



The Effect of Using Instructional Videos to Improve Bustier Pattern-Making Skills Among Fashion Design and Business Students at Ciputra University, Surabaya

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Abstract

Digital transformation has driven innovation in practical learning media, particularly in supporting the acquisition of complex skills. Instructional video has emerged as an effective solution for enhancing practice-based learning. This study aims to analyze the effect of instructional video utilization on students' skills in bustier pattern making within the Fashion Design and Business program at Universitas Ciputra Surabaya. The research sample consisted of students divided into an experimental group and a control group using purposive sampling techniques. A quantitative approach was employed, utilizing a quasi-experimental method with a pretest-posttest control group design. Data were collected through practical tests and skill assessment rubrics, and subsequently analyzed using descriptive statistics and an independent sample t-test. The results indicate a significant difference between the experimental and control groups, with a significance value of 0.000 (<0.05), demonstrating that the use of instructional videos effectively improves students' bustier pattern-making skills. Students in the experimental group achieved higher performance outcomes compared to those in the control group. In conclusion, instructional video has a significant and effective impact as a practical learning medium in teaching bustier pattern making in fashion design education.

INTRODUCTION

Digital transformation in the field of education has driven significant changes to the strategies, methods, and learning media used in universities. The integration of digital technology not only serves as a tool, but is also an important part of creating a more effective, interactive, and student-centered learning experience (C. Sulistyowati & N. Asriati, 2024). One form of rapid technological utilization is the use of learning videos, which are considered to be able to accommodate various learning styles and present material visually and systematically (Khamparia & Pandey, 2020; Navarrete et al., 2025; Nicolaou et al., 2019). Learning videos allow the delivery of complex information to be easier to understand through a combination of images, text, sound, and animation, thus potentially improving the quality of student learning processes and outcomes (Kay, 2019; Brame, 2020).

In the context of vocational education, especially in the field of fashion design, the need for effective learning media is increasingly important considering the characteristics of learning that focus on mastering practical skills (L. Idawati et al., 2024). Fashion design students at Ciputra University are not only required to understand theoretical concepts, but must also be able to apply this knowledge in the form of precise technical skills (Hidayat et al., 2022; Prianka, 2023; Purnamawati & Syahrul, 2016). One of the core competencies in this field is the skills of fashion pattern-making, which is the basis for the success of the fashion production

process. Making bustier patterns, as a type of pattern with a high level of complexity, requires a deep understanding of body construction, measurement techniques, and precision in drawing and adjusting patterns according to body proportions (Hanim¹ et al., 2025). Small mistakes in the pattern making process can have a big impact on the final result of the fashion.

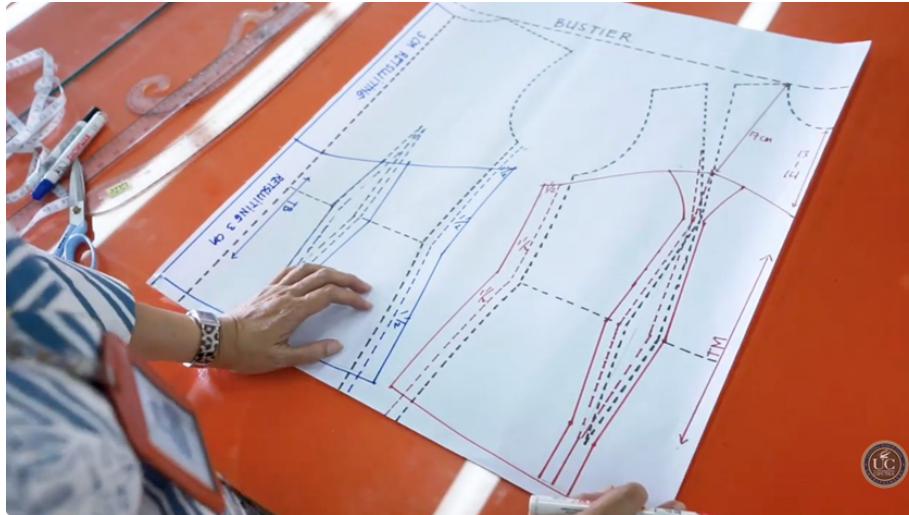


Figure 1 The process of making a manual bustier pattern construction technique

Source: Personal documents, 2024

However, in the practice of learning in college, the teaching process of making bustier patterns still faces various obstacles. Conventional learning methods that rely on oral explanations and direct demonstrations are often unable to accommodate differences in student learning speed (R. Wahyuni, 2021). The limited face-to-face time also causes students to not have enough opportunities to observe in detail each stage of pattern making. As a result, students tend to have difficulty understanding work procedures, lack confidence when practicing independently, and produce less accurate patterns. This condition shows the need for learning media innovations that are able to provide a clear, structured, and flexibly accessible visualization of work steps (Artal-Sevil et al., 2018; Gan et al., 2015).

The use of learning videos is a relevant alternative to answer these problems (F. Akbar, 2025). The learning video allows students to learn the process of making bustier patterns gradually, repeat certain parts as needed, and learn independently outside of lecture hours. Several studies have shown that learning videos are effective in improving practical skills, especially in the field of vocational and vocational education, as they provide a more concrete and contextual learning experience (Sari & Putri, 2021; Pratama et al., 2022). In addition, the use of video has also been proven to increase students' learning motivation, concentration, and active involvement in the learning process (Lestari & Nugroho, 2023).

However, the results of the review of previous studies show that there is a significant *research gap*. Most studies that examine the use of learning videos in the field of fashion still focus on sewing skills, fashion making in general, or improving students' cognitive learning outcomes. Research that specifically examines the skills of making fashion patterns, especially bustier patterns that have technical characteristics and a high level of difficulty, are still relatively limited (N. A. P. Atmaja & A. Kusumastuti, 2026). In fact, pattern making is the

main foundation in the fashion design process and requires a different learning approach compared to other practical skills.

In addition, many previous studies have focused more on aspects of student perception, satisfaction, or learning motivation towards the use of video media, without being accompanied by objective measurements of the resulting improvement of practical skills. The evaluation of learning success is often based only on questionnaires or subjective assessments, so it does not fully reflect the actual achievement of student competencies. In competency-based fashion design education, measuring practical skills through student work or performance is a very important aspect to assess the effectiveness of a learning medium (Hidayat & Rahmawati, 2024).

Furthermore, there are still relatively few studies that test the effect of the use of learning videos on the practical skills of fashion design students at the higher education level, especially in the local context of Indonesia. In fact, the characteristics of students, curriculum, and learning facilities in universities have differences that can affect the effectiveness of the use of learning media. Therefore, research is needed that empirically and quantitatively tests the effect of the use of learning videos on improving the skills of making bustier patterns for fashion design students.

Based on this description, this research is important to be carried out to fill the gap in the existing study. This research is expected not only to make a theoretical contribution to the development of video-based learning media studies in vocational education, but also to make a practical contribution for fashion design lecturers in designing bustier pattern making learning that is more effective, systematic, and in accordance with the needs of students in the digital era.

METHOD

Types and Approaches to Research

This study used a quantitative approach with a quasi-experimental method. The quantitative approach was chosen because this study aims to test the influence of the use of learning videos on the fashion design students' pattern making skills objectively through numerical measurements. The pseudo-experiment method was used because the researcher did not allow the researcher to complete the randomization of the subjects, but still gave different learning treatment to the research group.

The research design used is a pretest-posttest control group design, where there are two groups, namely the experimental group that is given learning using video learning and the control group that is given learning using conventional methods. This design allowed researchers to compare students' skill changes before and after treatment, as well as identify differences in skill improvement between the two groups.

Research Subject and Location

The subject in this study is a student of the Fashion Design and Business Program at Ciputra University Surabaya, who is taking a course in fashion pattern making. The selection of subjects was carried out using the purposive sampling technique with the criteria of students who have obtained basic materials for making fashion patterns and have not received special learning about making bustier patterns. This technique is used to ensure that the research subject has characteristics that are in accordance with the research objectives.

The research was carried out in the current semester in the fashion design lecture environment, both in face-to-face learning activities in the classroom and students' independent practice integrated with the use of learning videos.

Research Variables

This study involves two main variables. The free variable is the use of learning videos, namely the use of video media that contains the stages of making bustier patterns in a systematic and structured manner in the learning process. The bound variable is the skill of making bustier patterns, namely the ability of students to make bustier patterns which are assessed based on size accuracy, construction accuracy, neatness of pattern drawings, and conformity with bustier pattern standards.

Data Collection Techniques

The data in this study was collected through practical tests, performance assessment sheets, and documentation of student work results. A practice test was used to measure students' bustier pattern making skills before and after treatment. The performance appraisal sheet is prepared in the form of a rubric that includes aspects of measurement accuracy, pattern construction accuracy, neatness of lines and symbols, and the suitability of the pattern with the specified bustier design. Documentation in the form of student pattern results is used as supporting data to strengthen the results of practical skills assessment

Research Instruments

The research instrument is in the form of a rubric for assessing the skills of making bustier patterns which is compiled based on the competence of making fashion patterns. The rubric uses a numerical assessment scale for each skill indicator. The instrument was first tested for content validity through expert judgment by expert lecturers in the field of fashion design and practical learning. The reliability test of the instrument was carried out to ensure the consistency of the assessment results.

Data Analysis Techniques

The data obtained were analyzed using descriptive and inferential statistical analysis techniques. Descriptive analysis was used to describe the average, minimum, maximum, and standard deviation of students' bustier pattern making skills. Inferential analysis was used to test the research hypothesis, namely the effect of the use of learning videos on students' bustier pattern making skills.

Before the hypothesis test is carried out, the data is first tested for normality and homogeneity as a prerequisite for analysis. The hypothesis test was carried out using the t-test (independent sample t-test) to determine the difference in skill improvement between the experimental group and the control group. All data analysis was carried out with a significance level of 0.05.

Research Procedure

The research procedure begins with the preparation stage, namely the preparation of a learning video for making bustier patterns and the preparation of research instruments. Furthermore, a pretest of bustier pattern making skills was carried out in the experimental group and the control group. The treatment stage was carried out by providing learning using video learning to the experimental group, while the control group used conventional learning methods. After the treatment is completed, a posttest is carried out to measure the student's

bustier pattern making skills. The final stage of the research is data processing and analysis as well as drawing conclusions.

RESULTS AND DISCUSSION

Validity Test

Table 1. Validity Test Results

Item	r Table	r count	Remarks
R1	0,361	0,487	Valid
R2	0,361	0,496	Valid
R3	0,361	0,447	Valid
R4	0,361	0,501	Valid
R5	0,361	0,500	Valid
R6	0,361	0,477	Valid
R7	0,361	0,548	Valid
R8	0,361	0,490	Valid
R9	0,361	0,464	Valid
R10	0,361	0,473	Valid

Based on the results of the validity test using Pearson Product Moment correlation, all statement items (R1–R10) in the research instrument showed that the calculated r value was greater than the table r of 0.361. This shows that each statement item has a significant relationship with the Bustier Pattern Making Skill variable. Thus, all items are declared valid and suitable for use.

Reliability Test

Table 2. Reliability Test Results

Reliability Statistics	
Cronbach's Alpha	N of Items
.643	10

Based on the results of the reliability test using Cronbach's Alpha method, a value of 0.643 was obtained for 10 statement items, which shows that the research instrument has a sufficient and acceptable level of reliability. The value has met the reliability criteria ($\alpha > 0.60$), so that the instrument is declared consistent and suitable for use.

Normality Test

Table 3. Normality Test Results

Tests of Normality							
	Groups	Kolmogorov-Smirnova			Shapiro-Wilk		
		Statistic	df	Say.	Statistic	df	Say.
Bustier Pattern Making Skills	Control	.085	100	.072	.982	100	.188
	Eksperimen	.089	100	.051	.982	100	.181
a. Lilliefors Significance Correction							

Based on the results of the normality test using Kolmogorov-Smirnov and Shapiro-Wilk, the data on bustier pattern making skills in the control group and the experimental group showed a significance value greater than 0.05. In the control group, the significance value of Kolmogorov-Smirnov was 0.072 and Shapiro-Wilk was 0.188, while in the experimental group

the significance value of Kolmogorov-Smirnov was 0.051 and Shapiro-Wilk was 0.181. Thus, it can be concluded that the data from both groups are normally distributed, thus meeting the prerequisites for statistical analysis.

Homogeneity Test

Table 4. Homogeneity Test Results

Test of Homogeneity of Variances					
		Levene Statistic	df1	df2	Sig.
Bustier Pattern Making Skills	Based on Mean	1.223	1	198	.270
	Based on Median	1.255	1	198	.264
	Based on Median and with adjusted df	1.255	1	195.774	.264
	Based on trimmed mean	1.206	1	198	.273

Based on the results of the variance homogeneity test using Levene's Test, a significance value of 0.270 based on the mean, 0.264 based on the median, and 0.273 based on the trimmed mean, all of which are greater than 0.05. The results showed that the variance of bustier pattern-making skills data in the control group and the experimental group was homogeneous. Thus, the research data meets one of the prerequisites for parametric statistical analysis.

Uji Independent Sample t-Test

Table 5. Independent Sample T-Test Results

Independent Samples Test									
		Levene's Test for Equality of Variances		t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
								Lower	Upper
Bustier Pattern Making Skills	Equal variances assumed	1.223	.270	-10.898	198	.000	-10.42500	.95661	-12.31144 -8.53856
	Equal variances not assumed			-10.898	194.860	.000	-10.42500	.95661	-12.31163 -8.53837

Based on the results of the Independent Sample t-Test, a significance value (Sig. 2-tailed) was obtained of 0.000, which means it is smaller than 0.05, so it can be concluded that there is a significant difference between the control group and the experimental group in the bustier pattern making skills. The results of the Levene test showed a significance value of 0.270 (> 0.05), so that the homogeneity assumption was fulfilled and the analysis using equal variances was assumed. The t-value of -10.898 with a mean difference of -10.425 showed that the students' bustier pattern making skills in the experimental group were higher than those in the control group. Thus, it can be concluded that the use of learning videos has a significant effect on improving the skills of fashion design students' bustier patterns.

Based on the results of the Independent Sample t-Test, this study shows a significant influence of the use of learning videos on the skills of making bustier patterns of fashion design students. A significance value of 0.000 (< 0.05) indicates that there is a marked difference

between the control group and the experimental group. In addition, the results of the Levene test with a significance value of 0.270 (> 0.05) show that the data of the two groups are homogeneous, so the analysis using the assumption of the same variance is acceptable. The t -value of -10.898 with an average difference of -10.425 confirms that the bustier pattern making skills of students who learn using video learning are higher than students who follow conventional learning. These findings indicate that learning videos are effective in improving the mastery of complex and procedural practical skills.

The results of this study are in line with the video-based learning theory which states that audiovisual media is able to improve students' understanding and skills through the presentation of concrete, visual, and accessible material repeatedly. Learning videos allow students to observe the steps of creating bustier patterns in a systematic and detailed manner, thus supporting independent learning and individual learning speed differences. This is in accordance with the opinion of Kay (2019) who affirms that learning videos provide high flexibility in higher education, as well as the view of Brame (2020) who states that videos with procedural demonstrations are very effective for skill-based learning. Thus, theoretically, the results of this study strengthen the concept that learning videos are the right medium for practical courses in the field of fashion design.

The findings of this study are also in line with the results of previous research which showed the positive influence of learning videos on students' practice skills. Research by Pratama et al. (2022) found that video-based learning significantly improves the practical skills of vocational students because it is able to display the work process in real and contextual terms. In addition, the results of this study support the findings of Lestari and Nugroho (2023) who stated that the integration of digital media in fashion design learning can improve the quality of student practice results. This research also strengthens the view of Sari and Putri (2021) that learning videos are effective in helping students master the stages of making complex fashion patterns, including bustier patterns, because they allow for the repetition and detailed observation of each work step.

Overall, this study concludes that the use of learning videos has a significant effect on improving the skills of making bustier patterns for fashion design students. Theoretically, the results of this study contribute to strengthening the study of the effectiveness of video media as a means of practice-based learning in vocational higher education. Practically, the results of this research can be the basis for lecturers and fashion design education institutions to integrate learning videos as the main or supporting media in practical learning, especially in materials that are complex and require high precision. With the use of learning videos that are designed instructionally and contextually, it is hoped that the quality of learning and the competence of students' skills can be continuously improved.

CONCLUSION

Based on the results of the research, it can be concluded that the use of learning videos has a significant effect on improving the skills of making bustier patterns for *fashion design and business* students at Ciputra University. This is evidenced by the noticeable difference between the experimental group and the control group, where students who learned using video learning showed higher skills. Learning videos have proven to be effective in helping students systematically understand the stages of work, increase accuracy, and facilitate independent

learning on complex and practical materials. Thus, learning videos are the right and relevant medium to be applied in learning the practice of making bustier patterns in fashion design education. Based on the results of this study, it is recommended that lecturers and fashion design educational institutions optimize the use of learning videos as a supporting media and the main media in practical learning, especially in the material for making bustier patterns which are complex and require high precision. The development of learning videos should pay attention to the quality of instructional design, the clarity of the demonstration of the work steps, and the suitability of the course learning outcomes. In addition, further research is recommended to examine the effectiveness of learning videos on other fashion practice materials and combine them with innovative learning models to obtain more comprehensive results.

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