

Training on the Use of Digital Services for D3 Nursing Students at Poltekkes Semarang

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Abstract

Study This aiming For evaluate effectiveness of training programs utilization digital services for D3 Nursing students Semarang Polytechnic of Health in increase digital competencies needed in the digitalization era health . Using mixed method approach , research involving 120 4th semester students who participated in the training program with a blended learning format. Data collection was carried out through pre-test and post-test, observation structured interviews , semi- structured interviews , and focus group discussions. The results of the study show improvement significant in score knowledge from 65.3 (SD=8.2) to 87.6 (SD=6.4), with 85% of participants reach level " proficient " competence in use of telemedicine platforms and 78% in patient data management electronics . Analysis qualitative disclose that blended learning approach , ratio high level of practice and involvement practitioner industry contribute to effectiveness of the program. Although there is challenge related infrastructure and variations ability base students , this program succeed increase readiness participant in face demands digitalization , with 88% reporting improvement trust self in use system information health . Research This conclude that the training program is structured and oriented practice effective in develop students' digital competence nursing , with recommendation For development curriculum sustainable digital- based .

Keywords : Digital Training , Digital Competence , Students Nursing , Blended Learning, Health Digitalization

Introduction

The rapid digital transformation in the healthcare sector has driven the need for medical personnel who are proficient in using information technology and digital services. According to a report by the World Health Organization (2023), the adoption of digital technology in healthcare services has increased by 63% since the COVID-19 pandemic, creating a new urgency in developing the digital competencies of healthcare workers. This is in line with the findings of Kumar et al. (2022) who highlighted that 78% of global healthcare institutions now integrate digital health information systems into their daily operations.

In Indonesia, the Ministry of Health has launched the 2024 National Health Digitalization program, which requires all health facilities to adopt an electronic recording system (Kemenkes RI, 2023). This program presents a special challenge for health education institutions to prepare graduates who are competent in utilizing digital technology. As stated by Wijaya & Santoso (2023), nursing students need to be equipped with adequate digital skills to face the demands of the modern health industry.

Semarang Health Polytechnic, especially the D3 Nursing program, has identified a gap in its students' digital competency. An internal survey conducted by the Academic Department of Semarang Health Polytechnic (2023) showed that only 45% of students felt confident in using digital health information systems. Rahman et al. (2023) in their research at various nursing education institutions in Central Java found that the main obstacle in adopting digital technology was the lack of understanding and practical experience of students in operating digital health platforms.

Based on the identification of these needs, the digital service utilization training program is very relevant and urgent to be implemented. This training is designed to improve the digital literacy of D3 Nursing students at Poltekkes Semarang, with a focus on the use of health information systems, electronic patient data management, and telemedicine. As stated by Prasetya & Nurjanah (2022), structured and ongoing training can improve the digital competence of nursing students by up to 85% in one semester.

This article will discuss the implementation of a digital service utilization training program specifically designed for D3 Nursing students at Poltekkes Semarang, including the methodology, results, and impacts on improving students' digital competence. The analysis will include an

evaluation of the program's effectiveness as well as recommendations for the development of digital-based curricula in the future.

Research Methods

Study This use mixed method approach that combines analysis quantitative and qualitative For evaluate effectiveness of training programs utilization digital services for D3 Nursing students Semarang Polytechnic of Health . As put forward by Creswell & Plano Clark (2021), the approach mixture allow better understanding comprehensive to the phenomenon being studied through triangulation of data from various source . Population study consists of of 120 4th semester students of the D3 Nursing program , with taking sample use total sampling technique considering amount accessible population and its importance involvement all over student in the training program This.

Training program implemented for 12 weeks with a blended learning format that combines learning look at face to face and online. Training materials covers three module main : system information health , patient data management electronics , and telemedicine applications . Each module consists of from session theoretical and practical with 30:70 ratio , referring to the experiential learning principles developed by Kolb & Kolb (2018). Instructor training is practitioner technology health and lecturers with certification in health informatics field .

Data collection was carried out through various instruments that have been validated . Pre-test and post-test were used For measure improvement knowledge and skills participants , with developed instruments based on Standard Digital Competence of Health Workers (SDKI, 2023). Observation structured done during session practical work use rubric assessment that includes aspect technical and non- technical . Semi- structured interviews with 30 participants selected and focus group discussions with 4 groups each consisting of 8 participants implemented For gain qualitative insights about program effectiveness .

Quantitative data analyzed using SPSS software version 26, including analysis statistics descriptive and inferential . Paired t-test used For compare pre-test and post-test scores , while analysis regression done For identify factors that influence level mastery material . Qualitative data from interviews and FGDs were transcribed and analyzed use technique analysis thematic based on the framework developed by Braun & Clarke (2022). For ensure data validity , member checking and peer debriefing are carried out with team researcher independent .

Results and Discussion

Research result show improvement significant in digital competence of D3 Nursing students Semarang Polytechnic of Health after follow the training program utilization digital services . Based on quantitative data analysis , occurs average score increase knowledge from 65.3 (SD=8.2) in the pre-test to 87.6 (SD=6.4) in the post-test, with mark $t(119)=15.8$, $p<0.001$. Appropriate with findings of Wijaya et al. (2023), an increase significant especially seen in the aspect operation system information health and patient data management electronics .

Analysis skills practical through observation structured disclose that 85% of participants reach level " proficient " competence in use of telemedicine platforms, while 78% indicated good ability in patient data management electronics . Findings This in line with research by Santoso & Rahman (2023) which emphasizes importance learning based on practice in development digital skills power health . In special , students show improvement trust self in use system information health , with 92% reporting level " high " or " very high " confidence at the end of the program.

Qualitative data from interviews and FGDs revealed three theme main contributors to effectiveness of the program. First , the blended learning approach provides flexibility for student For to practice skills outside of formal learning hours . Second , the ratio more practical work big compared to theory allow mastery more technical in-depth . Third , involvement practitioner industry as instructor give outlook practical about implementation technology in clinical settings real .

Program evaluation also identifies a number of challenge in implementation training . As noted by Prasetya & Nurjanah (2022), the limitations infrastructure technology and variations ability base student influence speed learning . Analysis regression show that experience previously with digital technology ($\beta=0.45$, $p<0.01$) and frequency exercise independent ($\beta=0.38$, $p<0.01$) is predictor significant to level mastery material .

Impact of training programs to readiness work is also visible positive . Follow-up survey further action taken One month after the program shows that 88% of participants feel more Ready face demands digitalization on the spot practice clinic . This is support Kumar et al.'s (2023) findings

on correlation positive between digital competence and readiness Work graduate of nursing . As many as 75% of students also reported has apply skills learned during practice home clinic Sick partners .

Discussion

Discussion results study show that the training program utilization digital services provide impact positive to development digital competence of D3 Nursing students Semarang Polytechnic of Health . Improvement significant in score knowledge from 65.3 to 87.6 confirms effectiveness blended learning approach applied . Findings This strengthen results study previously by Wijaya & Santoso (2023) who stated that combination online and face-to-face learning optimal face for development digital skills in education nursing .

The height percentage students who achieve level " proficient " competence in use of telemedicine platforms (85%) and patient data management electronics (78%) showed success of learning strategies based on practice . As proposed by Rahman et al. (2023), ratio more practical work big give chance for student For build understanding deep through experience directly . Improvement trust self student in use system information health also indicates effectiveness of the program in overcome obstacle psychological which is often experienced in adoption technology new

Involvement practitioner industry as instructor give mark significant addition in the training program this . According to with findings Prasetya & Nurjanah (2022), exposure to experience practical and study case real help student understand context implementation technology in a clinical setting . This is reflected from height level implementation skills during practice clinic , where 75% of students report has use competencies learned .

Challenge main identified in program implementation , such as limitations infrastructure and variations ability base students , showing importance a more personal approach in learning . Kumar et al. (2023) emphasized that adjustment speed learning based on individual abilities can increase effectiveness of digital training programs . Analysis regression showing significance experience previously ($\beta=0.45$) and frequency exercise independent ($\beta=0.38$) supports importance provision chance adequate practice .

The impact of the program on readiness work , which is indicated by its height percentage students who feel more Ready face digitalization (88%), underlining relevance of the program to need industry . This is in line with direction policy National Health Digitalization 2024 which emphasizes importance digital competence in service modern health . However , as Santoso & Rahman (2023) stated that it is necessary evaluation sustainable For ensure material training still relevant with development technology health latest .

Implications from study This show importance integration digital training to in core curriculum of education nursing . Similar programs can adapted by the institution education other health with consider characteristics local and availability source power . For development to front , need under consideration addition modules that focus on aspects data security and ethics in use technology health , remembering the more the complex issue privacy in the era of digitalization health .

Conclusion

Training program utilization digital services for D3 Nursing student Semarang Polytechnic of Health has succeed increase digital competence of participants in a way significant . Increase This reflected from average score increase knowledge by 22.3 points and achievement level " proficient " competence by the majority participant in use of telemedicine platforms and patient data management electronics . Blended learning approach with ratio more practical work big proven effective in facilitate learning , supported by contributions practitioner industry that provides perspective practical in implementation technology health .

Although there is challenge related infrastructure and variations ability base students , this program succeed increase readiness participant in face demands digitalization in the environment work . This is proven with height level implementation skills during practice clinic and improvement trust self student in use system information health . Experience previously with digital technology and frequency exercise independent become factor key influencing level mastery material .

The success of this program give strong foundation For development curriculum digital based in education nursing . For increase the effectiveness of the program in the future , it is necessary done adjustment sustainable to material training in accordance development technology health , as well as addition focus on aspects data security and ethics in use technology health .

Research results This can become reference for institution education other health in develop similar programs with consider characteristics and needs local .

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