Effectiveness of self-directed learning methods compared with other learning methods in nursing education related to nursing students’ or registered nurses’ learning outcomes: a systematic review protocol

Liisa Montin PhD, RN¹
Jaana-Maija Koivisto MNSc, RN¹

1. Finnish Centre for Evidence-Based Health Care: An Affiliated Centre of the Joanna Briggs Institute.

Corresponding author
Liisa Montin
liisa.montin@metropolia.fi

Review question/objective
What is the effectiveness of self-directed learning methods compared with other learning methods in nursing education?

Do self-directed learning methods improve the continuing education learning outcomes of nursing students’ or registered nurses’?

Background
It is well known that the nursing workforce is aging and graduation of new nurses is insufficient to meet their global demand.¹ Additionally, the population is aging; by 2050 there will be a greater number of older than younger people in the world.² This means an increasing demand for health services.

The average nurse population ratio in Europe, the region with the highest ratios, is 10 times the average ratio in the lowest region. At a country level, for example in some Central African countries, the ratio varies from less than 10 nurses per 100,000 people, to more than 1000 nurses per 100,000 people in countries such as Norway and Finland.³ A nursing shortage, at the local, regional, national and global levels, has a negative impact on health care as it may lead to failure in maintaining or improving health care.⁴

Nurses are also changing jobs and leaving nursing. One reason for this is lack of access to continuing education.² Nursing shortage is not limited to clinical practice. It also includes nursing faculty, who are needed to prepare current and future generations of nurses.² The nursing education system is inadequate to supply the increased demand for nurses.¹ The education-related issues also include a lack of qualified faculty and clinical sites.⁵¹

This context raises the question of whether nurses should take more responsibility for their own learning.⁵ Therefore, different learning methods are needed in order to fulfill the requirements of these demand issues in health care. It is important to support diverse and individual learning practices. They
enable self-generated study, which emphasizes student responsibility of their learning and professional development. Thus, it is reasonable to ascertain whether there is any research evidence of the impact of self-directed learning methods.

Learning theories can be grouped into four main categories: behaviorism (e.g. Skinner’s theory), cognitive (e.g. Lewin’s approach, Ausubel’s theory, Kolb’s learning styles), humanistic (e.g. Rogers’ and Mezirow’s theory) and social (e.g. Vygotsky’s and Bandura’s theory) perspectives on learning. The focus of the theories or approaches vary from passive (behaviorist) to active learning (others).7 The concept of self-directed learning is based on active learning and the principles of adult education.8 In self-directed learning, the educator acts as a facilitator and identification of learning needs as well as learning objectives and evaluation of learning are important parts of the learning process.8,9,10

Self-directed learning can be defined in following ways. It is directed at one’s self or under one’s own control.11 Also it can be directed or guided by oneself, especially as an independent agent and learning can be regulated or conducted by oneself.12 Although previous literature indicates that there is no clear definition of the concept of self-directed learning, some consensus exists nevertheless. Self-directed learning is understood to be a form of study in which students are responsible for planning, implementing and evaluating their own work.14 In most definitions, there is also a perception that some personal control by the learner is needed during the learning process.9

However, the research has indicated that not all students are self-directed. Mature students who already had previous nursing experience have been found to have a preference for structured teaching. This preference is similar to traditional students.15 In some cases, mature students may be more self-directed if they have previous learning experience and therefore are more confident with their learning process.16

Research has suggested that self-directed learning is one of many teaching methods and before using it, educators must assess students’ learning styles and learning skills in order to decide whether this learning method can be used.9 Independent or self-directed learning can be implemented in many ways, but the activity of the learner must be confirmed.9,10 It is important to find meaningful learning strategies and/or activities such as computer or internet-based,17,18 problem-based learning methods,19 or other traditional learning methods which can engage students in active learning. New learning environments, such as virtual learning, may help maintain today’s students’ interest in learning and provide valuable experiences that may enhance student engagement, promote participation and motivate self-directed learning.20 Possibilities of virtual pedagogy are recommended as being useful more and more frequently in nursing training.21,22

Self-directed or independent learning has been studied with different perspectives and methods, with some positive outcomes. Self-directed learning has been found to have many advantages. It increases students’ options, self-confidence, independence, motivation and also the development of different skills for lifelong learning.9 It seems that many different educational solutions can be used in order to promote independent learning.23,19 Also, there exists moderate quality evidence which shows a modest improvement in the knowledge, but no difference in the skills or attitudes of health professional students when comparing self-directed learning and traditional learning methods.24 Still, there is no conclusion about the best method(s) to catch best learning outcomes. The purpose of this systematic review is to try to answer the question of the effectiveness of self-directed learning methods, for example skills, knowledge, attitude, competence and ability learning outcomes.
Keywords

self-directed; learning; nursing; education

Inclusion criteria

Types of participants

The review will consider all studies reporting independent learning methods in nursing education. In this review, nursing students are defined as degree students (bachelor and masters level) and registered nurses who are at work and in continuing training.

Types of intervention(s) and comparator(s)

The interventions of interest for this review are self-directed learning methods or intervention programs aimed at improving nursing students’ or nurses’ learning outcomes. The comparator(s) to be considered in the review are other learning methods.

Types of outcomes

This review will consider studies that have measured the impact of self-directed learning on one or more of learning outcomes (e.g. skills, knowledge, attitude, competence, ability), measured for example by questionnaires, tests and observation.

Types of studies

This review will consider randomized controlled trials; quasi-experimental studies and before and after studies for inclusion.

Search strategy

The search strategy aims to find both published and unpublished studies. A three-step search strategy will be utilized in this review. An initial limited search of MEDLINE and CINAHL 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. A second search using all identified keywords and index terms will then be undertaken across all included databases. Thirdly, the reference lists of all identified reports and articles will be searched for additional studies. Studies published in English, Swedish and Finnish will be considered for inclusion in this review. Studies published without any time limits will be considered for inclusion in this review.

The databases to be searched for published studies will include:

• MEDLINE
• CINAHL
• ERIC
• Medic

The databases to be searched for unpublished studies will include:

• MedNar
• ProQuest Dissertations & Theses Database (PQDT)
Initial keywords to be used will be:

- nursing
- learning
- student
- self-directed
- independent
- self-guided
- self-learning
- student-directed
- self-study
- learning-outcome

Assessment of methodological quality

Papers selected for retrieval will be assessed by two independent reviewers for methodological validity prior to inclusion in the review using standardized critical appraisal instruments from the Joanna Briggs Institute Meta Analysis of Statistics Assessment and Review Instrument (JBI-MAStARI) (Appendix I). Any disagreements that arise between the reviewers will be resolved through discussion, or with a third reviewer.

Data collection

Quantitative data will be extracted from papers included in the review using the standardized data extraction tool from JBI-MAStARI (Appendix II). The data extracted will include specific details about the interventions, populations, study methods and outcomes of significance to the review question and specific objectives.

Data synthesis

Quantitative papers will, where possible, be pooled in statistical meta-analysis using JBI-MAStARI. All results will be subject to double data entry. Effect sizes expressed as odds ratios (for categorical data) and weighted mean differences (for continuous data) and their 95% confidence intervals will be calculated for analysis. Heterogeneity will be assessed statistically using the standard chi-square test and also explored using subgroup analyses based on the different quantitative study designs included in this review. Where statistical pooling is not possible, the findings will be presented in narrative form including tables and figures to aid in data presentation where appropriate.

Conflicts of interest

None known.
References


Appendix I: Appraisal instruments

MAStARI appraisal instrument

**JBI Critical Appraisal Checklist for Randomised Control / Pseudo-randomised Trial**

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
<th>Unclear</th>
<th>Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Was the assignment to treatment groups truly random?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Were participants blinded to treatment allocation?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Was allocation to treatment groups concealed from the allocator?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Were the outcomes of people who withdrew described and included in the analysis?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Were those assessing outcomes blind to the treatment allocation?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Were the control and treatment groups comparable at entry?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Were groups treated identically other than for the named interventions</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Were outcomes measured in the same way for all groups?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Were outcomes measured in a reliable way?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Was appropriate statistical analysis used?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Overall appraisal: Include ☐ Exclude ☐ Seek further info. ☐

Comments (Including reason for exclusion)

__________________________________________________________

__________________________________________________________
Appendix II: Data extraction instruments

MAStARI data extraction instrument

**JBI Data Extraction Form for Experimental / Observational Studies**

<table>
<thead>
<tr>
<th>Reviewer</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Author</td>
<td>Year</td>
</tr>
<tr>
<td>Journal</td>
<td>Record Number</td>
</tr>
</tbody>
</table>

**Study Method**

- [ ] RCT
- [ ] Quasi-RCT
- [ ] Longitudinal
- [ ] Retrospective
- [ ] Observational
- [ ] Other

**Participants**

<table>
<thead>
<tr>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
</tr>
</tbody>
</table>

**Sample size**

<table>
<thead>
<tr>
<th>Group A</th>
<th>Group B</th>
</tr>
</thead>
</table>

**Interventions**

- Intervention A
- Intervention B

**Authors Conclusions:**

**Reviewers Conclusions:**