

FEASIBILITY ASSESSMENT OF A NURSING LEARNING E-BOOK THROUGH CONTENT AND MEDIA EXPERT VALIDATION

Gusti Omkang Hingmane^{1*}, Sisca Rahmadonna²

Educational Technology Department, FIPP, Yogyakarta State University, Indonesia

*Corresponding author email: gustiomkang.2023@student.uny.ac.id

Article History

Received: 9 May 2025

Revised: 27 July 2025

Published: 7 August 2025

ABSTRACT

This study aims to evaluate the feasibility of using an e-book as a learning medium for students in the Nursing Vocational High School (SMK) program through validation by content and media experts. The research employed a descriptive quantitative method with a validation approach. Validation by content experts included assessments of content substance, language use, and material presentation structure, while validation by media experts assessed visual design, readability, and technical aspects of the e-book. Data were analyzed using a feasibility percentage formula. The validation results showed that the content expert assessment yielded a feasibility score of 60% (moderately good), while the media expert assessment reached 80% (good). Therefore, the e-book is deemed feasible for educational use with several recommended improvements. The novelty of this research lies in its application of a user-centered design approach, which is still rarely implemented within the context of vocational nursing education in Indonesia. Therefore, this thoroughly validated e-book may serve as a valuable reference for the development of effective and high-quality digital learning media in vocational education.

Keywords: Interactive E-Book, Nursing Education, Vocational Students, Content Validation, Media Evaluation, Digital Learning Materials

Copyright © 2025, The Author(s).

How to cite: Hingmane, G. O., & Rahmadona, S. (2025). Feasibility Assessment of A Nursing Learning E-Book Through Content and Media Expert Validation. *NUSRA : Jurnal Penelitian Dan Ilmu Pendidikan*, 6(3), 492–499. <https://doi.org/10.55681/nusra.v6i3.3794>



This work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

INTRODUCTION

The digital transformation in the field of education has encouraged the emergence of various learning innovations, one of which is through the use of e-books as dynamic and interactive learning media. E-books offer the advantage of presenting material in a multimodal manner through the integration of text, images, audio, and video, and provide flexibility in accessing learning resources anytime and anywhere (Clark & Mayer, 2016). Along with the increasing demands of technology-based learning, the development of effective and efficient digital learning media has become an unavoidable necessity. In line with this, Arndt (2022) emphasized that curated digital corpora and genre-specific materials can serve as powerful resources to inform the development of learning materials that reflect authentic and context-relevant content, particularly in professional education domains.

In the context of nursing education, the mastery of theoretical knowledge and clinical skills requires the support of learning media that are not only substantively accurate but also attractive and easy to understand. Billings and Halstead (2016) emphasized that nursing learning requires a contextual and practice-based learning approach, where interactive media can strengthen students' conceptual and applicative understanding. However, many prior studies have focused separately on either content or media design, without considering an integrated approach that aligns both elements within a single platform tailored to the specific needs of end-users — in this case, nursing students (Papp et al., 2003).

Furthermore, Hanks et al., (2024), in their development of the Contracts Word List, underscore the importance of domain-

specific lexical design that mirrors real-world practices, which is highly relevant in nursing education where students engage with professional terminology and discipline-specific communication. Similarly, Lumley (1998) and Knoch (2014) have shown in health professions and ESP research that the alignment between language, media, and context improves both learner engagement and outcome relevance — reinforcing the need for context-driven instructional media.

Despite the potential of interactive media, there is still a lack of studies that develop and validate interactive e-books for nursing education in a comprehensive manner, involving both content and media experts. Such validation is essential to ensure pedagogical soundness and technical quality. Content validation ensures alignment with curriculum standards and expected competencies, while media expert validation addresses design usability, navigability, readability, and visual appeal (Rahmani & Hikmawan, 2025; Dewi, 2012). In addition, as Greene and Coxhead (2015) note, traditional educational materials often fail to capture the multimodal and evolving nature of language and content in digital formats, further highlighting the need for purpose-built digital tools.

The novelty of this research lies in the development of an interactive e-book based on a user-centered design (UCD) approach, which not only emphasizes content accuracy and completeness but also accounts for the needs, preferences, and comfort of users when accessing information. This approach is still relatively rare in nursing education media development in Indonesia. Therefore, this research is expected to contribute meaningfully to the creation of adaptive,

high-quality digital learning media that supports professional readiness.

Accordingly, this study aims to develop and validate the feasibility of an interactive e-book for nursing education, based on expert assessments of both content and media aspects.

METHOD

This research used a descriptive quantitative approach focusing on the validation stage of the e-book media. The validation process involved two groups of experts, namely content experts and media experts. Validation by content experts focused on aspects of content suitability with the curriculum, clarity of content and information, depth of material, and the appropriateness of vocabulary usage. In addition, other aspects assessed included text structure and organization, language quality, information accuracy, relevance to the nursing field, material appeal, and support for student skill development. This assessment aimed to ensure that the content in the e-book is relevant, accurate, and aligned with the predetermined learning objectives.

Meanwhile, validation by media experts included assessments of visual design, typography, illustrations and images, as well as navigation and interactivity. The assessment of these aspects focused on how well the e-book is visually organized, ease of reading, and the extent to which design elements support material comprehension and ease of navigation between pages.

According to Putri, I. T et al. (2020) and Ernawati, I. (2017), each expert may provide an assessment using a scale of 1 to 5. The scores given were then calculated to determine the feasibility percentage using the formula: Percentage = (Total Score

Obtained / Maximum Total Score) × 100%. With the following percentage criteria:

Criteria	Percentage
Not Valid	0% – 20%
Less Valid	21% – 40%
Fairly Valid	41% – 60%
Valid	61% – 80%
Very Valid	81% – 100%

Table 1

Validity Criteria Based on Percentage Score

RESULT AND DISCUSSION

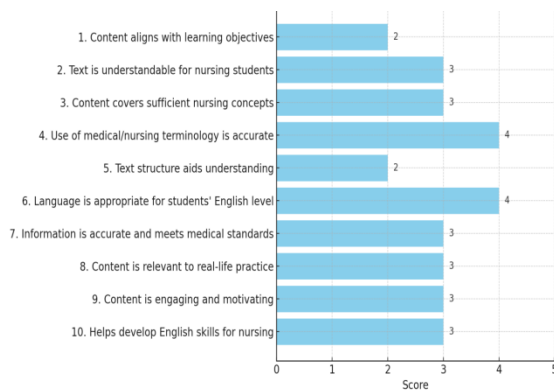
Results

The development of digital-based learning media, particularly interactive e-books, requires a validation process to ensure that the content quality and visual design align with instructional needs. Validation is a crucial step in assessing the extent to which the developed media meet academic standards, curricular alignment, and the principles of effective instructional design. According to Ivers, K. S., & Barron, A. E. (2010), validation by subject matter experts and media experts serves not only to guarantee content accuracy and pedagogical appropriateness, but also to ensure that technical, visual, and interactive aspects of the media support the achievement of learning objectives.

In this study, the validation process was carried out by two different experts: a subject matter expert, who assessed the scientific content and its alignment with the curriculum, and a media expert, who evaluated aspects such as design, navigation, and user experience of the e-book. The validation results served as the foundation for determining the feasibility of the developed interactive e-book before its broader implementation in vocational nursing high school instruction. The

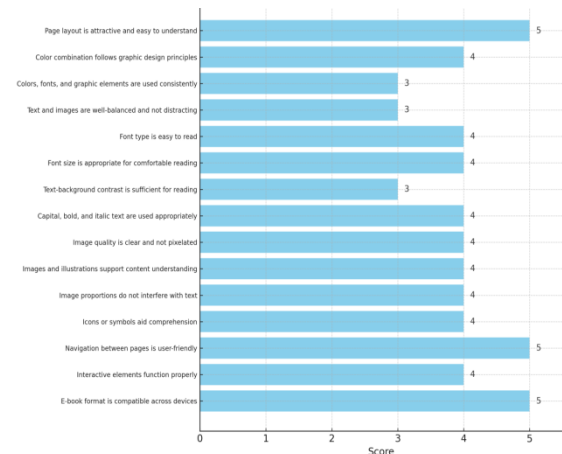
validation results from each expert are presented as follows.

Figure 1
Assessment Results by Content Expert



Based on the evaluation results from the subject matter expert, the developed e-book received a total score of 30 out of a maximum of 50, equivalent to a feasibility percentage of 60%. With this percentage, the material in the e-book is categorized as “Fairly Good.” Although it generally meets the eligibility standards, there are several aspects that still require improvement. The alignment of the material with the learning objectives and the structure of the text received low scores, each rated at 2, indicating that these components have not fully met expectations. On the other hand, the use of medical and nursing terminology was assessed as fairly good, receiving a high score of 4, indicating that the e-book is already appropriate in terms of the scientific terminology required. Therefore, improvements in content alignment and text structure will further enhance the overall quality of the e-book.

Figure 2
Assessment Results by Media Expert



Based on the evaluation results, the visual and technical aspects of the e-book received a total score of 60 out of a maximum of 75, resulting in a feasibility percentage of 80%. With this achievement, the e-book falls into the “Good” category. Several aspects demonstrated excellent performance, particularly in page layout, page navigation, and compatibility across various devices, which were considered effective in supporting ease of use for students. Nevertheless, there were notes regarding the consistency of color usage and text contrast, which still require improvement to enhance the e-book’s visual comfort and effectiveness in supporting learning. With improvements in these areas, the visual and technical quality of the e-book will be further optimized.

Discussion

The validation results of the interactive e-book for vocational nursing students indicate a fairly good level of feasibility in terms of content and a good level in terms of media aspects. These findings are consistent with previous studies emphasizing the importance of aligning content and design in digital learning media to support learning effectiveness (Maulida,

D. A et al., 2024; Clark & Mayer, 2016; Putri & Kurniasih, 2022).

The subject matter expert's validation revealed that, although the use of medical terminology in the e-book is accurate and consistent, there are still shortcomings in the alignment of content with the curriculum and in the structure of text presentation. The low score on content alignment suggests that the e-book has not fully met the demands of the nursing curriculum's learning objectives. This supports the view of Papp, Markkanen, and von Bonsdorff (2003), who argue that in nursing education, learning materials must not only be theoretical but also practically relevant. Such misalignment indicates the need for further revision so that the e-book can bridge curricular requirements with the clinical contexts faced by students.

Furthermore, the importance of context-based learning media development is emphasized by Mukurunge et al. (2024), who state that assessment approaches in nursing education in low-income countries must be grounded in local context and empirical evidence. Thus, the e-book developed in this study, through expert validation, serves as a strategic step toward producing media that aligns with the realities of vocational education in Indonesia.

In addition to content, the lack of systematic text structure also poses a challenge for effective content delivery. A poorly organized structure can hinder students' logical understanding, as highlighted by Wang and Bai (2016), who noted that the sequencing and organization of materials significantly contribute to the achievement of learning objectives in digital media. Therefore, improvements are necessary in terms of chapter division, sub-sections, and clarity of logical flow to help

students more easily understand and connect the concepts being studied.

From the media aspect, validation results show that the e-book's interface design and navigation meet good standards. The consistent page layout, intuitive navigation, and compatibility across various devices are valuable advantages, especially in the era of mobile learning. This aligns with Dhawan's (2020) findings, which underline the importance of flexible access in digital learning media to enhance student motivation and participation.

However, consistency in color usage and text contrast remains a critical note. Although often viewed as a technical matter, in practice, poor readability due to low contrast can reduce user engagement, particularly for students with special needs or visual impairments. Recommendations for improvement in this area align with the principles of Universal Design for Learning (Rose & Meyer, 2002), which emphasize the need for learning media to be accessible to all students without visual barriers.

Moreover, well-designed e-books also play a role in supporting students' emotional readiness. As found by Fumagalli et al. (2025), midwifery students are at risk of secondary traumatic stress during clinical training. In this context, the presence of interactive media that presents material in a gradual and structured manner can help students understand clinical situations more calmly and systematically.

Additionally, Carrasco Aldunate et al. (2025) highlight the importance of validated learning instruments in supporting students' reflection and self-assessment processes. The e-book developed and thoroughly validated in this study not only serves as a medium for delivering information but also as a tool for students to

independently comprehend and evaluate their learning processes.

Thus, the integration of validation results from content and media experts in this study not only provides a solid foundation for refining the nursing e-book product but also reinforces the urgency of developing adaptive, responsive, and contextually relevant digital media in vocational education.

CONCLUSION

This study demonstrates that the development of an interactive e-book as a learning medium for vocational nursing students holds significant potential for enhancing the quality of education, both in terms of content and design. The validation results from the subject matter expert indicated a feasibility level of 60% (categorized as fair), while the media expert's validation reached 80% (categorized as good). These findings suggest that, although the e-book meets most of the feasibility criteria, further improvements are necessary—particularly regarding the alignment of content with the curriculum and the systematic organization of material to enhance clarity and comprehension.

From the media perspective, the key strengths lie in layout design, navigation, and cross-device compatibility. However, improvements are needed in the areas of color contrast and readability to ensure better accessibility. The integration of content and design validation has resulted in a more holistic, adaptive, and learner-centered educational tool that meets the specific needs of nursing students.

The novelty of this research lies in its application of a user-centered design approach, which is still rarely implemented

within the context of vocational nursing education in Indonesia. Therefore, this thoroughly validated e-book may serve as a valuable reference for the development of effective and high-quality digital learning media in vocational education.

REFERENCES

- Al-Osaimi, D. N. (2024). The impact of digital learning on Saudi nursing students' engagement: A qualitative study. *Nursing Open*, 11(8), e2188. <https://doi.org/10.1002/nop2.2188>
- Billings, D. M., & Halstead, J. A. (2015). *Teaching in nursing: A guide for faculty*. Elsevier Health Sciences.
- Carrasco Aldunate, P., Pedrero, V., Reynaldos-Grandón, K., & Araya, A.-X. (2025). Validity and reliability of the Spanish version of the Self-Assessment Practice Scale for Students (SaPS). *Nurse Education in Practice*, 74, 104378. <https://doi.org/10.1016/j.nepr.2025.104378>
- Clark, R. C., & Mayer, R. E. (2023). *E-learning and the science of instruction: Proven guidelines for consumers and designers of multimedia learning*. John Wiley & Sons.
- Dewi, G. P. F. (2012). Pengembangan game edukasi pengenalan nama hewan dalam bahasa inggris sebagai media pembelajaran siswa SD berbasis Macromedia Flash. *Universitas Negeri Yogyakarta*.
- Dhawan, S. (2020). Online Learning: A Panacea in the Time of COVID-19 Crisis. *Journal of Educational Technology Systems*, 49(1), 5–22. <https://doi.org/10.1177/0047239520934018>
- Erarslan, A. (2021). Online Learning Experiences of University Students during COVID-19: Implications for Future Education. *Educational Process: International Journal*, 10(1),

- 7–20.
<https://doi.org/10.22521/edupij.2021.101.1>
- Ernawati, I. (2017). Uji kelayakan media pembelajaran interaktif pada mata pelajaran administrasi server. *Elinvo (Electronics, Informatics, and Vocational Education)*, 2(2), 204–210.
- Fumagalli, S., Torrenzano, G., Adami, A., Panzeri, M., De Lucia, A., Antolini, L., ... & Nespoli, A. (2025). Psychometric properties of the Italian version of the Secondary Traumatic Stress Scale (STSS-I) in midwifery students. *Nurse Education in Practice*, 74, 104342. <https://doi.org/10.1016/j.nepr.2025.104342>
- Greene, J. W., & Coxhead, A. (2015). Academic vocabulary for middle school students. *Research-Based Lists and Strategies for Key Content Areas*.
- Hanks, E., Hashimoto, B., & Egbert, J. (2024). The contracts word list: Integral vocabulary for reading and writing English contracts. *English for Specific Purposes*, 75, 37–48. <https://doi.org/10.1016/j.esp.2024.03.002>
- Ivers, K. S., & Barron, A. E. (2010). *Multimedia projects in education: Designing, producing, and assessing*. Bloomsbury Publishing USA.
- Knoch, U. (2014). Using subject specialists to validate an ESP rating scale: The case of the International Civil Aviation Organization (ICAO) rating scale. *English for Specific Purposes*, 33, 77–86. <https://doi.org/10.1016/j.esp.2013.08.002>
- Hanks, E., Hashimoto, B., & Egbert, J. (2024). The contracts word list: Integral vocabulary for reading and writing English contracts. *English for Specific Purposes*, 75, 37–48. <https://doi.org/10.1016/j.esp.2024.03.002>
- Knoch, U. (2014). Using subject specialists to validate an ESP rating scale: The case of the International Civil Aviation Organization (ICAO) rating scale. *English for Specific Purposes*, 33, 77–86. <https://doi.org/10.1016/j.esp.2013.08.002>
- Lumley, T. (1998). Perceptions of Language-trained Raters and Occupational Experts in a Test of Occupational English Language Proficiency. *English for Specific Purposes*, 17(4), 347–367. [https://doi.org/10.1016/S0889-4906\(97\)00016-1](https://doi.org/10.1016/S0889-4906(97)00016-1)
- Papp, I., Markkanen, M., & von Bonsdorff, M. (2003). Clinical environment as a learning environment: student nurses' perceptions concerning clinical learning experiences. *Nurse Education Today*, 23(4), 262–268. [https://doi.org/10.1016/S0260-6917\(02\)00185-5](https://doi.org/10.1016/S0260-6917(02)00185-5)
- Maulida, D. A., Jannah, S. S., Saktilia, Y. R., Sajidah, L. A., & Kamelia, F. (2024). Media Pembelajaran Digital di Sekolah Dasar: Pembelajaran Bahasa Indonesia di Era Merdeka Belajar. *Cahaya Ghani Recovery*.
- Mukurunge, E., Nyoni, C. N., & Hugo, L. (2024). Development and validation of a competency-based assessment approach in low-income settings. *Nurse Education in Practice*, 72, 104240. <https://doi.org/10.1016/j.nepr.2024.104240>
- Papp, I., Markkanen, M., & von Bonsdorff, M. (2003). Clinical environment as a learning environment: student nurses' perceptions concerning clinical learning experiences. *Nurse Education Today*, 23(4), 262–268. [https://doi.org/10.1016/S0260-6917\(02\)00185-5](https://doi.org/10.1016/S0260-6917(02)00185-5)
- Putri, I. T., Aminoto, T., & Pujaningsih, F. B. (2020). Pengembangan e-modul fisika berbasis pendekatan saintifik pada materi teori kinetik gas.

- Edufisika: Jurnal Pendidikan Fisika*, 5(1), 52–62.
- Rahmani, Z., & Hikmawan, R. (2025). Pengembangan E-Modul Interaktif Pada Mata Pelajaran Matematika untuk Meningkatkan Kemampuan Berpikir Kritis Siswa Sekolah Dasar. *Didaktika: Jurnal Kependidikan*, 14(1), 743–756.
- Rismayanti, R., Susilo, H., & Nurmiyati, N. (2022). Validasi Media Pembelajaran Digital Interaktif untuk Pendidikan Keperawatan. *Jurnal Pendidikan Vokasi Kesehatan*, 5(2), 110–119.
- Rose, D. H., & Meyer, A. (2002). *Teaching every student in the digital age: Universal design for learning*. ASCD.
- Wang, T. H., & Bai, H. (2016). Exploring the impact of the sequence of learning materials in a web-based environment. *Educational Technology & Society*, 19(1), 292–304.