

From classroom to clinic: strengthening nurse anesthetist students' readiness through an anesthesia e-pocket book

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Abstract.

Health student education consists of theoretical learning, laboratory practicum, and clinical practice. For anesthesia nursing students, clinical practice represents real professional responsibilities, requiring adequate preparation and supportive learning resources. This study aimed to determine the effect of implementing an anesthesia e-pocket book on improving students' readiness for clinical practice. A pre-experimental design with a One-Group Pretest–Posttest approach was employed, involving 30 students selected through simple random sampling. Data were analyzed using the Wilcoxon Signed Rank Test. The results showed that the anesthesia e-pocket book effectively improved students' pre-clinical readiness, indicated by a p-value < 0.000, which was lower than $\alpha = 0.05$. These findings demonstrate that the anesthesia e-pocket book significantly enhances anesthesia nursing students' readiness for clinical practice. The study contributes to health education by providing empirical evidence on the effectiveness of digital pocket-based learning tools and offering a practical model that can be integrated into anesthesia nursing curricula to support clinical preparedness.

Keyword: E-pocket book; Anesthesia nursing; Clinical readiness; Digital learning; Clinical practice

1. Introduction

Clinical/field practice learning is the process of student interaction with clients under the guidance and supervision of a clinical teacher to achieve planned competencies. Students are given the opportunity in clinical learning to apply the theory they have learned during their studies and to actively participate in providing anesthetic care at the pre-, intra-, and post-anesthesia stages. Through clinical learning, students are expected to be more active in performing direct procedures on patients, thereby enhancing their skills in applying theory and practice (Yulistika, 2022). Student readiness to learn is a crucial aspect influencing the effectiveness of learning in the field. Readiness to learn can be defined as someone accepting, willing, and able to adapt to a learning process. Several things a student needs to prepare before beginning clinical practice include physical readiness, emotional readiness, experience, and knowledge (Seuk Asa et al., 2022). Therefore, before students begin clinical practice, educators must first conduct physical readiness, emotional readiness, experiential readiness, and knowledge readiness. These four types of learning readiness can be either barriers or drivers of learning, especially during clinical practice (Bastable, 2019).

One of the crucial components that students must prepare for clinical practice is knowledge. A good student's knowledge is influenced by the wealth of information about learning gained through lectures. Knowledge is also gained through independent study to find information related to the learning material. Knowledge of the material is influenced by exposure to information and reference sources from books, journals, and scientific articles (Purnamasari & Setyawan, 2021). When a student has a good level of understanding, they will be able to put what they already know into practice. Students must have a strong theoretical foundation related to the material they will be practicing, which will help them understand the clinical context and facilitate decision-making during the practicum. When knowledge is good through accurate information, the possibility of stressors or anxiety is minimized, so students are better prepared for clinical practice (Lisia Angelina et al., 2024). Education to improve the knowledge before clinical practice is crucial so they can undertake the practice with confidence and competence. It is hoped that by providing education, an individual can transform their knowledge into action in their lives. Educational strategies can help students build more mature knowledge and skills before undergoing clinical practice. The right learning media can have a significant impact on increasing a person's knowledge, one of which is digital media. In today's digital era, human life is inseparable from technology (Anam K et al., 2021).

Media can be defined as a tool that functions as an intermediary to convey messages or information from the sender to the recipient (Nurrita T et al., 2018). The use of appropriate and varied media in the

learning process can increase learning motivation and can reduce student passivity, with the help of media in the learning process, it is hoped that it can increase student learning interest, increase motivation, and students can learn independently so that students are dominant as learning subjects. The right learning media can have a significant influence on increasing someone's knowledge, one of which is through interesting media. One example of e-learning-based teaching materials that can help convey information about learning materials is the e-pocket book (Wibowo & Suryana, 2023).

E-pocket book often called digital pocket books, can be used as a medium for health education. One of their advantages is that they are easy to carry anywhere and don't require much storage space (Shafyra Tampilang et al., 2021). This e-pocket book has attractive colors, images that support the explanation, so this can increase motivation and curiosity of patients in reading this book. With high motivation, students can be better prepared to face clinical practice. The use of e-pocket books for anesthesia nursing students can be used as a practical guide, strengthening understanding, increasing independence, and reducing procedural errors. E-pocket books allow students to access information anywhere and anytime through electronic devices. Although e-pocket books and posters are considered to be able to increase a person's knowledge, e-pocket books are more effective than posters (Wijaya et al., 2024). Based on this background, the hypothesis of this study is that the implementation of an anesthesia e-pocket book has a significant effect on improving students' readiness for clinical practice.

2. Method

This study used a quantitative one-group pretest–posttest design involving 30 randomly selected fourth-semester students from a population of 157. Eligible participants were active students with no prior clinical practice experience and willingness to join the study. Data were collected using a clinical practice readiness questionnaire administered before and after a one-week intervention using an anesthesia e-pocket book. The research followed ethical principles, ensuring confidentiality and safety, and received approval from the Ethics Committee of Universitas 'Aisyiyah Yogyakarta (4632/KEP-UNISA/VI/2025).

3. Result and Discussion

3.1. Result

3.1.1. Frequency Distribution of Respondent Characteristic and Student Readiness

The Result of the analysis distribution of respondent characteristic and student readiness can be seen in the following table:

Table 1. Frequency Distribution of Respondent Characteristics and Student Readiness (n=30)

No	Respondent Characteristics	Frequency	Percentage (%)
	Age		
	18 years	0	0
1	19 years old	14	46.7
	20 years	9	30
	21 years	4	13
	22 years	3	10
	Gender		
2	Man	13	43.3
	Woman	17	56.7
	Interest in Entering Anesthesia		
3	Own Desire	24	80
	Other People's Requests	6	20
	Clinical Practice Experience		
4	Once	6	20
	No	24	80
	Total	30	100

Based on the analysis results, the characteristics of the respondents were mostly 19 years old (14 respondents) (46.7%), female (17 respondents) (56.7%), had their own wishes in choosing the Anesthesiology Nursing Study Program (24 respondents) (80%), and did not have clinical practice experience (24 respondents) (80%).

3.1.2. Effect of Anesthesia E- Pocket Book on Student Readiness

The Result of the analysis regarding the Effect of Anesthesia E- Pocket Book On Student Readiness can be seen in the following table:

Table 2. Wilcoxon Test Results

Readiness Level	Pretest		Posttest		p-value
	F	%	F	%	
Not Ready	23	76.7	2	6.7	0,000
Ready	7	23.3	21	70.0	
Very Ready	0	0	7	23.3	
Total	30	100	30	100	

Based on Table 1.2, The Wilcoxon Signed Rank Test showed a p-value of 0.000, indicating a significant difference between students' readiness before and after using the anesthesia e-pocket book. Student readiness increased notably, with fewer students classified as "not ready" and more moving into "ready" and "very ready" categories. These results demonstrate that the e-pocket book effectively improves student readiness and support the broader evidence on the benefits of digital media for learning.

3.2. Discussion

The distribution of respondent characteristics provides an initial overview of the students who were the subjects of this study. The analysis shows that the majority of respondents were female. This phenomenon aligns with the findings of (Anjany & Asriyadi, 2019), which reports that the nursing profession is still often associated with feminine characteristics such as gentleness, empathy, and patience. This is reinforced by the findings (Alief & Yohana) which states that female students tend to have higher intrinsic motivation in preparing for clinical practice than male students, so that their learning readiness is relatively more stable.

In addition to gender, this study also shows that age plays a significant role in influencing students' clinical practice readiness. The majority of respondents were 19 years old, generally in the late adolescence to early adulthood stage. In this phase, individuals have entered cognitive and psychosocial development, characterized by increased abstract thinking skills, decision-making skills, and independence in learning (John, 2021). Students of a more mature age tend to have better stress management and emotional regulation skills, so they are better prepared to face the pressures of clinical practice (Kunanithaworn et al., 2018). This is in line with the opinion of (Purnamasari & Setyawan, 2021), which confirms that readiness to learn is influenced by the physical, emotional, experiential, and knowledge readiness of students. This finding was then reinforced by (Muftikhah & Mustafidah, 2025) which states that internal and external factors, including academic experience, can predict student learning outcomes.

Another influential factor is motivation to enter the study program. Most respondents chose anesthesia nursing of their own free will, reflecting intrinsic motivation. This aligns with the findings (Sianturi & Natalia, 2021) Intrinsic motivation is positively related to students' clinical readiness. Students who choose majors based on personal interests are better able to maintain their enthusiasm for learning, have a strong sense of responsibility, and are more adaptable in facing the challenges of clinical practice. Conversely, respondents who enter due to encouragement from others tend to have higher levels of anxiety and lower preparedness. Therefore, demographic characteristics such as age, educational level, and motivation are not merely population characteristics but also important factors in determining students' clinical readiness (Menik & Danan, 2020).

Kinanti & Joko (2024), proved that digital pocket books can increase students' interest and motivation to learn, suggesting that similar media can be adapted in nursing education. In line with this, (Anam et al., 2021) shows that digital media generally increases the effectiveness of the teaching and learning process, because it can present information in an interactive and engaging manner. Meanwhile, (Wibowo & Suryana, 2023) even emphasized that audiovisual e-flip pocket books not only increase learning interest but also facilitate student engagement in the learning process. In the nursing context, similar innovations have proven relevant because they can help students understand complex clinical material. Furthermore, (Latifah & Tri, 2024) explained that digital media also plays a role in shaping

students' preventive attitudes towards clinical risks. The results of this study are also in line with the findings (Baharuddin & Hashim, 2020) which shows that students with higher learning readiness—supported by innovative learning media—have higher levels of confidence when facing clinical practice. Thus, the anesthesia e-pocket book can be seen as a practical, flexible, and appropriate pre-clinical preparation tool for today's nursing students.

Apart from media effectiveness, student readiness is also determined by the interaction between internal and external factors (Lisia et al., 2024) highlighted that low knowledge and preparedness can increase students' anxiety before clinical practice, so appropriate educational efforts are needed to address this (Etik & Hanifah, 2022) also emphasized that the role of educators and the learning environment are important factors in shaping readiness. In this study, the anesthesia e-pocket book served as an external factor supporting student readiness by providing structured content, procedural visualizations, and easy access that could be repeated independently (Istiana et al., 2024) added that students with high intrinsic motivation are better able to utilize digital learning media optimally, resulting in more stable learning outcomes. This indicates that the effectiveness of e-pocket books is not only determined by the quality of their content but also influenced by students' psychological readiness to receive and integrate new knowledge. Thus, integrating technological support with students' internal factors can create more comprehensive clinical readiness.

Overall, the results of this study strengthen the argument that digital-based learning media innovation has a strategic role in improving the academic and clinical readiness of nursing students. (Lisia et al., 2024) confirms that technology-based learning strategies are relevant for use in health education to address the challenges of transitioning from theory to practice. (Shafyr et al., 2021) which tested the effectiveness of the HIV/AIDS e-pocket book on adolescents proved the success of this media in increasing knowledge of prevention, while (Wijaya et al., 2024) found that implementing an e-pocket book can also improve adolescents' knowledge and perceptions about anemia. Furthermore, Afrianti et al. 2021 emphasized that students who received digital learning support demonstrated better clinical readiness than those who relied on conventional methods. Therefore, the anesthesia e-pocket book serves not only as a learning aid but also as an innovative strategy that can increase intrinsic motivation, reduce anxiety, and build student confidence before entering clinical practice.

4. Conclusion

Based on Findings, the researchers concluded that the anesthesia e-pocket book has proven to be an effective, innovative learning in supporting student readiness for clinical practice.

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References

- Yulistika, D. (2022). Metode pembelajaran klinik pada praktik profesi mahasiswa keperawatan. *Faletehan Health Journal*, 9(1), 37–42. <https://journal.lppm-stikesfa.ac.id/ojs/index.php/fhj>
- Seuk Asa, S. M., Naibili, J. E. M., Sbeta, N. R., & Program Studi Keperawatan, Universitas Timor. (2022). Hubungan antara kesiapan mahasiswa semester II Prodi Keperawatan Universitas Timor dengan tingkat kecemasan menghadapi praktik klinik perdana selama pandemi Covid-19. *Jurnal Sains Keperawatan*, 4. <https://jurnal.unimor.ac.id/JSK>
- Bastable, S. B. (2019). *Nurse as educator: Principles of teaching and learning for nursing practice*. Jones & Bartlett Learning.
- Purnamasari, V., & Setyawan, A. (n.d.). Factors that affecting students' learning readiness in clinical practice. *Jurnal Keperawatan Respati Yogyakarta*. <http://nursingjurnal.respati.ac.id/index.php/JKRY>
- Angelina, L., Wardani, Y., & Noviati, B. E. (2024). Korelasi antara tingkat pengetahuan, tingkat kesiapan dengan tingkat kecemasan pada mahasiswa peserta praktik klinik di masa pandemi Covid-19 di Sekolah Tinggi Ilmu Kesehatan Panti Rapih Yogyakarta. *Jurnal Keperawatan*, 3(1), 1–17.
- Anam, K., Husaini, T. S. I., Rohana, S., & Meulaboh, T. N. (2021). Efektivitas penggunaan media digital dalam proses belajar mengajar. *Jurnal Pendidikan*, 2.

- Nurrita, T. (2018). Pengembangan media pembelajaran untuk meningkatkan hasil belajar siswa. *Jurnal Pendidikan*, 3.
- Wibowo, A. ., & Suryana, D. (2023). PENGEMBANGAN MEDIA E-FLIP POCKET BOOK AUDIOVISUAL (LIPOBO) MATERI SEJARAH PENJAJAHAN INDONESIA UNTUK MENINGKATKAN MINAT BELAJAR SISWA KELAS V SEKOLAH DASAR. *Primary Education Journals (Jurnal Ke-SD-An)*, 3(1), 1–8. Tampilang, M. S., Setiawan, R., & Poltekkes Kemenkes Bandung. (2021). Pengaruh media e-pocketbook HIV/AIDS terhadap peningkatan pengetahuan pencegahan HIV/AIDS pada remaja. *Jurnal Kesehatan*, 2(1). <https://bit.ly/epocketbook-hiv-aids>
- Wijaya, L. R., Utami, S. B., Rialihanto, M. P., & Siswati, T. (2024). Implementation of an e-pocket book to improve knowledge and perceived anemia in adolescents. <https://creativecommons.org/licenses/by/4.0/>
- Husaini, F. A., & Asriyadi, F. (2019). Studi korelasi sikap dan kesiapan penerapan evidence-based practice pada mahasiswa profesi ners UMKT. *Jurnal Keperawatan*, 2.
- Arian, A. R., & Satwika, Y. W. (2025). Perbedaan motivasi belajar siswa laki-laki dan perempuan di SMAN 22 Surabaya. *Observasi: Jurnal Publikasi Ilmu Psikologi*, 3(1), 294–305.
- Santrock, J. W. (2021). *Life-span development* (13th ed.). Erlangga.
- Kunanitthaworn, N., Wongpakaran, T., Wongpakaran, N., Paiboonsithiwong, S., Songtrijuck, N., & Kuntawong, P. (2018). Factors associated with motivation in medical education: A path analysis. *BMC Medical Education*, 18(1). <https://doi.org/10.1186/s12909-018-1256-5>
- Muftikhah, M., & Mustafidah, H. (2024). Prediksi prestasi belajar mahasiswa berdasarkan faktor internal dan eksternal menggunakan jaringan backpropagation dengan klasifikasi fuzzy. *Sainteks*, 21(1), 47.
- Sianturi, S. R., & Natalia, L. (2021). Nursing students readiness through clinical learning. *Journal of Nursing Science Update*, 9(1), 126–132.
- Agustina, M. T., & Kurniawan, D. A. (2020). Motivasi belajar mahasiswa di masa pandemi Covid-19. *Jurnal Psikologi Perseptual*, 120–128. <http://jurnal.umk.ac.id/index.php/perseptual>
- Dyana, K. I., & Suprapmanto, J. (2024). Dampak penggunaan buku saku digital pada minat dan motivasi belajar siswa SD. *Jurnal Pendidikan*, 4. <https://senapadma.nusaputra.ac.id/index>
- Zahra, L. A., & Listyaningrum, T. H. (2024). Pengaruh edukasi manajemen risiko kesehatan keselamatan kerja rumah sakit (K3RS) terhadap sikap pencegahan needle stick injury pada mahasiswa anesthesiologi Universitas ‘Aisyiyah Yogyakarta. *Seroja Husada*, 1.
- Baharuddin, N. Q., & Hashim, H. (2020). Using digital reading in ESL Malaysian primary classrooms: The strengths and the shortcomings from the learners’ perspectives. *Journal of Educational and Learning Studies*, 3(1), 7.
- Setyorini, E. S., & Noviandari, H. (2022). Pengaruh tingkat pendidikan, pengalaman kerja, dan komitmen terhadap kinerja karyawan. *Qulubana: Jurnal Manajemen Dakwah*, 3(1), 47–61.
- Istiana, R., Munandar, R. R., & Choerunnisa, N. A. (2024). E-pocket book media PBL-based for problem solving ability and student learning motivation. *Mangifera Edu*, 8(2). <https://doi.org/10.31943/mangiferaedu.v8i2.182>
- Afrianti, N., Ruslan, D., & Yusuf, M. (2021). Implementation of the e-pocket book to improve learning outcomes in economics at Madrasah Aliyah Madinatussalam, Bandar Khalifah Regency, Indonesia. *Budapest International Research and Critics in Linguistics and Education (BIRLE) Journal*, 4(1), 125–131.