

## DEVELOPMENT OF LEARNING MEDIA VIDEO BASED ON PROJECT-BASED LEARNING (PjBL) MODEL WEBEX ASSISTED APPLICATION TO HELP THE LEARNING PROCESS IN MOMENTUM AND IMPULSE MATERIAL IN THE ERA OF DIGITAL SEA CLASS

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### ABSTRACT

This study aims to find out how are the validity and the feasibility the video learning media based on the project learning model. This study uses webex as an application for helpers in making physics learning videos for 10th grade Semester 1 High School. Type of the research is descriptive with the data collection through questionnaires. This research was conducted in 2017 bilingual physics class with supervisor Yeni Megalina as well as a validator in this study. The study was conducted with a questionnaire method in which respondents filled out questionnaires as a result of learning satisfaction after watching our learning video. The respondents were 15 classmates in the bilingual physics class of 2017.

**Keywords:** *PjBL, Momentum dan Impuls, online learning, webex*

### PRELIMINARY

Education is an important factor in determining the future of a nation. Learning is an activity carried out by someone to gain knowledge. The level of success of a learning is greatly influenced by the learning process carried out by students. In the learning process the delivery of innovative material can help students to be able to quickly understand the material delivered by the teacher. Education is not only determined by the mastery of the material alone but by the ability of the students themselves. Through proper learning, students are expected to be able to master the material presented by the teacher so that it is useful in their lives.

Learning is a process of interaction of students with educators and resources. Learning in a learning environment (Yuliati, 2008). Learning objectives will achieve maximum results if learning runs effectively and makes it easy students for to learn something useful such as facts, skills, values, concepts, or a desired learning outcome. One of the goals of physics lessons is for students to master various concepts and principles of physics to develop knowledge, skills and self-confidence so that they can be applied in daily life (Putra, Widodo, & Jatmiko, 2016).

Physics is the study of the nature of matter, energy and phenomena experienced by objects in nature, and is the basis for the development of technological science in everyday life. In learning physics, students are expected to not only master the concepts of physics in theory but must also be able to use scientific methods to prove the physics concepts obtained from the theory (Fauzi & Radiyono, 2013; Hasbi, Kosim, & Gunawan, 2015). Based

on the situation that is happening right now, Corona makes every activity constrained. The application of social distancing as a prevention of transmission of the epidemic COVID-19, made most of the activities of the community carried out at home. With current technological advancements and information it does not reduce the productivity of work and study. And one of the teaching and learning activities was also transferred to using some media in the process. Physics learning rests on the specific embodiment of physics itself that stems from an effort to obtain a culture of truth, namely thinking. Systematic through physics that does not forget the nuances of humanity (Suparwoto, 2007). Physics is a science that is developing rapidly along with the development of science and technology (Purwanto, Menza, & Susanti, 2016). Technological advancements facilitate the formation of creative and innovative elements in learning physics (Fitri, Desnita, & Raihanati, 2015).

Researchers use momentum and impulse material to be observed. The application of this teaching uses the project based learning model (PJBL). Project Based Learning (PJBL). PJBL is a systematic learning model that involves students in learning basic knowledge and life skills through an extension, inquiry process, authentic questions, and design of products and activities careful. When students are given a project in the PJBL then students will be able to improve their thinking skills. PJBL is based on thinking, imaging and function, so that it can train creative individuals who take on the responsibility of learning themselves (Turgut, 2014). PJBL is very important for the quality of behavior individual and requires a different learning process. PJBL can improve

achievement learning, physical attitude, and science process skills (Munawaroh, Subali, & Sopyan, 2012; Yalcin, Turgut, & Buyukkasai, 2014).

PJBL is able to improve process skills science, learning outcomes, analytical skills, students' attitudes, and creative thinking abilities (Jack, 2013; Luthvitasari, Made, & Linuwih, 2012). PJBL is also able to improve thinking skills from low level to high level thinking such as abilities creative thinking (Balkevicius, Mazeikiene, & Svediene, 2013; Luthvitasari et al., 2012; Mihardi, Harahap, & Sani, 2013; Munawaroh et al., 2012). PJBL was developed based on the philosophy of constructivism in learning. PJBL as a learning approach was introduced by John Dewey. The problem is less than the maximum students in understanding the material delivered by the teacher to students.

Based on the background, a study was conducted on the PjBL model assisted with webex as an application for helpers in making physics learning videos to know how are the validity and the feasibility the video learning media. This can result in less effective, valid and feasible learning process pursuit of the especially at Webex. Less effective learning process causes students to be lazy in following ongoing learning. The root of the problem of this research is the lack of internet network facilities provided makes students feel less than optimal in the learning process, especially webex, so the learning activities that take place in class are less effective.

## RESEARCH METHOD

This research uses descriptive method. This research was conducted in 2017 bilingual physics class Medan State University T.P 2019/2020. The sample in this study consisted of 15 people or classmates and also the supervisor.

The method used by researchers is to get respondents to fill out a questionnaire after seeing the learning video that we have made. The questionnaire designs for respondents that we made are listed and T]the questionnaire design for the supervisor that we made is listed

## RESULTS AND DISCUSSION

### Result

The data described in this study are the respondents' satisfaction with the project-based learning process using webex video media, specifically on the material Impulse and momentum. The results can be shown in Figure 1.

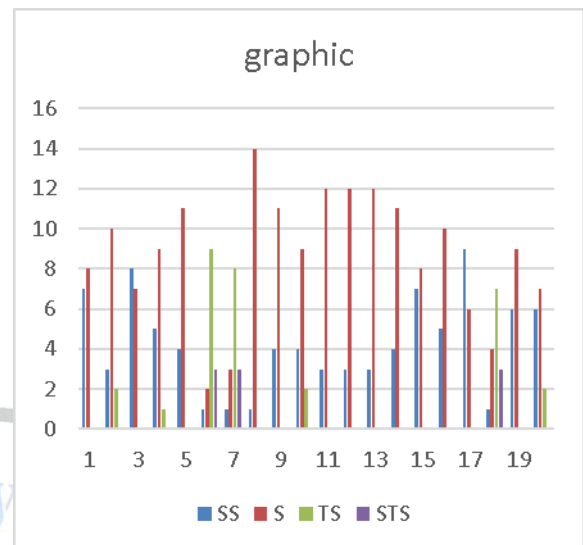


Figure 1. Student respondent questionnaire data

### Pembahasan

#### 1. Statement-1

“Student Worksheet (LKPD) use language that is easily understood”

SS = 7

S = 8

TS = -

STS = -

Thus, the average respondent **Strongly Agreed** with the statement Student Worksheet (LKPD) use language that is easily understood

#### 2. Statement -2

“LKPD uses sentences that do not cause multiple meanings”

SS = 3

S = 10

TS = 2

STS = -

Thus, the average respondent **Agreed** with the statement LKPD uses sentences that do not cause multiple meanings

#### 3. Statement-3

“The instructions for the activities in LKPD are clear, making it easier for me to do all activities”

SS = 8

S = 7

TS = -

STS = -

Thus, the average respondent **Strongly Agreed** with the statement The instructions for the activities in LKPD are clear, making it easier for me to do all activities

4. Statement-4  
 "The choice of fonts, sizes and spaces used made it easier for me to read the LKPD"

SS = 5  
**S = 9**  
 TS = 1  
 STS = -

Thus, the average respondent **Strongly Agreed** with the statement The choice of fonts, sizes and spaces used made it easier for me to read the LKPD

5. Statement -5

"At the beginning of learning using this student worksheet, there was something interesting to me"

SS = 4  
**S = 11**  
 TS = -  
 STS = -

Thus, the average respondent **Agreed** with the statement At the beginning of learning using this student worksheet, there was something interesting to me

6. Statement -6

"This LKPD presentation style is boring"

SS = 1  
 S = 2  
**TS = 9**  
 STS = 3

Thus, the average respondent **Disagrees** with the statement This LKPD presentation style is boring

7. Statement -7

"On every page there are words or sentences that I don't understand"

SS = 1  
 S = 3  
**TS = 8**  
 STS = 3

Thus, the average respondent **Disagrees** with the statement On every page there are words or sentences that I don't understand

8. Statement -8

"In this study I often state questions in the form of drawings, sketches, or diagrams"

SS = 1  
**S = 14**  
 TS = -  
 STS = -

Thus, the average respondent **Agreed** with the statement In this study I often state

questions in the form of drawings, sketches, or diagrams

9. Statement -9

"Variations in activities, assignments, practice questions, illustrations and others helped me to develop my physics abilities"

SS = 4  
**S = 11**  
 TS = -  
 STS = -

Thus, the average respondent **Agreed** with the statement Variations in activities, assignments, practice questions, illustrations and others helped me to develop my physics abilities

10. Statement -10

"When studying, I always re-examine the results of my work and get conclusions in accordance with the problem being asked"

SS = 4  
**S = 9**  
 TS = 2  
 STS = -

Thus, the average respondent **Agreed** with the statement When studying, I always re-examine the results of my work and get conclusions in accordance with the problem being asked

11. Statement -11

"From each of the activities in this LKPD, I can conclude and take important ideas about the material of Momentum and Impuls"

SS = 3  
**S = 12**  
 TS = -  
 STS = -

Thus, the average respondent **Agreed** with the statement From each of the activities in this LKPD, I can conclude and take important ideas about the material of Momentum and Impuls

12. Statement -12

"I can relate the contents of this LKPD to the things that I have seen, done, or thought about in my daily life"

SS = 3  
**S = 12**  
 TS = -  
 STS = -

Thus, the average respondent **Agreed** with the statement I can relate the contents of this LKPD to the things that I have seen, done, or thought about in my daily life

13. Statement -13

“I was able to make a physics model of problems in the form of descriptions and story problems”

SS = 3  
 S = 12  
 TS = -  
 STS = -

Thus, the average respondent **Agreed** with the statement I was able to make a physics model of problems in the form of descriptions and story problems

14. Statement -14

“I can gain knowledge by following a series of activities in a student worksheet”

SS = 4  
 S = 11  
 TS = -  
 STS = -

Thus, the average respondent **Agreed** and **Strongly Agreed** with the statement I can gain knowledge by following a series of activities in a student worksheet

15. Statement -15

“As I learned to use this LKPD, I believed that I could learn its contents well”

SS = 7  
 S = 8  
 TS = -  
 STS = -

Thus, the average respondent **Agreed** with the statement As I learned to use this LKPD, I believed that I could learn its contents well

16. Statement -16

“After learning the Momentum and Impuls using this LKPD I believe that I will succeed in the test”

SS = 5  
 S = 10  
 TS = -  
 STS = -

Thus, the average respondent **Agreed** with the statement After learning the Theory Kinetic Gases using this LKPD I believe that I will succeed in the test

17. Statement -17

“The contents of LKPD are very useful for me”

SS = 9  
 S = 6  
 TS = -  
 STS = -

Thus, the average respondent **Strongly Agreed** with the statement The contents of LKPD are very useful for me

18. Statement -18

“There is no material in this LKPD that I understand”

SS = 1  
 S = 4  
 TS = 7  
 STS = 3

Thus, the average respondent **Strongly Disagreed** with the statement There is no material in this LKPD that I understand

19. Statement -19

“I am happy to study physics, especially regular straight motion using this LKPD”

SS = 6  
 S = 9  
 TS = -  
 STS = -

Thus, the average respondent **Agreed** with the statement I am happy to study physics, especially regular straight motion using this LKPD

20. Statement -20

“The contents of this LKPD are according to my interests”

SS = 6  
 S = 7  
 TS = 2  
 STS = -

**KESIMPULAN**

Based on the table, the results of the LKPD Questionnaire research data are obtained. From these results it is known that many students stated that this LKPD is very good, seen from the colors, pictures, writing letters, languages, examples of questions stated that it was good and very interesting to read. Thus, the average respondent Agreed with the statement The contents of this LKPD are according to my interests:

1. From this Mini Research we can recommend this worksheet (LKPD) if you want to teach or study Impuls and Momentum based Project Based Learning (PjBL).
2. Thus we made this report, as authors we realize that in the preparation of this report there were still many shortcomings and errors. We apologize profusely. Therefore we request criticism and suggestions from

readers. Hopefully this report is useful for readers and others.

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