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Enhancing Vocational Competency Exam Preparation: The Impact of YouTube Channel Videos

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Abstract

This study aimed to assess the effectiveness of using YouTube Channel videos as a learning tool, with a specific focus on tire changing and wheel balancing content, to enhance student learning outcomes and prepare them for the Vocational Competency Exam at Vocational High Schools. The research was conducted at Dharma Bahari Vocational School in Surabaya, where blended learning was adopted in response to the COVID-19 pandemic. The research utilized a quantitative descriptive research design, incorporating response questionnaires from both students and teachers, as well as cognitive, affective, and psychomotor assessment instrument sheets. Data collection included questionnaires, tests, and observations, followed by quantitative descriptive analysis. The findings of the study indicated a significant positive impact of using YouTube Channel video media on student learning outcomes. This impact was evident through the noteworthy difference in student learning outcomes before and after the intervention. The significance value (p-value) in the t-test was 0.000, falling below the probability threshold of 0.05, signifying a substantial difference in the learning outcomes of students who utilized YouTube Channel video media. In conclusion, this research affirms that YouTube Channel can effectively serve as a supportive tool in blended learning and as a means of preparing students for vocational competency exams. as a result, the recommendation stemming from this research is to continue harnessing YouTube Channel video media for learning purposes and to explore the development of video content relevant to other materials.

Keywords*: Vocational, Competency, and Youtube*

1. Introduction

Vocational or vocational education plays an important role in preparing individuals to enter the world of work. In the modern era, with rapid changes in technology and an increasingly competitive job market, the need for students and prospective workers who have strong competencies is increasingly urgent. One important element in preparing students to face challenges in the job market is a vocational competency exam(Ahmad Yani et al., 2020). Vocational competency exams are a very important evaluation in the vocational education system. These exams help measure a student's knowledge, skills, and abilities in a specific area(Irwanti & Sudira, 2014). In the past, preparation for vocational competency exams may have been limited to textbooks and traditional printed materials. However, with the development of digital technology, especially YouTube, there is great potential to improve vocational competency exam preparation via video. This research covers topics such as the effectiveness of video-based learning, student preferences for online learning resources, and comparisons of test results of students who use YouTube videos with those who rely on traditional sources. The results of this study provide valuable insight into the potential of YouTube in improving vocational competency exam preparation. While there is relevant research into the use of YouTube videos for exam preparation, there are several gaps that still need to be filled. First, most current research has not focused on vocational competency exam preparation specifically. Additionally, there is little research that

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digs deeper into the factors that influence the effectiveness of YouTube videos in vocational exam preparation. Finally, there is a need to understand how YouTube videos can be integrated into vocational education curricula more effectively.

In this article, we will investigate the impact of using YouTube videos in vocational competency exam preparation. We will collect data from students who use YouTube videos as their primary learning resource and compare it to students who rely on traditional materials. We will also identify factors that influence the effectiveness of YouTube videos in vocational exam preparation. The results of our research will provide valuable insights for educators, students, and educational policy makers. The results of this research have several important implications in the context of vocational education. First, we hope that this research will provide empirical evidence about the effectiveness of using YouTube videos in vocational competency exam preparation.

In addition, this research can also provide insight into students' preferences in online learning and assist in the development of learning strategies that better suit their needs. Finally, the practical implications of this research may help improve the quality of vocational exam preparation and, ultimately, better prepare students for success in the competitive world of work.

The Vocational Competency Exam is part of the Government's intervention in ensuring the quality of education in Vocational High School education units. The implementation of vocational competency exam aims to measure students' achievement of competency at a certain level according to the Skills competency taken during the learning period at Vocational School(Ahmad Yani et al., 2020). The assessment of vocational school student learning outcomes, in this case the student skill competency test, is included in competency-based assessment, namely an assessment carried out to determine whether students are competent or not. Because the skills competency test aims to determine students' competency achievements at the end of the period, the assessment is included in the type of summative assessment, namely the assessment of learning outcomes to determine the final achievement of learning. The competencies measured and assessed are regarding student performance including aspects of knowledge, skills and attitudes. In the context of vocational education, competence in the context of vocational education competence focuses on an individual's ability to carry out certain tasks(Irwanti & Sudira, 2014). Competency focuses on an individual's ability to master a task or job as well as possible. A person is said to have competence (competent) in a particular field, when he or she has all the knowledge, skills and attitudes to complete the task/work well in accordance with the demands of professionalism(Suranto et al., 2014).

As social media develops rapidly, there is one social media that is used to share videos that can be accessed by people all over the world. This social media is called YouTube. YouTube has a section whose job is to record the video parts that are most popular with each viewer in various categories. These fans will later become subscribers to their respective favorite YouTube channels. Subscriber is another word for customer in Indonesian. The meaning of the word customer here is as a customer of videos uploaded by a YouTube channel. It's not just artists who use YouTube as a means to show their existence, but it can also be used by people who don't have professions as artists to show their existence in cyberspace via YouTube.(Adiyanto, 2018). YouTube videos can be an alternative media that is really needed at this time. This is because YouTube can provide a challenge for teachers to be more creative and innovative in presenting learning material, besides that, YouTube video media allows educators to increase learning activities and focus more on understanding the material quickly.(Delfisanur et al., 2020)(Yoon et al., 2021).

2. Method

This research uses a quantitative descriptive research design to evaluate the effectiveness of using videos from YouTube channels as a learning tool. This research focuses on tire changing and wheel balancing material in student preparation for the Vocational Competency Exam at Vocational High Schools. This research was conducted at the Dharma Bahari Vocational School in Surabaya. This research was conducted during the period where blended learning was implemented as a response to the COVID-19 pandemic. This research instrument includes a questionnaire response questionnaire used to collect responses from students and teachers regarding the use of videos from YouTube channels in learning. Then the cognitive, affective, and psychomotor are used to measure changes in students' knowledge, attitudes, and skills before and after intervention. Data was collected through questionnaires filled out by students and teachers to obtain their views on the use of videos from YouTube channels. Cognitive, affective, and psychomotor assessments were conducted before and after the use of videos from the YouTube channel to monitor changes in students' understanding, attitudes, and skills. Observations were also used to gain a deeper understanding of student interactions with the video material. and psychomotor skills were conducted

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before and after the use of videos from the YouTube channel to monitor changes in students' understanding, attitudes and skills. Observations were also used to gain a deeper understanding of student interactions with the video material. and psychomotor skills were conducted before and after the use of videos from the YouTube channel to monitor changes in students' understanding, attitudes and skills. Observations were also used to gain a deeper understanding of student interactions with the video material.

Data obtained through questionnaires and assessment instruments were analyzed quantitatively descriptively to measure changes and differences in students' understanding and learning outcomes. The t test was used to test the significance of differences in student learning outcomes before and after intervention with videos from YouTube channels.

3. Results and Discussion

In this research, YouTube Channel videos with tire changer and wheel balancing content were uploaded and then implemented in Class XII of Dharma Bahari Vocational School, Surabaya. So that the effectiveness of media use can be measured with certainty, the researcher took two classes of research subjects, the first class used the developed media and the second class did not use the media. The class that does not use media serves as the control class(Mulyatiningsih, 2019). After using the YouTube Channel video media, students and teachers were given a response questionnaire regarding the use of the YouTube Channel video media that was developed.

The selection of control and experimental classes was carried out randomly based on lottery drawing. Previously, students had been given pretest questions to determine the level of student competency so that there were no differences in student competency. Once it is known that the students' competencies are the same, a draw is carried out to select students in the control class and the experimental class.

Research can be carried out by comparing the situation before and after using the new system (before-after) whether there is an increase in learning outcomes or not. The experimental method uses a classical experimental design with a pretest-posttest control group design pattern.

Table 1. Classical Experimental Design Model

Group	Pre-test	Treatment	Post test
Experiment	O1	X	O2
Control	O3		O4

Source:(Mulyatiningsih, 2019)

Information :
O1 :*Pre-test*in experimental class
O2 :*Post test*in the experimental class
O3 :*Pre-test*in the control class
O4 :*Post test*in the control class
X : The treatment given

Researchers gave different treatment when in teaching and learning activities, the first group carried out learning activities using the developed YouTube Channel video learning media and the second group carried out learning without using the developed YouTube Channel video learning media. This treatment aims to obtain student learning outcomes to determine the level of effectiveness of the YouTube Channel video media which is used as a supporting medium for preparation for skills competency exams.

This trial is to find out the impact of YouTube Channel video media with tire changer and wheel balancing content can effectively support the preparation of skills competency exams using the blended learning method for vocational school students. This experiment was carried out on two class groups. The first class is the experimental class using YouTube Channel media with the flipped-classroom blended learning method. Meanwhile, the second class group, namely the control class, used media that is usually given in everyday life using the flipped-classroom blended learning method.

In determining the experimental class and control class to avoid bias, the researcher conducted a short pretest on all XII TKR classes, namely there were 6 TKR classes, then held a pretest using Quizziz. It is known from these results that 4 of the 6 classes, namely the TKR 1, 2, 5, 6 classes, got similar results in the range of 70 - 80, while the TKR 3, 4 classes were below 70, this can be assumed to be due to differences in teaching teachers. PSPTKR subjects. Because the classes were equivalent and in the same range, a lottery was carried out from the 4 classes, 3 classes were drawn to maintain subjectivity. The samples used for the control class, experimental class, and instrument validity testing class used a random sampling technique using the draw method.

Blended learning in the control class is assisted by PPT media and student handbooks. Meanwhile, in the class the YouTube Channel video media was developed. In assessing learning outcomes, the aspects assessed are the cognitive, affective and psychomotor domains. In calculating the final score for student learning outcomes for certain competencies at SMK Dharma Bahari

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Surabaya, assessment proportions are used with a composition of 30% cognitive aspects (knowledge), 10% affective aspects (attitudes), and 60% psychomotor aspects (skills).

The learning outcomes are then tested for prerequisites before hypothesis testing is carried out. The prerequisite test is carried out with the help of SPSS 20 software. The first thing that is done is to test the normality of the learning outcome data obtained. The first thing to do before carrying out a normality test is to look for the N-Gain value. The formula for finding the NGain value = (posttest – pretest) / (maximum value – pretest)(Suyatna, 2017).

The learning media that is better between those who use YouTube Channel videos and those who do not use YouTube Channel is the one that produces a significantly higher average normalized gain. To find out this, from the learning outcomes and N-Gain data, the following hypothesis can be formulated:

a. Hypothesis

The average N-Gain for the class that studied using YouTube Channel videos (experimental class) was significantly higher than those that did not use YouTube Channel videos (control class).

$H0: \mu_{experiment} = \mu_{control}$

$H1 = \mu experiment > \mu_{control}$

b. Test Criteria

Reject H0 if the Sig value. or probability value p <0.05. Accept H0 if the Sig value. or probability value p > 0.05. Using SPSS, it is analyzed or tested for normality with one sample KS or the Kolmogorov-Smirnov test(Suyatna, 2017). The following are the output results from the one sample KS normality test.

Table 2. Results of one sample KS analysis

One-Sample Kolmogorov-Smirnov Test

		Control Class N-Gain	Experimental Class N-Gain
N		40	40
Normal Parameters, b	*Mean*	.3410	.5712
	Std. Deviation	.15309	.14017
Most Extreme Differences	*Absolute*	,164	.153
	Positive	,090	,089
	Negative	-.164	-.153
Kolmogorov-Smirnov Z		1,039	,965
Asymp. Sig. (2-tailed)		,230	,309

a. Test distribution is Normal.
b. Calculated from data.

In Table 2, the results from Asymp are shown. Sig. (2-tailed) N-Gain for control class = 0.230 > 0.05 and N-Gain for experimental class = 0.309 > 0.05, this means that the N-Gain data for control class and N-Gain for experimental class are each normally distributed. Therefore it can be used for parametric analysis of the independent sample T Test.

To see whether there are differences in learning outcomes between classes that use YouTube Channel video media and those that do not, a hypothesis test is carried out using SPSS 20 software. The hypotheses tested are:

1) $H0: \mu_1 = \mu_2$There is no difference in student learning outcomes when using YouTube Channel video media with students who do not use YouTube Channel media.

2) $H1: \mu_1 > \mu_2$There are differences in student learning outcomes when using YouTube Channel video media with students who do not use YouTube Channel media.

By using SPSS, it is analyzed or tested differently using the independent sample t-test(Suyatna, 2017). The following are the output results from the independent sample t-test.

Table 3. Group Statistics independent sample t-test

Group Statistics

	Instructional Media	N	Mean	Std. Deviation	Std. Error Mean
N-Gain	*YouTube Channel*	40	.5712	.14017	.02216
	Power point	40	.3410	.15309	.02421

Based on Table 3, it can be seen that the control class mean is 0.3410, which is smaller than the experimental class average of 0.5712. This shows that there is a difference in average after using YouTube Channel learning media and those who do not. To find out whether this difference is significant if conclusions are drawn, it can be seen through the following output results.

Table 4. Independent sample t-test

		Levene's Test for Equality of Variances		*t-test for Equality of Means*						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	*95% Confidence Interval of the Difference*	
									Lower	Upper
N-Gain	*Equal variances assumed*	2,901	,092	7,016	78	,000	.23027	.03282	.16493	.29561
	Equal variances not assumed			7,016	77,402	,000	.23027	.03282	.16493	.29562

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The results of data analysis in Table 4 are divided into two parts. The first part, namely Levene's Test for Equality of Variences, shows the results of the equality of variances test or homogeneity test(Suyatna, 2017). The second part, namely the t-test for Equality of Means, shows the results of the similarity of the averages.

In the Levene's Test for Equality of Variences column, the Sig value is obtained. 0.092 > 0.05. In accordance with the decision making rules, if Sig > 0.05 then H0 is accepted, meaning there is no difference in variance or type between the average of the experimental class that uses YouTube Channel video media and the control class that does not use YouTube Channel video media, so it can be interpreted both ways. the class is homogeneous.

As a consequence then for results*t-test for Equality of Mean*sused is in the equal variances assumed line. In this line, the value Sig = 0.000 is obtained. Based on decision making rules, if Sig < 0.05 then H0 is rejected or H1 is accepted, meaning that there is a significant difference in the average learning outcomes of classes that apply YouTube Channel video media and classes that do not, where the experimental class gets the average result value.

The level of effectiveness of a media can be seen in the increase in student learning outcomes who apply YouTube Channel video media. In this research, media effectiveness is obtained from assessing learning outcomes in the domains of knowledge, attitudes and skills. The cognitive domain assessment was assessed using a validated multiple choice question instrument. Meanwhile, the affective assessment is assessed using a validated affective instrument and is based on the student's attitude during the learning process, then the psychomotor assessment is assessed using a validated psychomotor assessment instrument and is based on the student's skill performance in changing tires using a tire changer and repairing wheel balance using wheel balancer.

In carrying out a hypothesis test to find out whether there are differences in learning outcomes between classes that use YouTube Channel video media and those that do not use YouTube Channel videos, learning outcome values are used, where learning outcome values are obtained from the final value of the cognitive, affective and psychomotor domain value calculations. Before carrying out the hypothesis test, conditional testing is carried out, namely normality and homogeneity testing with the help of SPSS 20 software. The results obtained are in Table 4.35. The results from Asymp are shown. Sig. (2-tailed) N-Gain for control class = 0.230 > 0.05 and N-Gain for experimental class = 0.309 > 0.05, this means that the N-Gain data for control class and N-Gain for experimental class are each normally distributed so that independent sample t-test parametric analysis can be used. Meanwhile, the results of data analysis in Table 4.37 are divided into two parts. The first part, namely Levene's Test for Equality of Variences, shows the results of the equality of variances test or homogeneity test(Suyatna, 2017). The second part, namely the t-test for Equality of Means, shows the results of the similarity of the averages. In the Levene's Test for Equality of Variences column, the Sig value is obtained. 0.092 > 0.05. In accordance with the decision making rules, if Sig > 0.05 then H0 is accepted, meaning that there is no difference in variance or variety between the average of the experimental class that uses YouTube Channel video media and the control class that does not use YouTube Channel video media, so it can be interpreted that the two classes are homogeneous. As a consequence, the t-test results used are in the equal variances assumed line. In this line, the value Sig = 0.000 is obtained. In accordance with the decision making rules, if Sig < 0.05 then H0 is rejected or H1 is accepted, This means that there is a difference between the average learning outcomes of classes that apply YouTube Channel video media and classes that do not implement YouTube Channel videos, where the experimental class gets a greater average learning outcome value. If it is categorized at the level of effectiveness based on the results of the N-Gain Score calculation, namely the experimental class's N-Gain Score gets a value of 0.5712, which is in the medium category or in the percentage of 57.12%, then it is in the quite effective category.

The results of this hypothesis test show that the YouTube Channel video media with tire changer and wheel balancing content developed is quite effective in supporting vocational school students' balancing. The results of this study are in line with the results of researchMuhammad Ilyas & Putri (2020)And(Ronald & Odora, 2021), which states that the YouTube Channel can significantly improve student learning outcomes after being taught using the YouTube Channel. Next are the research resultsMoghavvemi et al.(2018), shows that students rely on YouTube to solve problems and answer questions they have. Apart from that, students also use YouTube to search for information and learn. The effectiveness of learning videos using YouTube Channel is that it can provide something new as a learning tool or medium because by visualizing objects, especially videos, you can explain things easily to students and make their understanding more real and better.

Apart from that, the YouTube Channel is also very efficient to use to support balancing, this is in

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accordance with the research resultsFachriyah et al. (2020), which states that YouTube is a medium that is easy to practice, understand concepts, and is very effective because it can be accessed flexibly both outside the classroom and inside the classroom. So that during class you can spend more time discussing and asking questions about material that you have not yet mastered and you can be more confident and ready to take part in the learning.

Evaluation of responses from experimental class students taught using YouTube Channel media with tire changing and wheel balancing content. Student responses to aspects of interest in presentation, aspects of suitability of material, aspects of quality of use, received very good response categories. Based on these results, it can be concluded that the students' response to the media developed in the form of YouTube Channel videos with tire changer and wheel balancing content was very good, so it is known that the YouTube Channel video media is very practical as a medium to support blended learning for vocational school students.

Then, if we look at the responses of teachers who use the YouTube Channel video media that was developed, namely from 4 teachers who teach chassis light vehicle subjects. In accordance with the response data seen in the results, the responses obtained in the aspects of interest in presentation, aspects of suitability of material, aspects of quality of use, received a very good response. Based on these results, it can be concluded that the teacher's response to the media developed in the form of YouTube Channel videos with tire changer and wheel balancing content was very good,

The practicality of the YouTube Channel as a learning medium is also supported by several research results, including research Yaacob & Saad (2020), that students' acceptance of YouTube as a learning resource is related to the user's perceived ease, perceived usefulness, and social influence stating that students accept YouTube as a learning resource during the Covid-19 pandemic and it is very practical to use. Apart from that, research Jalinus et al. (2021) and Irawan, Ahmadi, et al. (2020), also revealed that students feel that they really benefit from learning using YouTube videos because of the ease of use and ease of access which is free so it is very good and practical to use as a learning solution in the pandemic era and in the current digital era. Apart from that, it can support or increase students' level of readiness in preparing for the skills competency tests they will face.

4. Conclusion

From the results of the research conducted, it can be seen that student learning outcomes in the areas of knowledge, attitudes and skills have differences in average between classes that use YouTube Channel video media and classes that do not use YouTube Channel video media. Based on the results of the hypothesis test, it shows that there are differences in learning outcomes achieved between students who are taught by balancing with the help of the developed YouTube Channel video media and students who are taught by balancing with the help of PowerPoint media. In general, this research shows that the control class has a lower mean compared to the experimental class which uses YouTube Channel video media. It can be seen that YouTube videos have a good impact on improving student learning outcomes and can have a positive impact as a medium for preparing students' vocational competency exam.

References

Adiyanto, MW (2018). The Effect of Exposure to Automotive Review Shows on YouTube on Fulfilling Information Needs. E-Proceedings of Management, 5(1), 1481–1493.

Ahmad Yani, Yano Hurung Anoi, & Wildan Hamdani. (2020). Pre-Vocational Competency Test (Ukk) Competency Improvement Training for Automotive Engineering Department for Rigomasi Bontang Vocational School Students. Journal of National Development Services, 1(1), 128–136. https://doi.org/10.46306/jabb.v1i1.48

Delfisanur, Sari, DY, Hasanuddin, H., & Ambiyar. (2020). The Influence of YouTube Application-Based Learning Media on the Activities and Learning Outcomes of Class X Students in the Energy Conversion Machine Subject at SMK Negeri 1 Koto XI Tarusan. Journal of Vocational Mechanics, 2(1), 53–59. http://vomek.ppj.unp.ac.id/index.php/vomek/article/view/85

Fachriyah, E., Badriyah, RDM, & Perwitasari, E. (2020). Using YouTube to Evaluate and Practice English Skills: A Case Study of Blended Learning. Advances in Social Science, Education and Humanities Research, 410(Imcete 2019), 26–29. https://doi.org/10.2991/assehr.k.200303.007

Irawan, E., Ahmadi, Prianggono, A., Saputro, A., & Rachmandhani, M. (2020). YouTube Channel Development on Education: Virtual Learning Solutions during the Covid-19 Pandemic. International Journal of Advanced Science and Technology.

Irwanti, YD, & Sudira, P. (2014). Evaluation of Multimedia Skills Student Competency Test in Vocational Schools in Yogyakarta City.

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Evaluation of Multimedia Skills Students Competency Test in Yogyakarta Vocational Schools. Journal of Vocational Education, 4(3), 420–433.

Jalinus, N., Verawardina, U., Krismadinata, Nabawi, RA, & Darma, Y. (2021). Developing blended learning model in vocational education based on 21st century integrated learning and industrial revolution 4.0. Turkish Journal of Computer and Mathematics Education, 12(8), 1239–1254.

Moghavvemi, S., Sulaiman, A., Jaafar, N.I., & Kasem, N. (2018). Social media as a complementary learning tool for teaching and learning: The case of YouTube. International Journal of Management Education, 16(1), 37–42. https://doi.org/10.1016/j.ijme.2017.12.001

Muhammad Ilyas, & Putri, ME (2020). YouTube Channel: An Alternative Social Media to Enhance EFL Students' Speaking Skills. Journal of English for Academics, 7(1), 77–87.

Mulyatiningsih, E. (2019). Applied Research Methods in the Field of Education. Alphabet.

Ronald, P., & Odora, J. (2021). Exploring The Effects Of Youtube On Technology Education Students' Cognitive Achievement In A Mechanical System Module. Perspectives in Education, 39(3), 94–108.

Suranto, S., Muhyadi, M., & Mardapi, D. (2014). Development of Office Administration Skills Competency Test (Ukk) Evaluation Instrument at Vocational High Schools. Journal of Educational Research and Evaluation, 18(1), 98–114. https://doi.org/10.21831/pep.v18i1.2127

Yaacob, Z., & Saad, N.H.M. (2020). Acceptance of YouTube as a Learning Platform during the Covid-19 Pandemic: The Moderating Effect of Subscription Status. TEM Journal. https://doi.org/10.18421/TEM94-54

Yoon, M., Lee, J., & Jo, I. (2021). Video learning analytics: Investigating behavioral patterns and learner clusters in video-based online learning. The Internet and Higher Education, 50(April), 100806. https://doi.org/10.1016/j.iheduc.2021.100806

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