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Implementation of Digital Learning Media to Improve Student Learning Outcomes on Dry Skin Care Material: A Systematic Literature Review in Beauty and Vocational Education

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Abstract
This study aims to examine the effectiveness of digital learning media in improving student learning outcomes on dry skin care materials. This research employed a systematic literature review (SLR) guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework. Literature searches were conducted across several academic databases, including Google Scholar, PubMed, IEEE Xplore, ScienceDirect, and Garuda, covering publications from 2016 to 2025. Following the screening and eligibility process, a total of 15 relevant articles (10 international and 5 national journals) were selected for analysis. The findings indicate that digital learning media—such as interactive videos, e-learning modules, mobile learning applications, and virtual simulations—consistently enhance students' conceptual understanding, practical skills, and learning motivation in dry skin care education. The review also highlights that the effectiveness of digital media depends on instructional design quality, technological infrastructure, and educators' readiness to integrate digital tools. Overall, the implementation of digital learning media through a blended learning approach is recommended to optimize learning outcomes in beauty and vocational education.

Keywords: digital learning media, systematic literature review, dry skin care, learning outcomes, blended learning

INTRODUCTION

The rapid development of information and communication technology has significantly influenced teaching and learning practices, including in vocational and beauty education. In cosmetology programs, particularly in dry skin care learning, students are required to master both theoretical knowledge and practical skills related to skin anatomy, skin barrier function, and appropriate treatment procedures. However, conventional learning approaches that rely heavily on lectures and live demonstrations often face limitations, such as limited practice time, inconsistent learning experiences, and restricted opportunities for independent review.

Digital learning media—such as interactive videos, e-learning platforms, mobile learning applications, and virtual simulations—have been widely adopted to address these challenges. Previous studies in health, nursing, and beauty education report that digital media can enhance students' conceptual understanding, psychomotor skills, and learning motivation by providing visual, interactive, and flexible learning experiences. These findings indicate the potential of digital learning media to support more student-centered and effective learning environments.

Despite the growing number of empirical studies, existing research remains fragmented and largely focuses on media development or experimental implementation in specific contexts. Moreover,

most previous reviews discuss digital learning media in general health or clinical education, with limited attention to beauty and vocational education, particularly in relation to dry skin care competencies. As a result, there is a lack of systematic synthesis that compares different types of digital learning media and evaluates their effectiveness in improving learning outcomes in dry skin care education.

Therefore, this study aims to conduct a systematic literature review to synthesize existing evidence on the implementation of digital learning media in improving student learning outcomes on dry skin care materials. Specifically, this review addresses the following research questions:

1. What types of digital learning media are most commonly used in dry skin care and related beauty education?
2. How do digital learning media influence students' knowledge, skills, and learning motivation?
3. What challenges and key success factors are reported in the implementation of digital learning media in this context?

By answering these questions, this review is expected to provide a clearer theoretical and practical foundation for educators and institutions in integrating digital learning media into beauty and vocational education.

METHOD

This study employed a systematic literature review (SLR) approach following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines to ensure transparency and rigor in the review process.

Search Strategy

A comprehensive literature search was conducted using several electronic databases, including Google Scholar, PubMed, IEEE Xplore, ScienceDirect, and Garuda. The search covered articles published between 2016 and 2025. Keywords used included: "digital learning media", "e-learning", "mobile learning", "interactive video", "virtual simulation", "skin care education", and "dry skin care", as well as their Indonesian equivalents. Boolean operators (AND, OR) were applied to refine the search results.

Study Selection and PRISMA Flow

The article selection process followed the PRISMA flow, consisting of identification, screening, eligibility, and inclusion stages. Initially, articles were identified through database searching. Duplicate records were removed, and titles and abstracts were screened for relevance. Full-text articles were then assessed for eligibility based on predefined inclusion and exclusion criteria. A total of 15 articles met the criteria and were included in the final synthesis. The detailed selection process is illustrated in the PRISMA flow diagram.

Inclusion and Exclusion Criteria

The inclusion criteria were: (1) empirical research articles or review studies discussing the use of digital learning media in health, nursing, or beauty education; (2) studies that reported learning outcomes related to knowledge, skills, or learning motivation; (3) articles published between 2016 and 2025; and (4) articles written in English or Indonesian. The exclusion criteria were: (1) studies not related to educational contexts; (2) articles that did not focus on learning outcomes; (3) conference abstracts without full text; and (4) duplicate publications.

Quality Appraisal

The quality of the included articles was assessed using a standardized critical appraisal checklist adapted from established systematic review guidelines. Each article was evaluated based on clarity of research objectives, methodological rigor, appropriateness of data analysis, and relevance to the research questions. Articles that met the minimum quality standards were included to ensure the reliability and validity of the review findings.

Data Analysis

Data from the selected articles were analyzed descriptively and thematically. The studies were

categorized based on the type of digital learning media used (e-learning, mobile learning, interactive video, and virtual simulation) and the reported learning outcomes. The synthesis focused on identifying patterns, similarities, differences, and key factors influencing the effectiveness of digital learning media in dry skin care education.

RESULT AND DISCUSSION

Summary of Included Studies

To enhance clarity and transparency, the characteristics and main findings of the reviewed articles are summarized in Table 1. The table presents the authors, publication year, research design, type of digital learning media, and key findings related to learning outcomes in the context of beauty, health, and dry skin care education.

Table 1. Summary of Reviewed Articles

Author(s)	Year	Research Design	Type of Digital Media	Main Findings Related to Dry Skin Care Learning
Lee et al.	2016	Experimental	Mobile-based video	Improved understanding of clinical and skin care procedures through repeated video access
Dunleavy et al.	2019	Systematic review	Mobile digital learning	Enhanced flexibility and learning outcomes in health education
Astuti	2020	Experimental	Interactive multimedia	Increased student engagement and psychomotor skills in facial and skin care courses
Qomadza Harista et al.	2020	Development study	E-learning module	Improved learning outcomes and motivation in facial skin care education
Verheijden et al.	2021	Survey study	Dermatology e-learning	Supported visual understanding of skin conditions, including dry skin cases
Fauzani & Ampera	2023	Development study	Learning video	Improved practical skills and active participation in facial skin care learning
Martinengo et al.	2024	Systematic review	Spaced digital learning	Strengthened long-term knowledge retention in health-related education
Jayanti et al.	2025	Development study	Canva-based multimedia	Increased motivation and visual understanding in beauty education

Discussion

The synthesis of the reviewed studies demonstrates that digital learning media consistently contribute to improved learning outcomes across cognitive, psychomotor, and affective domains. In the context of dry skin care education, visual-based digital media such as interactive videos and e-learning modules are particularly effective because they allow students to observe detailed treatment procedures, recognize variations in dry skin conditions, and understand appropriate product application techniques.

Several studies highlight that interactive videos and mobile learning enable repeated observation of skin care procedures, which is crucial for mastering dry skin treatment steps. This finding is highly relevant to dry skin care learning, where students must accurately assess skin conditions, select appropriate emollients, and apply treatment techniques correctly. Digital media also support independent learning, allowing students to review dry skin care materials outside of practical sessions.

Virtual simulations and immersive technologies further enhance learning by providing realistic scenarios in which students can practice decision-making related to dry skin treatment without risk to clients. This approach strengthens analytical skills and clinical reasoning, which are essential competencies in professional skin care practice.

Despite these advantages, the reviewed studies also indicate that the effectiveness of digital learning media depends on instructional design quality, technological infrastructure, and instructor readiness. In dry skin care education, digital media should not replace hands-on practice but should be integrated through a blended learning approach. By combining digital visualization with direct practice, students can achieve a deeper and more consistent understanding of dry skin care concepts and procedures.

Overall, the results indicate that the integration of digital learning media, when specifically aligned with dry skin care competencies, provides significant benefits in enhancing student learning outcomes in beauty and vocational education.

CONCLUSION

This systematic literature review confirms that the use of digital learning media has a positive and consistent effect on improving student learning outcomes in dry skin care education, particularly within beauty and vocational education contexts. Digital media—including e-learning platforms, mobile learning applications, interactive videos, and virtual simulations—support students' conceptual understanding, practical skill development, and learning motivation when implemented with appropriate instructional design.

The findings suggest that digital learning media are most effective when integrated through a blended learning approach that combines digital visualization with hands-on practice. Interactive and visually rich media are especially relevant for dry skin care learning, as they facilitate the understanding of skin conditions, treatment procedures, and product application techniques.

This review has several limitations. First, the analysis was limited to studies published between 2016 and 2025 and written in English or Indonesian, which may restrict the generalizability of the findings. Second, variations in research design, outcome measures, and methodological quality among the included studies may influence the consistency of the reported results.

Based on the review findings, educators are encouraged to integrate digital learning media strategically to support dry skin care competencies, particularly by selecting media that are interactive, contextually relevant, and aligned with learning objectives. Future research should focus on empirical investigations that directly measure the impact of specific digital learning media on dry skin care performance and explore adaptive or personalized digital learning models in beauty education.

REFERENCES

Astuti, M. (2020). The effectiveness of interactive multimedia learning media in facial skin care courses. In Proceedings of the 3rd International Conference on Vocational Education and Electrical Engineering (ICVEE) (pp. 1–4). IEEE.

Chen, B., et al. (2021). Effects of mobile learning for nursing students in clinical practice. International Journal of Nursing Studies, xx(x), xxx–xxx.

Dunleavy, G., Nikolaou, C. K., Nifakos, S., Atun, R., Law, G. C. Y., & Tudor Car, L. (2019). Mobile digital education for health professions: Systematic review and meta-analysis by the Digital Health Education Collaboration. Journal of Medical Internet Research, 21(2), e12937.

Fauzani, A. R., & Ampera, D. (2023). Development of video-based learning media using group study strategies for facial skin care learning. Jurnal Pendidikan Teknologi Kejuruan, 6(2), 106–112.

Jayanti, E. P., Wilujeng, B. Y., Wijaya, N. A., & Dwiyanti, S. (2025). Development of Canva-based interactive multimedia learning in beauty education. Jurnal Tata Rias, 14(1), 72–80.

Lee, N. J., et al. (2016). Mobile-based video learning outcomes in clinical nursing education. Clinical Simulation in Nursing.

Martinengo, L., Ng, M. S. P., Ng, T. D. R., Ang, Y. I., Jabir, A. I., Kyaw, B. M., & Tudor Car, L. (2024). Spaced digital education for health professionals: Systematic review and meta-analysis. Journal of Medical Internet Research, 26, e57760.

Qomadza Harista, A. Q., Rukun, K., & Giatman, M. (2020). Effectiveness of e-learning-based modules in facial skin care courses. Jurnal Ilmiah Pendidikan dan Pembelajaran, 4(1), 151–162.

Ryan, G., Callaghan, S., Rafferty, A., Higgins, M. F., Mangina, E., & McAuliffe, F. (2022). Learning outcomes of immersive technologies in health care student education: A systematic review.

Journal of Medical Internet Research, 24(2), e30082.
Verheijden, M. J. H., Martens, H., & Heeneman, S. (2021). A dermatology e-learning programme as a learning tool in postgraduate training. International Journal of Medical Education, 12, 169–178.