



Original Research

Impact of YouTube as Educational Media on Students' Learning Interest at SMK N 1 Padangsidempuan

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Abstract

This study investigated the significant impact of YouTube as educational media on students' learning interest at SMK N 1 Padangsidempuan. Previous research has mostly focused on learning outcomes, while evidence on learning interest in English learning has remained limited. A quantitative approach with a quasi-experimental non-equivalent control group design was employed. The population was all Marketing class students, and the sample consisted of 66 students from class X Marketing 1 (experimental group, 33 students) and class X Marketing 2 (control group, 33 students). Data were collected using a closed-ended questionnaire administered as a pre-test and a post-test, based on four indicators of learning interest: feeling of enjoyment, curiosity/attraction, attention, and involvement/participation. The data were analysed through the Shapiro-Wilk normality test, N-Gain analysis, the Paired Sample T-Test, and the Mann-Whitney U Test. The experimental group's mean score increased from 67.79 in the pre-test to 88.88 in the post-test (a gain of 21.09 points), with a mean N-Gain of 0.64 (medium category), while the control group improved only from 70.91 to 72.06 (+1.15 points), with a mean N-Gain of 0.035 (low category). The Paired Sample T-Test for the experimental group yielded a significance value of 0.000 ($p < 0.05$), and the Mann-Whitney U Test on the post-test scores of both groups also yielded 0.000 ($p < 0.05$), with a mean rank of 49.38 for the experimental group against 17.62 for the control group. The alternative hypothesis was therefore accepted and the null hypothesis rejected. The study concluded that YouTube had a significant positive impact on students' learning interest in English learning compared to conventional learning, and that English teachers should consider integrating YouTube as a supplementary learning medium.

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1. Introduction

Learning interest is one of the important factors that influence the success of the teaching and learning process. Slameto (2020) describes interest in learning as a sense of liking and being drawn to a learning activity without any coercion from others and explains that it is influenced by internal factors such as motivation, attention, and learning readiness. When these factors are not supportive, students' interest decreases, and uninteresting learning makes students feel bored and unmotivated. In this study, learning interest is understood as a student's interest, attention, and desire to be involved in the learning process, which encourages the student to learn seriously.

Several problems related to English learning were identified in the research setting: students' motivation to learn English is low, students are more interested in using YouTube for entertainment than for learning, and the learning media used by teachers are not interactive and varied enough, which leads to a monotonous learning environment that fails to capture students' attention. These conditions call for learning media that can attract students' attention and make the lesson more enjoyable.

YouTube is a promising medium for this purpose. Beyond its function as an entertainment platform, YouTube gives students access to educational videos that contain explanations, examples, demonstrations, and authentic language use. According to Mayer's (2020) theory of multimedia learning, learning becomes more effective when information is delivered through a combination of text, images, and sound rather than through words alone, and YouTube, as an audiovisual medium, provides this combination naturally. Alwehaibi (2020) states that the use of YouTube in English learning can increase student engagement because the material is presented in an interesting, interactive, and authentic manner, while Kumar and Kumar (2021) argue that online video platforms support self-directed learning because students can learn at their own pace and repeat lessons according to their needs.

Previous studies provide empirical support for this potential. Rahmawati et al. (2022) found that YouTube-based learning videos significantly increased students' learning interest by creating a more enjoyable learning atmosphere, reducing boredom, and enhancing students' attention. Jasliza and Syahrul (2024) reported that students were more engaged when they learned with colourful short videos, and Putri and Sari (2023) showed that the integration of YouTube in English learning helped improve students' vocabulary mastery and listening skills through authentic language exposure.

However, most previous studies have focused on learning outcomes, curriculum implementation, and general instructional technology, whereas studies that specifically examine the effect of YouTube as a learning medium on students' learning interest in English learning remain limited. This study addresses that gap by investigating the impact of YouTube as educational media on the learning interest of tenth-grade Marketing students at SMK N 1 Padangsidempuan. Specifically, this study aims (1) to describe

students' learning interest before and after the treatment, and (2) to determine the significance of the impact of YouTube as educational media on students' learning interest compared to conventional learning.

2. Method

This study employed a quantitative approach with a quasi-experimental design, specifically the non-equivalent control group design. According to Sugiyono (2019), a quasi-experimental design is used when the researcher cannot fully control all variables that influence the experiment, particularly because the groups are already formed naturally and cannot be randomised. Two existing classes at SMK N 1 Padangsidimpuan were used, one as the experimental class and one as the control class. Both groups were given a pre-test before the treatment and a post-test after the treatment. The experimental class received learning activities using YouTube as educational media, while the control class followed conventional learning without YouTube.

The population was all Marketing class students of SMK N 1 Padangsidimpuan, consisting of six classes from grade X to grade XII. The sample comprised two grade X classes, namely X Marketing 1 (n=33) as the experimental group and X Marketing 2 (n=33) as the control group, with a total of 66 students. The classes were chosen because grade X students are at an early stage of vocational high school learning, in which they are still adapting to various learning methods and media, and because the researcher had permission and sufficient access to conduct the research in these classes.

The research instrument was a closed-ended questionnaire (angket) administered twice, as a pre-test before the treatment and as a post-test after the treatment, using the same questionnaire to ensure consistency of measurement. The questionnaire consisted of 20 statements covering the four indicators of learning interest proposed by Djamarah (2008): feeling of enjoyment, curiosity/attraction, attention, and involvement/participation. Each statement was answered on a five-point Likert scale from Strongly Agree (5) to Strongly Disagree (1), so the maximum total score was 100. In the experimental class, descriptive text was taught by the researcher using an animated educational video from the YouTube channel @englishpediachannel, which explains the material in English and in Indonesian, whereas the control class was taught the same material using the conventional method without YouTube.

The data were analysed through the following procedures: (1) the Shapiro-Wilk normality test, which is appropriate for samples under 50, to decide between parametric and non-parametric techniques (Sig.>0.05 indicates normal distribution); (2) N-Gain analysis, calculated as $g = (\text{post-test score} - \text{pre-test score}) / (\text{maximum score} - \text{pre-test score})$ (Hake, 1999) and classified as high ($g \geq 0.70$), medium ($0.30 \leq g < 0.70$), or low ($g < 0.30$); (3) the Paired Sample T-Test to compare pre-test and post-test scores within each group; and (4) the Mann-Whitney U Test to compare the post-test scores of the experimental and control groups when normality could not be confirmed for both groups.

The significance level was set at 0.05. The hypotheses were H0: there is no significant impact of YouTube as educational media on students' learning interest, and Ha: there is a significant impact of YouTube as educational media on students' learning interest.

3. Results

3.1 Pre-test and Post-test Score Description

The data were obtained from the pre-test and post-test questionnaires administered to the experimental group, which received the YouTube-based treatment, and to the control group, which followed conventional learning. Table 1 presents the descriptive statistics and the N-Gain scores of both groups.

Table 1. Descriptive Statistics and N-Gain of Pre-test and Post-test Scores

Group	N	Mean Pre-test	Mean Post-test	Mean Gain	SD (Pre/Post)	Mean N-Gain
Experimental (YouTube)	33	67.79	88.88	+21.09	6.91 / 6.55	0.64 (Medium)
Control (Conventional)	33	70.91	72.06	+1.15	5.99 / 5.93	0.035 (Low)

Table 1 reveals a substantial difference in score gains between the two groups. The experimental group improved by 21.09 points on average (from 67.79 to 88.88), with post-test scores ranging from 78 to 100, and obtained a mean N-Gain of 0.64 (64.09%), which falls into the medium category. The control group improved by only 1.15 points (from 70.91 to 72.06) and obtained a mean N-Gain of 0.035, which falls into the low category; its individual N-Gain scores ranged from -0.29 to 0.29, indicating that the scores of some students did not increase at all. Notably, the experimental group started with a lower pre-test mean than the control group (67.79 versus 70.91), yet its post-test mean was far higher than that of the control group (88.88 versus 72.06). Descriptively, these results indicate that YouTube was more effective than conventional learning in increasing students' learning interest.

3.2 Normality Test

Before the hypothesis testing, the Shapiro-Wilk test was conducted to determine the appropriate statistical technique. The results are presented in Table 2.

Table 2. Shapiro-Wilk Normality Test Results

Group	Data	Statistic (W)	Sig.	Conclusion
Experimental	Pre-test	0.974	0.582	Normal
Experimental	Post-test	0.954	0.175	Normal
Experimental	Gain (Post-test – Pre-test)	0.976	0.662	Normal
Control	Pre-test	0.930	0.031	Not normal
Control	Post-test	0.937	0.049	Not normal
Control	Gain (Post-test – Pre-test)	0.874	0.001	Not normal

The pre-test, post-test, and gain scores of the experimental group were normally distributed (Sig.>0.05), which justifies the use of the Paired Sample T-Test for this group. In contrast, all data of the control group were not normally distributed (Sig.<0.05). Strictly speaking, a non-parametric technique such as the Wilcoxon Signed Rank Test would be more appropriate for the control group; the Paired Sample T-Test result for this group is therefore retained only for comparability with the experimental group and should be interpreted with caution. Because normality could not be confirmed for both groups, the comparison of post-test scores between the two groups was conducted using the non-parametric Mann-Whitney U Test rather than the Independent Sample T-Test.

3.3 Hypothesis Testing: Paired Sample T-Test and Mann-Whitney U Test

The within-group comparison of pre-test and post-test scores is presented in Table 3.

Table 3. Paired Sample T-Test Results

Group	Mean Difference	t-value	df	Sig. (2-tailed)
Experimental	-21.091	-13.272	32	0.000*
Control	-1.147	-2.303	33	0.028*

Note. * Significant at $p < 0.05$.

Table 3 shows that the significance value of the experimental group was 0.000, which is smaller than 0.05, so there was a statistically significant improvement in students' learning interest after they learned using YouTube as educational media. The control group also obtained a significance value below 0.05 (0.028), but the mean improvement was very small (1.15 points) compared to that of the experimental group, and, as explained above, this result should be interpreted with caution because the control group's data were not normally distributed.

The comparison of post-test scores between the two groups is presented in Table 4.

Table 4. Mann-Whitney U Test Results on Post-test Scores

Group	N	Mean Rank	Sum of Ranks
Experimental	33	49.38	1629.50
Control	33	17.62	581.50

Note. Mann-Whitney U = 20.500; Wilcoxon W = 581.500; Z = -6.727; Sig. (2-tailed) = 0.000.

Table 4 shows that the Mann-Whitney U Test produced a significance value of 0.000 ($p < 0.05$), with the mean rank of the experimental group (49.38) considerably higher than that of the control group (17.62). These results lead to the rejection of the null hypothesis (H_0) and the acceptance of the alternative hypothesis (H_a). It can therefore be concluded that YouTube as educational media had a significant positive impact on students' learning interest compared to conventional learning.

4. Discussion

The findings show that the use of YouTube as educational media significantly improved students' learning interest. The experimental group made a far larger gain than the control group, and the Mann-Whitney U Test confirmed that the post-test scores of the two groups differed significantly. These results are consistent with the theoretical framework and the earlier empirical findings discussed in the Introduction.

The results can be explained through Mayer's (2020) cognitive theory of multimedia learning, which holds that learning is more effective when information is delivered through a combination of text, images, sound, and video than through text alone. As an audiovisual medium, YouTube presents this combination naturally, allowing students to process the material through visual and auditory channels at the same time, which reduces cognitive load and helps them retain information. The animated descriptive text video used in this study, which explains the material in both English and Indonesian, may have made the lesson easier to follow and more attractive for students. The improvement also agrees with Alwehaibi (2020), who found that YouTube increases student engagement in English learning because the material is presented in an interesting, interactive, and authentic manner. Kumar and Kumar (2021) similarly argue that online video platforms allow students to learn at their own pace and to repeat lessons according to their needs, which may strengthen students' sense of ownership over their learning and help them concentrate better.

With regard to learning interest specifically, the result directly supports Rahmawati et al. (2022), who reported that YouTube-based learning videos significantly increased students' learning interest by creating a more enjoyable atmosphere and reducing boredom. Jaslizah and Syahrul (2024) likewise found that students were more engaged when learning with colourful short videos. Together with the present findings, these

studies suggest that the positive effect of YouTube on learning interest is consistent across different school contexts. The gain of the experimental group corresponds to the four indicators of learning interest adopted from Djamarah (2008), namely feeling of enjoyment, curiosity/attraction, attention, and involvement/participation. However, because the questionnaire scores were analysed as total scores, this study cannot show which indicator contributed most to the improvement; future research could analyse each indicator separately.

The very small improvement of the control group can be explained by the fact that conventional learning without audiovisual media gave limited stimulation to students' attention and motivation, which are internal factors of learning interest (Slameto, 2020). Consequently, the mean N-Gain of the control group remained in the low category, and some students even showed a decrease in scores.

Several limitations should be considered. First, the control group's data were not normally distributed, so a Wilcoxon Signed Rank Test would provide a more rigorous confirmation of the within-group result for this group. Second, the study used two intact classes without random assignment, and the two groups differed slightly in their pre-test means, so the findings are limited to the participants involved and may not be generalised to other classes, schools, or educational levels. Third, learning interest was measured through a self-report questionnaire, which reflects students' perceptions rather than direct observation of their behaviour.

5. Conclusion

Students' learning interest improved markedly after the use of YouTube as educational media. The mean score of the experimental group increased from 67.79 to 88.88 (+21.09 points; mean N-Gain=0.64, medium category), whereas the control group, which was taught conventionally without YouTube, increased only from 70.91 to 72.06 (+1.15 points; mean N-Gain=0.035, low category).

The Paired Sample T-Test for the experimental group (Sig.=0.000) showed a statistically significant improvement, and the Mann-Whitney U Test on the post-test scores (Sig.=0.000; mean rank 49.38 versus 17.62) showed a significant difference between the two groups. The null hypothesis is therefore rejected and the alternative hypothesis is accepted: YouTube as educational media has a significant positive impact on the learning interest of tenth-grade students at SMK N 1 Padangsidempuan compared to conventional learning. These findings help to fill the gap left by earlier studies that focused mainly on learning outcomes, by providing quasi-experimental evidence on the effect of YouTube on students' learning interest in English learning.

English teachers are encouraged to integrate YouTube as a supplementary medium in their teaching, selecting video content that is relevant, age-appropriate, and aligned with the learning objectives. Schools are expected to support this integration by providing

adequate facilities such as internet access and projectors. Students are encouraged to use YouTube not only for entertainment but also as a learning resource, while maintaining focus and discipline. Future researchers are recommended to conduct similar studies with larger samples, longer treatment durations, or different subjects and school levels, to apply the Wilcoxon Signed Rank Test when the normality assumption is not met, and to explore other variables that may be influenced by YouTube-based learning, such as learning motivation, academic achievement, or digital literacy.

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