Validating YouTube Factors Affecting Learning Performance

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Abstract. YouTube is often used as a companion medium or a learning supplement. One of the educational places that often uses is Jogja Audio School (JAS) which focuses on music production education. Music production is a difficult material to learn, especially at the audio mastering. With tutorial contents from YouTube, students find it easier to learn and understand audio mastering and improved their learning performance. This study aims to validate the role of YouTube as a medium of learning in improving student's learning performance by looking at the factors that affect student learning performance. The sample involves 100 respondents from JAS at audio mastering level. The results showed that student learning performance increases seen from factors that have a significant influence of motivation, instructional content, and YouTube usefulness. Overall findings suggest that YouTube has a important role to student learning performance in music production education and as an innovative and efficient learning medium.

1. Introduction

Online material can be easily obtained from the internet, one of the providers of such material is YouTube. It allows teachers to include online material into traditional classes [1]. The lecturers provide the supreme material and the main material in the teaching process [2], [3]. The purpose of using technology in the learning process is to improve the quality of learning [4]. Jogja Audio School (JAS) is a music education institution focused on music production. Studying the music production process is not easy, especially at the audio mastering level, the material that is studied quite a lot and complicated, so that students often find it difficult to learn and understand the audio mastering process. In the process of learning JAS has developed a learning method by utilizing YouTube as a learning medium or as a student learning supplement. After using YouTube, students' learning performance is increasing. This shows that after the use of YouTube a positive change in student learning performance. In previous studies, YouTube has shown a positive impact on students' learning outcomes [5], [6], [7]. However, until now there is still no research on the factors that impact on improving student learning performance by using YouTube video tutorials to validate that YouTube has a major role in the improvement. This is the focus of this research, by analyzing the various factors that influence the improvement of student learning performance by utilizing YouTube as a medium and learning supplement. The final result will be obtained by several factors that can impact on the improvement of learning performance, and can be concluded from the conclusion is expected to give a positive impact that is the potential development of YouTube as a medium of learning in order to achieve increased learning outcomes.

2. Literatur review and hyphoteses

2.1. Motivation and Self-efficacy

In an educational environment or ordinary motivational learning is defined as "the special desire of learners to learn the contents of the learning program" [8]. In Mathieu, Tannenbaum, and Salas research, it shows that learners provide a good emotional response when they have a higher motivation. This is found proportionally with regard to improved work performance after training [9]. In Chou & Wang's research, computer self-efficacy is a very important characteristic in electronic training or e-training situations [10]. Self-efficacy also has an impact on the effectiveness of learning in such areas as in computer software learning [11]. Learning effectiveness of learners with computer self-efficacy is higher better than learners with low self-efficacy computer. Application of technology in learning will be more effective if the system has high functionality and learners have high self-efficacy computer [12]. This study intends to verify the link between student learning, motivation and YouTube self-efficacy and learning performance.

H 1-1: Learning motivation has a positive effect on learning performance
H 1-2: Learning motivation has a positive effect on the transfer of performance
H 2-1: YouTube Self-efficacy has a positive effect on learning performance
H 2-2: YouTube Self-efficacy positively affects the transfer of performance

2.2. Instructional Contents
The material of the content is certainly very important in the use or distribution of learning outcomes [13]. The material or content presented should be harmonized with actual practice, in order for an organization to increase the motivation of the trainee to improve the learning performance [70]. When learners feel the content is practicable, then they apply the ability of what they get from training in their real work [14]. When applied to the domain of this research, YouTube may be a rich and fresh source of procedural content. Eiriksdottir and Catrambone [15] stated that individuals do not see procedural or instructional content that is inaccurate and missed out as something useful. Therefore, content, or information according to Tung [16] involves three dimensions: relevance, timeliness, and sufficiency. Thus, one may demonstrate a greater perception of the benefits of a system designed to be accessible for every situational task objective. Collectively, it is expected the extent to which users feel that YouTube provides procedural learning content when requested and is perceived to affect its usefulness [17].

H 3-1: Instructional contents have a positive effect on learning performance
H 3-2: Instructional contents positively affect the transfer of performance

2.3. Usefulness and Ease of use
Perceived usefulness is defined as "the extent to which a person believes that using a particular system will improve his performance" [18]. Chiu, et al. [19] suggest that perceived usefulness positively affects the effectiveness of e-learning. Johnson et al positively demonstrate technology usefulness affecting e-learning success [20]. Based on the theory of Davis (1989) [18] shows that ease of use positively impacts perceived usefulness. Venkatesh & Davis, 1996, 2000. TAM theorizes that perceived ease of use determines the actual intent and usage behavior [21].

H 4: Ease of use has a positive effect on learning performance
H 5: YouTube usefulness has a positive effect on learning performance

2.4. Transfer Performance
Baldwin & Ford's research [22] demonstrates the integration between learning and performance transfer, learning performance influencing the transfer of performance or the use of learning outcomes in the real world. However, design, methods, materials, and theories have only an impact on learning performance. Learning performance affects the transfer of performance or application of acquired knowledge.

H 6: learning performance has a positive effect on the transfer performance

This research applies the research model from Hyochang Lim et al. [13] and there is an addition of YouTube Usefulness variable in this research to see the impact of technology in terms of expediency in the process of improving learning performance. In addition, there are some variables that are omitted because they do not fit the research needs or not in accordance with the learning culture of the Jogja Audio School, such as e-mail exchange, face-to-face, continuous learning culture and seniors' support. The following variables are used in this study:
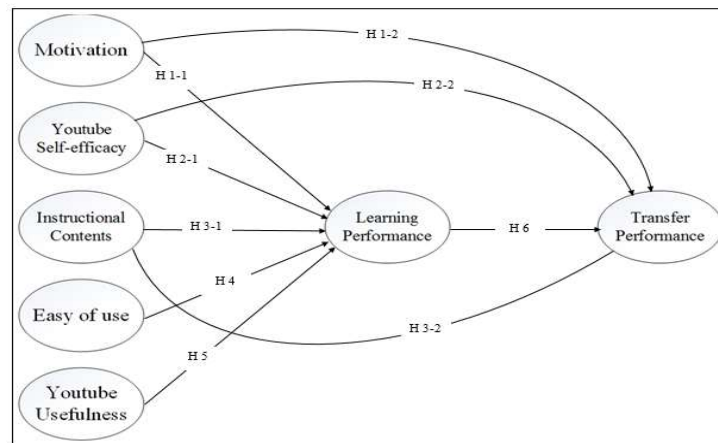

Figure 1. Proposed research model.

3. Research method
The population of this research is the students and teachers from the Jogja Audio School who have been through the learning system using video tutorial YouTube. Samples to be taken amounted to 100 respondents. Determination of the sample based on the purposive sampling method, i.e. the determination of the sample by the researcher by considering that the information needs can be obtained from the target that has been determined [23].
- The proportion of males to females is 83 percent to 27 percent.
- The age is divided into 4 groups of age ranges, age group 15-20 years as many as 10 percent, 21-25 years as many as 44 percent, 26-30 years some 39 percent and 31-35 years of 7 percent.

   Primary data collected from the respondents by division of questionnaire will then be analysed. Prior to the division, according to the provisions shall be tested the validity and reliability of the instrument. The validity test is intended to assess the feasibility of the indicator or team in defining the construct variable. In the PLS, convergent validity can be seen through the loading factor of the indicators that measure the construct. The indicator can be declared valid if it has a loading factor> 0.70 [24]. While the reliability test the consistency of measuring instruments in measuring a concept correctly and error free. In PLS, reliability is tested using two methods of cronbach's alpha and composite reliability. The data is said to be good if cronbach's alpha and composite reliability have values greater than 0.7 for confirmatory research or more than 0.6 for explanatory research [24].

4. Results
The objective of this study is to identify and validate the factors that affect learning performance by using YouTube tutorial video for music production education. With the obtained results, descriptive analysis and structural equation modeling analysis were conducted.

4.1. Validity Analysis
Validity testing is done to see the suitability of each indicator in the size of a variable according to the theory used as a reference. For model models or outward models, it must look at the values of convergent validity (convergent validity) and discriminant validity (discriminant validity) of its indicators [24]. The

low loading factor value is in the instructional content indicator IC6 that is equal to 0.814. Based on these results, all indicators of this research model are valid. Discriminant validity is indicated by the correlation between measuring devices in measuring different attributes, the expected results are not extreme and smaller than the measuring instruments that measure the same attributes. The discriminant validity table shows a good result based on the value of the Fornel - Larcker criterion which shows the square root of the AVE value of each latent variable is greater than the value of latent variable correlations as can be seen in Table 1.

Table 1. Discriminant validity based on Fornel-Larcker criterion.

	SE	IC	EOU	MV	LP	TP	YU
SE	**0.860**						
IC	0.863	**0.904**					
EOU	0.783	0.771	**0.909**				
MV	0.752	0.801	0.731	**0.859**			
LP	0.738	0.844	0.668	0.814	**0.920**		
TP	0.752	0.811	0.714	0.791	0.852	**0.948**	
YU	0.765	0.850	0.735	0.854	0.886	0.865	**0.904**

Note. SE = Self-Efficacy; IC = Instructional Contents; EOU = Easy of use; MV = Motivation; LP = Learning Performance; TP = Transfer Performance; YU = Youtube Usefulness.

4.2. Reliability Analysis
Reliability testing is intended to see the consistency of the measurement gauge of an instrument if the instrument is reused as a measuring instrument. In reliability, it can use Cronbach's Alpha (CA). This value reflects the reliability of each indicator in the model. The minimum value of 0.7 is ideally 0.8 or 0.9. In addition to Cronbach's Alpha also used the value of composite reliability (CR) which is interpreted the same as Cronbach's Alpha [24]. The value of CA & CR in this research model can be seen in Table 2.

Table 2. Composite Reliability (CR) and nilai Cronbach Alpha (CA).

Constructs	*Cronbach's Alpha*	*Composite Reliability*
Self-Efficacy	0.912	0.934
Intructional Contents	0.968	0.973
Easy of use	0.930	0.950
Motivation	0.881	0.919
Learning performance	0.940	0.957
Transfer performance	0.888	0.947
YouTube usefulness	0.944	0.957

The value of composite reliability (CR) and Cronbach's Alpha (CA) value for all constructs worth more than 0.6 is above the minimum value, thus all constructs are considered reliable.

4.3. Results of hypothesis verification
In this research hypothesis testing by using t-value that compared with t-table. If the value of t-value is greater than the t-table value, then the hypothesis is accepted, and rejected if the t-value is less than the value of t-table [24]. One-tailed test with a significance level of 5% or 0.05 which means that research results can be accounted for in case of error in the research process of a magnitude not more than 5%. Samples of 100 respondents with 7 research variables in the model considering degrees of freedom or

degree of freedom (df) obtained t-table of 1.66. Based on the results of the significance of path coefficient testing, it can be seen testing the rejected and accepted hypothesis in this study in Table 3.

Table 3. Hypotheses testing results.

Hypotheses	Path	t-value	t-table	Adopted or denied
Hypothesis 1-1	MV →LP	1.746	1.66	Adopted
Hypothesis 1-2	MV→TP	2.222	1.66	Adopted
Hypothesis 2-1	SE→LP	0.236	1.66	Denied
Hypothesis 2-2	SE→TP	1.222	1.66	Denied
Hypothesis 3-1	IC→LP	3.362	1.66	Adopted
Hypothesis 3-2	IC→TP	0.826	1.66	Denied
Hypothesis 4	EOU→LP	1.364	1.66	Denied
Hypothesis 5	YU→LP	5.292	1.66	Adopted
Hypothesis 6	LP→TP	5.012	1.66	Adopted

First, the greater motivation to learn with YouTube better learning performance and transfer performance, this means that the willingness to learn is an important factor in improving learning performance and its use in real life or work. Second, self efficacy has no effect on learning performance and performance transfer. From the test results obtained t-statistical value of SE→LP 0.236 and SE→TP 1.222 . This is unlike the study [10] [11]. Based on interview with lecturer and respondents, the material content chosen by the teacher leaves students free and has confidence in using YouTube, even though students are given the opportunity to search for personal content, but the content is subject to certain restrictions by the teacher. Third, Instructional contents improve learning performance, based on t-statistics IC→LP 3.362 and also in accordance with previous studies [25]. The ultimate goal of introducing YouTube as learning tool is to increase the learning performance with advanced student's knowlege and tecnology. However, instructional contents do not play a significant role in transfer performance with t-statistics IC→TP 0.826. Based on the research, the relationship between the two constructs requires a mediating factor that is learning performance. Fourth, ease of use has no significant effect on learning performance. With the calculation of t-statistics EOU→PB 1,364. Based on interviews with lecturer and respondents, the increased learning performance is not influenced by the ease of using YouTube, but rather the content of learning from YouTube. Fifth, learning performance is enhanced in terms of YouTube usefulness. Students feel YouTube is very useful in supporting the learning process. This is evidenced by the acquisition of t-statistics YU→LP 5.292 and support the prior study [18]. Sixth, higher learning performance better transfer performance as shown the t-statistics of LP→TP 5.012. Improved learning performance provides students with more ability to apply learning outcomes to the real work.

5. Conclusion
Thus, judging from the viewpoint of technology or learning with the YouTube media has a significant impact on improving student learning performance in terms of tutorial content and usefulness and by providing motivation in learning more. In this study most of the hypothesis stated acceptable and show that YouTube plays an important role in improving student learning performance in music production, especially audio mastering.

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