

Literature Review Matrix

Author/ Date	Theoretical/ Conceptual Framework	Research Question(s)/ Hypotheses	Methodology	Analysis & Results	Conclusions	Implications for Future research	Implications For practice
Horntvedt, M.-E. T., Nordsteien, A., Fermann, T., & Severinsson, E. (2018).	The PICO framework for qualitative research	In this literature review, we aimed to identify strategies for teaching EBP in undergraduate nursing education. The review questions were: “What teaching strategies are used to enhance knowledge and skills in EBP in undergraduate nursing education and what are the learning outcomes and barriers?”	conducted literature searches using Medline, Embase, CINAHL, ERIC, and Academic Search Premier. Six qualitative studies and one mixed-method study met the inclusion criteria and were critically evaluated based on the Critical Appraisal Skills Programme. The seven studies were deductive and thematically analyzed using Braun and Clarke's six phases of discovering themes.	Four teaching strategy themes were identified, including subthemes within each theme: i.e., interactive teaching strategies; interactive and clinical integrated teaching strategies; learning outcomes; and barriers. Although four studies included a vague focus on teaching EBP principles, they all included research utilization and interactive teaching strategies. Reported learning outcomes included enhanced analytical and critical skills and using research to ensure patient safety. Barriers included challenging collaborations, limited awareness of EBP principles, and poor information literacy skills	Four of the seven analyzed studies included a vague focus on the use of EBP teaching strategies. Interactive teaching strategies are used, but primary strategies focus on searching for and critically appraising research for practice-based applications. Although this review included a relatively small sample of literature, the findings indicate a need for more qualitative research investigating interactive and clinically integrated teaching strategies toward further enhancing EBP undergraduate nursing students' knowledge and skills.	There is a need to improve educators' consciousness of and competencies in teaching EBP principles, which involves using interactive and clinical integrated teaching strategies.	Students expressed that writing assignments helped them understand the research process. Based on the nursing students' reports, they were motivated by being able to choose topics that were of interest to them. Learning outcomes from teaching strategies were presented in most of the studies we evaluated, and it was from these outcomes that the Enhancing analytical skills and Increased awareness of using research subthemes were identified.

Chang, C.-Y., Lai, C.-L., & Hwang, G.-J. (2018)	Literature Review (Conceptual framework)	In the past decades, the issues related to mobile learning have been widely discussed around the globe; however, the development and trends of applying mobile technologies in nursing education still lack systematic analysis	The journal papers related to mobile learning in nursing education between 1971 and 2016 were searched in the Scopus database on December 31st, 2016. There were 24,353 papers including “mobile learning” or “ubiquitous learning” in the paper title, abstract, or keywords list. Among them, 130 were related to nursing. By removing 28 non-journal papers and 5 redundant journal papers, a total of 97 were selected from the final list. Two experienced researchers then read and categorized the papers based on the coding scheme. During the coding process, if there were inconsistent coding values, the researchers were asked to discuss them until agreement was reached.	From the review results, it was found that the use of mobile technologies in nursing education and training have made great progress in the past decades. In addition to the changes in mobile technologies and the increasing number of mobile learning studies in nursing education, the subjects and research issues have also become more diverse in recent years. It was also found that mobile learning has mainly been applied to the training of basic nursing concepts and skills as well as to long-term care and obstetrics and gynecology, while few or even no studies are related to other nursing education domains.	In this study, a meta-review was conducted by analyzing the mobile learning studies in nursing education published in academic journals from 1971 to 2016. It was found that the number of studies greatly increased over the decades. It was also found that many studies reported the positive impacts of mobile learning on participants’ performance or perceptions in nursing education. It was found that issues related to “learning behavior” were seldom investigated. Most studies used achievement tests, skills tests and questionnaires to measure the participants’ performance or perceptions from the cognition, affect, or psychomotor aspects, or they analyzed the relationships among these factors.	Proposing more effective mobile learning modes and strategies for nursing education. For instance, applying a combination of mobile technology and the flipped learning mode to nursing employee training and evaluating the effects of learners’ nursing knowledge, skills, and self-learning performances	Due to the rapid development of technology, health care methods are becoming increasingly diverse. Through mobile technology and Internet communication, 24-hour medical and nursing service is being provided to increase the quality of medical care. Mobile technology can change the medical caring modes and allow professionals to use their time to provide information on cases, consultation for health education, and supports for those who require special care.
---	--	---	---	---	--	---	--

<p>Sáiz-Manzanares, M. C., Escolar-Llamazares, M.-C., & Arnaiz González, Á. (2020)</p>	<p>Quasi-experimental framework</p> <p>There are various stages in this instruction process that will facilitate or inhibit the efficiency and depth of the learning process. One of them is the design of learning tasks in LMS. Another essential element is that the teacher plans for process-oriented feedback.</p>	<p>Currently, teaching in higher education is being heavily developed by learning management systems that record the learning behavior of both students and teachers. The use of learning management systems that include project-based learning and hypermedia resources increases safer learning, and it is proven to be effective in degrees such as nursing.</p>	<p>A quasi-experimental post-treatment design with an equal control group (in terms of metacognitive skill) was used. Likewise, learning outcomes (learning outcomes in the development of project-based learning; learning outcomes in an exhibition of project-based learning; learning outcomes in the test; and learning outcomes total) and behavioral learning in the LMS were the dependent variables (access to complementary information; Access to guidance to prepare PBL; Access to theoretical information; Access to teacher feedback; and mean visits per day).</p>	<p>The following statistical analyses were applied: Analysis of asymmetry and kurtosis; analysis of the variance of a fixed-effect factor (ANOVA); multiple regression analysis (MRA) [appropriate Tolerance (T) values were considered close to one and, with respect to the variance inflation factor, the values were between 1–10]; cluster analysis. Package for the Social Sciences (SPSS) v.24 was used to perform the different analyses. Likewise, the Goodness-of-fit indices were measured by structural equation modeling (SEM) and were used to study the settings of the machine learning technique to predict the learning results. The calculations were performed with the Statistical Package for the Social Sciences (SPSS) AMOS v.24. Finally, to visualize the results in a cluster analysis, RapidMiner Studio software was used. The results of metacognitive skills on the ACRAr subscale in both groups were acceptable for both indicators.</p>	<p>This research study has identified the characteristics to design an effective LMS in the nursing degree. The use of prediction and clustering techniques is very important to facilitate personalized learning and to analyze how resources are better utilized in the blended learning space. This type of analysis can be automatically generated in LMS environments, such as Moodle, and could be integrated in modules and plugins. These tools would facilitate rapid and straightforward generation of those analyses, which would be of great utility for the teacher and would assist with the early detection of at-risk students, as well as behavioral analyses of both the individual student and the collaborative groups of students, which would foreseeably increase the teaching quality and learning outcomes.</p>	<p>This study has limitations, but the results of this study should, nevertheless, be given prudent consideration. Limitations include the following: methodological intervention was in one university, the students were from a specific country, convenience sampling was applied, the knowledge area of the students was specific, and the type of design (quasi-experimental) was also specific. Although, it must be taken into consideration that there are few specific studies to test the effectiveness of this type of methodology in nursing students. Studies that have been carried out have similar characteristics that are justified from the specificity of this research. Therefore, future studies will be directed at increasing the size of the sample and the diversity of the nursing degree course level. Therefore, this profession is subject to continuous theoretical and technological advances that require systematic research on how to teach better in order to learn more effectively.</p>	<p>It can be concluded that this way of teaching seems to be effective for nursing students. Although, more studies are needed in this field aimed at studying the effectiveness of blended learning in teaching in the nursing degree.</p>
--	--	--	--	---	--	---	---

Hawkins, J. (2018).	In a recent qualitative study, I conducted semi-structured email interviews with 17 nurse educators from 11 different nursing programs across the country. The purpose of the study was to describe the experiences of nurse educators in developing and implementing concurrent enrollment ADN-BSN programs. Concurrent enrollment ADN-BSN programs are educational. The Qualitative Report 2018 partnerships combining simultaneous enrollment in ADN and BSN nursing coursework at two separate institutions. Participants were nurse educators recruited via email from schools of nursing offering concurrent enrollment ADN-BSN programs in the United States	The purpose of the study was to describe the experiences of nurse educators in developing and implementing concurrent enrollment ADN-BSN programs. Interviews of nurse educators describing their experiences of developing and implementing concurrent enrollment ADN-BSN programs offered a firsthand account of the process. A discussion of the potential advantages, disadvantages, and relative appropriateness of email interviews will assist qualitative researchers in determining when this method of data collection may be preferred for their own research.	The qualitative descriptive design for this study using a phenomenological perspective included thematic analysis of the interview data and resulted in a narrative descriptive composite of the experience. Findings from the study provide nurse educators with information to assist in the decision-making process of whether to implement the educational model in other institutions.	Because email interviews were asynchronous, I was able to concurrently conduct interviews with more than one participant. As a result, I found that I was also able to verify emerging themes between participants as more than one interview was simultaneously in progress. Verifying emerging themes increases the dependability and confirmability of findings. The quick and easy conversion of written email responses into transcripts facilitated simultaneous interviewing, coding, and analysis. As new participants and responses were added to my investigation, transcripts were continually read and re-read for comparison with previous data. Through the comparison of data for similar concepts, themes emerged early in the data coding process. As patterns emerged during initial interviews, themes were further explored in subsequent interviews with future participants and cross-compared to existing data for pattern matching. Recurring and matching patterns found during data analysis determined the themes and subthemes related to the process.	A number of the advantages associated with email interviews contributed to credible findings and promoted feasibility of the study highlighted in this article. The email interview proved to be a very effective data collection method for the specific research aim and targeted participants. Research studies designed to describe an experience rather than to interpret or understand a phenomenon may be well suited for electronic data collection methods. The targeted participants almost universally have access to email and are very comfortable with email communication, another important factor when considering email for data collection.	When considering electronic data collection for qualitative studies, researchers should examine multiple factors. Important factors that help determine the appropriateness of email interviews include the research aims and potential advantages and disadvantages of this method in promoting feasibility and credibility of the study.	The email interview was advantageous for this particular study and may have elicited a fuller experience than traditional face-to-face interviews. The personal experiences add unique findings associated with this study and validate prior research in a new context that should assist qualitative researchers in determining when this method of data collection may be preferred for their own research.
---------------------	---	---	---	--	--	--	--

Haegdorens, F., Van Bogaert, P., De Meester, K., & Monsieurs, K. G. (2019).	<p>Mandatory nurse staffing levels are in place in the state of California (United States) and in Victoria and Queensland (Australia). However, since no evidence-based nurse staffing guidelines exist to date, most governments and healthcare organisations are hesitant to support a mandated ward-based minimum.</p> <p>Furthermore, hospital managers and nurse leaders continue to struggle on a daily basis when allocating available nurses to hospital wards taking into account patient acuity and outcomes, nurse's experience and education level, ward workflow and financial factors. It is reasonable to hypothesize that if there were more nurses available with an appropriate skill-mix, patient care would improve.</p> <p>However, the most important limitation in current research is that the majority of studies investigating nurse staffing and patient outcomes use aggregated hospital level data making the translation to the ward level impossible.</p>	The impact of nurse staffing levels and nurse's education on patient mortality in medical and surgical wards	<p>This was an observational longitudinal study retrospectively analyzing the control group of a stepped wedge randomized controlled trial (SW-RCT) concerning 14 medical and 14 surgical wards in seven Belgian hospitals. In the original study, we investigated the effect of a rapid response system on patient outcomes. Therefore, we collected data on patient morbidity and nurse staffing levels since we hypothesized that they could be important confounders. This longitudinal observational study explored the association between nurse staffing levels and adverse mortality on medical and surgical wards in Belgian hospitals.</p>	<p>Analyses were performed using IBM SPSS Statistics version 24 for MAC OS. Ward level data were compared between wards or hospitals using a Kruskal Wallis test because of the relatively small sample size. To investigate the relation between nurse staffing levels and outcome variables, linear mixed models (LMM's) were fitted. A linear mixed model analysis is the most appropriate approach when dealing with repeated measures at different time points (multiple measures per ward) and in the case of data clustering (multiple wards belonging to one hospital). We aggregated data from 34,267 patient admissions resulting in estimates per ward and per period concerning patient's age, length of stay, and the proportion of patients who reached one of the study outcomes. Additionally, we aggregated all comorbidity data of 1860 patients.</p>	<p>This is the first multicenter study exploring the effect between nurse staffing levels and patient mortality using longitudinal, ward-level data with adjustment for patient's age and comorbidity, nurse education level, and care team composition. Our results per previous research confirm the association between higher nurse staffing levels and lower patient mortality. Furthermore, we also found that a higher proportion of bachelor's degree nurses is related to a reduction in patient mortality. We proposed a new method to estimate optimal staffing levels using ward-level data.</p>	<p>Since nurses have a very important role in detecting deteriorating patients in the general ward, many interventions were therefore targeted at nurses. However, the increasing care demands in acute care hospitals, combined with the nursing shortage could impact the effectiveness of such interventions.</p>	<p>Policy makers should be aware of this ongoing issue and adequate staffing levels should be determined to provide safe care. Ward-based minimal staffing levels should be considered relating to ward acuity measures estimating nurses' workload and patient outcomes.</p>
---	--	--	--	---	--	--	---

References

Chang, C.-Y., Lai, C.-L., & Hwang, G.-J. (2018). *Trends and research issues of mobile learning studies in nursing education: A review of academic publications from 1971 to 2016*. *Computers & Education*, 116, 28–48.

doi:10.1016/j.compedu.2017.09.001

Haegdorens, F., Van Bogaert, P., De Meester, K., & Monsieurs, K. G. (2019). The impact of nurse staffing levels and nurse's education on patient mortality in medical and surgical wards: An observational multicentre study. *BMC Health Services Research*, 19(1), 864. <https://doi.org/10.1186/s12913-019-4688-7>

Hawkins, J. (2018). The Practical Utility and Suitability of Email Interviews in Qualitative Research. *The Qualitative Report*. <https://doi.org/10.46743/2160-3715/2018.3266>

Horntvedt, M.-E. T., Nordsteien, A., Fermann, T., & Severinsson, E. (2018). *Strategies for teaching evidence-based practice in nursing education: a thematic literature review*. *BMC Medical Education*, 18(1). doi:10.1186/s12909-018-1278-z

Sáiz-Manzanares, M. C., Escolar-Llamazares, M.-C., & Arnaiz González, Á. (2020). Effectiveness of Blended Learning in Nursing Education. *International Journal of Environmental Research and Public Health*, 17(5), 1589. MDPI AG. Retrieved from <http://dx.doi.org/10.3390/ijerph17051589>