

# Analysis of the Implementation of Video-Based Learning Media on Student Learning Outcomes in the Grade X History Subject at SMA Labschool

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## Article Info

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## ABSTRACT

This study reviews the results of quantitative experimental research conducted by Mikhael Oktavian Betalino (History Education Study Program, Tadulako University, 2026) regarding the influence of video-based learning media on the understanding levels of Grade X students at SMA Labschool in the subject of History, specifically concerning the topic of the arrival of Islam in Indonesia. The study employed a pretest-posttest control group design involving two classes selected via purposive sampling: one class was taught using video media (experimental group), while the other was taught using conventional methods (control group). Data analysis using SPSS revealed that the experimental group's mean posttest score (77.31) was higher than that of the control group (65.77); a two-tailed t-test yielded a significance value of 0.001 ( $p < 0.05$ ), indicating the rejection of the null hypothesis and the acceptance of the alternative hypothesis. However, the N-Gain test showed that the magnitude of the improvement in student understanding remained low, at 20.11%. These findings indicate that video-based audiovisual media had a statistically significant effect on student understanding; however, the impact was not yet optimal, suggesting a need for better content planning, longer study duration, and larger sample sizes in future research. This article presents a narrative review of these findings and discusses their practical implications for teachers and schools.

## Informasi Artikel

### Kata Kunci:

media pembelajaran berbasis video, hasil belajar siswa, pembelajaran Sejarah, eksperimen kuasi, teknologi pembelajaran.

## ABSTRAK

Penelitian ini mengulas hasil penelitian eksperimen kuantitatif yang dilakukan oleh Mikhael Oktavian Betalino (Program Studi Pendidikan Sejarah, Universitas Tadulako, 2026) mengenai pengaruh media pembelajaran berbasis video terhadap tingkat pemahaman siswa kelas X SMA Labschool pada mata pelajaran Sejarah, khususnya materi Masuknya Islam di Indonesia. Penelitian menggunakan desain "pretest-posttest" dengan kelompok kontrol, melibatkan dua kelas yang dipilih melalui teknik "purposive sampling": satu kelas diajar menggunakan media video (kelas eksperimen) dan satu kelas lainnya diajar dengan metode konvensional (kelas kontrol). Hasil analisis data dengan bantuan SPSS menunjukkan bahwa rata-rata nilai posttest kelas eksperimen (77,31) lebih tinggi dibandingkan kelas kontrol (65,77), dengan uji-t dua pihak menghasilkan nilai signifikansi 0,001 ( $p < 0,05$ ), yang berarti hipotesis nol ditolak dan hipotesis alternatif diterima. Meski demikian, uji N-Gain menunjukkan bahwa besaran peningkatan pemahaman siswa masih tergolong rendah, yakni sebesar 20,11%. Temuan ini mengindikasikan bahwa media video berbasis audiovisual berpengaruh signifikan secara statistik terhadap pemahaman siswa, namun dampaknya belum optimal dan perlu didukung oleh perencanaan konten, durasi penelitian, serta jumlah sampel yang lebih memadai pada penelitian selanjutnya. Artikel ini menyajikan ulasan naratif atas temuan tersebut beserta implikasi praktisnya bagi guru dan sekolah.

## Article History

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## 1. Introduction

History is often perceived by students as a "heavy" subject because it is laden with dates, historical figures, and sequences of past events that are difficult to visualize through text alone. Many students struggle to recall the order of events or grasp the cause-and-effect relationships behind historical occurrences, largely because instruction tends to be monotonous—dominated by lectures and lacking in visual aids. Yet, understanding history is not merely about memorizing facts; it is about cultivating historical awareness and the ability to think critically about the events that have shaped human life today.

Educational curricula in Indonesia—including the \*Kurikulum Merdeka\* (Independent Curriculum) and \*Permendikdasmen\* (Regulation of the Minister of Basic and Secondary Education) Number 13 of 2025—increasingly promote the integration of digital technology into "deep learning." This approach combines three elements: mindful learning (maintaining full awareness during the learning process), meaningful learning (connecting new information with existing knowledge), and joyful learning (an enjoyable and motivating learning experience). These three approaches are expected to work in synergy to create a holistic learning experience, ensuring that students not only comprehend the material but also enjoy the learning process itself.

Addressing this issue, a study conducted by Mikhael Oktavian Betalino—a History Education student at Tadulako University—sought to answer a simple yet important question: do video-based learning media truly help students better understand history material, and how significant is the improvement compared to conventional teaching methods?

History is considered one of the subjects that most requires visual support, as the material is chronological, contextual, and often abstract when conveyed solely through lectures or written text. Students are expected to grasp past events in concrete terms despite never having experienced them firsthand; this is where visual media, such as videos, are seen as having great potential to bridge the gap between the subject matter and the students' experience.

At Labschool High School, the use of video media in instruction has already been implemented; however, there has been no research specifically measuring the extent to which student understanding improves through this medium compared to methods that do not utilize video. This study addresses that gap, focusing on the topic of the "Arrival of Islam in Indonesia" for 10th-grade students—a subject rich in events, historical figures, and processes of cultural acculturation that requires strong visualization capabilities to be easily understood.

This research does not stand in isolation; it builds upon a body of prior findings that consistently demonstrate a positive relationship between video media and student learning outcomes across various educational levels and subjects. For instance, studies on economics education have found that visual videos significantly enhance student comprehension, while research on English language learning at the junior high school level has similarly noted improvements in learning outcomes following the use of video. In a context closer to the present study, research on the use of video media in history education indicates that video makes the presentation of material more engaging and contextual, thereby facilitating students' understanding of historical events.

Theoretical support also comes from multimedia learning theory, which explains that combining audio and visual elements simultaneously utilizes two distinct cognitive channels, thereby enhancing memory retention and information processing compared to media relying on a single mode of delivery. Based on this conceptual framework, the study formulated a hypothesis that the use of video media significantly influences students' level of understanding in the History subject—a hypothesis that was subsequently tested empirically in the field.

## 2. Research Method

The study employed a quantitative approach with a quasi-experimental design featuring an equivalent pretest-posttest pattern, involving two Grade X classes at SMA Labschool Palu selected via purposive sampling due to their relatively homogeneous average History learning outcomes:

- The experimental class (XB), consisting of 13 students, was taught using video-based learning media.
- The control class (XA), consisting of 13 students, was taught using conventional methods without video.

Both classes were administered a pretest and a posttest consisting of 20 multiple-choice questions; these questions had previously undergone validation by experts and analysis for item validity, difficulty index, discrimination power, and reliability (using the Kuder-Richardson/KR-20 formula), confirming the instrument as valid and reliable for use. In addition to the learning outcome tests, the researcher prepared instructional materials—including video-based learning modules, student worksheets, and teacher observation sheets—to ensure the learning process proceeded in accordance with the lesson plan (RPP) validated by expert lecturers.

The learning process spanned two sessions per class, with each session lasting three lesson periods. Following the intervention, pre-test and post-test data from both classes were analyzed

systematically using SPSS; the analysis included a normality test (to ensure the data followed a normal distribution), a homogeneity test (to verify that the variances of the two groups were equal), a two-tailed t-test for hypothesis testing, and an N-Gain test to measure the proportional magnitude of the improvement in students' understanding.

### 3. Results and Discussion

#### 3.1 Results

The research results reveal an interesting picture. Prior to the treatment, both classes possessed nearly identical initial proficiency levels—with average pretest scores of 65.38 for the experimental class and 64.62 for the control class, and with little difference between their respective minimum and maximum scores. This equivalence in initial conditions is crucial, as it ensures that any subsequent differences in outcomes are genuinely attributable to the treatment rather than to pre-existing disparities in the students' baseline abilities.

**Tabel 1. 1** Perbandingan Hasil Belajar siswa Kelas Eksperimen dan Kelas Kontrol

Following the treatment, a striking difference was observed. The

| Description       | Pretest (Tes Awal) |               | Posttest (Tes Akhir) |               |
|-------------------|--------------------|---------------|----------------------|---------------|
|                   | Experimental Class | Control Class | Experimenta Class    | Control class |
| Sample            | 13                 | 13            | 13                   | 13            |
| Lowest value      | 40                 | 40            | 65                   | 40            |
| the highest score | 95                 | 85            | 100                  | 90            |
| average           | 65,38              | 64,62         | 77,31                | 65,77         |

experimental class, which utilized videos for learning, saw its average score rise from 65.38 to 77.31, whereas the control class experienced only a slight increase from 64.62 to 65.77. Prerequisite tests indicated that the data for both groups were normally distributed (significance values of 0.20 and 0.098, respectively—both above 0.05) and homogeneous (significance value of 0.49, also above 0.05), thereby justifying the subsequent hypothesis testing using parametric statistics.

| Difficulty Index        | Interpretation |
|-------------------------|----------------|
| $0,00 \leq p \leq 0,30$ | Sukar          |
| $0,31 \leq p \leq 0,70$ | Sedang/Cukup   |
| $0,71 \leq p \leq 1,0$  | Mudah          |

**Tabel 2. 2** Classification of Test Item Difficulty Levels (*p*)

Kriteria penerima item adalah jika memenuhi :  $0,31 \leq p \leq 0,70$

The two-tailed t-test conducted using SPSS yielded a significance value (two-sided) of 0.001, which is well below the 0.05 threshold. This indicates a statistically significant difference in learning outcomes between the experimental and control classes; consequently, the null hypothesis ( $H_0$ ) is rejected and the alternative hypothesis ( $H_1$ ) is accepted, demonstrating that the use of video-based learning media has a significant effect on students' level of understanding in the History subject for Grade X at SMA Labschool.

However, the improvement remains relatively low. Interestingly, although the effect was statistically significant, the magnitude of the increase in student understanding—measured via the N-Gain test—averaged only 0.201 (or 20.11%). This falls into the "low" category according to Hake's (1999) criteria, which classify values below 30% as low. These findings indicate that while the instructional videos had a positive and statistically significant impact, the extent of the improvement in student understanding was not fully optimal.

$H_0: \mu_0 = \mu_1$  The use of video-based learning media did not have a significant effect on students' level of understanding in the Grade X History subject at SMA Lab School.

$H_1: \mu_0 \neq \mu_1$  The use of video-based learning media has a significant impact on students' level of understanding in the Grade X History subject at SMA Lab School.

**Tabel 3. 3** Classification of Test Item Distinguishing Power

| Disrcriminatory Power   | Interpretation |
|-------------------------|----------------|
| $0,00 \leq D \leq 0,20$ | Minnus         |
| $0,21 \leq D \leq 0,40$ | Enough         |
| $0,41 \leq D \leq 0,70$ | Good           |
| $0,71 \leq D \leq 1,00$ | Very well      |

Kriteria

penerima item adalah jika memenuhi :  $0,31 \leq p \leq 0,70$

There are several possible explanations for these findings. The researchers noted a number of limitations that may have influenced the results, such as the relatively small sample size (only 13 students per class)—meaning the findings cannot necessarily be generalized to a broader population—and the study's limited duration, which spanned only two sessions. Another factor mentioned was the researcher's teaching experience; at the time, the researcher was a final-year student lacking the extensive teaching experience of professional educators, a factor that may have influenced how the video material was presented and managed in the classroom.

In addition to those two suggestions, the findings regarding the persistently low N-Gain category also open up avenues for further research. Future researchers might consider using larger samples, extending the duration of the intervention, or combining videos with other active learning strategies—such as group discussions or history-based projects—to determine whether such combinations can boost understanding to the medium or high category.

**Tabel 4.4** Kriteria Tingkat Gain

| Gain Level (%)        | Criteria |
|-----------------------|----------|
| $g \geq 70\%$         | high     |
| $30 \leq g \leq 70\%$ | Medium   |
| $g < 30\%$            | Low      |

### 3. Discussion

Furthermore, the two-tailed t-test conducted using SPSS yielded a two-sided p-value of 0.001. Since the p-value was less than 0.05, the null hypothesis ( $H_0$ ) was rejected

and the alternative hypothesis ( $H_1$ ) was accepted. This indicates a significant difference between the experimental class and the control class. Consequently, it can be concluded that the use of video-based learning media significantly influenced the students' level of understanding in the Grade X History subject at SMA LABSCHOOL. A significance level of 0.05 was employed in this study, implying an expectation that conclusions would be correct 95% of the time, with a 5% margin of error. Additionally, the researcher analyzed the data to observe improvements in student learning outcomes using the N-gain test. The results showed an average N-gain value of 0.201 and an N-gain percentage of 20.11% for the experimental and control classes. Based on this analysis, the average N-gain percentage for both the control and experimental classes fell into the "low" category according to the criterion of  $g < 30\%$  (specifically,  $22.11\% < 30\%$ ). Ultimately, the study's findings indicate only a slight difference in learning outcomes between the experimental class and the control class.

### 4. Conclusion

Based on the results of the hypothesis testing conducted,  $H_0$  was rejected and  $H_1$  was accepted; thus, it can be concluded that:

The use of video-based learning media has a significant influence on the level of student understanding in the Grade X History subject at SMA Lab School.

Based on the average N-Gain percentage score, the improvement in student learning outcomes for the history subject—where video-based learning was implemented—falls into the low category. This implies that there was no substantial difference in the level of student understanding before and after the implementation of video-based learning, as the result remained within the low category.

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