | | | |

a. **Mean or average value**

$$\text{Mean} \overline{X} = \frac{\sum Xi}{n} = = 87.8 \frac{2721}{31} \sim 88$$

So, the average posttest score for understanding dance movements in dance learning is 88.

b. **Median or middle value.**

Given: n = 31

$$Me = x\left(\frac{n+1}{2}\right)$$
$$Me = x\left(\frac{31+1}{2}\right)$$
$$Me = x\left(\frac{32}{2}\right) = x16$$

From the calculation above, it is obtained that the median is x16 or data in the 16th order. To find out the 16th data, look at the tableThe posttest score from lowest to highest is 88.

**c. The mode or value that appears frequently**

Based on the table of pretest scores from lowest to highest, it can be seen that the score 87 is the student score that appears most often, 8 times.

**d. Many internal classes**

K $\quad$ = 1 + 3.3 log n

$\quad\quad$ = 1 + 3.3 (log 31)

$\quad\quad$ = 1 + 4.91

$\quad\quad$ = 5.91 ~ 6

**e. Range (J)**

J $\quad\quad$ =$_{max}$– Xmin

$\quad\quad$ = 93 – 83

$\quad\quad$ = 10

**f. Interval class length**

$$c = \frac{J}{K}$$
$$c = \frac{10}{6}$$
$$c = 1{,}67$$

**g. Frequency distribution table**

**Table 13. Pretest Frequency Distribution Table**
**Understanding Dance Movement**

| Class | Mark *Pretest* | Midpoint (xi) | Frequency (fi) | xifi | Cumulative Frequency | Relative Frequency | Real Limits |
|---|---|---|---|---|---|---|---|
| 1 | 83 – 84 | 83.5 | 2 | 167 | 31 | 6.45 % | 82.5 |
| 2 | 85 – 86 | 85.5 | 5 | 427.5 | 31-2 = 29 | 16.13 % | 84.5 |
| 3 | 87 – 88 | 87.5 | 14 | 1225 | 29-5 = 24 | 45.16 % | 86.5 |
| 4 | 89 – 90 | 89.5 | 5 | 447.5 | 24-14 = 10 | 16.13 % | 87.5 |
| 5 | 91 – 92 | 91.5 | 4 | 366 | 10-5 = 5 | 12.90 % | 90.5 |
| 6 | 93 – 94 | 93.5 | 1 | 93.5 | 5-4 = 1 | 3.23 % | 92.5 |
| **Amount** | | 531 | 31 | 2726.5 | 100 | 100% | 524 |

The results of data analysis with posttest score statistics can be described as follows:
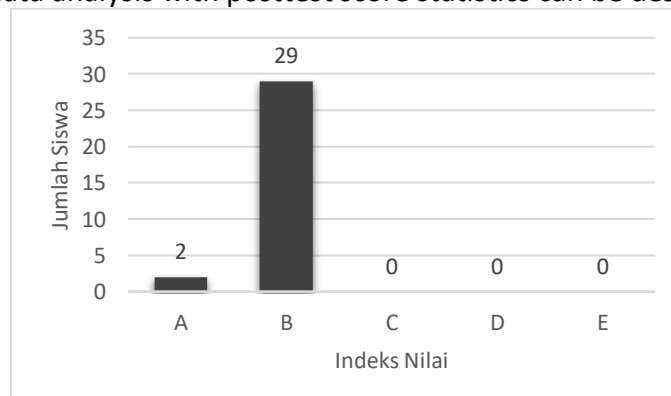
**Figure 6. Posttest Score Diagram**
**Understanding Dance Movement**

It is known from the diagram above that there is a significant increase between the pretest scores and the posttest scores. The scores obtained by none of the students were below <85, while 29 students got a B score (84-92) and 2 students got an A score (93-100) with the overall average score being on the index. grade B "Good".

The percentage level of understanding of dance movements after implementing the online multimedia-based Problem Based Learning model can be seen in the diagram below:
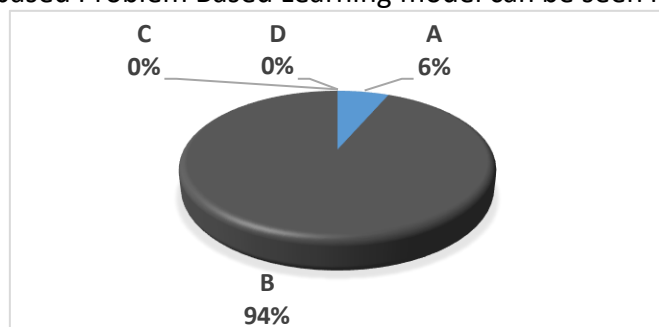


**Figure 7. Percentage diagram of the level of understanding of dance movements during the posttest**

Apart from being tested with multiple choice questions regarding understanding of dance movements using levels and floor patterns, the researchers gave students a questionnaire on understanding dance movements according to the indicators of explaining, stating, categorizing, discussing, comparing, giving examples and concluding. The questionnaire that the researcher gave to students was in the form of a closed questionnaire with the aim of making the data obtained by the researcher more accurate.

Through a questionnaire instrument given to 31 students as respondents in a closed manner, the results of the answers were analyzed as follows with SS = Strongly Agree given a score of 5, S = Agree given a score of 4, N = Neutral given a score of 3, TS = Disagree given a score of 2, and STS = Strongly Disagree with a score of 1.

**Table 14. Questionnaire Data on Understanding Dance Movements**

| No | Questionnaire Statement | Answer Choices | | | | | Score |
|----|--------------------------|------|------|------|------|------|-------|
| | | SS | S | N | T.S | STS | |
| 1 | I am able to explain the meaning of dance movements | 50 | 64 | 15 | 0 | 0 | 129 |
| 2 | I am able to express the elements of dance movements | 30 | 72 | 21 | 0 | 0 | 123 |
| 3 | I am able to categorize the elements of dance movements | 45 | 68 | 13 | 0 | 0 | 126 |
| 4 | I am able to discuss with friends the elements of dance movements | 40 | 56 | 27 | 0 | 0 | 123 |

| 5 | I am able to compare the elements of dance movements with the movements/activities of everyday life | 45 | 80 | 6 | 0 | 0 | 131 |
|---|---|---|---|---|---|---|---|
| 6 | I am able to model movements through dance movements | 45 | 64 | 21 | 0 | 0 | 130 |
| 7 | I am able to summarize dance movements both verbally and in writing simply | 40 | 64 | 21 | 0 | 0 | 125 |

The ideal total score for each item is 5 x 31 = 155 (if all respondents answer SS). Furthermore, these numbers can be presented in the following continuum data.
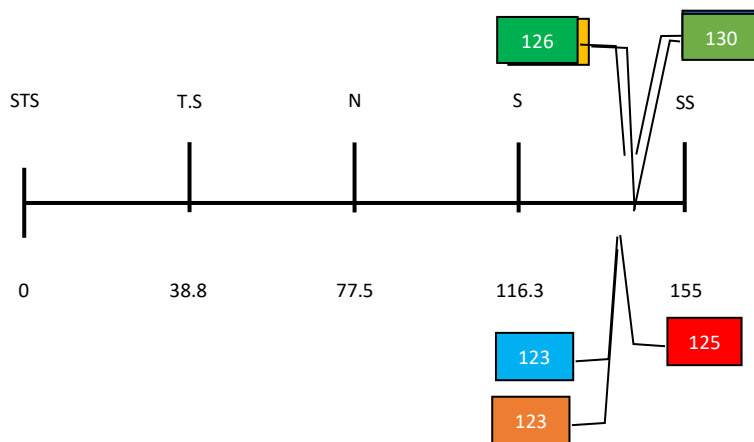


Based on previous posttest data analysis, where students got an average score in the good category which identifies an increase in understanding of dance movements, this is in line with the students' opinion when filling out the questionnaire that they were able to explain, express, categorize, discuss, compare, exemplify and conclude dance movement material. .

To see students' progress regarding understanding dance movements, the researchers analyzed using the Normality Gain test, below is a comparison of pretest and posttest scores as well as the difference in student scores regarding understanding dance movements in dance learning in class VII G SMPN 12 Bandung.
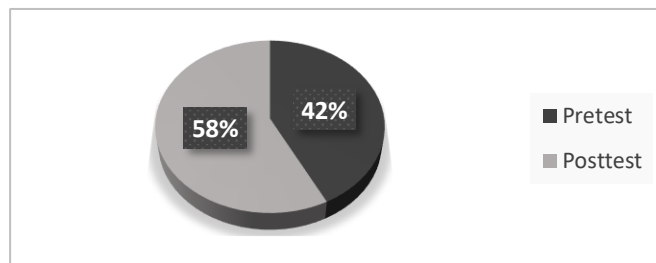
**Table 15. Comparison of pretest and posttest scores**

| No. | Mark *Pretest* | Mark *Posttest* | d | d2 | Gain Value $<g>$ | Classification |
|---|---|---|---|---|---|---|
| **1** | 77 | 87 | 10 | 100 | 0.43 | Currently |
| **2** | 51 | 87 | 36 | 1296 | 0.73 | Tall |
| **3** | 63 | 88 | 25 | 625 | 0.68 | Currently |
| **4** | 63 | 83 | 20 | 400 | 0.54 | Currently |
| **5** | 71 | 89 | 18 | 324 | 0.62 | Currently |

| | | | | | | |
|---|---|---|---|---|---|---|
| **6** | 70 | 88 | 18 | 324 | 0.60 | Currently |
| **7** | 64 | 86 | 22 | 484 | 0.61 | Currently |
| **8** | 64 | 86 | 22 | 484 | 0.61 | Currently |
| **9** | 76 | 90 | 14 | 196 | 0.58 | Currently |
| **10** | 54 | 88 | 34 | 1156 | 0.74 | Tall |
| **11** | 64 | 92 | 28 | 784 | 0.78 | Tall |
| **12** | 64 | 90 | 26 | 676 | 0.72 | Tall |
| **13** | 61 | 87 | 26 | 676 | 0.67 | Currently |
| **14** | 54 | 84 | 30 | 900 | 0.65 | Currently |
| **15** | 61 | 89 | 28 | 784 | 0.72 | Tall |
| **16** | 57 | 88 | 31 | 961 | 0.72 | Tall |
| **17** | 59 | 87 | 28 | 784 | 0.68 | Currently |
| **18** | 54 | 85 | 31 | 961 | 0.67 | Currently |
| **19** | 69 | 87 | 18 | 324 | 0.58 | Currently |
| **20** | 67 | 87 | 20 | 400 | 0.61 | Currently |
| **21** | 66 | 87 | 21 | 441 | 0.62 | Currently |
| **22** | 61 | 91 | 30 | 900 | 0.77 | Tall |
| **23** | 63 | 87 | 24 | 576 | 0.65 | Currently |
| **24** | 61 | 86 | 25 | 625 | 0.64 | Currently |
| **25** | 67 | 89 | 22 | 484 | 0.67 | Currently |
| **26** | 61 | 91 | 30 | 900 | 0.77 | Tall |
| **27** | 66 | 85 | 19 | 361 | 0.56 | Currently |
| **28** | 71 | 89 | 18 | 324 | 0.62 | Currently |
| **29** | 86 | 93 | 7 | 49 | 0.50 | Currently |
| **30** | 73 | 88 | 15 | 225 | 0.56 | Currently |
| **31** | 63 | 88 | 25 | 625 | 0.68 | Currently |
| **Amount** | 2001 | 2722 | 721 | 18149 | 19.98 | Currently |
| **Average** | 65 | 88 | 23 | 585 | 0.65 | |

Based on the table above, the average pretest score for understanding dance movements is 65 with a percentage of 42%, while the average posttest score for understanding dance movements is 88 with a percentage of 58%. The comparison of pretest and posttest scores for understanding dance movements can be described as follows:



**Figure 8. Pretest Score Comparison Diagram and Posttest**

After making a comparison and finding out the difference between the pretest and posttest scores for understanding dance movements, the researcher then carried out a normality test as one of the conditions for hypothesis testing. The normality test results are as follows:

**Table 16.Normality Test of Pretest and Posttest Values**

|  | Kolmogorov-Smirnova | | | Shapiro-Wilk | | |
|---|---|---|---|---|---|---|
|  | Statistics | df | Sig. | Statistics | df | Sig. |
| PRETEST | ,142 | 31 | .111 | ,956 | 31 | ,231 |
| POSTTEST | .143 | 31 | .108 | ,972 | 31 | ,580 |

There are 2 ways to carry out the normality test, namely Kolmogorov-Smirnov and Shapiro-Wilk. Researchers used the results of calculations from Shapiro-Wilk, because the number of samples used by researchers was no more than 50 people, namely only 31 people. The SPSS calculation results can be seen from the Sig value. contained in the normality test table. A data is said to be normal if the Sig value. greater than 0.05. Sig value. The pretest in this research was 0.232 or > 0.05, while the Sig. posttest is 0.580 or > 0.05. Based on these data, the pretest-posttest normality test has a "Normal" distribution, which means accepting H0.

1. **The average value of the difference between the pretest and posttest for understanding dance movements**

$$d2 = \frac{\sum d}{n}$$
$$= \frac{721}{31}$$
$$= 23.3 \sim 23$$

2. **The standard deviation value is the difference between the posttest and pretest understanding of dance movements**

$$s = \sqrt{\frac{n\sum d^2 - (\sum d)^2}{n(n-1)}}$$
$$s = \sqrt{\frac{31(18149) - (721)^2}{31(31-1)}}$$

$$s = \sqrt{\frac{562619 - 519841}{31(30)}}$$

$$s = \sqrt{\frac{41778}{930}}$$

$$s = \sqrt{44,92}$$

$$s = 6.7$$

### 3. Pretest and posttest t-values for understanding dance movements

$$H0 = tcount < ttable$$

$$H0 \neq tcount > ttable$$

So the t value is:

$$t = \frac{\bar{d}}{\left(\frac{s}{\sqrt{n}}\right)}$$

$$t = \frac{23}{\left(\frac{6,7}{\sqrt{31}}\right)}$$

$$t = \frac{23}{\left(\frac{6,7}{5,6}\right)}$$

$$t = \frac{23}{1,2} = 19,2$$

Next, to determine ttable, this is done by calculating db= n-1 = 31 -1 = 30 with a significance level = 0.05, then look at the t table list for db = 30 and significance 0.05 then ttable $= \alpha = 5\ \%1,697$

The decision making is done by comparing tcount and ttable as follows:

It can be concluded that after treatment was carried out by applying the Problem Based

If tcount > ttable then H1 is accepted, and H0 is rejected

**19.2 > 1.697, then H1 is accepted and H0 is rejected**

Learning model based on interactive multimedia online, there was an increase in the understanding of dance movements of class VII G students at SMPN 12 Bandung in learning dance.

### 4. CONCLUSION

Based on research that has been carried out by applying the Problem Based Learning model based on interactive multimedia online in dance learning in class VII SMPN 12 Bandung, it was found that the results increased. This can be seen from the pretest score for understanding dance movements before any action or treatment is carried out and the results show that there is a lack of understanding of dance movements, seen from the average score obtained by students with a score of 65 on the "Not Good" criteria. During the learning process, teachers tend to carry out teacher-centered learning which is still guided by arts and culture package books using the lecture method.

The action taken by researchers is to apply a learning model. The Problem Based Learning model based on interactive multimedia online is one of the learning modelscan train students to organize their own knowledge, develop skills and abilities in solving the problems they face, apart from that mThis model is useful for improving understanding of teaching material. The learning process is strengthened by the use of interactive multimedia as a complement to understanding dance movements, so that the learning process becomes more complete*student centered learning,*Apart from that, it is done online because currently learning is carried out remotely due to the outbreak of the Covid-19 virus in Indonesia.

The use of an online interactive multimedia-based Problem Based Learning model has been proven to increase students' understanding of dance movements after research was conducted by comparing the results of students' pretest and posttest. The increase in understanding of dance movements can be seen from the difference in the average pretest and posttest scores from 65 (Poor) to 88 (Good) with a gain value of 0.65 in the medium category. This is also proven by the results of the hypothesis test carried out, the results of the t test analysis show that tcount is greater than ttable, meaning that H1 can be accepted and H0 is rejected.

It can be concluded that the application of the Problem Based Learning model based on interactive multimedia online in dance learning can increase understanding of dance movements in dance learning in class VII SMPN 12 Bandung.

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## 6. REFERENCES

Amir, & Taufik, M. (2009). Educational Innovation through Problem Based Learning: how educators empower students in the knowledge era. Prenadamedia Group.

Bloom. (1956). Taxonomy of Educational Objectives: The Classification of Educational Goals. David McKay Company, Inc.

Bloom. (1964). Affective Domain. In Taxonomy of Educational Objectives: The Classification of Educational Goals (Handbook I). David McKay Company, Inc.

Gagnon, G. W., & Collay, M. (2001). Designing for learning : six elements in constructivist classrooms. Corwin Press, Inc.

Ibrahim, & Nur. (2000). Problem Based Teaching. Uniesa University Press.

Kurniawan, A. (2018). Educational Research Methodology. PT Teen Rosdakarya.

Melania. (2020). Online Learning, Is It Effective for Indonesia? (On line). Https://Muda.Kompas.Id/Baca/2020/04/06/Pembelajaran- Daring- Is-Effective-For-Indonesia/. https://muda.kompas.id/baca/2020/04/06/pembelajaran-%09daring-%09baik-effeksi-untuk-indonesia/

Susilana, R. (2006). Curriculum and Learning. Bandung: UPI [Indonesian Education University] Press, Limited Publication, 106.