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Use of Electronic Logbook Based on Mobile Learning in Clinical Learning among Nursing Students

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ABSTRACT

Filling out the Logbook in the clinical learning process in Indonesia is still mostly conversational, characterized by filling in the Logbook, which still needs to be integrated. So, it requires an innovation in media technology that is currently popular, namely the use of mobile learning, which has more accurate information and communication capacity and is broader in space and time. Furthermore, it can carry out faster reporting. This study aims to analyze mobile learning-based Electronic Logbook (E-Logbook) in clinical learning. This type of research is Research and Development (R&D). The research product development design uses the ADDIE model, which will be carried out from April 2021 to March 2023 with research instruments to test product practicality by users. The sampling technique was Purposive Sampling with a case study of 30 nursing students. Based on the results of this study, the use of the E-Logbook in the mobile learning-based clinical learning process obtained product practicality test results of 85.05% in the practical category. It can be used in nursing clinical learning in Indonesia to make it easier to record data from activities carried out, information materials, documentation, and evaluation processes based on digital archives that are more accurate in the process of assessing nursing students' clinical competency achievements based on quantitative nursing student activity achievements with details of clinical competency achievements effectively and efficiently.

INTRODUCTION

Clinical learning is a crucial component that nursing students must undergo to train skills, increase knowledge, and develop nursing students' professionalism in a clinical setting (Bouchlaghem & Mansouri, 2018). It can impact the quality of clinical learning and health services in the future. However, clinical learning in Indonesia's implementation is still largely conventional, one of which is manual Logbook filling. According to Ibrahim (2016), The difficulty encountered when using a manual logbook is that when searching for information that has been going on for quite a long time, you need to be careful in opening each page to get the desired information. Apart from that, there are also difficulties in sharing with other colleagues who want to know information about previous activities or events. Another thing that also concerns us is the concern that information will be lost due to the logbook being exposed to liquid or missing pages. So, it becomes a challenge and problem in the learning process. According to Berame *et al.* (2022), Challenges and problems in educating students cannot be avoided. However, one important thing is the knowledge that students can gain in the use of all types of technological innovation.

Therefore, we need an innovative media technology that is currently popular, namely mobile learning, which has more accurate information and communication capacity and is unlimited in time and space. Moreover, it can carry out faster reporting. Using mobile learning has many advantages. Mobile learning, as smartphone-based, can help in the health education process in the health service

process (Kezelee *et al.*, 2023). Mobile learning is also a very effective learning method because it is student-centered and allows nursing students to learn and access information anytime and anywhere because it is portable or Personal Digital Assistant (PDA). Yalcinkaya & Yucel (2023); Kim & Suh (2018) Kenny *et al.*, (2020). Electronic logbooks also come in various forms, such as computers, programs on websites, software, and applications on iOS or Android. Judging by appearance, logbooks are divided into landscape, portrait, and virtual displays, with creations emphasizing convenience, simplicity, and aesthetics. Electronic Logbooks can also be used in any area, including the nursing service area (Schuttpelz-Brauns *et al.*, 2016).

E-logbooks can also overcome problems in nursing education related to the accumulation of evaluations at the end of the semester. Teachers who use E-Logbooks can access them anytime and anywhere to monitor student performance and provide direct feedback (Cevik *et al.*, 2018). Monitoring and analysis of E-logbooks have been used in service areas, from education to research, with the same functions of documentation, reporting, and performance evaluation. E-Logbooks can also change teaching and learning activities and guide future curriculum modifications to improve nursing quality (Fatemeh & Alavinia, 2014). Apart from that, E-logbooks have the advantage of being digital in inputting activity records, collecting data more clearly, and being easy to carry anytime and anywhere without limits. It is supported by a digital assistant personnel system (Shayan, Mosavi, & Yousefy, 2012). Therefore, developing E-books based on

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mobile learning is an alternative to overcoming students' learning problems. Mobile learning is learning that uses Communication and Information Technology. Mobile learning can be done with distance learning, making clinical learning easier.

Based on the description above, researchers can develop and research the use of mobile Learning-Based Electronic Logbooks (E-Logbooks) in clinical learning among nursing students in the clinical learning area. So that it can facilitate the management of the learning process, evaluation, documentation, interaction, and access information in an integrated and real-time manner in the implementation of the clinical education learning process, where the mobile learning offered can be accessed anywhere using a smartphone or browser, having a more comfortable user experience or interaction.

LITERATURE REVIEW

E-Logbook

A Logbook is a notebook or document that students need to document in detail all activities in the process of learning. It contains personal identity, competency information, daily notes, learning activity notes, student reflections, assessment sheets, research sheets, questionnaires, and lecturer and supervisor supervision sheets. Outline: There are two forms of Logbooks, namely manual and electronic. Manual Logbooks can include several types, such as books, notes, paperwork, etcetera. There is also a form of electronic Logbook using programs on websites, software websites, or Android applications (Andry & Wijaya, 2020).

The advantages and disadvantages of an E-Logbook are that inputting activity records and collecting data is more straightforward to carry anytime and anywhere without limits. It is supported by a PDA (Personnel Digital Assistant) system. The weaknesses are also explained by the technical aspects of the E-Logbook and the limited number of users in digital applications (Shayan, Mosavi, & Yousefy, 2012). According to Ullah *et al.* (2019); Komsiyah & Indarti (2019), E-Logbooks are very good for documentation as a monitoring and evaluation tool for the implementation of clinical competencies to increase comfort and flexibility in the activity documentation process. Meanwhile, research by Martha & Soepriyanto (2018). Mobile Learning-Based E-books can help students increase their attention to learning material so that the learning process seems more interesting.

Mobile Learning

M-learning or Mobile Learning is learning using mobile devices such as PDAs, mobile phones, laptops, and other information technology equipment (Ariesto Hadi Sutopo, 2012). The advantage of m-learning is that learning can access materials, guides, and applications related to learning that can be accessed anytime and anywhere. According to Wang, Liao, & Yang, (2013). Mobile applications allow users to connect to internet

services that are usually accessed via a PC or notebook, and mobile applications can help access internet services using their mobile devices.

Another advantage of using mobile-based teaching media is that the price is relatively cheaper than a Personal Computer (PC) or laptop. With a lower price, a smartphone has almost the same advantages as a PC, namely that it can display multimedia elements in the form of text, video, sound, animation, and others. Entertainment and others. The weaknesses of Android mobile-based smartphones in learning are limited image resolution, battery life, and lack of support for several file types for operation (Aripin, 2018).

MATERIALS AND METHODS

Research Design

The design in this research is descriptive research with a Research and Development (R&D) approach to produce a product in the form of a mobile learning-based E-Logbook. The design for the development of this mobile learning-based clinical learning Logbook product uses the Analysis, Design, Development, Implementation, and Evaluation (ADDIE) model.

Setting and Sample

The research location was carried out in one of the nursing science study programs in the city of Palembang, Indonesia. The time of the research was carried out from April 2021 to March 2023. The sampling technique was Purposive Sampling with a sample size of 30 nursing students.

Ethical Considerations

This research passed the Ethical Clearance examination at the Health Ethics Commission, Sriwijaya University, Palembang, Indonesia, with the protocol certificate of ethical approval number 287-2022, with the result of exempt status on December 2, 2022.

Instrument Development

Instruments in developing an E-Logbook for clinical learning based on mobile learning, namely: Test the practicality of the product by the primary user (students) consisting of which consists of assessment aspects: Appearance, application menu, application contents, ease of use, usefulness, and implementation (Widoyoko, 2017).

Procedures in the Development Stage

The procedure for developing a mobile learning-based clinical learning E-Logbook using the Analysis, Design, Development, Implementation, and Evaluation (ADDIE) model is as follows:

1. Analysis: Analyzing media development needs
2. Design: Designing learning media systematically and specifically
3. Development: Validity testing process by material experts, technology experts, and practicality testing by users using questionnaires.

4. Implementation: Testing the clinical learning Logbook based on mobile learning using the black box test method to test the application based on the functionality of the system that has been created. The trial was carried out in small groups in small groups.

5. Evaluation: Evaluation and improvements after testing are carried out so that the system that has been tested can be analyzed and redesigned based on the system's functionality.

Data Collection

The data collection process in this research uses observation, interviews, and questionnaires to obtain test data from practitioner's E-Logbooks for clinical learning based on mobile learning. The data collection method in this research is as follows:

- 1) The process of collecting research data begins with signing informed consent as proof of agreement to become a respondent.
- 2) Collecting product practicality test data using questionnaires using observation and interview techniques with users, namely students, the results of which are in the form of data scores, which can be used as a basis for analyzing, evaluating, and revising the media being developed.

Data Analysis

This research uses descriptive data analysis to describe the frequency and percentage of the characteristics and practicality of using the E-Logbook for mobile learning-based clinical learning using Likert Scale measurements to measure attitudes, opinions, or perceptions of the product being developed. After calculating the percentage figure, it is then transformed into a qualitative sentence with the provisions, If the score is 90% to 100% (Very Practical), Score 80% - 89% (Practical), Score 65% - 79% (Quite Practical), Score 55 % - 64% (Less practical) and ≤ 54% (Not practical).

RESULTS AND DISCUSSION

Mobile Learning Based Clinical Learning E-Logbook

E-Logbook Mobile Learning-Based Clinical Learning has several functions, including a place to record data from activities carried out, information and evaluation materials, and reporting materials in the clinical learning process where the results of the Logbook can be reviewed, printed, or downloaded. Users can use this Logbook feature in the following way (Figure 1).

- 1) Click on the Logbook logo, click on the time information, and please fill in the activity's date, month, year, and time.

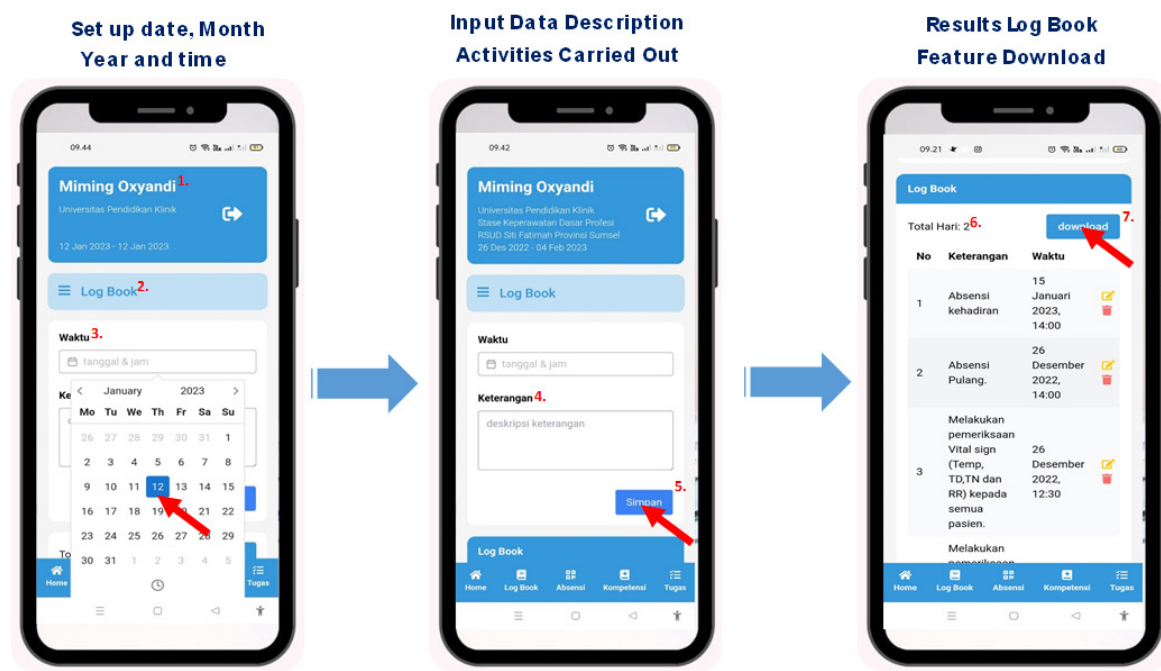


Figure 1: Process of filling out the Clinical Learning E-Logbook Mobile Learning Based

- 2) Click on the description to start filling in the Logbook according to the activity.
- 3) Click save when the input activity has been completed.
- 4) Click the download sign if the user wants to print or have the complete soft file logbook stage.

Figure 1 Providing information 1). Student and Institutional Identity, 2). Feature Name, 3). Set Up Activity Time, 4). Activity Description, 5). Save button, 6). Number of

Logbooks filled in, 7). Download the Logbook results.

Demographic Characteristics

Demographic Data of Respondents in this Study

The average age of most students is 22 years (70%). Meanwhile, the gender of most of the students is female, 35 people (87.5%), while the majority of students come from regular education programs, three people (75%). (Table 1).

Table 1: Demographic Characteristics

No	Variables	f	%
1	Age, median, years	21	70.0
2	Sex		
	Male	6	20.0
	Female	24	80.0
3	Education		
	Regular	28	95.0
	Non-Regular	2	5.0

Practicality Test of E-Logbook for Clinical Learning Based on Mobile Learning

The results of the practicality test assessment of the Mobile Learning-Based E-Logbook Clinical Learning by users, namely students, consist of assessment aspects: Display, application menu, application content, ease of use, usefulness, and implementation. The results of the practicality test for the Mobile Learning Based Clinical Learning E-Logbook product were obtained with a score of 85.05%, with the practical category being used as a Learning Management Mobile Learning Application System in clinical learning (Table 2).

Table 2: Practical Results of Learning E-Logbook Products Mobile Learning-Based Clinic

No	Indicator	Percentage
1.	Display	85.80 %
2.	Menu Application	85.00 %
3.	The contents (content) of the application	87.00 %
4.	Ease of Use	86.50 %
5.	Expediency	81.50 %
6.	Implement ability	84.50 %
Average value		85.05 %

Table 2. It shows the use of the E-Logbook in clinical learning based on mobile learning, which is practical and can be used in the clinical learning process. The Mobile Learning Based Clinical Learning E-Logbook is a digital notebook or daily record that contains all the activities carried out by students participating in clinical learning while working in 1 (one) shift at the clinical learning place consisting of time (date & time) and information activities in implementing digital archive-based clinical learning. The Logbook feature in the clinical learning process has several functions, including as a place to record data from activities carried out, information material, documentation, and evaluation, as well as report material in the clinical learning process where the results of the Logbook can be reviewed, printed or downloaded. According to Schuttpelz-Brauns *et al.* (2016), The era of the Industrial Revolution 4.0 has experienced an utterly digital change, including the form of logbooks, which were initially manual to electronic. There can be

various manual Logbooks, such as books, notes, sheets of paper, etcetera. Electronic Logbooks also come in various forms, such as computers, programs on websites, software, and applications on iOS or Android. Judging by the appearance, logbooks are divided into landscape, portrait and virtual displays with creations emphasizing convenience, simplicity, and aesthetics.

Using an E-Logbook in mobile learning-based clinical learning has many advantages, including making it easier to record data from activities carried out, information materials, and evaluations, according to Butarbutar (2022). E-Logbook can simplify inputting data and searching for data quickly and precisely. Also, in terms of evaluation, users can evaluate correctly from previous historical results. The E-Logbook also has an essential role as proof of documentation of the implementation of activities and supervision by academic and clinical preceptors.

The use of the E-logbook is as a monitoring and evaluation tool for the implementation of clinical competencies, as well as a tool for nursing students' accountability for achieving the clinical competency targets that have been given (Regulation of the Minister of Health of the Republic of Indonesia No. 49, 2013).

Using the E-Logbook in mobile learning-based clinical learning is also a digital archive-based documentation medium. According to research by Ullah *et al.* (2019); and Komsiyah & Indarti (2019). E-logbooks are very good for documentation containing records of activity achievements and analyzing data related to clinical activities. The e-logbook is also used as a monitoring and evaluation tool for implementing clinical competencies to increase comfort and flexibility in the activity documentation process. According to research by Martha & Soepriyanto (2018) and Aripin, (2018), Mobile learning-based E-books can help students increase their attention to learning material so that the learning process seems more interesting. The advantage of mobile learning is that learning can be done remotely, and the price is relatively cheaper than a Personal Computer (PC).

CONCLUSIONS

The use of E-Logbook in the mobile learning-based clinical learning process has statistically obtained a score of 85.05% with the practical category used in nursing clinical learning in Indonesia to make it easier to record data from activities carried out, information materials, documentation and based evaluation processes. Digital archives are more accurate in the process of assessing nursing students' clinical competency achievements based on activities with details of clinical competency achievements that have been carried out.

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