

Optimization of Online Learning Autotronic Technology Courses Using Youtube Media

Wagino^{1,*}, M Giatman¹, M Muskhir¹, H Effendi¹, Iffarial Nanda¹

¹*Universitas Negeri Padang*

**Corresponding author. Email: wagino5520@gmail.com*

ABSTRACT

One of the factors that influence learning outcomes is motivation and interest where there is a low average student learning score. The low motivation and interest of students during the Covid-19 pandemic, among others, during online learning activities, students showed an unenthusiastic attitude towards learning. Technology may be used to simplify the getting to know process, support notifications, evaluate Manage learning activities, resources and create learning materials. Research describes scholar studying motivation who makes Use of YouTube as studying This means this is so broadly utilized in universities. The use of YouTube Must be created as a learning medium more Interesting, interesting and interactive learning conditions and atmosphere. Such research quantitative, using experimental methods learning in the Autotronic Technology course, Department of Automotive Engineering. The consequences of records processing may be visible that students' gaining knowledge of motivation is withinside the excellent category. Although the results of the study were carried out using a symbolic test, the test explained the an exciting, exciting and interactive learning environment and atmosphere. these studies showed that there was a significant effect on students' studying motivation on studying outcomes.

Keywords: *YouTube, Learning Motivation, Learning Outcomes.*

1. INTRODUCTION

Advances in science and technology are further encouraging innovative efforts use technology in the learning process. business revolution 4.zero has changed the teaching system, mindset, and actions of students in developing creative and innovative ideas in various problems, so a revolution in education must be carried out [1]. Technological development in the era of Industry Revolution 4.0 has changed people's lifestyles, every individual must follow technological developments and know how to use them to make everyone's life easier [2]. The development of technology has become potential In various fields, especially in education, we need to respond proactively and adaptively to complex 21st century challenges.[3]. The use of technology in education has become one very important issue and is often discussed in various activities [4]. The existence of technology in the educational world is a medium that can be used as a vehicle to deliver both one-way and interactive learning ways [5]. In addition, the use of technology has enabled the

emergence of distance learning, facilitating More innovation the development of Teaching method inside and outside the classroom [6]. in the field of Education, lecturers are required to be able to use the equipment provided by the university. Lecturers can at least use efficient tools, but it is a must so that the expected goals can be achieved. Lecturers are also required to be able to develop skills in making learning media. One of the factors that influence learning outcomes is motivation and interest. The low motivation and interest of students during the Covid-19 pandemic, among others, when online learning activities, students showed an unenthusiastic attitude towards learning. Technology can be used to facilitate learning, support alerts, evaluate learning activities, manage resources, and create learning materials [7]. Several studies have been conducted to investigate the readiness of students studying online in higher education institutions environment. In addition, [8]. Students' motivation for online learning is found to be greater than their self-efficacy and self-learning on the computer / Internet. Computer / Internet self-efficacy, self-study, and motivation for

learning are also found to be significantly positively correlated with academic performance. The demand for student learning motivation is getting higher with the presence of the latest library resources/ and can be accessed unlimitedly in space and time.

There is a change in student motivation during online learning, namely a positive change in motivation during self-directed learning [9]. A stimulus is the theoretical composition used to describe the initiation, direction, strength, persistence, and quality of an action, especially the indicated action. Motivation provides an impetus to take firm action in the direction of physical and mental ideals, which is why activity becomes a very important part of motivation [10]. Similarly, motivation also plays an important role in learning. Motivation encourages Supports learning behavior. Therefore, it is important to understand the motivation of students [11]. Motivation determines the activities of Students in learning process. Logically speaking, Students with higher learning motivation will Strive to participate in the learning process. On the other hand, students with low motivation engaged [12]. Many studies show that student's motivation to learn a lesson is a factor that influences student achievement in their learning outcomes [13].

The results of previous research conducted by [14] It can be said that the COVID-19 pandemic that swept the world is not the cause of students' academic slump are highly motivated to learn. While shortcomings have been found in practice, there is no choice but to optimize That's because online learning only has the skills to act as a bridge in these emergencies to transfer knowledge from teachers to students. Other studies have shown that there is a significant relationship in the academic relationship independence and face-to-face and distance learning outcomes [15]. With high curiosity, the desire will encourage students to find what they want to know so that it can affect learning outcomes [16].

Therefore, every educational institution has started implementing online learning using YouTube[17] Zoom Meeting [18] Google Meet [19], and other android applications. YouTube is the most popular social media nowadays. Its popularity is projected to continue to increase along with the number of users. Previously, YouTube recorded the number of logged-in monthly users of 1.5 billion in mid-2017. market research institute Statista predicts By 2021, the number of users will reach 1.8 billion [20]. The advantage of learning with video is that it

presents an image and sound representation of an idea or event to students in the classroom.

The lecture process at the State University School of Engineering Automotive Engineering Research Program of Padang is known that in learning Autotronic courses using e-learning system due to the Covid19 pandemic, where lecturers only use electronic media and only rely on reference electronic books and PowerPoint media in the process learning. This makes students bored or has low learning motivation in participating in learning/ so that their learning outcomes are not optimal. the existence of YouTube is very supportive to be used as an integrated learning resource by utilization in the learning system. However, using YouTube as a learning resource has not been integrated into the Autotronic curriculum learning system. YouTube is very popular and easy to use for people of all ages with diverse educational backgrounds, especially among students of the Automotive Engineering Education Study Program, FT UNP. Observing these conditions, YouTube has the potential to be used as a learning resource that is easy to use by students of the Automotive Engineering Education Study Program, FT UNP. With YouTube content, the researcher makes PowerPoint media and animations/video clips that are arranged according to the topic of the material in the syllabus and teaching materials that have been uploaded to UNP e-learning every week. Thus, students can study and observe more varied lecture materials because, in addition to teaching materials in pdf format which are e-learning, the content is also linked to e-learning so that synchronization and optimization occur in online learning. Each student finished studying these materials, at the next meeting before entering new material, the lecturer reviewed via zoom first. This can be seen from the number of students of the Automotive Engineering Education Study Program FT UNP using YouTube as a learning resource for Autotronics courses, which with YouTube content that has been created, the motivation and learning outcomes for Autotronics courses are quite good (according to the learning objectives). The purpose of This examines ambitions to explain the studying motivation of college students who use YouTube as a studying medium resource by utilization, to find out whether or not It is effective to use YouTube as a lecture resource using with learning results, and to determine whether or not there is an influence of learning motivation in the use of YouTube as a learning resource using student learning results.

2. METHOD

This study type is quantitative, using experimental methods in control class and experimental class. In the learning process for the Autotronics course, the control class does not use YouTube as learning resource (only using online learning materials in pdf format), while the experimental class uses YouTube as a learning material. The learning made by the researcher uses the Apowerec application which is adjusted based on the syllabus in the Autotronic Technology Course, then uploaded to YouTube. Next, students learn Autotronic Technology material from YouTube, which has been linked to e-Learning. In addition, statistical analysis will be carried out to determine students' motivation in using YouTube as a learning resource and whether the use of YouTube as a learning resource will affect student learning outcomes. The subjects of this study were students of an automotive engineering research project.

Semester IV 2020 2021 consisted of 30 people in the control class and 30 people in the experimental class, material experts, and psychologists. The data collection techniques used in this study include: (1) Data collection techniques using survey questionnaires, the data will be used to measure the accuracy of selecting YouTube links as learning resources, these links are used in Autotronic SQL course material. In addition, questionnaires are also used to collect data that will be used to measure student learning motivation, and (2) tests are used to collect data about student learning outcomes. The percentage formula used for the level of learning motivation is as follows:

$$P = \frac{\sum \text{alternatif Jawaban yang dipilih dari setiap aspek}}{(\text{skor tertinggi} \times \sum \text{butir soal}) \times \sum \text{responden}} \times 100$$

As the meaning of using the above formula to calculate the percentage number of the result, the formula will be associated with the determination of whether the questionnaire result shows a positive or negative value, using a standard based on the following Likert scale:

Table 1. Score Criteria using the SPSS version of the tool Source: [21]

Percentage	Criteria
81%-100%	Very good
61%-80%	Good
41%- 60%	Not good
21%- 40%	Not good
0%-20%	Very Not good

The value difference of learning outcomes uses an independent sample test (t-test). Perform a t-test to determine whether YouTube as a learning resource has an impact on students' learning outcomes. That-test is performed only once for 24 hours to determine whether there is an impact between students' learning motivation and student learning outcomes. The decision criterion is determined based on the significance value (sig). If the value of sig>0.05, Ho is accepted (not relevant), if the value of sig<0.05 0.05 then Ho is rejected (relevant).

3. RESULTS AND DISCUSSION

The researchers created the research paradigm shown in Figure 1. The study was conducted at Universitas Negeri Padang (UNP) from February 2021 to May 2021. The study subjects were students from the fourth semester of the Program. of Educational Research in Automotive Engineering in the academic year 2020-2021. The review up to 60 students, including 30 in the control class, 30 people in the experimental class. This study analyzed three variables, including an independent variable, YouTube (X) as a source of learning use, and two dependent variables, learning motivation (Y1) and learning outcomes (Y2).

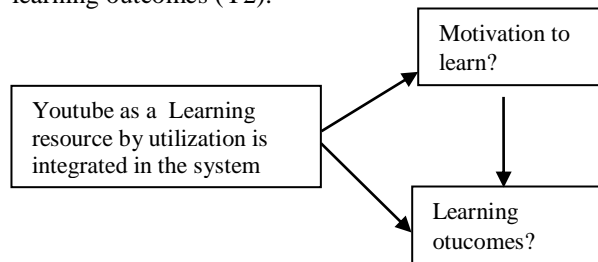


Figure 1. Research Paradigm: processed by researchers Source:[21]

Based on the research paradigm, table 1 explains whether the use of YouTube (X) affects motivation (Y1) and learning outcomes (Y2). The t-testis to determine whether YouTube has an impact as a learning resource by using student learning outcomes. The T-test is **run** only once to determine the similarity between the experimental and control class **posttests**. Linear regression testing technology is used to determine if there is an impact between student learning motivation and student learning outcomes. The decision criterion is determined based on the significance value (sig) If the value of sig is greater than 0.05, Ho is accepted (unrelated), and if the value of sig is<0.05, Ho is accepted (unrelated). 0.05Then Ho is rejected (relevant).

3.1. Data Description

The data needed about Using YouTube as a learning resource by utilization is in the form of validation from material experts, where the data is obtained by giving questionnaires to material experts to be filled out/validated. The validation data from this material expert is used to state that Using YouTube as a learning resource by utilization is by following per under the SQL material in the Autotronics course. Learning motivation data was obtained from the distribution of closed questionnaires to respondents from the experimental class as many as 30 respondents, where the results of the questionnaire would later be processed using SPSS application tools. To prove that the learning motivation tool in the form of a questionnaire is effective, it is necessary to verify the learning motivation tool by an expert, and the researcher uses a psychologist. Based on the questionnaire to verify the feasibility of learning motivation tools, it can be seen that up to 11 questions from the questionnaire submitted have not been reviewed. Furthermore, according to the data recapitulation of the questionnaire results, which are still qualitative, it is calculated quantitatively, the score is 80%.

So it can be concluded that from all aspects of the expert trial, the percentage of scores was 80%, according to [21], the percentage was in a Good category. So, it can be stated that the learning motivation questionnaire is good to use. Learning outcomes data were come from the posttest in the control class and experimental class. Data will be processed to compare Learning Outcomes in Control and Experimental Classes. In addition, the results achieved are used to state whether or not the influence of Use YouTube as a learning resource using results-based learning.

3.2. Analysis and Discussion

According to the results of the normality test, it can be observed that for the control category a posttest significance value $0.108 > 0.05$ obtained, and for the experimental category, a post test significance value $0.173 > 0.05$ is obtained. Therefore, we can conclude the test data is normally distributed and meets the formality requirements, and further tests can be continued. According to the homogeneity test results, the significance value of the results after the test is 0.787, which is greater than 0.05, Therefore, we have the control group and the experimental group have the same variance or homogeneity.

3.3. Hypothesis testing

According to the question formulation of this research, one of the goals is to use YouTube as a learning resource for autoerotic courses and to determine the Motivate Students to Use YouTube for Teaching resource. Motivation level testing is conducted as a non-test to determine the student's motivation for learning. After completing the test, a motivational questionnaire was issued to the group to determine the motivation of the students after receiving treatment. The following are the calculated results of the learning motivation questionnaire after using YouTube as a learning resource in learning.

$$P = \frac{1660}{1920} \times 100 = 86,45\%$$

Motivation based on learning outcomes questionnaire given to students after using YouTube as a learning resource in Autotronics courses. it is known that the percentage value obtained is 86.45%. This means that the calculation results from the questionnaire show a very good standard. It should be noted that in this study, researchers did not pay attention to things that could affect motivation, such as interests, talents, etc.

3.4. Analysis of Differences in Learning Outcomes

According to the formulation of the second question of this research, whether Use YouTube as a learning resource automatic learning has an impact. Test the following two methods to determine the similarity between the control group and experimental group. Through this test, comparing the results of the post-test of the control class and the experimental class. Regarding the subjects, there were up to 30 people in the control group and 30 people in the experimental group. The calculation of the second average similarity test uses an independent sample t-test. based on data results processing that has been carried out, the post-test average (mean) for the control class is 69 and the experimental class is 80. Then, the results calculated by the sign test are used to obtain the significance value according to the asymptomatic column. Sig of 0.000 (2 tails) or significance < 0.05 ($0.000 < 0.05$). It can be seen that there is a difference between the post-test mean of the control group and the post-test mean of the experimental group.

The use of designed learning resources (learning resources by design) can affect student learning outcomes by 51%, while the use of available learning resources (learning resources by utilization) affects

student learning achievement by 66%. In addition, there is a difference in average student performance between the control and experimental groups. E-Learning-Based Learning Model is a web-based learning model that can improve student learning outcomes in Curriculum and Learning Courses [22]. Referring to the analysis of posttest results in the control class that does not use YouTube as a learning source by utilization and the experimental class That makes use of YouTube as a gaining knowledge of useful resource with the aid of using utilization, and previous relevant research, it can be interpreted that there is an effect of differences in learning outcomes for the Autotronics course for fourth-semester students of the Study Program. Automotive Engineering Education Academic Year 2020-2021.

3.5 Analysis of the Influence of Learning Motivation on Learning Outcomes

Leveraging student learning outcomes to use YouTube as a learning resource to find out if it affects students' willingness to learn, a linear regression test was performed. The R-squared value obtained is 0.864 (86.4%), which indicates Student motivation to learn influences learning outcomes 86.4% and the rest are affected. by other factors. The count value is 13328 and the sig value is 0.000 <0.05. This can be understood as an important influence between students' motivation to learn and their learning outcomes.

Related previous studies investigated responsibility and creativity in the context of academic motivation and reciprocity, including teacher and student motivation, and analyzed and determined possible "strengthening" methods. The method part includes a qualitative analysis of organizational behavior, education, and quantitative and qualitative analysis of student practice for the second consecutive year (N1 = 45 students in the first year, N2 = 53 students in the second year). After analyzing academic achievement over the last two years, the average student scored 50.82 points using the first experimental method. Using the second method, the average value = 53.21 points. This shows that student systematic motivation and fairness have a positive impact on academic performance [21].

By combining the results of the studies to date with the analysis of existing theories, it can be seen that Motivate students to learn using YouTube as a teaching method resource has a significant impact to motivate students across the board. use of the results. The students are studying. Referring to the studies to date, it can be said that the use of YouTube as a

learning resource has a great influence on motivation, as well as the results of the analysis on the impact of students' educational motivation. students on student learning outcomes.

4. CONCLUSIONS AND SUGGESTIONS

In the 4 semesters of the Automotive Engineering Education and Research Program FT UNP, which utilizes YouTube in the process of Autotronics and uses it as a learning resource, students' motivation to learn is in the very good category. Use YouTube as a learning resource the Autotronics course by Semester IV students of the FT UNP Automotive Engineering Research Program has a significant effect on student learning outcomes. There is a significant effect between student motivation to use YouTube as a learning resource and usage in Autotronic courses on student learning outcomes. In addition, the main problem facing online learning is access to the Internet. Most students from various regions have difficulty accessing the internet because most of them live in rural areas. As we all know, students do not agree whether UNP professional universities should use online learning. In the context of higher education optimization online lectures, government expected to provide facilities in the form of video learning related to mastery of professional skills. This can be done in collaboration with the film censorship agency of the Ministry of Education. Training institutions, National Professional Certification Agency (BNSP), Job Training Centers (BLK), Universities (in which teachers, lecturers, and technicians participate), industry and commerce, and other organizations subordinate to the Ministry of Education and Culture. Governments must immediately make digital documents available, especially in light of the COVID19 pandemic.

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