The Influence of Microsite-Based Learning Media on Student Learning Independence in Islamic Education Subjects

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ABSTRACT

This study aims to examine the effect of using microsite-based learning media on student learning independence in Islamic Religious Education (PAI) subjects at SMAN Cahaya Madani Banten Boarding School. This research employed a quantitative method with a quasi-experimental design, using a pretest-posttest control group design. The subjects were two 11th-grade classes, with one class serving as the experimental group using the microsite media and the other as the control group. Learning independence data were collected through pretest-posttest questionnaires and analyzed using an Independent Sample T-Test. The results showed a significance value (p-value) of 0.024 ($p < 0.05$), indicating a significant difference in learning independence between the experimental and control groups. Therefore, it can be concluded that the use of microsite-based learning media has a significant influence on student learning independence.

Keywords: *Learning Independence, Microsite Media, Quasi-Experimental, Islamic Religious Education, Media Influence.*

INTRODUCTION

Enhancing students' self-directed learning (SDL) constitutes one of the primary challenges in contemporary education, particularly amidst the rapid advancement of information technology (Nurillahwaty, 2021). The capacity for autonomous study is pivotal in ensuring that the learning process transcends the constraints of classroom face-to-face interaction, allowing it to become more flexible and sustainable. Integrating technology as a pedagogical medium serves as an effective strategy to cultivate interactive learning environments that support student autonomy in knowledge acquisition (Isti'ana, 2024).

The urgency for self-directed learning is particularly evident at SMAN Cahaya Madani Banten Boarding School. Despite being equipped with comprehensive technological facilities, the instruction of Islamic Education (PAI) and Ethics faces significant constraints due to limited instructional hours. Consequently, educators encounter difficulties in delivering the entire curriculum within the classroom setting. In such contexts, self-directed students can engage with the material outside of scheduled hours, enabling classroom time to be utilized more effectively for in-depth discussion and conceptual exploration (Interview with Laochiyah, 2024). Therefore, a medium capable of facilitating ubiquitous access to self-directed learning is required.

To address these challenges, web-based learning offers a promising solution. One implementation is through the use of microsites—compact websites specifically designed for particular educational topics (Yudhi Munadi, 2013). Microsite-based media excel in facilitating autonomous learning by providing structured content that can be accessed

according to each student's individual learning pace. Previous research has demonstrated that utilizing similar media effectively enhances student motivation, engagement, and learning outcomes through visual and interactive approaches (Ibrahim et al., 2025).

Based on this background, the present study aims to investigate the influence of microsite-based learning media on students' self-directed learning in Islamic Education and Ethics. Specifically, the study examines whether the implementation of this innovative learning medium yields a significant increase in the level of self-directed learning among students at SMAN Cahaya Madani Banten Boarding School.

METHODS

This study employs a quantitative approach with a quasi-experimental design, specifically utilizing a pretest-posttest control group design. This design aims to measure the effect of the independent variable—the use of microsite-based learning media—on the dependent variable, namely students' self-directed learning.

Research Location, Time, and Subjects

The research was conducted at SMAN Cahaya Madani Banten Boarding School from September 2024 to May 2025. The research subjects involved two Grade XI classes selected through a saturated sampling technique. Class XI.3 was designated as the experimental group, receiving the treatment of learning via microsite media, while Class XI.1 served as the control group, utilizing conventional learning media.

Research Procedures

The study commenced with the administration of a pretest in the form of a self-directed learning questionnaire to both groups (experimental and control) to assess their baseline conditions. Subsequently, the experimental group engaged in the PAI learning process using the developed microsite media, while the control group followed the conventional methods typically employed by the teacher. Upon completion of the treatment period, both groups were administered a posttest using the same instrument to measure changes in the level of self-directed learning.

Data Collection Techniques and Instruments

Primary data regarding students' self-directed learning were collected through pretest and posttest questionnaires. These questionnaires were structured based on three dimensions of self-directed learning: metacognition, motivation, and behavior. The instrument consisted of 12 valid items, verified through validity testing using Pearson's Product-Moment correlation. Reliability testing using Cronbach's Alpha yielded a value of 0.774, indicating that the instrument is reliable and consistent for measurement purposes.

Data Analysis Techniques

Prior to hypothesis testing, prerequisite analyses including normality and homogeneity tests were performed. The Shapiro-Wilk method was employed for the normality test due to the sample size being less than 50, with data considered normally distributed if the

significance value was > 0.05. A homogeneity of variance test was conducted to ensure that both sample groups originated from the same population. To test the research hypothesis, an Independent Sample T-Test was utilized. This analysis aims to determine whether there is a significant difference in self-directed learning scores between the experimental and control groups following the intervention.

RESULTS AND DISCUSSION

Results

This study aims to examine the influence of microsite-based learning media on students' self-directed learning. Quantitative data were obtained from pretest and posttest results administered to both the experimental group (utilizing the microsite) and the control group (utilizing conventional learning). Prior to hypothesis testing, prerequisite analyses were conducted. The Shapiro-Wilk normality test indicated that all datasets (pretest and posttest for both classes) were normally distributed ($p > 0.05$). However, Levene's Test for homogeneity of variance revealed that the posttest variance between the two groups was not homogeneous ($p = 0.046$). Consequently, the t-test analysis employed the "Equal variances not assumed" approach.

Descriptive statistics in Table 1 present the mean scores of students' self-directed learning after the intervention. The mean posttest score for the experimental group (M=49.68, SD=3.742) was lower than that of the control group (M=52.38, SD=4.938).

Table 1. Descriptive Statistics of Self-Directed Learning Posttest Scores

Class	N	Mean	Standard Deviation
Experimental	28	49, 68	3, 742
Control	29	52, 38	4, 938

Hypothesis testing using the Independent Sample T-Test is presented in Table 2. The results show a t-value (52.099) = -2.332 with a significance value (2-tailed) of $p = 0.024$.

Table 2. Independent Sample T-Test Results

	t	df	Sig. (2-tailed)	Mean difference
Equal variances not assumed	-2,332	52,099	0,024	-2,701

Discussion

Based on the statistical analysis, a significance value of $p = 0.024$ was obtained, which is lower than the alpha level ($\alpha = 0.05$). This indicates that there is a statistically significant difference in the level of self-directed learning between students using microsite-based learning media (experimental group) and those using conventional methods (control group). Accordingly, the alternative hypothesis (Ha), which posits a significant influence of microsite media usage, is accepted.

However, a compelling finding of this study lies in the direction of that influence. Descriptive data demonstrate that the mean self-directed learning score of the

experimental group (M=49.68) was significantly lower than that of the control group (M=52.38). This result contradicts the initial hypothesis, which assumed that microsite media would increase self-directed learning scores. This unexpected finding opens a crucial space for discussion. One possible interpretation is that while the media is designed to facilitate autonomy by providing abundant resources and student control, it may induce cognitive overload or confusion among students unaccustomed to highly open learning methods. Qualitative feedback from students during field trials supports this possibility, as one student remarked that the media "required students to explore the material themselves rather than providing ready-made teaching materials.".

This suggests that the transition toward technology-facilitated self-directed learning is not a linear process. Students may require scaffolding or more structured guidance initially before being released for fully independent exploration. Conventional learning in the control group, being more structured by the teacher, might have provided a greater sense of security and clarity for students, resulting in higher perceived self-direction scores on the measurement instrument. Although microsite media proved to have a significant influence, further research is needed to understand how to optimize its implementation to consistently enhance, rather than diminish, students' self-directed learning scores.

CONCLUSION

Based on the quantitative data analysis using the Independent Sample T-Test, it can be concluded that the use of microsite-based learning media has a statistically significant influence on students' self-directed learning ($p = 0.024$). This finding confirms that the implementation of technology-based learning media yields a distinct impact compared to conventional learning methods. However, this study also revealed that the mean self-directed learning score of the experimental group was unexpectedly lower than that of the control group. This indicates that while the medium is effective in creating a significant difference, the implementation of autonomous learning tools requires appropriate scaffolding strategies to ensure that the impact remains positive and aligns with the intended educational objectives.

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