Clinical Practise Evaluation Quality Improvement Among Nursing Students in The Digital Technology Transformation Era: Literature Review

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ABSTRACT

Background: Technological developments make the quality of evaluation of clinical practice even better. However, it must be known in advance which technology is more appropriate to use so that evaluation of clinical practice among nursing students can meet the expected quality. Objective: This literature review aims to analyse the efforts that have been made to improve the quality of clinical practice evaluation among nursing students in the digital technology transformation era. Methodology: The literature review uses electronic database sources through journal search engines, Google Scholar, Pro-Quest, PUBMED, and Science Direct. The journal criteria taken were the last five years (2018-2023) using the keywords “improving the quality of evaluation of clinical practice among nursing students using digital technology.”. Results: Based on the results of the literature that has been collected, it is found that two ways can be done to improve the quality of evaluation of clinical practice among nursing students in this digital transformation era, namely by utilizing digital technology developments and also supported by efforts without using digital technology. Conclusion: The application of digital technology must be well planned and reviewed from various angles to produce clinical practice evaluations among qualified nursing students.

Keywords: Digital technology; Transformation; Quality of evaluation; clinical practice; Nursing
INTRODUCTION

Technological progress in the world today is very rapid. This progress is marked by industrial development, which has now entered the industrial era 5.0 Society, first declared by Japanese prime minister Shinzo Abe on January 21, 2019, in Japan (Ellitam, 2020; Önday, 2020; Rojas et al., 2021; Society, 2020). Some countries that have just entered the industrial 4.0 progress seem pressured to jump into this 5.0 era. Indonesia is one of the countries that is late in following developments in this industrial era (Prassida & Asfari, 2021). However, with government policies that do not want Indonesia to be left behind, Indonesia is moving to follow the changes to the industrial era 5.0 Society. It, of course, must be supported and followed by various parties from all kinds of professional fields, including the field of nursing (Haleem et al., 2022; Prassida & Asfari, 2021; Society, 2020).

The use of technology in the nursing field certainly does not always have to be in hospitals or clinics, but the area of nursing education must also use technology. It is a form of support system that is connected between educational institutions and hospitals or clinics where nursing student professional practice is carried out (Ahuja et al., 2023; Hernon et al., 2023). The use of technology in the nursing education environment will be very beneficial, not only for the academic community but also for prospective nurse students (Liu et al., 2019; Øvrebø et al., 2022).

One of the problems with the application of technology in the field of nursing education in Indonesia is the use of conventional systems and technology, especially in the process of evaluating nursing clinical practice (Ali et al., 2023; Blanchard et al., 2021; Bonner et al., 2018; Cornberg et al., 2019). The use of this conventional method certainly has an impact on hampering the improvement of the quality of evaluation of clinical practice among nursing students. Thus, the effects of complex problems that arise can also be broader. Several studies have revealed that the quality of clinical practice evaluation among conventional nursing students can result in non-integration of the evaluation process (Smith, 2019), the emergence of unclear domains or evaluation components (Na & Roh, 2021), lack of transparency in the evaluation process of clinical practice among nursing students, slow and usually carried out collectively (Christiansen et al., 2021), not focused on the process (Murdhiono & Siswanto, 2019) and only determines the final result, the evaluation process is less effective and efficient, wasteful use of paper, bias on the subject being assessed (Aronowitz et al., 2017; Einarsen & Giske, 2019; Enneking et al., 2019).

Theoretically, all these problems can be analysed in a better management evaluation, starting from planning, implementation, monitoring, and reporting (Gibson et al., 2020; Oermann & Gaberson, 2019; Said & Muslimah, 2021). However, the problems that arise cannot only be returned to the existing theory but in terms of methods and concepts must also be considered (Tsimane & Downing, 2020). The application of modern technology can be an alternative, but the application of technology is also not easy, especially when it comes to costs (Gerich et al., 2022; Tsimane & Downing, 2020; Tvenge & Ogorodnyk, 2018). Need consideration and analysis of the problems that occur in the field. Bias conditions that occur in the field without realizing it, as described above that go unnoticed will
continue to recur if they are considered normal. This problem that is considered normal becomes a tradition that keeps on repeating itself, especially when a nursing education institution is in a comfort zone (R. Zhu et al., 2019).

Through the above issues, the question arises, what should the nursing education institutions do to improve the quality of clinical practice evaluation among nursing students? Does the nursing education institution have to survive with conventional methods because it is straightforward, or must it keep up with current technological developments? In order to answer this question, it is necessary to carry out further analysis of the studies that have been done so that any gaps can be addressed appropriately.

**METHODS**

This is a literature review study that aims to analyse efforts made to improve the quality of clinical practice evaluation among nursing students in the digital technology transformation era. In addition to discussing the use of technology, this literature review will also be the basis for researchers to develop technology to improve the quality of clinical practice evaluation among nursing students. The literature review process takes sources from several electronic open databases using journal search engines, such as Google Scholar, Pro-Quest, PUBMED, and ScienceDirect. The criteria for the selected journal are within the last five years (2018-2023). The main keywords used to obtain literature sources for this review are: “Improving the quality of evaluation of clinical practice” AND/OR “among nursing students” AND/OR “using digital technology”. The data obtained by the journal is the primary source discussed as an effort to improve the quality of evaluation of clinical practice among nursing students in the era of digital technology transformation. Journal analysis was performed using the PRISMA method. The data extraction process uses (1) views from the database starting from the author, title, date, year, type of journal, keywords, topics, and the primary source of reference used; (2) the content or subject matter provided contains the topic "digital technology" AND/OR "quality evaluation". The journal inclusion criteria are: (1) the population is nurses; (2) intervention: applied digital technology; and (3) the year of publication from 2018 to 2023.

**RESULT AND DISCUSSION**

Based on search results for journals that have the same theme and keywords are as follows:

The flow chart above is the process and the result of selection from the journals being analysed. This flow chart was made using the PRISMA flow diagram generator application (Haddaway et al., 2022). From the results of the analysis, 31 sources discussed the use of digital technology to improve the quality of evaluation of clinical practice among nursing students.
The results of the analysis obtained as many as 31 sources discussing the use of digital technology to improve the quality of evaluation of clinical practice among nursing students. Technology is a set of tools, rules, and procedures used to apply scientific knowledge to a particular job in a way that allows repetition (Edo et al., 2023; Löh, 2023). While digital is an electronic device that can store, create, and process data in two conditions, namely positive (1) and negative (0) (Edo et al., 2023; O'Connor et al., 2023). So digital technology can be interpreted as a tool that no longer requires manual labour but focuses more on automatic operating systems that use computerized systems or computer-readable formats (Edo et al., 2023; O'Connor et al., 2023; Zhang et al., 2021). At the same time, the quality of clinical practice evaluation is an effort made to assess the ability and progress of nursing students during clinical practice in a sustainable and standardized manner to meet the expectations of institutions, organizations, and society (Herrero et al., 2019; Tvenge & Ogorodnyk, 2018; R. Zhu et al., 2019).

In an effort to improve the quality of evaluation of clinical practice in this digital transformation era, it must be done by more than simply applying technology. It must be balanced with efforts from non-technology. Based on the results of the literature review, it was found that the first effort that can be made is to increase the competence of academic supervisors and clinical instructors (Asegid et al., 2023; Chandran et al., 2023). This effort can be done by providing routine or periodic training and dissemination of knowledge to academic supervisors and clinical instructors (Chandran et al., 2023). The second effort is to increase students' understanding of the practice and evaluation process that will be carried out (Asegid et al., 2023; Ruzafa-Martínez et al., 2023). This is very important to do, mainly before clinical practice is carried out at the practice site, and nursing students must understand the process that will be undertaken during practice, both the practice process and the evaluation process (Ruzafa-Martínez et al., 2023). The third effort is to improve and provide learning facilities and environment, either by the academy or hospital or clinic (Allahabadi et al., 2021; Berhe & Gebretensaye, 2021). Problems related to learning facilities and environment seem trivial. However, this can have a significant impact on the skills, knowledge, understanding, and psychology of nursing students (Amoo & Enyan, 2022; Berhe & Gebretensaye, 2021). Not only that, facilities and learning environment are competitive factors that can affect the interest of prospective students and business partners (Allahabadi et al., 2021; Amoo & Enyan, 2022). The fourth effort is selecting and understanding the guidance method (Yasser et al., 2023). Clinical practice not only releases students to test the actual abilities of patients, but students must also receive direction and guidance (Yasser et al., 2023; X. Zhu et al., 2020). Mistakes in providing guidance can be fatal to students' psyche, so the use of guidance methods is essential; even special training is needed so that academic supervisors and clinical instructors can create an atmosphere of guidance that does not only criticize nursing students but also provides education, enthusiasm, enthusiasm, and support (Hernon et al., 2023; Øvrebø et al., 2022). The fifth effort is evaluating and reconstructing the materials and modules used. Reconstruction or revision of modules and clinical practice materials must be done because knowledge can
develop quickly (Liu et al., 2019). Reconstruction that is carried out not only updates reference sources but also has to have an evaluation based on the evidence base and the method that will be used next. The sixth attempt is the selection of evaluation methods (Yasser et al., 2023). The accuracy of selecting the evaluation method is crucial because the measurements taken must honestly describe the actual conditions of the evaluated subject (Allahabadi et al., 2021; Amoo & Enyan, 2022). The seventh effort is the optimization of the evaluation function (Ali et al., 2023; Bonner et al., 2018; Hakim et al., 2022). Four evaluation management functions must be optimized: planning, implementation, monitoring, and reporting (Gibson et al., 2020; Oermann & Gaberson, 2019; Said & Muslimah, 2021). The better the management of these four functions, the better the input, process, output, and outcome (Oermann & Gaberson, 2019).

This non-technological effort is an initial effort before the application of digital technology. In other words, technological efforts complement all processes to make them more optimal, effective and efficient. Based on the results of the literature review, it was found that several types of digital technology can be used to improve the quality of evaluation of clinical practice among nursing students. This technology can be grouped into three types: computers/laptops, mobile/smartphones, and tablets. As for the basis, it can be grouped into web and application/program.

Web and websites have differences. The web is a single document available online, while a website is a collection of various web pages connected in the same domain (Khan et al., 2022). The web and web applications are also different. The web contains information pages, be it text, images, videos, animations, sounds, etcetera. In comparison, a web application is a web-based program (run via the web) (Alghamdi et al., 2023). An application or program is software for performing a specific activity or task (Johnstone et al., 2023). The use of web applications today is very much and prevalent. The web application benefits academic supervisors and clinical instructors in evaluating clinical practice among nursing students (Amoo & Enyan, 2022). The use of web applications such as student portal (Albers et al., 2021), using the student web portal is very helpful for academic supervisors and clinical instructors in evaluating clinical practice. However, the drawback is that the assessment form is still general and cumulative in the final grade of a stage course. However, the advantage is that almost all academic activity history is recorded, from billing for tuition fees to printing draft diplomas. WEPC (Web Evaluation Practical Nursing) (Gerich et al., 2022), WEPC is almost the same as the student portal, but the drawback is that it is not integrated with academic activities and only focuses on evaluating clinical practice. Besides that, it also requires an internet network and the advantage is that it is more focused on the evaluation component of clinical nursing practice. E-mail (Liu et al., 2019) The use of the email application has many disadvantages. Apart from only being able to attach assessment forms and send information, the system needs to be integrated, and the advantages are that academic supervisors and clinical instructors and students can still share information, documents and other academic activities in the form of soft files. E-dnsc (digital nursing student centre) (Hernon et al., 2023) This web application has advantages in mentoring, monitoring.
and evaluation activities where nursing students, academic supervisors and clinical instructors can communicate with each other via chat, download guidebooks, and upload assignments. However, the evaluation of the assessment here is more on quizzes that are answered in the application rather than based on clinical practice evaluation activities. I-STAR (interactive (i), Situation (S), Task (T), Action (A), and Reflection (R)) (Huang & Fang, 2023), The advantage of this application is that it can be accessed with a smartphone, and students can also share and learn through it. However, the drawback is that this application is only intended for pediatric nursing courses. I’m Smart (Information Management System For Measuring Student Achievement in Real Time) (Murdhiono & Siswanto, 2019) This web application is practical because it can be accessed at any time, and the assessment system is integrated into all courses and can be monitored. Nevertheless, the drawback is that this web application must always be connected to the internet. Another disadvantage is that the value entered is cumulative.

While applications that can be used are Microsoft Excel but only to help with calculations (Cerra et al., 2019); Microsoft Access but limited to local network mode only (Wang et al., 2018); telementoring using Whatsapp, Line, WeChat, Zoom, Microsoft Team, but all these applications only function as a means for sharing and chatting (Henderson et al., 2020; Schuler et al., 2021). Meanwhile, in terms of operating system software that is widely used is Windows and Linux for computer devices, and on smartphones there are Android and IOS (iPhone Operation System). Web applications and smartphone applications can be combined to become interconnected and can be accessed by academic supervisors, clinical instructors, and nursing students from computers and smartphones, making it more transparent in the evaluation process of clinical nursing practice. (Asegid et al., 2023; Wang et al., 2018).

CONCLUSION
The application of digital technology as a replacement for conventional methods can be applied in educational institutions. However, it must be well-planned and reviewed from various angles. Both digital technology and non-digital technology produce clinical practice evaluations among qualified student associations.

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