



UTS
ePRESS

Project Management
Research and
Practice

Vol. 5, 2018



© 2018 by the author(s). This is an Open Access article distributed under the terms of the Creative Commons Attribution 4.0 International (CC BY 4.0) License (<https://creativecommons.org/licenses/by/4.0/>), allowing third parties to copy and redistribute the material in any medium or format and to remix, transform, and build upon the material for any purpose, even commercially, provided the original work is properly cited and states its license.

Citation: Melender, H-L. and Hilli, Y. 2018. Implementation of evidence-based practice in a development project on nurse students' clinical education. *Project Management Research and Practice*, Article ID 6248. <https://doi.org/10.5130/pmrp.v5i0.6248>

ISSN 2207-1415 | Published by UTS ePRESS | <http://epress.lib.uts.edu.au/journals/index.php/PMRP/index>

TEACHING CASE (PEER-REVIEWED)

Implementation of evidence-based practice in a development project on nurse students' clinical education

Hanna-Leena Melender^{1*} and Yvonne Hilli²

¹PhD, Principal Lecturer in Nursing, VAMK University of Applied Sciences, Wolffintie 27-32, 65200 Vaasa, Finland. hanna-leena.melender@vamk.fi

²PhD, Professor in Clinical Nursing, Faculty of Health and Community, Nord University, Universitetsallén 11, 8026 Bodö, Norway. yvonne.hilli@nord.no

*Corresponding author: Hanna-Leena Melender. hanna-leena.melender@vamk.fi

DOI: <https://doi.org/10.5130/pmrp.v5i0.6248>

Article History: Received 17/08/2018; Revised 05/11/2018; Accepted 05/11/2018; Published 10/01/2019

Synopsis

The evidence-based practice (EBP) movement started at the beginning of the 1970s in the field of medicine. The famous definition by Sackett et al. (1997, p. 2) defined evidence-based medicine as 'the conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients.' The idea of EBP was later introduced to other fields of professional practice in health and social care, as well as to the education of health professionals such as nursing education. The project named Knowledge in development (KID) focused on the development of clinical preceptorship in the context of nursing. Clinical preceptors are registered nurses and practical nurses who have the responsibilities of caring for patients and teaching nursing students at the same time. Nursing teachers working in the KID project were enthusiastic to implement the evidence-based practice approach in the project work, by using different evidence bases.

Purpose

The purpose of this article is to present how evidence-based practices in the project work were implemented and to describe the experiences of the project group members about the implementation of EBP.

DECLARATION OF CONFLICTING INTEREST The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article. **FUNDING** The author(s) received no financial support for the research, authorship, and/or publication of this article.

Project setting

Two universities of applied sciences, two vocational institutes, and four health-care organizations in Western Finland.

Year of the project

2009-2013

Target readers

Primarily project practitioners, project managers and teachers on the healthcare sector, and secondarily other interested parties.

Lessons learned

Based on the experiences gained in this project, the use of an evidence-based practice approach in planning and implementing a development project in healthcare clinical and educational settings is recommended.

Competencies highlighted

Information literacy

Related theory

The structure of different evidence bases presented by Rycroft-Malone et al. (2004), including *research, clinical experience, patients, clients and carers*, and *local context and environment*.

Keywords

Evidence-based practice, Clinical education, Development project, Healthcare, Nurse, Nursing education, Practitioner case, Preceptorship

Introduction

Learning in clinical education forms an important part of nursing education (Warne et al. 2010). In Finland, out of the Registered Nurse program (Bachelor of Nursing), clinical education forms 90 ECTS/210 ECTS (ECTS, European Credit Transfer System = 27 hours of the student's work). Of the Practical Nurse program, the extent of clinical education forms at least 30 ECVET/180 ECVET (ECVET, European Credit system for Vocational Education and Training = 27 hours of the student's work). In clinical education, the students are introduced to the value base and the activities of the social and health care services. The purpose is to improve the students' ability to reflect upon theory in different practical situations (Landmark et al. 2003) and (Lambert & Glacken 2005). In the context of clinical education, the role of the nursing teachers (faculty staff) has changed in many countries, and it also differs between countries (Warne et al. 2010). In Finland, nursing teachers are eventually responsible for the implementation of both theoretical and clinical education (Heinonen 2003). However practically, their share of the teaching in clinical settings is often very small, and the main part of the clinical teaching is carried out by clinical preceptors who, in most

cases, are registered nurses for registered nurse students and practical nurses for practical nurse students. A clinical preceptor works as a subject matter expert and is responsible for the preceptorship of a single student whose preceptorship has been assigned to be her/his task. The clinical preceptor works in cooperation with the nursing teacher (Häggman-Laitila et al. 2007). According to CINAHL Headings, the term *Preceptorship* refers to “a teaching/ learning method in which each student is assigned to a particular preceptor to experience day-to-day practice with a role model and resource person immediately available within the clinical setting.” Also, for example, terms *Clinical Supervision* and *Student Supervision* are used in nursing literature in the context of nursing students' clinical education (CINAHL Headings 2018). In the project, we chose the term ‘preceptorship,’ because the definition of it reflected the way how we defined the role of the nurses working in social and healthcare organizations, caring clients and patients, but also teaching nursing students in clinical context.

As clinical preceptorship in practice has such an important role in nursing education, it is important to ensure its quality. In Finland, no general recommendations have been published regarding, for example, the work experience needed by a nurse before starting to precept students. There was a need for both clinical preceptors and nursing teachers to change outdated and inappropriate approaches and to develop new practices to better meet the student learning needs in clinical education (Saarikoski et al. 2009) when this development project (2009-2013), funded by the European Union, on clinical preceptorship, started. As Finland is a bilingual country, with both Swedish and Finnish as official languages, the project was originally named using the main language of the administrating university which is Swedish. The Swedish name ‘Kunskap I utveckling’ means ‘*Knowledge in development*’ (KID) in English.

The development project (2009-2013) was established between two universities of applied sciences, two vocational institutes, and four health-care organizations in Western Finland. The aim of the project was to develop the preceptorship at five different units (in four organizations) within the health-care sector in western Finland by implementing an action research approach. The units offered clinical education placements for both registered nurse students and practical nurse students, and qualified nurses acted as their preceptors. A unique preceptorship model was developed by each unit, to answer their specific needs. The nursing teachers (faculty members) involved in the project gave continuous pedagogical support to the preceptors during the development of the model. The models were tested by implementing them during one academic year followed by a quantitative and qualitative evaluation of the process. The implementation of the project as an action research study at its different phases, the context, and the models are reported in an earlier paper (Hilli & Melender 2015a). The evaluation results of the study are presented in another paper (Hilli & Melender 2015b).

This article complements the earlier articles (Hilli & Melender 2015a) and (Hilli & Melender 2015b) on the project by presenting in detail how an evidence-based practice (EBP) approach was implemented in the project. It is important to view the basis of the practices implemented in a development project, because in development work, research and development shall be combined, in order to produce new or better services or means or methods of production (Toikko & Rantanen 2009; Kankkunen & Vehviläinen-Julkunen 2013). Blomquist et al. (2010) describe a framework of project-as-practice approach for the project management research. The authors define the word ‘practices’ as ‘the various traditions, norms, and rules or bodies of knowledge that state, explicitly or implicitly, how the practitioner should act in a certain situation’ (Blomquist et al. 2010, p. 9). In this project, we consciously

pondered over what would our specific activities be based on and strived at an EBP approach when implementing the project.

Moreover, the inspiration for this project was action research, based on a partnership between the researchers and participants, which was supposed to be educative, advance knowledge and explore the application of theory (Williamson 2012). As EBP has been reported to ensure the quality of practices in health care (Melnik 2017), the idea of the project group was that ensuring that the practices implemented in the project were based on evidence, would ensure the quality of the project. The purpose of this article is to present how evidence-based practices in the project work were implemented and what were the experiences of the project group members about the implementation of EBP.

GROUNDS FOR THE EVIDENCE-BASED PRACTICE APPROACH IN THE PROJECT

A British epidemiologist Archie Cochrane is most often acknowledged as the starter of the EBP movement. In 1972, he published a book where he “criticized the medical profession for not using appropriate evidence to guide and direct medical practice and called for medicine to produce an evidence base” (Barker 2010). The medical profession responded to this challenge and created the Cochrane Centre for systematic reviews, opened in 1992 (Barker 2010). At first, the discourse was limited to medicine, rather than health care. More recently, the principles of evidence-based medicine have been applied to other fields of professional practice in health and social care (Pearson & Graig 2002). In their now famous textbook, Sackett et al. (1997) defined evidence-based medicine as ‘the conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients’ (Sackett et al. 1997, p. 2). According to Deming (2009), EBP represents both an ideology and method.

Already in 1998, the Centre for Evidence-Based Nursing was founded at the University of York. It aimed to promote evidence-based nursing through research, development, and education (Barker 2010). Quite soon, after the introduction of EBP in clinical practice in health care, experts emphasized that learning EBP during the education of health professionals was crucial. This led to curriculum revisions, efforts for clinical education reform and professional development programs (Stevens 2013). Moreover, some other disciplines have taken the concept of ‘evidence-based’ into use, and for example, concepts of ‘evidence-based teaching’ (Mitchell 2014) and ‘evidence-based management’ (Barends et al. 2014) have been introduced.

When this project started, the teachers working within this project were familiar with the processes of both evidence-based teaching and teaching EBP in nursing education, and thus, we were attracted to take the EBP approach also into the implementation of our project. We adopted ideas about evidence-based program planning presented by Neale et al. (2008), whose training manual was designed to actively involve participants in the learning process and emphasizes the evidence-based practice approach in program planning. Later, these ideas were used in a text chapter about evidence-based project planning, published by the New Partners Initiative (NPI 2012). In this latter publication, it is stated that

The project life cycle follows a basic, logical sequence of steps that help an organization move from identifying a problem to developing solutions to implementing activities for evaluating results to restructuring solutions in response to evidence. Different organizations will use different planning methods to suit their needs, but evidence can be used to inform decision-making at every stage of the life cycle (NPI 2012, p. 123)

When planning and implementing evidence-based practices during the action phase of the project, we chose the theoretical framework presented by Rycroft-Malone et al. (2004) who name evidence bases according to their source: *research; clinical experience; patients, clients and carers; and local context and environment*. This framework is focused on patient care, but we anticipated that it could be useful also in this project and decided to examine its usefulness. Rycroft-Malone et al. (2014) refer to Higgs and Jones (2000) and suggest that '... 'evidence' in evidence-based practice should be considered to be 'knowledge derived from a variety of sources that have been subjected to testing and has found to be credible' (Rycroft-Malone et al. 2014, p. 83).

IMPLEMENTATION OF EVIDENCE-BASED PRACTICE APPROACH IN THE PROJECT

Evidence gained from research

Research evidence was used in the planning phase of the project when the action research *method* was chosen. There was research evidence informing the project group about successful implementation of this method in the development of clinical education also in the Eastern part of Finland (Jokinen et al. 2008). In the first phase of the project, a cultural analysis was carried out at the pilot units. This method has been developed by Berg (2003) in his pedagogical studies placed in school environments on different levels. All members of the project group familiarized with the method by reading the publication by Berg (2003) before starting to collect and analyze the data for the cultural analysis. The data was collected by asking the clinical preceptors (nurses) to write a letter about how it was to be a preceptor of nursing students in their working units. The data were analyzed by content analysis. The results were then presented for the preceptors and used in the development work (Hilli & Melender 2015a).

We also used the national research-based guidelines for preception in planning the project (Heinonen 2003). The guidelines describe the responsibilities of both the faculties and the social and healthcare services in organizing and implementing the students' clinical education. The project group, consisting of teachers of four faculties, ensured at first that the practices of the faculties related to the students' clinical education were in line with the national guidelines. The guidelines were then delivered to the staff in all pilot units, and the contents of them were dealt with on different occasions. This was done in order to ensure that the practices of the work-places related to the students' clinical education followed the national guidelines.

When planning the activities implemented in the project, we conducted literature searches in relevant scientific databases (Hartzell & Fineout-Overholt 2017). These were international databases Cinahl, PubMed and ERIC, and a Finnish database Medic. The contents and methods selected for further education, seminars, workshops and continuing pedagogical support for the preceptors were based on that research evidence. For example, when the preceptors expressed their learning needs around some topic, the project group organized a workshop on the topic. Regarding every topic, the best expert was chosen among the group members. This expert then made literature searches in the databases, and during the workshop, presented the evidence found. The discussion around the topic was then related to how to implement the existing research evidence in the role of a preceptor. The topic could be, for example, how to support students' critical thinking.

When implementing the activity of searching and using the best research evidence available, information literacy competencies were needed. According to the Information

literacy competency standards for higher education, 'the information literate student determines the nature and extent of the information needed,' 'accesses needed information effectively and efficiently,' 'evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system.' He or she 'individually or as a member of a group, uses information effectively to accomplish a specific purpose' and 'understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally' (Information literacy competency standards for higher education 2000, p. 6-14). Information literacy constitutes the basis for lifelong learning and is common to all disciplines, to all levels of education, as well as to all learning environments (Information literacy competency standards for higher education 2000).

We also produced evidence-based material about patient-centered clinical education for the preceptors. The project group members had found research evidence on that good learning outcomes had been gained through a patient-centered approach in students' clinical education. This approach includes the idea that during a clinical education period, every student gets one or two own patients whose care she/he especially focuses on (Lindahl et al. 2009). In order to promote patient-centered clinical education in the units, an algorithm on the subject was needed. The project manager set apart the task for one group member. She conducted literature searching in databases and found out that studies (Ross & Crumpler 2007) and (Wells et al. 2007) had shown that using storyboards can be effective in the implementation of evidence-based nursing. Based on this evidence, the algorithm was published in the form of a card fitting in hand and pocket of the staff uniform. The implementation of the use of this card was started in a workshop for the core groups by presenting and discussing the meaning and contents of it. It was then tested by preceptors who were willing to implement the patient-centered approach in their students' clinical education. Those who tested the card found it useful and easy to use, and thus the card became a supportive tool for preceptors.

Evidence gained from clinical experience

Knowledge derived from clinical experience is based on 'practical know-how' of the practitioners (Rycroft-Malone et al. 2004). This type of evidence was present in this project as knowledge gained through the cultural analysis ('what works'). For example, it was found in the cultural analysis that preceptors considered it important that the students follow the same working schedule as their preceptors (Hilli & Melender 2015a). In developing preceptorship, this was kept as a basic idea, though developed in a way that the students would get one or two patients of their own whose care she/he especially would focus on (Lindahl et al. 2009). Another important thing to keep left was naming two preceptors for each student since many preceptors had part-time work. This well-functioning concept also allowed a shared responsibility (Hilli & Melender 2015a).

Moreover, this 'practical know-how' gained from the clinical experience was present in lively discussions during further education lectures, seminars, workshops and co-operative working between project group members and core group members on pilot units.

Evidence gained from patients, clients and carers

Knowledge gained from patients, clients and carers refer to the personal experience and knowledge of clients and patients (Rycroft-Malone et al. 2004). In this project, this source of knowledge was not directly used, because the project was not directly involved with patient care. However, indirectly, knowledge gained from patients, clients, and carers was present in many ways. For example, in the workshop dealing with the students' clinical learning

about ethical issues, a central topic was planning holistic care by human needs, using case descriptions. Here, knowledge about the patient in the case was central.

Evidence gained from local context and environment

When enhancing practices, the practitioners may make use of, for example, performance and audit data or knowledge about the organization's culture and individuals inside it (Rycroft-Malone et al. 2004). In this project, we used knowledge about the cultures of the organizations gained by the cultural analysis (Hilli & Melender 2015a), in many ways. For example, as the culture analysis revealed that the preceptors felt that they did not get enough information about the background of the students (Hilli & Melender 2015a), we chose to amend one clinical education document by adding there space for the student to properly present herself/himself. Another example is that many preceptors informed us about their lack of time to precept (Hilli & Melender 2015a). We tried to facilitate the work communities in organizing the work shifts in a new way for preceptors so they would find time for preception. The preceptors were also encouraged to document the time spent with the students and hence make preceptorship visible as they experienced that it had been an invisible task earlier (Hilli & Melender 2015a).

In implementing EBP, the prerequisites, resources, and values of the organization have to be considered (Ministry for Social and Health Care Affairs 2009). One prerequisite for a high-quality preception is competence in preception which was enhanced continuously in the project. The most central resource issue was time to precept. In the project, we assisted the staff to allocate time for preception for example by suggesting new working time arrangements and by testing web-based technology (Booth et al. 2009) and (Falloon 2011). The web-based technology was tested in order to enhance the communication between the student, the teacher from the faculty and the clinical preceptor. The value base of preceptorship was discussed on many different occasions. The central questions were: on what value basis is the clinical preception implemented, how can the value basis be seen in everyday preception, and what impact does it have on the students' learning and personal experience of the clinical work?

An important thing, facilitating the use of evidence gained from local context and environment, was the fact that all project group members (nursing teachers) were also registered nurses and had working experience in a role of a nurse. So, they all spoke the same language as the clinical preceptors, because as nurses, they had also acted in the role of a clinical preceptor and knew the reality of caring for patients and precepting a student at the same time.

Reflective practice

Taylor says that

Healthcare professionals engaged in daily practice have the advantage of living their practice, in that they have opportunities to look every day at their practice to learn from it. When healthcare professionals reflect on what they do, they can make sense of their practice, and imagine and bring about changes. (Taylor 2010, p. 88)

During this project, from the beginning to the end, the members of the participating healthcare units were invited to reflect on their practices related to preceptorship. As this project was supposed to be based on the best evidence available, the project group members

(nursing teachers) as well had to reflect on their practices and try to find the best evidence to support the procedures implemented in the project.

Taylor (2010) presents questions for healthcare professionals to support their reflection on their practices. Although Taylor's examples are focused on patient care, the following questions were also usable in this project focused on clinical preceptorship:

Think of a clinical procedure you have undertaken for some time now that you suspect outmoded in some way. Why do you continue to perform that procedure in the same way, even though you suspect it is outmoded? Who needs to be convinced to change the procedure in your workplace? (Taylor 2010, p. 112)

When we replaced the expression 'clinical procedure' with the expression 'clinical preception procedure' we could support the reflection on if there were outdated approaches in preceptorship and if there was any need for the development of new practices to better meet the student learning needs in clinical education (Saarikoski et al. 2009).

COMMON PRACTITIONER APPROACHES

Acceptance

Saunders and Vehviläinen-Julkunen (2015) found in their integrative review, including 37 original studies, that nurses are quite largely familiar with the concept of EBP regardless of nationality, professional role, or practice environment. In the studies included in the review, nurses' familiarity with EBP ranged from 42 % to 84%, and it was associated with nurses' use of EBP and their primary role, as teachers, administrative nurses and head nurses were reported to be more familiar with EBP than clinical nurses. Unfamiliarity with EBP has been associated with nurses' level of education. Nurses have reported that they value EBP for improving quality of care and patient outcomes. However, they have reported that their own EBP knowledge and skills are insufficient for employing EBP and they do not always use the best evidence in practice.

The interesting thing is that having a role of a clinical preceptor was found to promote the use of EBP by nurses in the review by Saunders and Vehviläinen-Julkunen (2015). When this project was started, the concept of EBP was mostly new for the clinical preceptors working at the participating pilot units. However, they were interested in learning about it, and the education about the topic was very fruitful. However, more education is needed for the clinical preceptors about EBP to ensure that all of them have the EBP competencies needed to be able to support the nursing students' learning about EBP during the clinical education.

Resistance

There are barriers to EBP, although the attitudes towards it would be positive. Research has shown that main barriers have often been lack of resources, for example, lack of competencies and time, as well as a non-supportive organizational culture (Khammarnia et al. 2015) and (Melnyk et al. 2012). Nurses are willing to implement EBP in their work, but they may find that it is not easy to access the best evidence. Moreover, nurses may find that the best evidence is not available in a form that would be useful in clinical practice. That is why it is the most important that teachers and nurse leaders ensure that clinical nurses in frontline access the best evidence easily. (Saunders & Vehviläinen-Julkunen 2015). In this project, the nursing teachers acting as project group members strived to diminish barriers related to the missing competencies, by educating the preceptors about EBP. We did not ask the preceptors if they

felt that there were barriers to EBP in their organizations. However, we knew that there was lack of time for precepting the students overall, and it can be assumed that if the time for precepting would be organized, then the preceptors would get time for EBP as well because the students' learning objectives include learning EBP during clinical education.

Discussion

When planning and implementing evidence-based practices during the action phase of the project, we chose the theoretical framework presented by Rycroft-Malone et al. (2004). Although this framework is originally focused on patient care, it proved to be, however, also useful in the implementation of this project. EBP was implemented by choosing the methods and contents of development by the best evidence available.

Conducting a fidelity assessment provides with information on the level of adherence to EBP practices (Metz 2007). In order to collect this information, we asked about the preceptors' current practices in a survey at the end of the project (Hilli & Melender 2015b). For learning more about the level of adherence to these EBP practices, it would have been useful to assess the fidelity at a later time point once again. Thus lack of it is a limitation. However, already at the measurement point at the end of the project, we were able to find out which aspects need to be examined and developed further.

In this development project, research and development were combined, in order to produce better services (Toikko & Rantanen 2009; Kankkunen & Vehviläinen-Julkunen 2013) which means better clinical preception in health care for nursing and practical nursing students. We cannot claim that the use of an EBP approach would have directly affected the favorable results of the project because the evaluation of that would have demanded another kind of study design. However, what we can report is that we were able to use all kinds of evidence sources presented by Rycroft-Malone et al. (2004). Based on the experiences gained in this project, the use of an evidence-based practice approach in planning and implementing a development project in healthcare clinical and educational settings is recommended.

To be able to implement EBP, an individual needs a good knowledge base, good skills and a positive attitude towards EBP (Salminen et al. 2010). Moreover, access to current, user-friendly technology and computer systems as well as support from the managers are needed (Tacia et al. 2015). Because EBP represents both an ideology and method (Deming 2009), in an evidence-based project planning and implementation, the project group members must also be committed with the idea of EBP and develop their skills in implementing the EBP method.

Teaching note

TARGET GROUP

Master's degree students on health care sector (who have an undergraduate Bachelor of nursing or midwifery or corresponding degree and who have work experience gained in nursing or midwifery or corresponding vacancy/vacancies). This learning activity is planned to be workplace-related in a way that the students will prepare a plan for a project, which could be implemented on their workplaces.

LEARNING OBJECTIVES AND KEY ISSUES

1. to deepen the understanding of the idea of evidence-based practice (EBP)
2. to deepen the understanding of the different evidence bases used in implementing EBP
3. to understand how EBP can be implemented in project management by using different evidence bases

BACKGROUND READING (following publications which are included in the reference list)
Rycroft-Malone et al. (2004) and Taylor (2010, pp 5-41 and 79-123)

RELATED THEORY

The structure of different evidence bases presented by Rycroft-Malone et al. (2004), including *research, clinical experience, patients, clients and carers*, and *local context and environment*.

PRACTITIONER AND/OR RESEARCH COMPETENCIES HIGHLIGHTED

Information literacy

TEACHING STRATEGY

The teaching strategy is based on the constructivist learning theory. In this theory, learning is understood as “an act of selecting new information and interpreting it based on one’s aims, perceptions, and expectations. The learner strives to understand new information grounded on his/her existing knowledge and constructs the knowledge through new information. This always happens in some situation and context.” (von Wright 1996)

PHASE 1: SELF-DIRECTED LEARNING

A. The students are instructed to read the article by Rycroft-Malone et al. (2004) and pages 5-41 and 79-123 in the book by Taylor (2010). After reading the material, the students are instructed to reflect on the following questions:

1. What would EBP be related to your practice?
2. What promotes EBP in your practice?
3. Are there any barriers to EBP within your practice and if there are any, who could assist in diminishing the barriers?
4. How could you network to promote EBP in your practice?
5. When you reflect on your practices, what would be a relevant topic for a new development project? (The topic may be related to the care of patients or clients or other issues related your practice.)

B. The students are invited to fill in a questionnaire measuring their competencies related to EBP. Such questionnaires are presented, for example, in Leung’s, Trevena’s and Waters’s systematic review (2014).

PHASE 2: CONTACT LEARNING

The students form small groups which are instructed to discuss the questions the students were instructed to independently reflect over at the first self-directed learning phase. Each small group then presents the main conclusions of the discussions during a general discussion within the whole student group. The purpose of the discussion is to share experiences and reflections

in order to promote shared learning. Each student will get feedback on his/her development project idea from the peer students and the teacher (the idea which they produced when reflecting question 5 at the first self-directed learning phase).

The teacher presents the results of the measurement of the competencies related to EBP in the student group (the competencies were measured at the self-directed learning phase). The results are discussed in the group, and if the measurement showed deficiencies in the competencies, the group will make a plan on how the students could enhance their competencies related to EBP during the Master's education. The plan should be implemented as soon as possible during the education, and the role of the teacher is to assist the students to find existing learning activities available at the faculty (for example education on information literacy), and possibly organize new ones when needed.

PHASE 3: SELF-DIRECTED LEARNING

The students are instructed to write an idea paper about the new development project related to their practice (the idea which they presented at the contact learning meeting). On the idea paper, the students are instructed to outline the purpose and the aims of the project as well as the evidence bases that will be used in the project. The students are encouraged to be innovative and produce ideas related to all evidence bases presented by Rycroft-Malone et al. (2004).

The students are also instructed to turn back to the measurement of the competencies related to EBP and to self-evaluate if their personal competencies are good enough to be used in their project which uses different kinds of evidence bases. If they find deficiencies in their competencies, they will write a personal plan on how to enhance their competencies related to EBP.

PHASE 4: CONTACT LEARNING

The students present their idea papers in a seminar. Each student invites his/her chief and/or at least one colleague from the workplace to participate in the seminar. Each student will get feedback on their idea paper from the peer students, the representatives of working life and the teacher. Because the students are supposed to learn how to implement EBP in a project, they should get feedback also about their ideas on the evidence bases that will be used in the implementation of the project.

PHASE 5: SELF-DIRECTED LEARNING

Based on their idea papers, the students are instructed to prepare a plan for a development project, which then could be implemented in their workplace.

PHASE 6: CONTACT LEARNING

The students present their project plans in a seminar. At least the same participants as at phase 4 will attend the seminar, giving feedback on the plans.

PHASE 7: SELF-DIRECTED LEARNING

The development projects are implemented on workplaces.

PHASE 8: CONTACT LEARNING

The students present their project reports in a seminar. At least the same participants as at phase 4 and six will attend the seminar. Regardless of how the aims of the project were met, the students are also instructed to report about the different evidence bases that were used in the implementation of the project. The use of the evidence bases is also evaluated by the teacher when grading, as well as how actively each student strived to develop their competencies related EBP.

Experience in using the case: We have not used this case, yet.

About the Authors



Hanna-Leena Melender (RNT, RM, MSc, PhD) is a principal lecturer at the School of Health Care and Social Services at VAMK University of Applied Sciences, Finland. Her main teaching and research areas are learning of evidence based practice (EBP) and development of EBP in clinical settings. She was a project group member in the KID project 2009–2013. Her other research interests concern quality of care of a childbearing woman and her family.



Yvonne Hilli (RNT, PHN, MSc, PhD) is a professor at the Faculty of Health and Community at Nord University, Norway. She has been a nurse educator for over two decades with a special research interest in students' learning during clinical education and preceptorship. She was project manager in the KID project 2009–2013, administered by Novia University of Applied Sciences, Finland. Her other research interests concern ethical issues, home care, health promotion and compassionate care.

References

- Barends, E., Rousseau, D. M. & Briner, R. B. 2014, *Evidence-Based Management: The Basic Principles*, Center for Evidence-Based Management, Amsterdam. <https://www.cebma.org/wp-content/uploads/Evidence-Based-Practice-The-Basic-Principles-vs-Dec-2015.pdf>
- Barker, J. 2010, *Evidence-Based Practice for Nurses*, SAGE, London.
- Berg, G. 2003, *Att förstå skolan*, Studentlitteratur, Lund.
- Blomquist, T., Hällgren, M., Nilsson, A. & Söderholm, A. 2010, 'Project-as-Practice. In Search of Project Management Research That Matters', *Project Management Journal*, vol. 41, no. 1, pp. 5–16. <https://doi.org/10.1002/pmj.20141>
- Booth, A., Carroll, C., Papaioannou, D., Sutton, A. & Wong, R. 2009, 'Applying findings from a systematic review of workplace-based e-learning: implications for health information professionals,' *Health Information & Libraries Journal*, vol. 26, no. 1, pp. 4–21. <https://doi.org/10.1111/j.1471-1842.2008.00834.x>
- CINAHL Headings. 2018. The Cinahl Database. EBSCO Publishing.
- Deming, W. E. 2009, 'Evidence-Based Practice' in J. Fischer, (ed.), *Towards Evidence-Based Practice: Variations on a Theme*, Lyceum books, inc, Chicago, pp. 451–468.
- Falloon, G. 2011, 'Making the connection: Moore's Theory of Transactional Distance and Its relevance to the Use of a Virtual Classroom in Postgraduate Online Teacher Education,' *Journal of Research and*

- Technology in Education*, vol. 43, no. 3, pp. 187-209. <http://www.anitacrawley.net/Articles/Falloon2011.pdf>
- Hartzell & Fineout-Overholt 2017. 'The evidence-based practice competencies related to searching for best evidence,' in B.M. Melnyk, L. Gallagher-Ford & E- Fineout-Overholt, *Implementing the evidence-based practice (EBP) competencies in healthcare: a practical guide to improving quality, safety and outcomes*, Sigma Theta Tau International, Indianapolis, IN, pp. 55-75.
- Heinonen, N. 2003, *Terveysalan koulutuksen työssä oppiminen ja ohjattu harjoittelu. Suositus sosiaali- ja terveydenhuollon toimintayksiköille*, Stencils of the Ministry of Social Affairs and Health 22, Helsinki.
- Hilli, Y. & Melender, H-L. 2015a, 'Developing preceptorship through action research: Part 1', *Scandinavian Journal of Caring Sciences*, vol. 29, no. 3, pp. 470-477. <https://doi.org/10.1111/scs.12169>
- Hilli, Y. & Melender, H-L. 2015b, 'Developing preceptorship through action research: Part 2', *Scandinavian Journal of Caring Sciences*, vol. 29, no. 3, pp. 478-485. <https://doi.org/10.1111/scs.12216>
- Häggman-Laitila, A., Eriksson, E., Meretoja, R., Sillanpää, K. & Rekola, L. 2007, 'Nursing students in clinical practice – developing a model for clinical supervision,' *Nurse Education in Practice*, vol. 7, no. 6, pp. 381-391. <https://doi.org/10.1016/j.nepr.2006.11.011>
- Information literacy competency standards for higher education. 2000. (Brochure). Association of College & Research Libraries, Chicago.
- Jokinen, P., Mikkonen, I. & Pietarinen-Lyytinen, R. 2008, 'Ohjaajien kokemuksia osallistumisesta harjoittelun kehittämiprojektiin', *Tutkiva Hoitotyö*, vol 6, no. 2, pp.30-37.
- Kankkunen, P. & Vehviläinen-Julkunen, K. 2013, *Tutkimus hoitotieteessä*, 3rd edn, Sanoma Pro Oy, Helsinki.
- Khammarnia, M., Haj Mohammadi, M., Amani, Z., Rezaeian, S. & Setoodehzadeh, F. 2015. 'Barriers to Implementation of Evidence-Based Practice in Zahedan Teaching Hospital, Iran,' *Nursing Research and Practice*. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4381851/>
- Landmark, B.T.H., Hansen Storm, G., Bjones, I. & Bøhler, A. 2003, 'Clinical supervision – factors defined by nurses as influential upon the development of competence and skills in supervision,' *Journal of Clinical Nursing*, vol. 12, no. 6, pp. 834-841. <https://doi.org/10.1046/j.1365-2702.2003.00813.x>
- Lambert, V. & Glacken, M. 2005, 'Clinical education facilitators: a literature review,' *Journal of Clinical Nursing*, vol. 14, no. 6, pp. 664-673. <https://doi.org/10.1111/j.1365-2702.2005.01136.x>
- Leung, K., Trevena, L. & Waters, D. 2014, 'Systematic review of instruments for measuring nurses' knowledge, skills and attitudes for evidence-based practice,' *Journal of Advanced Nursing*, vol. 70, no. 10, pp. 2181-2195. <https://doi.org/10.1111/jan.12454>
- Lindahl, B., Dagborn, K. & Nilsson, M. 2009, 'A student-centered clinical education unit – Description of a reflective learning model,' *Nurse Education in Practice*, vol. 9, no. 1, pp. 5-12. <https://doi.org/10.1016/j.nepr.2008.03.008>
- Melender, H-L. & Häggman-Laitila, A. 2010, 'Näyttöön perustuvan toiminnan edistäminen hoitotyössä: katsaus koulutusinterventioiden vaikuttavuuteen', *Hoitotiede*, vol. 22, no. 1, pp. 36-54.
- Melnyk, B.M. 2017. 'The foundation for improving healthcare quality, patient outcomes, & costs with evidence-based practice', in B.M. Melnyk, L. Gallagher-Ford & E- Fineout-Overholt, *Implementing the evidence-based practice (EBP) competencies in healthcare: a practical guide to improving quality, safety and outcomes*, Sigma Theta Tau International, Indianapolis, IN, pp. 3-18.

- Melnik, B.M., Fineout-Overholt, E., Gallagher-Ford, L. & Kaplan, L., 2012. 'The State of Evidence-Based Practice in US Nurses: Critical Implications for Nurse Leaders and Educators', *Journal of Nursing Administration*, vol. 42, no. 9, pp. 410-417. <https://doi.org/10.1097/nna.0b013e3182664e0a>
- Metz, A. 2007. A 10-Step Guide to Adopting and Sustaining Evidence-Based Practices in Out-Of-School Time Programs. Brief Research-to Results. *Child Trends*, June: 1-6.
- Ministry for Social and Health Care Affairs. 2009, *Johtamisella vetovoimaa ja vaikuttavuutta hoitotyöhön*. Action plan for the years 2009-2011. Ministry for Social and Health Care Affairs, Publications 18, Helsinki.
- Mitchell, D. 2014. *What really works in Special and Inclusive Education. Using evidence-based teaching strategies*, 2nd edn, Routledge, Abingdon.
- Neale, P., Ngoc Hue, L. & Kudrati, M. 2008, *Evidence-Based Planning for Sustainability of Government Reproductive Health Services*. Pathfinder International, Watertown MA.
- NPI. 2012, *Implementation Tips for USAID Partners*. Capable Partners Program New Partners Initiative (CAP NPI), Washington, DC. <http://www.npi-connect.net/documents/592341/749044/NPI+Implementation+Tips+for+USAID+Partners.pdf>
- Pearson, M. & Craig, J.V. 2002. 'Evidence-based practice in nursing' in J.V. Craig & R.L. Smyth, (eds), *The Evidence-Based Practice Manual for Nurses*, Churchill Livingstone, London, pp. 3-20.
- Ross, A. & Crumpler, J. 2007, 'The impact of an evidence-based practice education program on the role of oral care in the prevention of ventilator-associated pneumonia,' *Intensive & Critical Care Nursing*, vol. 23, no. 3, pp. 132-136. <https://doi.org/10.1016/j.iccn.2006.11.006>
- Rycroft-Malone, J., Seers, K., Titchen, A., Harvey, G., Kitson, A. & McCormack, B. 2004, 'What counts as evidence in evidence-based practice?', *Journal of Advanced Nursing*, vol. 47, no. 1, pp. 81-90. <https://doi.org/10.1111/j.1365-2648.2004.03068.x>
- Saarikoski, M., Warne, T., Kaila, P. & Leino-Kilpi, H. 2009, 'The role of the nurse teacher in clinical practice: An empirical study of Finnish student nurse experiences,' *Nurse Education Today*, vol. 29, no. 6, pp. 595-600. <https://doi.org/10.1016/j.nedt.2009.01.005>
- Sackett, E., Richardson, W.S., Rosenberg, W., Haynes, R.B. 1997, *Evidence-based medicine. How to practice and teach EBM*, Churchill Livingstone, New York.
- Salminen, L., Stolt, M., Saarikoski, M., Suikkala, A., Vaartio, H. & Leino-Kilpi, H., 2010, Future challenges for nursing education – A European perspective. *Nurse Education Today*, vol. 30, no. 3, pp. 233-238. <https://doi.org/10.1016/j.nedt.2009.11.004>
- Saunders, H. & Vehviläinen-Julkunen, K., 'The state of readiness for evidence-based practice among nurses: An integrative review,' *International Journal of Nursing Studies*, 2016 Apr; 56:128-40. doi: 10.1016/j.ijnurstu.2015.10.018.
- Stevens, K.R. 2013, 'The Impact of Evidence-Based Practice in Nursing and the Next Big Ideas,' *The Online Journal of Issues in Nursing*, vol. 18; no. 2, pp. 1.
- Tacia, L., Biskupski, K., Pheley, A. & Lehto R.H. 2015, 'Identifying barriers to evidence-based practice adoption: A focus group study.' *Clinical Nursing Studies*, vol. 3, no. 2, pp. 90-96. <https://doi.org/10.5430/cns.v3n2p90>
- Taylor, B.J. 2010, *Reflective Practice for Healthcare Professionals: A Practical Guide*, 3rd edn, Open University Press, Berkshire.

- Toikko, T. & Rantanen, T. 2009, *Tutkimuksellinen kehittämistoiminta*, Tampere University Press, Tampere.
- von Wright, J. 1996, 'Oppimisen tutkimuksen opetukselle asettamia haasteita', *Kasvatus*, vol. 27, no. 1, 9-20.
- Warne, T., Johansson, U-B., Papastravrou, E., Tichelaar, E., Tomietto, M., Van den Bossche, K., Flores, M. & Saarikoski, M. 2010, 'An exploration of the clinical learning experience of nursing students in nine European countries', *Nurse Education Today*, vol. 30, no. 8, pp. 809-815.
- Wells, N., Free, M. & Adams, R. 2007, 'Nursing research internship: enhancing evidence-based practice among staff nurses', *The Journal of Nursing Administration*, vol. 37, no. 3, pp. 135-143. <https://doi.org/10.1097/01.nna.0000262732.14123.a2>
- Williamson, G.R. 2012, 'Action research, nursing, and health care' in G.R Williamson, L. Bellman & J. Webster, (eds), *Action Research in Nursing and Health Care*, Sage Publications, London, pp. 51-65.