Reflection in the training of nurses in clinical practice settings: a scoping review protocol

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Review question/objective
This scoping review will seek to find answers for the following questions which will focus on the use of reflection in the education of nurses in clinical settings:
1. What tools and approaches for reflection have been reported?
2. What “levels” of reflection have been achieved/identified (“low”/descriptive, “middle”/application, or “high”/evaluative)
3. What outcomes of reflection have been included/reported?
The review will also extract and map data regarding: i) what outcomes have been found in relation to the use of different tools and approaches (e.g. dialogues, diaries, case studies); ii) how approaches and tools have been implemented as interventions; iii) details of the topic or focus of reflection (e.g. ethical issues, care of older adults etc.); iv) details about the participants involved in reflection activities (e.g. first or second year undergraduate nursing students etc.); and v) barriers/challenges to the use of reflection approaches/tools. Additional details may also be extracted and mapped during the process of the scoping review and this will be explained in the final scoping review report.

Keywords clinical settings; nurse training; nursing practice; reflection; tools


Background
Reflection is a process that is known to assist nurses in the development of necessary skills and competencies when undertaking training within clinical settings. Broadly, the ultimate aim of reflection in clinical education is to support the development of healthcare professionals who are able to, by their own initiative, enhance the development of further skills through the conscientious and strategic reflection of their experiences and knowledge to become reflective practitioners. While the value of reflection has been widely accepted and promoted through the use of various tools and approaches, a comprehensive understanding of what skills and competencies these tools/approaches support and what interferes with the process is necessary (i.e. barriers and challenges). Many previous reviews have noted difficulties comparing different approaches and outcomes of reflection due to the variety of different criteria and definitions used for reflection itself. Different “levels” of reflection have also been defined: “low” level (descriptive/recollection reflection), “middle” level (application of reflection), and “high” level (evaluation/analysis of reflection).1 These different levels of reflection have also been cited as a reason why comparison between different reflection tools and approaches has been challenging.2

While undergoing formal training to become qualified nurses, students must develop strong clinical competencies. This may be supported by real world experience with the kinds of complex challenges they will face in clinical settings. By reflecting on their experiences, students familiarize themselves with numerous different situations in praxis and reflect on the outcome of these situations and on their own role.3 Reflection allows students to make
sense of the events that occur in clinical settings and to critically examine not only their role, behaviors, actions and beliefs but also those of others. As opposed to standardized approaches to reflection being transferred from other contexts, reflective skills and clinical reasoning are linked and must be taught and undertaken in ways that are appropriate to the complex clinical context of nursing.4,6

In a 2006 review, the perspective that novice nurses develop skills in critical thinking and achieve competence in an area within two-three years was challenged.7,8 Instead it was posited that coaching in the context of real life practice fostered these skills and expedited the ability of novice nurses to progress from thinking as an arrangement of separate facts to organized thinking as a process of critical thought and applied practice.9 It is necessary to examine the connection between the reflection process and the nature of the reflections in the interventions.

The notion of reflective practice has been explored by many authors. Parrish and Crookes note the wealth of research and literature addressing the notion of reflective practice in nursing and suggest that nurses who are able to effectively reflect are: i) more proficient in developing strategies that promote a flexible, individualized and holistic approach to patient care; ii) better equipped to resolve problems through thoughtful and systematic reasoning; and iii) more inclined to monitor and enhance their professional competence.5 The reflective competencies of nurses are often related to the delivery of safe and effective care for patients and have been linked to reductions in the risk of the incidence of potentially fatal mistakes both as students and as qualified health professionals.4,10 These relationships have however not been empirically established. It has been argued that reflection may play a vital role in relation to enabling the implementation of evidence-based practice within clinical settings.11 Evidence-based practice can be understood as the integration of theory and practice in education.12

**Definition of reflection**

A comprehensive understanding of the use and impact of reflection in nursing education must be based on ensuring a common language around what reflection is, what tools and approaches have been used, the content and context of reflection, details regarding the participants in reflection interventions, and what outcomes have been measured. A common feature of all models of reflection is that they provide a structured approach to reflection with the aim of directing the learner through a series of phases of the reflective process. Reflection may begin with developing a description of the situation or incident (low level reflection), which develops into a deeper examination including underlying assumptions and the perspectives of others (middle level reflection), and finally into planning how to use and improve approaches in similar situations in the future (high level reflection). A key challenge is that reflection is defined differently by different authors and theoreticians.

In order to capture the differences in commonly used definitions of reflection, the present scoping review will use a broad definition. Reflection is thus defined as the: “…active, persistent and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusion to which it tends”.13(p.9)

The focus of this scoping review will also be on “verbalized reflection” activities – reflection occurring either via spoken dialogue or in writing. “Non-verbalized reflection” which takes place in the mind as thoughts will not be included as this form of reflection is largely unmeasurable and therefore not well understood. As several studies have indicated that verbalized reflection with a coach or supervisor allows more effective reflection, this scoping review will focus on reflection activities occurring with coaches.4,6,14

**Reflection interventions: tools and approaches for reflection**

Within several healthcare professions including nursing, different types of reflective dialogues and tools are central to student learning between supervisors and students. These tools include debriefing,15-22 portfolios,23-25 creative methods such as painting,26,27 storytelling,27,28 storyboarding,29 and flash cards.30 Many of these tools and approaches (interventions) are used in groups and some in one-to-one situations between a student and supervisor. It is unknown whether there are differences in terms of effectiveness between each of these modes of reflection on student learning outcomes. Reviews describe reflection levels within these interventions but they do not compare the results between the interventions, the content reflected on, or the level of students’ education. The present scoping review is the first step toward enabling clear comparisons in terms of the
effectiveness of different reflection interventions in nursing.

Many reviews highlight the importance of the supervisor’s role in student learning.\textsuperscript{14,31} Students are exposed to varied patterns and situations which make it possible for them to compare present care situations with earlier and future situations.\textsuperscript{3,4,6} Reflection can be a formalized part of student learning and can be understood as a “dialogue” when undertaken between students and supervisors, coaches or educators (all three used as synonyms in this protocol). When reflecting together with a supervisor, students may obtain and develop vital competencies around different incidents, experiences, thoughts and emotions encountered in clinical practice.\textsuperscript{4,6}

Differences in how students are introduced to the tools and approaches for reflection interventions and the duration of reflection activities can have an effect on the progress and success of the reflection activity. The duration of being introduced to reflection tools and approaches can vary from a few hours to months.\textsuperscript{9} Existing reviews have not described the relationship between the types of reflection tools and approaches, the levels of reflection that have been achieved, and the duration of use of the tools and approaches. As noted above, this review will seek to identify and map this data.

\textbf{Topics and contents of reflection}

Reflection interventions as educational strategies have focused on different topics and contents. A 2015 review suggested that nurses reflected on: i) diverse clinical practice settings from acute care hospital-based units to clinical office practices, ii) palliative care or terminally ill patients, iii) mental health/psychiatric care, iv) elder care, v) family practice, and vi) maternity/pediatric settings.\textsuperscript{32} This review will map the topics that have been the focus of different reflection activities and tools.

\textbf{Levels of education and reflection for nursing}

The level of education where nursing students encounter and use reflection interventions and tools may have an influence on how reflection is used and the outcomes it achieves. It has been suggested that it takes two to three years before nurses reach “high” level reflection, that is, reflection that involves analysis, evaluation, and/or creation (e.g. of new approaches or tools to improve clinical practice).\textsuperscript{8} In contrast, others have suggested that systematic reflection may achieve high level reflection earlier.\textsuperscript{32} Studies have described reflection being used for undergraduate nursing students as well as newly graduated nurses,\textsuperscript{33} novice nurses with less than six months of experience,\textsuperscript{34} and mid-career nurses with five to 15 years of experience.\textsuperscript{35} Interestingly, nurses of differing levels of education and experience may all begin with the ability to use “low” level reflection skills such as simply finding, describing and recalling relevant information regarding their clinical practices, behaviors and beliefs. This could indicate that the tools and approaches used for different groups of nurses have been different, or that some nurses with greater experience or educational attainment may not have learned to engage in middle or high level reflection. For these reasons, this scoping review will attempt to identify and map the level of reflection attained by participants in relation to the levels of education/experience of students/nurses.

\textit{Clinical settings}

This scoping review seeks to examine reflection in nursing education in clinical settings as opposed to solely educational settings such as university lectures or workshops. In an extensive empirical study from 2010, the clinical learning experience of almost 2000 nursing students in nine European countries was examined. Results indicated that the duration of the clinical stay affected student satisfaction and perceived learning outcomes and that students highly valued individualized supervision processes.\textsuperscript{36} The authors argued that “working with patients and effective mentorship relationships are core elements of professional development in nursing”.\textsuperscript{36(p.814),37} In another analysis of final year nursing student learning, “...the mutual relationship between student and mentor was important. This relates closely to students’ comments on the significance of inspiring role models”.\textsuperscript{28(p.43)} In this regard, it is clear that supervisors also need to be actively engaged in critical reflection regarding educational practice to support student learning needs.\textsuperscript{26} These studies substantiate the argument that student learning in clinical practice is highly dependent on the supervision process. Our review will be attentive to reflection in the presence of both students and supervisors used in clinical settings.
Preliminary literature search
The following databases were searched on March 22, 2017 to establish whether similar scoping or systematic reviews had been conducted on this topic: PubMed, CINAHL, ERIC, Web of Science. Reviews published from 2007 were sought as evidence from the last 10 years was agreed to represent the most up-to-date and relevant information. There were similar but not identical reviews located. The principal similarities between these three reviews and the proposed scoping review are discussed below.

A 2009 systematic literature review evaluated evidence on reflection and reflective practice in the health professions (not specifically nursing) and included 29 studies from 11 countries. A 2015 systematic review included 37 studies. Most studies used exploratory or descriptive qualitative methods and focused on academic contexts rather than clinical learning. The third review published in 2015 explored the literature on the use of reflection as an educational strategy in the post-licensure nursing population with the questions: i) in what way is reflection used as an educational strategy, and ii) what outcomes are reported for reflective educational strategies. They found different strategies, with specific clinical practice goals, group-guided reflection, reflective journaling on the metacognitive process, and reflection nested into multifaceted educational programs. Overall, the authors highlighted an increase in participants’ knowledge from engaging with the reflective strategies identified in the included studies. A fourth review from 2016 was an umbrella review. The review presented similar conclusions to the other three reviews and also provided some broader perspectives on reflection in terms of what is known about reflection and some of the enhancing factors and barriers to effectively teaching reflective practice.

In summary, the four reviews were written between 2009 to 2016 and while highly relevant in their own right, they do not comprehensively identify and map each of the details proposed by the present scoping review in order to identify patterns regarding connections between reflection tools or strategies, the length of introduction, the topic or contents which the health professional reflects on, or the level of the student’s education.

The overall aim of this review is therefore to offer knowledge users a user-friendly, comprehensive list of tools and approaches used for reflection as well as outcomes that have been measured in relation to these relevant to supporting the use of reflection as a learning strategy in clinical settings.

Our review will provide important insights into these topics by going beyond the scope of the past reviews. As a comprehensive overview of reflection tools, approaches and outcomes, the JBI methodology for the conduct and reporting of scoping reviews will be utilized including an adapted form of the proposed template data extraction tool. This scoping review will be an important contribution to the field of clinical supervision for nursing professionals.

Inclusion criteria
Participants
The population of interest for this review will include nursing trainees encompassing both students and graduates involved in higher degree clinical training programs. Nursing educators who provide training for nursing trainees will also be included; this group may be defined by variety of titles such as coaches, teachers, preceptors or instructors.

Concept
The concept of interest for this review includes the tools and approaches as well as the outcomes that have been investigated, measured or used in the area of reflection.

Outcomes include any specific skill or ability that may be affected by engaging in the use of reflection as an intervention (e.g. empathy, wound dressing ability, job satisfaction, confidence) and may be measured using either objective or subjective data. The level(s) of reflection achieved by reflection interventions will also be of interest.

Tools and approaches may be used to: i) support or facilitate reflection (e.g. reflective journals, formalized reflection sessions); or ii) measure the effectiveness/impact/effects of reflection on outcomes (e.g. examinations, assessments, interview, self-report).

The scoping review will also extract and map data regarding how approaches and tools have been implemented as interventions, the topic or focus of reflection (e.g. ethical issues, care of older adults etc.), and barriers/challenges to the use of reflection approaches/tools.

Additional details may also be extracted and mapped during the process of the scoping review and this will be explained in the final scoping review report.
Context
This review focuses on training undertaken within clinical practice contexts where nursing trainees and their educators are involved in the care of patients. Eligible settings include any hospital or health institutional location where trainee nurses work alongside educators/coaches in the care of patients.

Evidence sources
Quantitative and qualitative studies of any design or approach will be eligible for inclusion in this review. As this review aims to gain an understanding of what has actually been used and/or investigated in the area of reflection in clinical practice context training, articles based on expert opinion (e.g. concerning what could be used or measured) will not be eligible for inclusion.

Search strategy
A three-step search strategy will be utilized. An initial search in PubMed, ERIC, CINAHL and Web of Science will be undertaken, followed by analysis of the text words contained in the title and abstract, and of the index terms used to describe the article. The initial search strategy for use in PubMed, ERIC, CINAHL and Web of Science is included in Appendix I.

A second search using all identified keywords and index terms will then be undertaken across all included databases. Thirdly, all relevant references selected for inclusion in the review will be subject to a citation search in Web of Science and Scopus. While not eligible for inclusion themselves relevant studies from existing systematic reviews will be examined for relevant primary studies that meet the inclusion criteria of the present scoping review. The reference lists of the identified reviews (introduced above) will be inspected for relevant evidence sources. Authors of the review are fluent in English, Danish, Swedish and Norwegian, and studies published in any of these languages will be sought. If included in the review, relevant information and data from non-English studies will be translated into English. The databases will be examined for potentially relevant studies published the last ten years, since 2007 until the present. As discussed, there are a number of similar reviews focusing on the use of reflection in both nursing and other healthcare fields. This scoping review however has a particular focus not clearly addressed by these reviews. As such, this scoping review will seek to identify and include the most relevant and up to date evidence published in the past 10 years, from January 1, 2007. The date of the final search will be reported in the scoping review report. The complete list of the electronic databases to be searched is: CINAHL, PubMed, Education Research Complete, British Education Index, Nursing and Allied Health Source, Embase, Cochrane Central Register of Controlled Trials, PsyCINFO, ERIC, Web of Science and Scopus. Inclusion of gray literature and unpublished studies is beyond the scope of this project due to resourcing constraints.

Study selection
All identified studies will be examined by reviewers for congruity with each of the inclusion criteria above, first at the title/abstract level, then by examining the full-text of potentially relevant studies in greater depth. To ensure consistency, the reviewers will pilot the screening and selection process on a sample of identified studies. Discussion will occur to settle any disagreements between reviewers regarding the inclusion of studies. Citation management software (e.g. EndNote [Clarivate Analytics, PA, USA]) will be used to track study selection and inclusion process. Full text studies that do not meet the inclusion criteria will be excluded and reasons for exclusion will be provided in an appendix in the final scoping review report. The results of the search will be reported in full in the final report, and presented in a Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram adapted for use for a scoping review. Any disagreements that arise between the reviewers will be resolved through discussion or with a third reviewer.

Data extraction
The details of included studies as well as relevant data pertaining to the stated review questions will be extracted using a standardized data extraction form adapted from the JBI scoping review methodological guidance (see Appendix II). The tool will be piloted by the reviewers on a selection of included studies. In line with the JBI approach to scoping reviews, the form may be refined and updated during the course of the review. Authors will not be contacted for
mapping the evidence

Extracted data will be summarized quantitatively and qualitatively in relation to the two focus questions of the review. Frequency analysis based on numerical counts of key characteristics and data will be extracted and presented in tabular form (e.g. the number of studies reporting use of reflective diaries) supplemented by a descriptive narrative. Qualitative data (e.g. descriptions of the outcomes of using reflection tools) will be extracted and synthesized using descriptive content analysis. Overall, the extracted data will be mapped in terms of:

Question 1: The tools and approaches used for reflection (both to facilitate/teach reflection and/or measure the outcomes of reflection) for nursing education by nursing trainees and educators in clinical settings.

Question 2: The “levels” of reflection identified/achieved (“low”/descriptive, “middle”/application, or “high”/evaluative)

Question 3: The outcomes measured in studies where reflection has been used for nursing education by nursing trainees and educators in clinical settings.

Key concepts regarding reflection and its use as well as relevant conclusions and key findings across the articles will also be identified and summarized.

Data will also be extracted and mapped in order to elucidate: i) what outcomes have been found in relation to the use of different tools and approaches; ii) how approaches and tools have been implemented as interventions; iii) details of the topic or focus of reflection; iv) details about the participants involved in reflection activities, and v) barriers/challenges to the use of reflection approaches/tools. Additional details may also be extracted and mapped during the process of the scoping review and this will be explained in the final scoping review report. The approach to the synthesis and mapping of evidence may be adapted and refined during the conduct of the review as the reviewers become familiar with the included studies.

Acknowledgements

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References

Appendix I: Initial search strategy

**PubMed**

((reflection'[All Fields]

AND

((portfolios[All Fields] OR diaries[All Fields] OR (“paintings”[MeSH Terms] OR “paintings”[All Fields]

OR “painting”[All Fields]) OR (“photography”[MeSH Terms] OR “photography”[All Fields]) OR (“art”

[MeSH Terms] OR “art”[All Fields] OR “arts”[All Fields]) OR (“narration”[MeSH Terms] OR “narration”

[All Fields] OR “narrative”[All Fields]) OR (dialogues[All Fields] OR conversation[All Fields] OR

(“communication”[MeSH Terms] OR “communication”[All Fields]) OR (guided[All Fields] AND reflec-

tion[All Fields]) OR briefing[All Fields] OR debriefing[All Fields] OR questioning[All Fields] OR verbal’[All

Fields] OR writ’[All Fields]))))

AND

(“nurses”[MeSH Terms] OR “nurs”’[All Fields] OR (“education, nursing”[MeSH Terms]))

**ERIC**

Reflection* OR DE “Reflection”

AND

DE “Portfolios (Background Materials)” OR portfolios OR DE “Diaries” OR diaries OR paintings OR DE

“Photography” OR Photography OR DE “Art” OR arts OR DE “Narration” OR narration OR narrative

OR dialogues OR conversation OR DE “Communication (Thought Transfer)” OR communication OR

(guided AND reflection) OR briefing OR debriefing OR DE “Questioning Techniques” OR questioning OR

DE “Verbal Communication” OR verbal’ OR DE “Writing (Composition)” OR writ

AND

(DE “Nurses”) OR (DE “Nursing Education”) OR nurs’

**CINAHL**

Reflection* OR (MH “Reflection”)

AND

Portfolios OR diaries OR paintings OR Photography OR arts OR narration OR narrative OR dialogues OR

conversation OR communication OR (guided AND reflection) OR briefing OR debriefing OR questioning

OR verbal’ OR writ’ OR (MH “Portfolio”) OR (MH “Diaries”) OR (MH “Photography”) OR (MH

“Narratives”) OR (MH “Conversation”) OR (MH “Communication”)

AND

(nurs* OR (MH “Nurses”) OR (MH “Education, Nursing”)

**Web of Science**

TS = (Reflection*)

AND

(TS = (Portfolios) OR TS = (diaries) OR TS = (paintings) OR TS = (Photography) OR TS = (arts) OR

TS = (narration) OR TS = (narrative) OR TS = (dialogues) OR TS = (conversation) OR TS = (communication)
(communication) OR (TS = (guided) AND TS = (reflection)) OR TS = (briefing) OR TS = (debriefing) OR TS = (questioning) OR TS = (verbal*) OR TS = (writ*)

AND

TS = (Nurs*)
### Appendix II: Draft data extraction tool

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<table>
<thead>
<tr>
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<tbody>
<tr>
<td><strong>Study (citation details)</strong></td>
<td>E.g. author/s, title, journal, year, volume (edition): pages.</td>
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<tr>
<td><strong>Study design (methodology)</strong></td>
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<tr>
<td><strong>Study approach/methods</strong></td>
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<td><strong>Study aims/goals</strong></td>
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<td><strong>Clinical context</strong></td>
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<tr>
<td><strong>Country</strong></td>
<td></td>
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<tr>
<td><strong>Participants</strong></td>
<td>Number and details (trainees and educators) (also students level of education)</td>
</tr>
<tr>
<td><strong>Definition of reflection</strong></td>
<td>E.g. criteria from mezirow, schon, brookfield</td>
</tr>
<tr>
<td><strong>Intervention details (reflection tools/approaches)</strong></td>
<td>E.g. case studies, diaries, dialogues. E.g. questionnaires, guidelines E.g. appreciative inquiry</td>
</tr>
<tr>
<td><strong>Introduction to the intervention</strong></td>
<td>E.g. 2 x 3 hours of introduction, 3 weeks of education</td>
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<tr>
<td><strong>Barriers/challenges</strong></td>
<td>E.g. not enough time, no supervision</td>
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<tr>
<td><strong>Content of reflections</strong></td>
<td>E.g. elderly care, terminal care.</td>
</tr>
<tr>
<td><strong>Outcome measurement (tools/approaches to measure outcomes of interventions)</strong></td>
<td>E.g. criteria from mezirow, criteria from mezirow + added some more criteria. Specific measurement tools. The measurement collaborate to the definition of reflection or it does not.</td>
</tr>
<tr>
<td><strong>Results/outcomes</strong></td>
<td>E.g. student whose interventions are measured in writing diaries alone in clinical settings are low reflectors (only descriptive). Students who are sharing diaries are middle reflectors. Students which interventions are measured in case studies together with other students are both high and middle reflectors.</td>
</tr>
</tbody>
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