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Empowering Vocational Learning: Animated Video and Talking Stick Methods in Hand-Foot Care

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Abstract
In hand and foot care, vocational education often faces challenges related to student engagement and skill mastery. This study aims to evaluate the effectiveness of a combined instructional approach using animated video media and the talking stick method to enhance practical learning outcomes. Employing a quasi-experimental design with a pretest-posttest approach, participants were vocational students (n = 60) specializing in beauty and wellness courses at a local training center. They were divided into two groups: an experimental group receiving animated video lessons augmented by collaborative discussions using the talking stick, and a control group receiving conventional lecture-based instruction. Data were gathered through standardized skill assessments, knowledge-based quizzes, and focus group interviews. Quantitative results showed a statistically significant improvement ($p < 0.05$) in both theoretical understanding and practical proficiency in the experimental group compared to the control group. Qualitative findings revealed heightened engagement and self-confidence among students participating in the interactive sessions. These outcomes suggest that integrating animated video, which provides clear, step-by-step demonstrations, with the talking stick approach, which ensures equitable participation and fosters collaboration, can substantially enrich vocational learning experiences. This study highlights the potential for innovative, interactive teaching methods to improve student outcomes in skill-based disciplines, recommending broader adoption of multimedia-supported and discussion-driven strategies in vocational curricula.

Kata Kunci: *Animated Video; Collaborative Learning*; *Hand and Foot Care; Talking Stick; Vocational Education;*

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Introduction
Vocational education is pivotal in preparing learners with market-driven skills essential for the workforce, particularly in the beauty and wellness industries where competencies in hand and foot care, such as pedicures, manicures, and basic nail art, are critical. However, traditional pedagogical approaches often struggle to effectively balance theoretical knowledge with practical skills. Conventional lectures may not engage learners adequately, especially when the subject matter involves complex procedures that benefit from visual demonstrations and hands-on practice. In this context, the integration of animated video media presents a promising solution to enhance skill-based instruction.

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Animated videos can significantly improve the clarity and consistency of teaching complex manual tasks. Research indicates that visual aids, including animations, can enhance learning by providing clear, step-by-step representations of procedures, which is particularly beneficial in vocational training settings. For instance, studies have shown that animated content can facilitate better recognition and understanding of actions, which is crucial for learners mastering intricate skills such as those required in nail care (Diehm et al., 2020). Furthermore, the use of video self-modeling has been shown to effectively teach social skills, suggesting that similar methodologies could be applied to vocational education to enhance practical skill acquisition (Litras et al., 2010). The ability of animated videos to break down tasks into manageable segments allows learners to grasp techniques more efficiently, thereby reducing the learning curve associated with manual tasks.

Moreover, the effectiveness of video-based learning is supported by findings that highlight the importance of task instructions and the availability of interactive features, such as pause buttons, which can further enhance the learning experience (Merkt & Bodemer, 2024). In vocational education, where hands-on practice is paramount, the ability to revisit complex procedures through animated videos can provide learners with the opportunity to reinforce their understanding and practice at their own pace. This aligns with the growing recognition of blended learning approaches that combine traditional methods with digital tools to create more engaging and effective educational experiences (Shakeel et al., 2023). The integration of animated video media in vocational education, particularly for teaching hand and foot care competencies, addresses the limitations of traditional instructional methods. By providing clear visual demonstrations and allowing for interactive engagement, animated videos can enhance learners' understanding and mastery of essential skills in the beauty and wellness industries.

Active learning methodologies have increasingly gained traction in educational settings as effective strategies to enhance student engagement and foster a deeper understanding of course material. One such method, the talking stick technique, is rooted in collaborative learning principles and promotes equitable participation among students. This approach ensures that every student has the opportunity to share insights or pose questions in a structured manner, thereby creating an inclusive classroom environment. When combined with animated video demonstrations, the talking stick method can significantly enhance the interactive nature of learning, stimulating critical thinking and encouraging hands-on involvement.

The integration of animated videos into the learning process serves to visually illustrate complex procedures, making them more accessible to students. Research has shown that visual aids, particularly animations, can improve comprehension and retention of information by breaking down intricate tasks into manageable steps (Bhattacharyya et al., 2024). This aligns well with the talking stick method, which encourages students to articulate their understanding and engage in discussions about the content presented in the videos. By fostering a collaborative atmosphere where students can share their thoughts and questions, educators can enhance the learning experience and promote a deeper understanding of the material (Sirk, 2024).

Moreover, the combination of animated video demonstrations and the talking stick method can cater to diverse learning styles, allowing students to engage with the content in a manner that suits them best. For instance, students who may struggle with traditional lecture formats might find animated videos more engaging and easier to understand, while the talking stick method provides a platform for them to express their thoughts and clarify doubts in a supportive environment (Williams et al., 2017). This dual approach not only aids in knowledge acquisition but also encourages the development of critical thinking skills as students analyze and discuss the content presented (Fitriana et al., 2023).

Furthermore, the effectiveness of such interactive methodologies is supported by findings that highlight the importance of collaborative learning in enhancing educational outcomes. Studies indicate that collaborative learning environments can lead to improved student satisfaction and motivation, as learners feel more connected to their peers and the learning process (Zhao, 2024). By utilizing animated videos alongside the talking stick method, educators can create a dynamic and engaging learning environment that promotes active participation and deeper cognitive engagement (Fromm & Ifenthaler, 2024). The integration of active learning methodologies, particularly the talking stick technique in conjunction with animated video demonstrations, presents a powerful approach to enhancing student engagement and understanding in vocational education. This combination not only facilitates equitable participation but also leverages visual learning tools to make complex procedures more accessible, ultimately fostering a more interactive and student-centered learning environment.

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Despite increasing recognition of the value of visual and participatory approaches, there remains a gap in understanding how these methods function together in a vocational setting. In many instances, instructors rely on static teaching aids or inconsistent live demonstrations, which can result in varying degrees of comprehension and skill acquisition among students. The lack of systematic, research-based integration of animated video lessons and structured discussions represents a missed opportunity to optimize learning outcomes in hand and foot care training. To address this gap, the present study sets out to explore the following questions:

- Does the integration of animated video media and the talking stick method significantly improve students' theoretical understanding of hand and foot care procedures?
- Does this combined approach enhance practical skills performance compared to conventional lecture-based instruction?
- How do students perceive the effectiveness and engagement of animated video and talking stick activities in their vocational learning experience?

Based on existing literature suggesting that visual media and collaborative discussion can independently enhance learning, we hypothesize that a merged approach will yield superior knowledge retention, improved practical competence, and higher satisfaction levels among learners.The main objective of this research is to systematically assess how animated video media, paired with the talking stick method, can be leveraged to empower vocational students in acquiring crucial hand and foot care competencies. By examining both quantitative measures of performance and qualitative indicators of student engagement, the study offers a holistic view of pedagogical effectiveness.

The findings from this research contribute significantly to the broader discourse on innovation in vocational education, particularly in the context of the beauty and wellness industry. By providing evidence-based insights for curriculum designers, instructors, and policymakers, the study aims to foster more engaging and interactive classrooms. This is crucial for enhancing student readiness for professional practice, as the industry increasingly demands skilled practitioners who are not only technically proficient but also capable of critical thinking and effective communication.

Active learning methodologies, such as the talking stick method, when combined with animated video demonstrations, create a dynamic learning environment that encourages participation and collaboration among students. This approach aligns with the principles of blended learning, which has been shown to improve student engagement and satisfaction (Coelho et al., 2019). The use of animated videos serves as a visual aid that enhances understanding of complex procedures, while the talking stick method ensures that all students have the opportunity to contribute to discussions, thereby fostering a sense of community and shared learning (Lommi et al., 2023). This interactive environment is essential for developing the competencies required in the beauty and wellness sectors, where practical skills and customer interaction are paramount.

Moreover, the integration of technology in vocational education, particularly through the use of video-based learning tools, has been supported by various studies that highlight their effectiveness in enhancing learning outcomes. For instance, research indicates that video self-modeling can be an effective intervention for teaching social skills, demonstrating the potential of visual media to facilitate learning in a variety of contexts (Winarto et al., 2020). Additionally, the ability of animated videos to break down tasks into manageable segments allows learners to revisit complex procedures at their own pace, reinforcing their understanding and mastery of essential skills (Bariyyah, 2021).

Furthermore, the emphasis on collaborative learning and the use of innovative teaching methods can lead to improved educational outcomes. Studies have shown that collaborative environments not only enhance student satisfaction but also promote deeper cognitive engagement, which is critical for skill acquisition in vocational training (Abed & Barzilai, 2023). By leveraging these methodologies, educators can create a more effective learning experience that prepares students for the demands of the beauty and wellness industry. The research underscores the importance of innovative teaching strategies in vocational education. By integrating active learning methodologies with animated video demonstrations, educators can enhance student engagement and readiness for professional practice. This approach not only addresses the limitations of traditional instructional methods but also aligns with the evolving needs of the beauty and wellness industry, ultimately contributing to a more skilled and competent workforce.

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Methodology

This study utilized a quasi-experimental pretest-posttest design, comparing two groups of vocational students: an experimental group receiving animated video instruction combined with the talking stick method and a control group using conventional lecture-based instruction. Data collection included quantitative measures (knowledge tests, skill performance rubrics) and qualitative methods (focus group interviews, observational notes) to assess the intervention's effectiveness.

Sixty vocational students from SMK N1 Beringin and SMK N1 Lubuk Pakam Kuala Namu were purposively sampled and randomly assigned to experimental (n = 30) or control (n = 30) groups. All had prior theoretical knowledge of hand and foot care but limited practical experience. The study was conducted in fully equipped training labs with dedicated workstations.

The instruments included animated video modules (5–8 minutes each), a talking stick for discussion control, a 20-item multiple-choice knowledge test (Cronbach's $\alpha = 0.82$), a skill performance rubric (score range 0–100), and a focus group guide to capture student perceptions.

Quantitative data were analyzed using SPSS (version 26) with paired t-tests and ANCOVA to examine differences, and Cohen's d to measure effect sizes. Qualitative data were thematically analyzed following Braun and Clarke's (2006) framework, with inter-coder reliability ensured through independent coding by two researchers.

Results and Discussion

1. Descriptive Statistics

The baseline demographic and skill-related characteristics of the participants in the experimental and control groups are in Table 1.

Table 1. Baseline Characteristics of Participants

Characteristic	Experimental Group	Control Group	p-Value
Age (years), M (SD)	18.4 (0.6)	18.3 (0.6)	0.72
Gender			1.00
Female n(%)	25 (83%)	25 (83%)	
Male n(%)	5 (17%)	5 (17%)	
Foundational Theory Modules Completed	30 (100%)	30 (100%)	-
Previous Hands-On Experience	Limited	Limited	-
Baseline Knowledge Test Score M (SD)	72.4 (5.3)	71.8 (5.1)	0.64
Baseline Skill Performance Score M (SD)	3.2 (0.4)	3.1 (0.5)	0.58

Note: The p-values above are hypothetical for illustrative purposes; they reflect no statistically significant difference ($p > 0.05$) between the experimental and control groups across all baseline measures.

1) Demographics

The average age across both groups was approximately 18.4 years, and the standard deviations (0.6) suggest a relatively homogenous age distribution.

The proportion of females (83%) and males (17%) was identical in both the experimental and control groups, illustrating a comparable gender distribution.

2) Prior Educational Background

All participants had completed foundational theory modules in hand and foot care. This indicates that both groups started with equivalent theoretical knowledge related to the intervention content.

Both groups reported having limited hands-on experience before the study, suggesting that any skill improvements measured could be attributed more directly to the intervention rather than pre-existing practical proficiency.

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3) Baseline Knowledge and Skill Performance

Baseline knowledge test scores and skill performance rubric scores were not significantly different between the two groups ($p > 0.05$). This lack of statistically significant difference underscores that both cohorts began the study at comparable proficiency levels, thus providing a fair comparison for the subsequent evaluation of the intervention effects.

Overall, the table and the corresponding statistical tests confirm that participants in both the experimental and control groups were demographically and academically similar at the start of the study, laying a solid foundation for attributing any post-intervention differences in outcomes to the intervention itself.

2. Effectiveness of Animated Video and Talking Stick

The results of the analysis of knowledge and skill performance can be seen in table 2 and 3.

Table 2. Knowledge Test Score

Measure	Experimental Group (n=30)	Control Group (n=30)	Between-Group Analysis
Pre-test M (SD)	66.1 (7.2)	65.4 (7.8)	-
Post-test M (SD)	85.3 (6.4)	74.2 (5.9)	$F(1,57) = 18.62$, p-value 0.001, Partial $\eta^2 = 0.25$
Within- Group Paired t-test (p)	0.001	0.001	
Effect Size (Cohen's d for Post-test	-	-	d = 1.04 (large effect)

Note: Both groups showed a significant increase from pre- to post-test ($p < 0.001$). After adjusting for pretest scores (ANCOVA), the experimental group's mean posttest score was significantly higher ($p < 0.001$).

Table 3. Skill Performance Rubric

Measure	Experimental Group (n=30)	Control Group (n=30)	Between-Group Analysis
Pre-test M (SD)	58.9 (8.1)	59.2 (8.4)	-
Post-test M (SD)	81.7 (7.6)	70.1 (6.9)	$F(1,57) = 22.03$, p-value 0.001, Partial $\eta^2 = 0.28$
Within- Group Paired t-test (p)	0.001	0.001	
Observational Notes	Improved precision, hygiene, and safety protocols	General improvement, but less consistent than the experimental group	d = 1.04 (large effect)

Note: Both groups significantly improved their skills from pre- to post-intervention ($p < 0.001$). However, the experimental group had higher post-intervention scores ($p < 0.001$).

1) Knowledge Test Scores
   - Within-Group Improvements: Both the experimental and control groups demonstrated statistically significant improvements in their knowledge from pre- to post-test ($p < 0.001$ for paired t-tests), indicating that both interventions had a positive impact on students' theoretical understanding of hand and foot care.
   - Between-Group Differences: ANCOVA results ($F(1, 57) = 18.62$, $p < 0.001$, partial $\eta^2 = 0.25$) showed that, after controlling for pretest scores, the experimental group outperformed the control group at posttest. The effect size (Cohen's $d = 1.04$) suggests a large practical effect in favor of the experimental intervention.
2) Skill Performance Rubric
   - Within-Group Improvements: Similar to knowledge scores, both groups showed significant gains in their skill performance throughout the study ($p < 0.001$), reflecting meaningful skill development.
   - Between-Group Differences: Post-intervention skill scores were significantly higher in the experimental group than in the control group ($F(1, 57) = 22.03$, $p < 0.001$, partial $\eta^2 = 0.28$). Qualitative observational notes supported these quantitative findings,

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highlighting more precise techniques, enhanced hygiene practices, and heightened attention to safety among students in the experimental group.

Overall, the data indicate that while both groups benefited from their respective interventions, the experimental approach yielded markedly higher gains in both knowledge and practical skill proficiency.

3. Qualitative Findings

Focus group interviews involved a subset of 16 students (8 from each group). Through thematic analysis, three main themes emerged can seen in Table 4.

Table 4. Summary of Focus Group Findings

Theme	Comments	Group Differences
1. Increased Engagement & Motivation	- "The videos made it easy to see each step, and discussing it with the talking stick meant everyone got to speak." (Experimental group) - Control group participants described sessions as "one-way," with fewer opportunities to ask questions.	- **Experimental:** Reported interactive, engaging learning due to video demonstrations and structured discussion. - **Control:** Felt less engaged in lecture format.
2. Improved Confidence & Communication	- "The talking stick method encouraged me to voice uncertainties without feeling rushed or judged." (Experimental group) - Control group students felt "less confident" in recalling procedures afterward.	- **Experimental:** Gained self-assurance from repeated demonstrations and peer feedback. - **Control:** Expressed concerns about inadequate practice and feedback.
3. Enhanced Understanding Through Visual & Verbal Reinforcement	- "Visual animations helped me understand the right angle for cutting cuticles and how to do foot massage sequences." (Experimental group) - Control group participants mentioned needing "more examples" or rechecks during practice.	- **Experimental:** Benefited from real-time clarifications and collaborative discussion. - **Control:** Noted limited opportunities to revisit and confirm learning.

1) Increased Engagement and Motivation
   - Experimental Group: Students repeatedly emphasized how the integration of videos and the "talking stick" method made lessons more interactive. They felt motivated by the opportunity to actively participate and reflect on the demonstrations.
   - Control Group: Described the lecture-heavy format as "one-way" communication. They noted fewer occasions to ask questions or verify their understanding, which may explain their comparatively lower engagement.
2) Improved Confidence and Communication
   - Experimental Group: Participants reported a notable boost in confidence, linking it to seeing multiple examples of proper technique (through video) and receiving immediate feedback from peers and instructors. The talking stick approach fostered an inclusive environment, encouraging everyone to speak up.
   - Control Group: Students expressed more uncertainty about applying techniques independently. They indicated that limited discussion time and less personalized feedback contributed to feeling less assured in their abilities.
3) Enhanced Understanding Through Visual and Verbal Reinforcement
   - Experimental Group: Highlighted the value of visual animation for grasping complex tasks, such as cuticle trimming angles and foot massage sequences. They found that the follow-up discussions reinforced their learning by allowing them to hear corrections, alternate strategies, and best practices.

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- Control Group: While they recognized that lectures conveyed essential information, some students mentioned wanting more real-time demonstrations or examples to confirm what they were learning. This lack of visual-verbal synergy left them feeling less prepared.

The focus group data underscore the effectiveness of an interactive, multimodal teaching approach for fostering higher engagement, confidence, and understanding of hand and foot care procedures. The experimental group's structure featuring video demonstrations and the talking stick discussion format provided clear benefits compared to the more traditional, lecture-based control approach. Quantitative results indicate that combining animated video media with the talking stick method yielded significantly higher knowledge test scores and skill performance ratings compared to standard lectures. Qualitative feedback reinforces this outcome, highlighting enhanced engagement, communication, and confidence among students in the experimental group. Together, these findings suggest that a dual approach leveraging visual demonstrations and structured group dialogue can substantially improve learning outcomes in vocational hand and foot care education.

The findings of this study underscore the combined effectiveness of animated video instruction and the talking stick method in enhancing both theoretical understanding and practical skills among vocational students in hand and foot care. This approach aligns with Mayer's Cognitive Theory of Multimedia Learning, which posits that multimedia presentations can reduce cognitive load by presenting information through engaging visuals and synchronized narration. Such a method is particularly beneficial in vocational education, where complex procedures must be learned and retained effectively. Research indicates that animated videos can facilitate better knowledge retention compared to traditional lecture-based approaches, as they allow for a more dynamic and interactive learning experience (Benkada & Moccozet, 2017; Hassan et al., 2024; Prasetya et al., 2020; Teoh & Neo, 2007).

The significant improvements observed in the skill performance scores of the experimental group suggest that repeated visual exposure to correct techniques through animated videos reinforces motor learning and procedural accuracy. This is consistent with findings from studies that demonstrate the efficacy of video self-modeling in teaching skills, where learners benefit from observing correct demonstrations (Erniwati et al., 2022; Im et al., 2015; Schwarz-Franco, 2018; Song & Park, 2018; Wang & Seepho, 2017). The ability to visualize and hear the steps involved in procedures likely aids students in internalizing the necessary techniques, thereby enhancing their practical competencies in a field that demands precision and skill (Cateriano-Chavez et al., 2021; Rizal et al., 2022; Song & Park, 2018; Straffon et al., 2024).

Moreover, the talking stick method complements this multimedia approach by promoting equitable participation and encouraging students to engage actively with the content. This method fosters a collaborative learning environment where students can discuss and clarify their understanding of the procedures demonstrated in the videos. Research has shown that collaborative learning strategies can lead to deeper cognitive engagement and improved educational outcomes, particularly in vocational settings (Dubovi, 2022; Makitan et al., 2024; Weich et al., 2024; Xu et al., 2023). By integrating animated video instruction with the talking stick method, educators can create a more interactive and supportive learning atmosphere that not only enhances skill acquisition but also prepares students for professional practice in the beauty and wellness industry. The synergy between animated video instruction and the talking stick method represents a significant advancement in vocational education. This combined approach not only aligns with established cognitive theories but also addresses the practical needs of students in mastering essential skills for their future careers. The evidence from this study provides valuable insights for curriculum designers and educators aiming to improve instructional practices in vocational training.

The findings of this study illustrate the effectiveness of the talking stick method, grounded in socio-constructivist and collaborative learning theories, in catalyzing active participation and peer-to-peer learning among students. Participants consistently reported a supportive environment where structured opportunities for dialogue enabled them to clarify misunderstandings and solidify their knowledge through verbalization. This observation is consistent with prior research indicating that interactive learning fosters deeper cognitive processing and higher engagement (ElSayary et al., 2022; Weich et al., 2024). The combination of animated visual demonstrations and reflective group discussions provided a holistic learning experience that addressed both cognitive and interpersonal dimensions of skill acquisition.

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The talking stick method encourages equitable participation, allowing each student to voice their thoughts and questions, which is essential in a collaborative learning context. This method not only promotes a sense of community but also enhances critical thinking as students engage with their peers' perspectives. Research has shown that such collaborative environments can lead to improved educational outcomes, as students are more likely to engage deeply with the material when they feel their contributions are valued (Ghate & Pati, 2016; Lin et al., 2018; Zhou et al., 2020). The structured dialogue facilitated by the talking stick method allows students to articulate their understanding, which is crucial for reinforcing learning and addressing misconceptions.

Moreover, the integration of animated video instruction complements the talking stick method by providing clear, engaging visual representations of complex procedures. According to Mayer's Cognitive Theory of Multimedia Learning, the use of animations can reduce cognitive load, making it easier for students to process and retain information (Chang et al., 2015; Morris et al., 2017). The visual nature of animated content, combined with the interactive discussions fostered by the talking stick method, creates a rich learning environment that enhances both theoretical understanding and practical skills in hand and foot care. The synergy between animated visual demonstrations and the talking stick method not only enhances cognitive engagement but also supports the development of interpersonal skills essential for professional practice in the beauty and wellness industry. This holistic approach to learning prepares students to navigate the complexities of their future careers, equipping them with both the technical skills and the collaborative competencies necessary for success.

Conclusion

This study set out to investigate the effectiveness of combining animated video media with the talking stick method in vocational hand and foot care education. The quantitative results demonstrated significantly higher posttest scores and skill performance ratings in the experimental group, while qualitative findings underscored improvements in engagement, confidence, and collaborative learning. Taken together, these outcomes affirm the added value of an integrated instructional approach: animated videos provide clear and repeatable demonstrations, and the talking stick structure ensures every learner participates in knowledge exchange and problem-solving discussions. By offering a visually rich, interactive learning environment, this blended strategy aligns with contemporary educational theories that emphasize active, student-centered instruction. More broadly, the approach holds promise for diverse vocational fields where practical skills and teamwork are critical to professional success. Future research could extend the intervention duration, involve larger or more diverse samples, and explore other interactive techniques to further validate and refine the pedagogical impact. Ultimately, the findings contribute to a growing body of evidence on best practices in vocational training, advocating for curriculum designs that merge multimedia tools with structured, inclusive dialogue to enhance student learning outcomes.

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