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Youtube as an alternative to learning media: a case study

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ABSTRACT

Learning activities in the 21st century are undergoing significant changes. The learning process is carried out with a combination of various digital media that can be easily accessed by students and teachers. Based on the covid-19 pandemic, it is also an effort to follow the development of technology and information. Vocational students in the Field of Automotive Engineering Expertise must have competence in the maintenance and repair of vehicles. Therefore, with learning that still cannot be done face-to-face in full, they must utilize technology and information to support learning and understand theoretical and practical materials. This research aims to find out the activity of the use of YouTube as a medium to support the learning process of vocational students in the field of automotive engineering. This research uses quantitative descriptive methods and is supported by literature studies.The sample taken in this study was a student of SMK Senopati Sidoarjo, East Java, Indonesia majoring in Light Vehicle Engineering and Motorcycle Business Engineering. This study shows that YouTube is beneficial for students to support online learning, effective in the pandemic period, and helps overcome problems in the automotive field. There are tutorial videos that are very easy to be accessed to help students overcome the problem in their vehicles and understand learning materials.

Keywords: Automotive, Learning Media, YouTube

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INTRODUCTION

The development of technology in the 21st century is very quick, all information needed can be obtained quickly through various digital platforms on the internet. Someone can master even several skills by self-learning. The most visited platforms on the internet are Google, Facebook, YouTube, Twitter, Instagram, Wikipedia, and several other sites. Based on influencer marketing hub data 2020, YouTube became the most visited site. There are at least 8.56 billion monthly global visitors on the site. YouTube is one of the digital platforms that allow its users to upload, watch, and share videos.

According to APJII survey report which conducted in 2019 shows that the regular rate of Indonesian Youtube users were frequently use it with 61.0% out of 100% then followed occasionally by 34.9% out of 100% and the rest which never watch the YouTube with the total

around 4.1% out of 100%. A lot of content is contained on YouTube, including Education, Music, Movies, Games, Lectures, etc., which can be accessed anytime.

Along with the industrial revolution, the educational field also evolved into a 4.0 system. It is characterized by an independent and student-centered learning system (Maulida et al., 2020). A good education can create students who can solve problems in the real world by implementing knowledge in everyday life. It will create human resources who can make changes for themselves, society, and the nation in the 21st century (Cahyani et al., 2020). The covid-19 pandemic caused face-to-face learning turned into online learning or e-learning. Information systems that integrate several dimensions of education, including learning materials, audio, video, text, discussions, quizzes, and assignments, are referred to as e-learning (Hinojosa et al., 2020; Siron et al., 2020). The main advantage for students is that e-learning enables them to achieve outstanding learning achievement, career development, and social value (Alsabawy et al., 2016; Siron et al., 2020). Thus, YouTube can be used as an online learning resource.

In increasing students' understanding in mastering the learning materials, teachers must prepare material that can be delivered to students so that the learning goals can be achieved even even during a pandemic. Therefore, the learning media used must be able to support the learning activities. In addition, teachers must be prepared to continue to innovate like making video tutorials, game-based learning, or providing learning via teleconference to overcome learning that was initially only taught in a monotonous manner (Soeryanto et al., 2021). Technology-based media can increase student motivation better than prepared traditional teaching materials (Astuti, 2021).

YouTube is one of the most widely used social media among teachers and students to help their learning. One learning video can help understand the learning material presented and can be played anytime and anywhere repeatedly according to learning and learners' needs. (Safitri et al., 2019). The role of YouTube media is really needed in the learning process; Currently, the media is no longer seen as a tool but as an integral part of the education and learning system. (Amos, 2021). To improve the effectiveness of the teaching and learning process and the quality of student learning outcomes, educators and the media should work integratedly to make learning easier for students (Yuliana & Aminullah, 2020). Research finds that students who utilize YouTube as the learning media are more enganged in English Learning (Fachriyah et al., 2020). In addition, the learning experience using YouTube makes students motivated by natural English learning (Mustadi et al., 2021). According to Faizah et al. (2017), using YouTube media rhetoric in Indonesian language and literature learning can increase learning effectiveness and benefit in scientific-based education, namely observing, exploring, associating, and communicating (Faizah et al., 2017). The same goes for Fleck et al. (2014), who's demonstrating that YouTube can succeed in student integration in psychology lessons. After watching a video, students are give

structures discussion which provides an opportunity to further engage with the materials, share ideas, and clarify uncertainties so they can do the quizzes well (Fleck et al., 2014). According to Farhatunnisya (2020), the use of YouTube among students or teenagers is very high while the motivation to learn is low, so a survey was conducted on lantern students who showed that YouTube videos could increase the basis of teaching students literation (Farhatunnisya, 2020).

In contrast, Setiadi et. al. (2019) state their research result of the use of YouTube media as one of the sources of student learning in the subject of citizenship politics in terms of use, follow-up, benefits obtained, and any obstacles experienced by students of the Department of Social and Political Sciences in using YouTube media as a source of learning shows that the result number of students who use YouTube as a source of learning for the low citizenship politics is 22.95% out of 100% (Setiadi et al., 2019). As a result, the researchers' thinking arises to conduct a study of YouTube utilization among vocational high school (SMK) students since online learning is still considered a big challenge for students, especially vocational high school students (SMK) who are required to master both theory and practice.

Vocational High School (SMK) is a school that creates and prepares its graduate to be ready for work, therefore they are not only required to master the theory but also master the practice as well. In term of light vehicle engineering and motorcycles studying theory and practice, students should know, understand, analyze the damage, and repair vehicles. Thus, selecting the suitable learning media to learn in pandemics is very important. Therefore, in this study, a case study was conducted on vocational students in automotive engineering major about the use of YouTube to support online learning during covid-19 pandemic. This research aims to find out the benefits of YouTube as a supporting medium for learning about vocational engineering expertise.

METHODOLOGY

This research uses quantitative descriptive methods and is supported by literature studies. The population of this study is the students of SMK SENOPATI Sidoarjo, located on Senopati Street No.2 Betro. The sample size used in the quantitative method in this study was obtained using the Slovin formula. Sampling is done by a nonprobability sampling technique, namely purposive sampling. The subject is considered representative of a population and by the criteria of research objectives, obtained 241 research subjects—collecting data using interviews and questionnaires. Data collection was carried out by the author of SMK students in automotive engineering major at SMK Senopati. The study results are processed with a quantitative descriptive analysis approach that emphasizes the analysis obtained from the effects of surveys through google forms presented in pie diagrams. The survey results are about the usage level of

YouTube and the benefits of learning automotive engineering to students of SMK Senopati in automotive engineering. The data analysis method used to calculate data is using Microsoft Excel.

RESULTS AND DISCUSSION

The survey results data about the use of YouTube among students as a medium of supporting learning for students of SMK Senopati can be seen below.

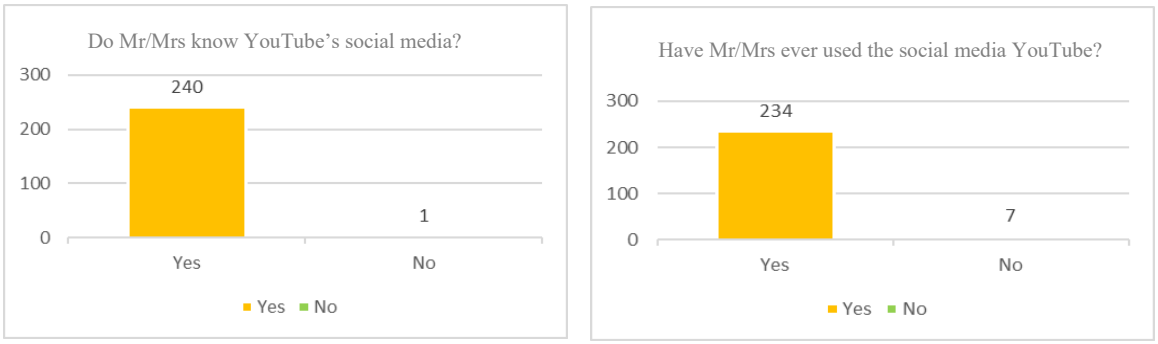

Figure 1. Knowledge of YouTube

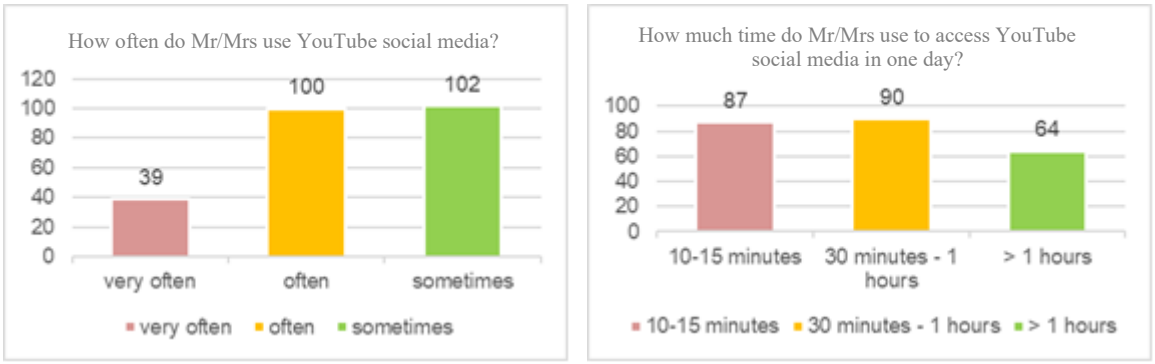

Figure 2. The intensity of YouTube usage

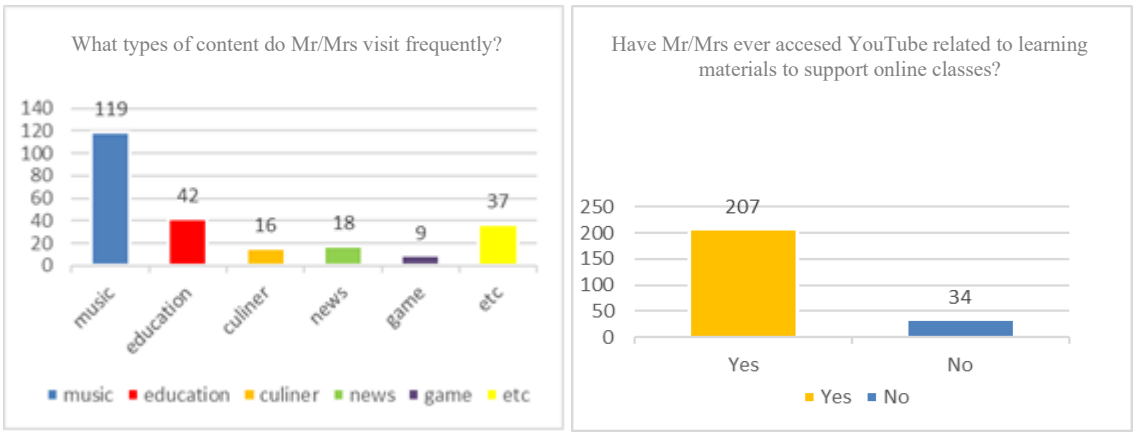

Figure 3. Types of content accessed

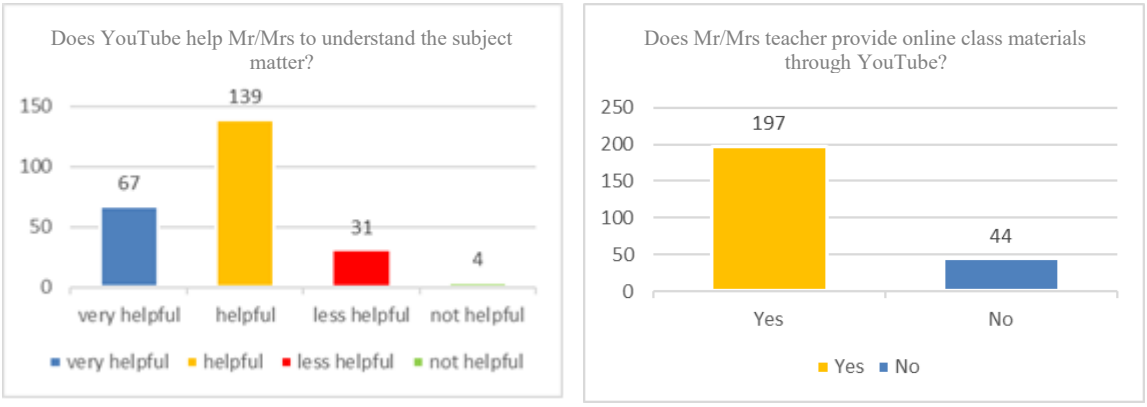

Figure 4. YouTube as a supporting learning media

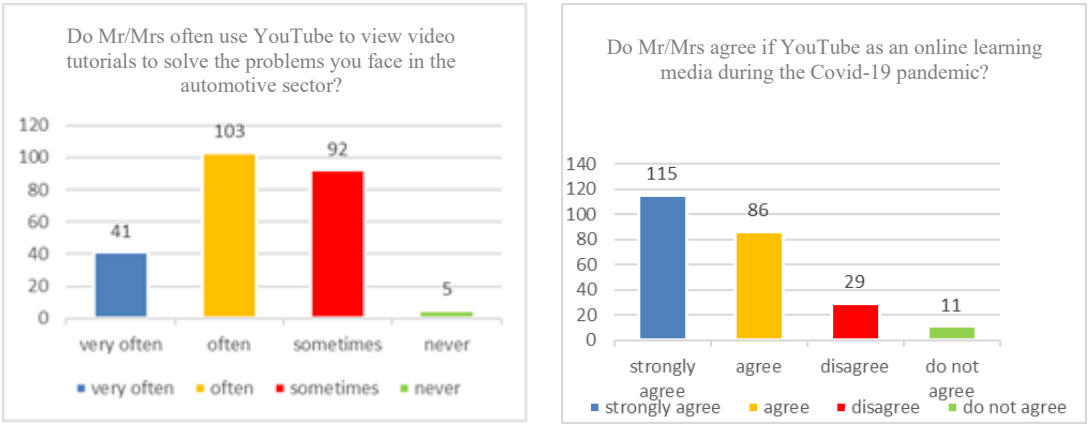

Figure 5. YouTube as a media to support the learning of automotive students

From the survey results, it is known that the percentage from the survey data on the use of YouTube as a supporting medium for learning automotive vocational students is presented in Table 1.

Table 1. Percentage of YouTube Usage Survey Results

Question	Percentage
Knowledge of YouTube social media among automotive engineering students	
Yes	99.6%
Not	0.4%
Use of YouTube social media	
Yes	97%
Not	3%
Frequent levels of using YouTube social media	
Very often	16.2%
Often	41.5%
Sometimes	42.3%
Never	0%
Duration of time used for YouTube access in one day	
10 - 15 minutes	36.1%
30 minutes - 1 hour	37.3%
> 1 hour	26.6%
Types of content frequented	
Music	49.4%
Education	17.4%

Question	Percentage
Culinary	6.6%
News	7.5%
Game	3.7%
Others	15.4%
YouTube helps to understand the subject matter	
Very helpful	27.8%
Help	57.7%
Less helpful	12.9%
Unhelpful	1.7%
The intensity of using YouTube to view tutorial videos in solving problems faced in the automotive field	
Very often	17.0%
Often	42.7%
Sometimes	38.2%
Never	2.1%
Can be related to YouTube as an online learning media during the Covid-19 pandemic	
Strongly Agree	47.7%
Agree	35.7%
Disagree	12%
Do not agree	4.6%

Descriptives

kelas				Statistic	Std. Error
NGain_Persen	eksperimen	Mean		77.04	3.263
		95% Confidence Interval for Mean	Lower Bound	70.40	
			Upper Bound	83.67	
		5% Trimmed Mean		78.04	
		Median		82.35	
		Variance		372.606	
		Std. Deviation		19.303	
		Minimum		35	
		Maximum		100	
		Range		65	
		Interquartile Range		26	
		Skewness		-.628	.398
		Kurtosis		-.712	.778
	kontrol	Mean		50.55	3.041
		95% Confidence Interval for Mean	Lower Bound	44.37	
			Upper Bound	56.73	
		5% Trimmed Mean		50.88	
		Median		50.00	
		Variance		323.601	
		Std. Deviation		17.989	
		Minimum		15	
		Maximum		81	
		Range		67	
		Interquartile Range		24	
		Skewness		-.259	.398
		Kurtosis		-.348	.778

Case Processing Summary

		Cases					
		Valid		Missing		Total	
kelas		N	Percent	N	Percent	N	Percent
NGain_Persen	eksperimen	35	100.0%	0	0.0%	35	100.0%
	kontrol	35	100.0%	0	0.0%	35	100.0%

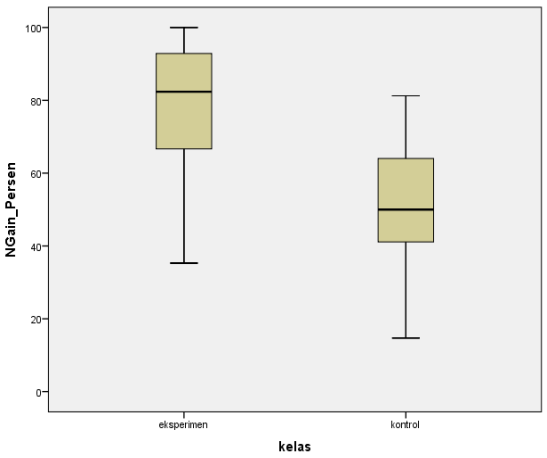

Figure 6. N-gain score calculation results

From the table 1 above, vocational automotive engineering students as much as 99.6% know YouTube, while only 0.4% of them do not know it. 97% of students have used YouTube, while only 3% of students have never used YouTube social media. From these results, the knowledge of vocational school students related to YouTube is relatively high. Furthermore, 16.2% of students use YouTube very often, 41.5% of students often use YouTube, and only 42.3%

rarely use YouTube. The duration of accessing YouTube is 36.1% in 10-15 minutes, while the time of accessing YouTube is between 30 minutes - 1 hour by 37.3%, then 26.6% of students access YouTube for more than 1 hour. Therefore, we can calculate that automotive vocational students access YouTube for more than 30 minutes.

Various types of content accessed by students include musical content with 49.4%, educational content by 17.4%, culinary content by 6.6%, news content by 7.5%, game content by 3.7%, and other content by 15.5%. From the percentage results, it is known that students very often visit musical content, so that it can be seen that in order to attract students' attention to learn using YouTube, the educational content presented can be equipped with music so that students can be enthusiastic about learning the material in the YouTube videos presented. However, students also accessed YouTube social media-related learning materials to support online classes with a percentage of 85.9%, and 14.1% never accessed YouTube to help online courses. From the percentage amount obtained, it is seen that students are classified as having accessed YouTube-related learning materials to support online classes.

According to 27.8% of students, YouTube is beneficial in understanding the subject matter. It is shows by the analysis result which presents (57.7%) of students strongly agree that YouTube supports their learning process. On the other hand, there are (12.9%) students agree, and the rest (1.7%) of students strongly disagree. The results conclude that YouTube can help students understand the subject matter. 81.7% of students stated that their subject teacher provided the material through YouTube, and 18.3% of students said that teachers do not offer material through YouTube. Further, vocational students often use YouTube to watch tutorial videos to overcome problems related to the automotive field. 17.0% of students are persistent, 42.7% of students often access it to watch tutorial videos to overcome their issues on their cars and motorcycles. 38.2% of students sometimes watch YouTube for accessing the problem handler tutorial videos on vehicles, and only 2.1% of students never access YouTube to solve problems with their cars.

From the results, it emerged that the opinions of automotive vocational students strongly agreed that YouTube was used as an online learning media during the Covid-19 pandemic with a percentage of 47.7%, 35.7% of students agreed, 12% of students disagreed, and 4.6% disapproved of YouTube being an online learning media. Effectiveness can be the depth of something used or implemented in everyday life. From Figure 6, we know after conducting a limited test to find out the level of effectiveness of YouTube media as a learning medium where the test was limited to the control class and the experimental class, each class consisted of 35 children. Based on the N-Gain Score test calculation result, it shows that the average value of the N-Gain score for the experimental class (using YouTube media) is 77.0355% or 77% included in the effective category with a minimum n-gain score of 35% and a maximum of 100%. While the average N-gain score

for the control class (using PPT media) is 50.487% or 50%, it is included in the quite effective category with an n-gain score of 14% and a maximum of 81%. So it can be seen that Youtube media is effectively used as an alternative learning media for vocational students in this case on Light Vehicle Engineering and Motorcycle Business Engineering students.

If viewed from a YouTube point of view, it can be seen the extent of the effectiveness of using YouTube. Samosir et al. (2019) revealed that YouTube benefits learners in learning, help in completing tasks, and adds to science. In addition, the information on YouTube is up to date since it contains the latest news that can increase knowledge and is not limited to space and time (Samosir et al., 2019). Further, Delfisanur et al. (2020) stated that using YouTube media is more significant to learners' results and learning activities than using conventional media. Since pandemics cause face-to-face learning is limited, YouTube can be usead as an effective learning media (Delfisanur et al., 2020).One of the things that makes YouTube easier for learners to learn is that it can be accessed anytime, anywhere easily. It allows students to understand lessons more quickly and motivate students in learning (Muhammad Ilyas & Putri, 2020).

YouTube can play an essential role in facilitating the self-management of online learning (SDL) as a finding that uncovers YouTube's range of knowledge and social affordability (Lee, 2017). Zhou et al. drew through the social cognitive theory to test how personal, environmental, and behavioral factors might affect each other in YouTube use. The approach reinforces that individual characteristics, namely expectations and attitudes of learning outcomes directly affect YouTube as a source of learning (people → behavior). Environmental factors, namely YouTube sociability, are influenced by attitudes (environment →people), while behavioral factors, namely before the learning experience on YouTube, affect learning outcomes (behavior → people).

In addition, two personal factors fully mediate the influence of socialization and previous experience on YouTube for learning. The factors and relationships identified in this provide important implications for individual learners, platform designers, educators, and other stakeholders who drive utilizing YouTube as a learning resource. On a comprehensive theoretical perspective (i.e., social cognitive theory) to investigate the interaction of essential components (i.e., individuals, environments, and behaviors) on YouTube, the learning ecosystem. Personal factors directly influence how people use YouTube as a learning resource and mediate the influence of environmental and behavioral factors on usage behavior (Yaacob & Saad, 2020; Zhou et al., 2020). Based on Moghavvemi et al. (2018) research, YouTube is a complementary teaching tool, considering the importance of using video and visual objects for teaching. Two essential things in using YouTube are usage patterns and related factors that encourage students to use it. YouTube is used to enjoy entertainment, information seeking, and academic learning. In addition, the primary motivation is to use YouTube because YouTube is an effective tool that

can improve the learning experience (Moghavvemi et al., 2018). Students' perception of using YouTube as a platform to learn through watching tutorial videos.

In a formal learning environment is received positively. Especially the relationship between students' attitudes towards YouTube usage and significant strong behavioral intentions shows that the platform is successful with student learning (Maziriri et al., 2020). A significant improvement in student achievement occurred after being taught using a YouTube channel (Muhammad Ilyas & Putri, 2020) Then, the use of YouTube videos as a medium positively affects students' skills (Rachmawati & Cahyani, 2020).

Looking at to the content aired on YouTube, so many of them are music channels, cooking channels, beauty channels, traveling channels, and one of them is the automotive review channel. Automotive channel review is a video content in which there is a review of the strenght and weakness of a car technology marketed in Indonesia to provide information and references to the public (Adiyanto, 2018). Therefore, for students of Vocational Automotive Engineering, the use of YouTube in the learning process makes them understand the subject easier. The learning achievement analysis of Automotive Engineering Vocational Students about valve mechanism material with YouTube Based Learning results that there are differences in learning achievement between students who learn to use YouTube compared to e-books. Differences in learning achievement between students with high mathematical logic intelligence versus low; and the interaction between the medium of learning with logical-mathematical intelligence towards student learning achievement (Soeryanto et al., 2021). That way, using YouTube is an effective tool to improve student's learning achievement (Ronald & Odora, 2021).

CONCLUSION

From the results and discussions that have been explained, some conclusions can be drawn that SMK students know YouTube and have used it. The intensity of students accessing YouTube is pretty long because most of it is more than 30 minutes. However, many students still access music rather than education or learning materials. YouTube is beneficial for students to support online learning in the pandemic period and overcome problems in the automotive field. On YouTube, there are tutorial videos that are very easy to access to help students overcome difficulties in their vehicles and understand learning materials. YouTube is a social media that is currently very popular among young children, students, and adults. Social media presents widespread use as a source of study (Viana et al., 2021). Therefore, teachers should use YouTube to support students' understanding in online learning and practice. It is recommended that instructors integrate YouTube into their respective courses to benefit from the advantages inherent in the context of learning/teaching. Content on YouTube has a closer relationship with YouTube addiction than looking at range.

Furthermore, social satisfaction significantly influenced both types of YouTube activity, while technological delight had no significant effect. Among all perceived gratification, content satisfaction has the highest relationship coefficient value with the recklessness of YouTube content creation (Balakrishnan & Griffiths, 2017). Freedom to access on YouTube social media, it is still necessary to monitor parents to pay attention to what content is accessed by their children to remain under surveillance to avoid the adverse effects of technological developments.

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