

Development of an Acupressure Animation Video to Enhance the Facial Care Competency of Vocational High School Students

Alia Rakhmawati¹, Ali Muhtadi²

¹ Universitas Negeri Yogyakarta, Yogyakarta, Indonesia; alia0529fip.2022@student.uny.ac.id

² Universitas Negeri Yogyakarta, Yogyakarta, Indonesia; alimuhtadi@uny.ac.id

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ABSTRACT

Effective instructional media are crucial in vocational education, particularly in enhancing students' practical skills. This study aims to develop an animation video for acupressure learning, assess its eligibility and practicality, and evaluate its effectiveness in improving student competency. A Research and Development (R&D) approach was employed using the ADDIE model (Analysis, Design, Development, Implementation, and Evaluation). The research was conducted at SMK Negeri 1 Kota Batu, East Java, during the 2023/2024 academic year. Participants included 10 students for needs analysis, 2 expert validators for content and product evaluation, 20 students for the experimental phase, and 2 teachers for practicality assessment. Data collection involved questionnaires, expert judgments, and pre-test/post-test measures, analyzed through qualitative and quantitative techniques. The animation video was successfully developed following all ADDIE stages. Expert validation indicated high content eligibility, with an average feasibility score of 93.75%. Practicality evaluations by two Facial Care teachers confirmed that the product is suitable for acupressure learning. Furthermore, inferential analysis comparing the control and experimental groups revealed a significant improvement in students' acupressure competency after using the animation video. The results suggest that the developed animation video is both practical and effective in enhancing acupressure learning outcomes. Its high validity and positive reception highlight its potential applicability across other vocational schools to support facial care instruction. The animation video demonstrates strong potential as an instructional tool for improving students' competency in acupressure within vocational education settings.

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Corresponding Author:

Alia Rakhmawati

Universitas Negeri Yogyakarta, Yogyakarta, Indonesia; alia0529fip.2022@student.uny.ac.id

1. INTRODUCTION

To prepare students for the demands of the professional world, vocational high schools must provide instructional content that aligns closely with students' skill development. Effective delivery of such content requires the use of appropriate learning media. Well-designed learning media facilitate the transition from abstract concepts to practical application, thereby enhancing students' comprehension and engagement. As highlighted by Limin and Kundiman (n.d.), learning media serve

as an integral component of the teaching and learning process, forming an inseparable part of modern education. Their benefits extend beyond students, supporting teachers by simplifying the delivery of complex concepts and fostering active learning environments. Additionally, learning media play a pivotal role in helping both teachers and students achieve predetermined competencies. With the rapid advancement of information technology, educators now have the opportunity to design and develop engaging, interactive media tailored to their instructional goals. Among various forms of media, animation videos stand out as a particularly effective tool. These videos not only capture students' interest but also provide opportunities for repeated learning, enabling students to revisit and reinforce the skills taught in the classroom at their own pace. In the digital era, animation learning videos are recognized as a powerful educational resource, offering an effective alternative to traditional instruction (Shiu et al., 2020).

One of the skills the students with a specialization in Skin and Hair Beauty have to master is the acupressure technique. Acupressure is the development of massage therapy following the development of the acupuncture technique. (Burhanuddin, 2022). Acupressure is based on the same paradigm as acupuncture. (Sun et al., 2021). In practice, acupressure uses hands to press certain points in the body. (Susilowati & Tridiyawati, n.d.); (Rahmaika Arumsari et al., 2018); (Solberg et al., 2021). The use of the thumb or index finger, palm, or stimulator helps the function of energy channels regularly. (Utli et al., 2023). In acupressure, stimulation will be channelled to the spinal cord and brain through the axon nerve. (Susilowati & Tridiyawati, n.d.) and finally makes the balance of the body and brain (Rahmaika Arumsari et al., 2018). Acupressure therapy is a complementary therapy in which not many people know. One of the benefits of the therapy is to reduce stress symptoms. (Moradi et al., 2014); (Hidayah et al., 2024)). When the body feels pain, through acupressure therapy, the body releases an endorphin that makes the body feel calmer. (Hidayah et al., 2024).

Based on the observation before the product was developed, the use of traditional media in acupressure learning brought challenges for both teachers and students. For teachers, bringing pictures or images could not create real or live learning (Fida & Setyowati, 2019), Schramm in Buchori & Setyawati, 2015). Teachers spent more time and energy explaining the acupressure therapy techniques to the students. They were so busy preparing the pictures to bring into the classroom and some students to be the models of the practice. Teachers also had difficulties making the class interactive with the traditional media. Meanwhile, for students, the use of dead pictures in the classroom made them bored and less enthusiastic. They could not concentrate on the skills explained by the teacher, so they only imagined the points without knowing what to do next. (Titania & Widodo, 2020). Besides, students could not learn and practice more independently after class hours because they could not bring the media home. As a result, the student's skill in acupressure therapy was not satisfying. Some mistakes were still found when they performed the acupressure therapy.

To solve the challenges in acupressure learning, it is crucial to develop an animation video and bring it into the classroom. As technology-based learning media, animation videos improve the quality of learning and help students solve various problems of the material being taught. (Andrasari et al., n.d.). They also become a powerful pedagogical tool in enhancing students' learning experience by increasing engagement, understanding, and flexibility in self-learning (Utaminingsih et al., 2024); (Liu & Elms, 2019). The use of animation videos in the learning process has proven to contextualize complex materials and create a fun learning experience without any anxiety (Lu et al., 2021); (Barut Tugtekin & Dursun, 2022). From another perspective, animation videos are beneficial in helping students understand and clarify the learning materials presented by their teachers, and they also make teachers easier to learn while teaching (Roy et al., 2020). Animation videos can also help students understand abstract materials to be more concrete and they prevent students from memorizing and imagining. (Alifa et al., n.d.)). Therefore, it is believed that developing an animation video can improve the quality of acupressure learning. More researches are needed to evaluate the feasibility and practicality of acupressure learning and ICTs because ICTs are a widely available tool that can be used to improve the skills of acupressure therapy (Kwon & Yeh, 2022).

In a previous study, learning media in facial care class were focus in developing tutorial videos. The video used callout animation used to write more interesting texts (Adinda et al., n.d.). The use of media, especially videos, is currently very much needed to meet the demands of students' competencies in understanding and mastering the concepts of learning materials. Meanwhile, this current study is related to the use of learning video media without motion graphics, but animation features for clarification of illustrations. In line with this research, Furoidah (2009) in Adinda (2021) stated that animation videos are moving images originated from a collection of various objects that are specially arranged, so that they move based on the flow determined at each count of time. Therefore, by using animation videos, students will be able to understand the learning materials more easily, and this is also true for students of high vocational schools.

From the explanation above, this study aims to develop an animation learning video for acupressure learning in vocational high schools specializing in Skin and Hair Beauty. This research also seeks to assess the video's feasibility, practicality, and effectiveness in enhancing student learning. In addition, the research is expected to contribute to the efforts to improve the teaching-learning quality at vocational high schools.

2. METHODS

2.1 Type of Research

Since this research focused on developing an animation video for acupressure learning, it employed research and development research (R&D research). The ADDIE model developed by Dick & Carey (1996) was implemented because this model provides a structured and flexible framework, enabling learning designers to design learning media that are effective and responsive to learner needs. The procedures including analysis, design, development, implementation, and evaluation were explained in the following part.

2.2 Procedures of the Development

In developing an animation video for acupressure learning media, the researcher followed the procedures below:

2.2.1 Analysis

This stage was done to analyze the needs of the students and teachers for an acupressure animation video. Besides, the researcher analyzed the use of conventional media by teachers in acupressure learning so that the developed animation video met the needs of both the students and teachers.

2.2.2 Design

The activities carried out at this stage included formulating learning objectives, creating learning materials, designing the animation video, and developing the instruments of learning assessment based on the results of the previous analysis.

2.2.3 Development

The third stage is developing the animation video learning materials which were made based on the design in the previous stage. The activities of this stage included making the animation video, validating the product, editing the video, and revising the developed product.

2.2.4 Implementation

This stage involved product implementation, with the aim of assessing the feasibility, practicality, and effectiveness of the developed animation video. For the effectiveness of the product, a quasi-experimental design was employed by using two different groups of experiment, namely an experimental group and a control group.

2.2.5 Evaluation

This final stage aimed to improve and make the product perfect based on the suggestions and criticism obtained from the final assessment carried out with the users, namely students of XI grade in

the Skin and Hair Beauty Program of Competency. This stage was also to ensure that the development of an acupressure animation video was right and successful for broader use.

2.3 Respondents of the Research

The respondents of this research were based on the needs of data sources in every stage of the development and were taken by using purposive random sampling. For the expert judgment, two lecturers of Universitas Negeri Yogyakarta involved, for they have good reputation in materials and media evaluation. Meanwhile, students who were learning acupressure became the respondents either for the needs analysis or the experiment of the developed product.

The details of the respondents are presented in the table below.

Table 1. The Details of the Respondents

No	Activities	Category of Respondents	Number
1	Needs analysis	Students	10
2	Product validity	Experts	2
3	Product experiment	Students	20
4	Feasibility and practicality test	Teachers	2

2.4 Data Collecting Technique and Instrument

This research collected both qualitative and quantitative data. For the qualitative data, the researcher employed interviews, classroom observations, and questionnaires. The instruments used included an interview guide, an observation checklist, a needs analysis questionnaire, and questionnaires for product validity and feasibility assessments by experts, as well as for practicality evaluations by teachers. In contrast, the quantitative data were obtained through the administration of pre-tests and post-tests to both the experimental and control groups. These tests consisted of multiple-choice questions, performance assessments, and attitude observation evaluations.

2.5 Data Analyzing Technique

As mentioned above, there were two kinds of data collected in this study. The qualitative data were analysed using Saldana, Miles, & Huberman's (2014) qualitative data analysis technique, namely data collection, data reduction, data display, and conclusion drawing. Meanwhile, the quantitative data were the results of a practicality test and experiment test. In the practicality test, the researcher counted the average score of every component and converted the score to category scores as listed below:

Table 2. Score Conversion to Four Scale Value

Score Range	Value	Category
$Mi + 1,5 SD_i \leq X \leq Mi + 3 SD_i$	A	Very good
$Mi + 0 SD_i \leq X \leq Mi + 1,5 SD_i$	B	Good
$Mi + 1,5 SD_i \leq X \leq Mi + 0 SD_i$	C	Fair
$Mi - 3 SD_i \leq X \leq Mi - 1,5 SD_i$	D	Poor

Notes:

- X = actual score
- Mi = 1/2 (maximum score + minimum score)
- SDi = 1/6 (maximum score - minimum score)
- Maximum score = number of item x maximum score
- Minimum score = number of item x minimum score

For the effectiveness of the product, the data of the experiment were analyzed by using a t-test with the following formula.

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\left(\frac{s_1^2}{N_1 - 1}\right) + \left(\frac{s_2^2}{N_2 - 1}\right)}}$$

Which is

- t= students' t-test
- x1= mean of first group
- x2= mean of second group
- s1= SD of group 1
- s2= SD of group 2
- n1= number of observations in group 1
- n2= number of observations in group 2

3. FINDING AND DISCUSSION

This part explains (1) the development stages carried out with the ADDIE development model, (2) the practicality of the acupressure animation video, and (3) the effectiveness of the developed product in acupressure learning.

3.1 The Development Stages of an Animation Acupressure Video

These stages include analysis, design, development, implementation, and evaluation. All the stages were carried out to result in a practical and effective animation video for acupressure learning.

3.1.1 Analysis Stage

In this stage, the researcher conducted a needs analysis of the learning media that covered learning constraints, learning materials, and learning media needed by students and teachers. To know the teachers' experiences in learning media for acupressure learning, an interview was conducted with 2 teachers. The results of the interviews showed that teachers demonstrated directly and read PowerPoint once. They had not developed learning media to meet the student's needs. They stated that they needed learning media for acupressure utilizing information technology products such as animation videos to illustrate learning materials.

Meanwhile, for the student's needs, a questionnaire was distributed to 65 students of Hair and Skin Competency of SMKN 1 Batu. The results of the questionnaire are presented in Table 3 below.

Table 3. Results of Needs Analysis for Animation Video

Queries	Answer Alternative	Choice (%)
Is Face Care currently a fun lesson?	Yes	50
	No	50
The medium used by teachers in the teaching of Facial Care Facial Material Totok Wajah (Acupressure)	Book	TL
	LKPD	50
	PowerPoint	100
Is the media that is present and used enough support for learning enough?	Already	20
	Not yet	80
Do you need another learning medium?	Yes	60
	No	40
If you need the media, which is easier?	Understanding content in learning modules	30
	Understand the content in an animated video	70
What kind of media do you like?	Animated video media	70
	Slide media	30

From the table above, it can be seen that recent acupressure learning could not make all the students excited. Only 50% of the students stated that acupressure learning was fun because teachers used only LKPD and PowerPoint as the learning media. Teachers never brought animation videos in acupressure learning activities. The use of these media did not support the students in learning about acupressure. Therefore, 70% of the students stated that they needed animation videos for learning media in acupressure classes.

3.1.2 Design Stage

The second stage carried out by the researcher in designing the product included formulating learning objectives, creating learning materials, creating animated video media frameworks, developing practicality and effectiveness assessment instruments, and learning assessment tools based on the results of the previous analysis.

3.1.3 Development Stage

At this development stage, animation video learning materials were made based on the design at the design stage. A feasibility test was also conducted at this stage by one media expert and one material expert. The media expert was a lecturer at the Educational Technology Department of Yogyakarta State University, while the material expert was a lecturer of the Makeup and Beauty Program at the Faculty of Vocational Studies at Yogyakarta State University. The following is the summary of the validation results of both media and material experts.

Table 4. The Validation Results

Validator	Percentage	Qualification
Media Expert	93.96	Highly Valid
Content Expert	93.75	Highly Valid

Based on the table of validation from media and material experts, the acupressure animation video was declared valid with a score of 93.85% (very feasible category).

3.1.4 Implementation Stage

After the acupressure animation video media had been declared feasible and valid, the developed product was experimented with in a small group and a large group. Small group trials were conducted to determine the practicality of the acupressure animation video, while large group trials were done to determine the effectiveness of the media. The results of both are explained in the different parts below.

3.1.5 Evaluation Stage

The evaluation stage was carried out to refine the product based on the suggestions and criticisms obtained from the final assessment conducted with users, namely grade XI students in the Skin and Hair Beauty Class. This stage was done to ensure the development of a practical and effective acupressure animation video for broader use in acupressure learning in High Vocational Schools.

3.2 The Results of the Practicality Test

Small group trials were conducted by two educators who taught the subject of Facial Care in class XI of SMK Negeri 1 Batu. The purpose of the trials was to determine the practicality of an acupressure animation video as a learning media. The results of the practicality assessment are as follows:

Table 5. The Results of the Practicality Test

No	Aspect	Teacher 1 score	Teacher 2 score	Average	Criteria
1	Effective	95	90	92.5	Very Practical
2	Interactive	90	95	92.5	Very Practical
3	Efficient	95	95	95	Very Practical
4	Creative	95	95	95	Very Practical

Based on the results in the table above, the average practicality score is 93.75%. This means the developed acupressure animation video was declared very practical to use in acupressure classes. After conducting a practicality test on a small group and getting suggestions, improvements were made so that an effective test could be carried out.

3.3 The Results of the Effectiveness Test

To evaluate the effectiveness of the developed product, the researcher conducted a quasi-experimental study involving two distinct groups: the experimental group and the control group. The experimental group comprised students who utilized the acupressure animation video alongside a supporting handout, while the control group consisted of students who received instruction through a lecture-based approach combined with direct practice. Both groups participated in pre-test and post-test assessments to measure learning outcomes.

The assessment covered three components: a multiple-choice test with 10 questions, a practical performance evaluation, and an attitude assessment conducted during the practice sessions. The effectiveness analysis was based on hypothesis testing, using the significance level (Asymp. Sig value) as the criterion. Specifically, the hypothesis was accepted if the Asymp. Sig value was less than 0.05, indicating a statistically significant difference, and rejected if the value exceeded 0.05.

The results of the Non-Parametric Mann-Whitney Test revealed a significant difference between the pre-test and post-test scores of the control and experimental groups. This finding suggests that the use of the acupressure animation video had a positive impact on enhancing students' competency compared to the conventional lecture-based method.

	Hasil Uji Pemahaman
Mann-Whitney U	.000
Wilcoxon W	378.000
Z	-6.313
Asymp. Sig. (2-tailed)	.000

a. Grouping Variable: Kelas

Figure 1. Mann-Whitney Results Pre-Test Score

The Asymp.sig value is 0.066, which exceeds 0.05. As a result, the hypothesis is rejected, indicating no difference in the pre-test results between the control group and the experimental group.

	Hasil Uji Pemahaman
Mann-Whitney U	258.500
Wilcoxon W	636.500
Z	-1.838
Asymp. Sig. (2-tailed)	.066

a. Grouping Variable: Kelas

Figure 2. Mann-Whitney Results Pre-Test Score

The Asymp.sig value is 0.066, which is above 0.05. Consequently, the hypothesis is not confirmed; there was no significant difference in the post-test results between the control group and the experimental group. The findings from the non-parametric Mann-Whitney test showed no significant difference between the experimental class and the control class before the application of an acupressure animation video and lecture technique and direct practice. The pre-test asymp.sig value for the experimental and control classes was 0.066, indicating no significant difference between the two, as the value exceeded 0.05.

Then, the experimental group showed a significant difference from the post-test results. The Asymp.sig value was recorded at 0.000, indicating that the value was less than 0.05. Consequently, there was a significant difference between the experimental group and the control group.

The average post-test results of the experimental and control groups showed a significant difference. The experimental group obtained an average post-test score of 80.33, while the control group obtained an average score of 57.85. Therefore, it can be concluded that the developed acupressure animation video is more effective than the lecture technique and direct practice.

Discussion

The results of the study indicated that animation videos were suitable for use in acupressure learning for high vocational students. This is because, in the process of applying acupressure, the same points are activated using the hands and fingers. (Sun et al., 2021). Similar research by Lu et al., 2021 explains that the ideal acupressure points when treating disorders affect the head. Research by Wahida et al., (2023) concluded that the video-based learning media developed was proven to be feasible and suitable for learning makeup. Meanwhile, Dewi et al., (2023) research also showed that video tutorial learning media for scalp and hair care developed by using the 4D method was considered very feasible and practical to use by media experts, material experts, lecturers, and students in which the average assessment score was in a very good category.

The use of technology in learning media makes the learning activities more interesting & effective, and the increase of students' learning interest can reach the learning objectives successfully. (Ferdiani et al., 2023). Some reasons support the benefits of developing animation videos for learning media, especially students' competency in acupressure therapy. This animation video was designed and developed appropriately because it was based on the results of the analysis of students' needs in the learning process. The ADDIE model is supposed to be the most suitable model used because the procedures or stages gone through in the development of this animation are very clear, easy, and systematic, and the learning design developed. (Isni Siddiq et al., 2020). The development of animation videos with the ADDIE development model is effective and can make the learning process run well. The most interesting stage of ADDIE model is design in which the process of planning appropriate media is required and a lesson plan was designed for the teaching and learning activities conducted with animation videos. (Ayu et al., 2022).

The developed product meets the criteria of the practicality assessment; effective, interactive, efficient, and creative. The four aspects motivate students to learn, present interesting materials to learn, and explain information that makes it easier to understand. The results of the practicality test show that the acupressure animation video is feasible to be used in the learning process of facial care.

The practicality of a learning media can be seen from how animation videos are easily integrated into the daily learning process and give good impacts to the students' involvement in the class and their skill achievement. (Suwondo et al., 2024). Arsyad (2017) added that learning media has a function and role to increase students' enthusiasm and motivation to learn. Maulina (2022) as quoted by Kustanti (2022) mentioned animation videos, which integrate audio, visual, and textual aspects interestingly and interactively, function as an effective media for conveying knowledge and concepts facilitating better understanding and retention for students. Utilizing interactive and contemporary media can increase students' active involvement in the educational process. (Riyana, 2019). In addition, animation learning videos cover the ability to convey knowledge in a visually appealing way. The combination of dynamic animated visuals, bright colors, and animated videos can attract students' attention and increase their involvement in the learning process, moreover, for students of high vocational schools.

A learning media is not only required to be practical, but also effective to enhance the students' competency, especially, the competency of facial care among students of high vocational schools. The results of a research by Cholik & Umaroh (2023) indicated that efforts were needed to improve the quality of learning, one solution of which was to utilize effective and efficient learning media like animation videos. Through a quasi-experimental technique, an acupressure animation video was proven effective and it can increase students' learning competency in acupressure. There was a significant difference in the pre-test and post-test results where the experimental group obtained an average post-test score higher than the control group. A study by (Ariantini, 2019) also found that an animation video helped overall learning and achieved excellent percentages. A similar study also showed that the use of animation videos might improve students' learning motivation and skills. (Kadek Ariani et al., 2021); Made et al., 2021). The concept of technological utilization for *smartphone* applications indicated that the students could easily study and access materials individually (Kawi et al., 2021). This ease gives students of high vocational schools more opportunities to improve their competency.

4. CONCLUSION

From the previous discussion, it can be concluded that an acupressure animation video developed with the ADDIE model (Analysis, Design, Development, Implementation, and Evaluation) is suitable for use. In the aspect of practicality, 93.75% of the respondents stated that the animation acupressure video fulfilled the criteria of effectivity, interactivity, efficiency, and creativity. Meanwhile, for the effectiveness of the product, an acupressure animation video showed the enhancement of the grade XI students' competence in the Facial Care subject. Through a large cohort using a quasi-experimental technique, the Mann-Whitney test produced a post-test value of *Asymp.sig* of (0.00) < 0.05, which indicated a significant difference between the post-test results of the experimental and control classes. However, this developed product still has limitations, especially the time and scope of the research, so further researchers can involve more high vocational schools and spend more time on every stage of the development. Teachers and students of Hair and Skin Care at High Vocational Schools can use the developed animation video by accessing any social media platforms like YouTube, Instagram, TikTok, or Facebook.

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