

EVALUATION OF LEARNING OUTCOMES FOR CRITICAL THINKING IN A NURSING STUDY PROGRAMME

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Abstract

In the three-year (2010-2013) project *Innovation of the Nursing Study Programme at the Silesian University in Opava, CZ.1.07/2.2.00/15.0178*, in the Education for Competitiveness Operational Programme, one of the major focuses was constructive alignment of learning outcomes with teaching, learning and assessment of outcome achievement in a series of modules. Learning outcomes can be differentiated into two types: A. learning outcomes for separate tasks (nursing interventions), B. developmental learning outcomes (long-term outcomes in the area of communication, nursing process implementation etc.) Developmental learning outcome assessment involves the level of critical thinking skills for each student. The Project team suggested various types of assessment for the given area.

Keywords: learning outcomes, assessment, critical thinking, OPVK Project (Education for Competitiveness Operational Programme), nursing study programme

1 Introduction

As a contribution to the Bologna Process, the European Area of Higher Education was established in 2010. The same year saw the publication of the the *National Qualification Framework for Tertiary Education in the Czech Republic (Q-RAM)* as a reflection of the *Qualifications Framework of the European Higher Education Area (QF-EHEA)* and the *European Qualifications Framework for Life-Long Learning (EQF-LLL)*. The *National Qualification Framework* renders the Czech system of tertiary education more comprehensible for both the Czech Republic itself, and the European Area. The Qualification Framework focuses on learning outcomes as statements of actual knowledge, skills and competences of learners. Contrary to traditional description of curricular systems, it is not based on a list of formal indicators (length of stud or compulsory subjects). For educators, this means a shift in the content of teaching and learning; for students, the system provides feedback on their knowledge, skills and competences. For educational institutions, the Qualification Framework represents a set of enhanced and more transparent criteria in their quality assurance efforts in tertiary education. Particular learning outcomes constitute cornerstones for graduate profile and qualification evaluation. Assurance of quality of qualification is largely based on constructive alignment of learning outcomes with teaching and learning methods, as well as assessment procedures. The present article aims to illustrate selected assessment methods for critical thinking skills as designed in the Project.

2 Methods

The three-year (2010-2013) project *Innovation of the Nursing Study Programme at the Silesian University in Opava, CZ.1.07/2.2.00/15.0178*, in the Education for Competitiveness

Operational Programme, was designed in accord with the *National Qualification Framework for Tertiary Education in the Czech Republic (Q-RAM)*. With on-going support from a European Commission expert, participants (nursing faculty) were initially trained in innovative educational methods. The differences between current subject-based curricula and module-based implementations of the European Credit Transfer and Accumulation System (ECTS) were emphasized. Twenty-four modules with learning outcome descriptions have been prepared as a framework for the nursing study programme. A number of educational methods have been suggested for constructive alignment of learning outcomes with teaching, learning and assessment. The methods help educators judge the level of learner achievement, including critical thinking skills.

3 Tools for assessment of learning outcome achievement

A number of tools have been suggested to evaluate learning outcome achievement by students in particular modules in the Project. The latter tools can be employed for both continuous and summative assessments. Examples of the tools include: an individual portfolio and self-reflection; laboratory skill assessment scales; case studies; essays; written tests; evaluation of clinical practice, critical thinking criteria and other items. Presently, selected tools are being tested by full-time teaching staff within the framework of the existing subject-based system in nursing studies at the Silesian University in Opava (*see Tables 1 – 3*).

Table 1 Illustration of a framework for assessment of critical thinking skills in a nursing study programme

THE STUDENT DEMONSTRATES CRITICAL THINKING SKILLS IN HEALTH CONTEXTS	Clinical assessment	Multiple choice test in class	Essay-written assessment in class	Case study	Classroom presentation	Journal
DEMONSTRATES analytical approach	x			x		x
DEMONSTRATES understanding of logical relationships	x	x	x	x	x	
EVALUATES assumptions and hypotheses	x	x	x	x	x	x
MAKES USE of reliable resources	x	x	x	x	x	
CONSIDERS alternative solutions	x	x	x	x	x	
PERFORMS continuous re-evaluation of patient status	x	x	x	x		x

4 Critical thinking in nursing

Critical thinking is one of the key competences of nurses. It is based on specific cognitive algorithms in deciding what to do or what to believe in a particular situation. Nurses endowed with critical thinking skills assume analytical approaches, demonstrate understanding of logical relationships, evaluate assumptions and hypotheses, employ reliable resources, consider alternative solutions and perform continuous re-evaluation of the results of their activities (McDonald, 2007). Critical thinking facilitates the following areas: understanding of persons and situations, identification of existing and potential problems, decision-making and choice of specific activities to be performed, risk management of undesirable reactions and situations, increasing the likelihood of positive outcomes of nursing care, quality enhancement and improved practice even in situations when no major issues are being solved.

5 Assessment of critical thinking skills

Identification of key features of critical thinking and student behaviour is a point of departure for the design and adjustment of educational strategies, student learning and assessment. It also helps to design assessment methods and criteria for judging the level of critical thinking. Student's ability to think critically can be assessed effectively by means of systematically designed integrated assessment plans (with multiple variables being measured). A number of other assessment methods can be employed, including multiple choice tests, cloze tests, essays, projects, research participation etc. In terms of evaluation indicators, learning outcomes should be classed as: A. learning outcomes for separate tasks (performance of nursing interventions, such as administration of medicine) – the assessment is either 'passed' (compliant with criteria) or 'failed' (non-compliant with criteria), B. developmental learning outcomes (long-term outcomes in the area of communication, nursing process implementation etc.) – the assessment in this case focuses on the level of achieved competence (novice to expert) and on critical thinking skills. – *See Table 1 – 3.* While preparing tasks and questions for essay assessments in critical thinking skills, the faculty should consider the level of particular student groups so as to tune the difficulty of the tasks.

Table 2 *Illustration of extended assessment criteria in an integrated plan for critical thinking skills development in the nursing study programme*

<ol style="list-style-type: none"> 1. DEMONSTRATES ANALYTICAL APPROACH <ol style="list-style-type: none"> 1.1 SEARCHES FOR facts/evidence 1.2 OVERVIEWS alternative opinions 1.3 PRACTISES metacognition (self-reflection of own knowledge processing – cognitive style) 1.4 MAINTAINS flexibility 1.5 DEMONSTRATES proactivity, rather than reactivity 2. DEMONSTRATES UNDERSTANDING OF LOGICAL RELATIONSHIPS <ol style="list-style-type: none"> 2.1 ASKS relevant questions 2.2 TAKES INTO ACCOUNT patient's standpoint 2.3 IDENTIFIES situations that require modification or change 2.4 SETS priorities for individual client status 2.5 VERIFIES significance of care plan for client 3. EVALUATES ASSUMPTIONS AND HYPOTHESES <ol style="list-style-type: none"> 3.1 CONSIDERS premises of outer world functioning 3.2 SEARCHES FOR alternative views and approaches 3.3 SEPARATES facts/evidence from false assumptions 3.4 COMPARES ideas and beliefs 3.5 PROVES or falsifies assumptions before drawing final conclusion 4. GATHERS INFORMATION FROM RELIABLE SOURCES <ol style="list-style-type: none"> 4.1 WORKS with an appropriate and reliable base of evidence 4.2 IS AWARE OF the limitations of own knowledge 4.3 EMPLOYS valid information sources 4.4 DISTINGUISHES precise and imprecise information 4.5 Derives judgment based on available information 5. CONSIDERS ALTERNATIVE SOLUTIONS <ol style="list-style-type: none"> 5.1 DIRECTS the co-operation process during problem solving 5.2 SEARCHES FOR alternative solutions 5.3 PREPARES a plan 5.4 PREPARES materials for intervention rationale 5.5 ORDERS priorities of nursing interventions 5.6 PLANS and sets goals/outcomes of care 6. PERFORMS CONTINUOUS RE-EVALUATION <ol style="list-style-type: none"> 6.1 EVALUATES effectiveness of care plans from various perspectives (client perspective, family perspective, care provider perspective) 6.2 SEARCHES FOR information to assess the effectiveness of care plan 6.3 ANALYSES new data 6.4 PERFORMS final evaluation of plan effectiveness 6.5 ADJUSTS criteria for plan pro evaluation 6.6 REVISES plan where necessary

Outcome: On completion of the module (course), the student will demonstrate critical thinking skills in health contexts through observable behaviour.

Table 3 Illustration of tasks and questions for critical thinking assessment in essays**APPLICATION**

- Identify three nursing measures suitable for a care plan in a patient who...
- Describe a clinical patient status illustrating a theory...
- (*Presents a case*). Identify three educational needs of the patient and suggest appropriate nurse reactions to the needs.
- (*Presents a case*). Discuss two potential complications. Identify three nursing interventions for the prevention of the respective complications.

ANALYSIS

- (*Presents a case*). Based on accumulated patient data, provide three nursing diagnoses. Specify the defining characteristic for each of the respective diagnoses.
- (*Presents a case*). Explain why the defining characteristics might have become manifest in the patient.
- (*Presents a case*). Identify three factors in patient history and explain their probable roles in the etiopathogenesis of the illness/status.

SYNTHESIS

- Design a care plan for a patient who...
- Suggest a situation that illustrates a(n)...style of leadership.
- Prepare an education plan for a patient who...
- (*Presents a scenario*). Suggest a plan of conflict resolution in the situation.
- Suggest a situation that illustrates an ethical dilemma and allows for multiple approaches to its solution.

EVALUATION

- (*Presents a case*). Describe how the nurse can establish whether the care plan involved was successful for the patient.
- (*Presents a case*). Evaluate each of suggested nursing decisions in the situation. Are there any other approaches you could take that appear equally or even more effective?
- (*Presents a case*). Identify an ethical dilemma in the case and discuss its management. Did the nurse chose an appropriate solution or would you recommend a different approach
- Identify five measures that can be incorporated in a care plan for a patient who... What evidence would you search for to evaluate the effectiveness of the former measures?
- (*Presents a case*). Identify three signs/manifestations in a patient that indicate the care plan has failed. What alternative approaches and/or solutions would you suggest?

6 Conclusion

Critical thinking skills are a major prerequisite for successful nursing practice. At present, critical thinking in nursing is oriented toward the acquisition of a relevant knowledge base, as well as toward problem solving, clinical judgment and decision making. Clinical judgment involves ethical dimensions, diagnostic and therapeutic dimensions, as well as evidence-based practice and research. Learning outcomes indicate appropriate learning objectives the students should accomplish and, concurrently, the strategies that are suitable for such accomplishments. The learning process itself has an importance sui generis, yet it is the learning outcomes and final competence that constitute the core of prospective nursing practice.

Learning environments in nursing are becoming increasingly complex. A creative approach is necessary along with facilitation of the acquisition of state-of-the-art knowledge and development of new skills. Assessment and measurement of learning outcome achievement in the area of critical thinking plays a major part in the process. Based on learning outcomes, educators should create appropriate educational paths to help students achieve sufficient levels of fitness for practice. Students, educators and nurses face new challenges as the ever-changing society of today is informing tertiary education and necessitating novel solutions.

References

- [1] S. Adam: Using Learning Outcomes: A consideration of the nature, role, application and implications for European education of employing learning outcomes at the local, national and international levels. Report on United Kingdom Bologna Seminar, 2004, Herriot-Watt University.
- [2] A. Gibbs, D. Kenedy, A. Vickers: Learning Outcomes, Degree Profiles, Tuning Project and Competences, Journal of the European Higher Education Area, 2012, No.1, www.ehea-journal.eu
- [3] A. Gibbs: Higher Education Reforms Key Features and Methodology 2012 [on –line] <http://www.slu.cz/fvp/cz/uo/projekty/inovace/materialy/docs/Higher%20Education%20Reforms%20Key%20Features%20and%20Methodology.pdf>
- [4] A. Gibbs: Handbook for the implementation of ECTS in the Nursing Programme at the Silesian University in Opava 2011 [on –line] <http://www.slu.cz/fvp/cz/uo/projekty/inovace/materialy/docs/Handbook%20for%20the%20implementation%20of%20ECTS%20in%20the%20Nursing%20Programme%20at%20the%20Silesian%20University%20in%20Opava.pdf>
- [5] R. W. Hartel, E. A. Foegeding: Learning: Objectives, Competencies, or Outcomes, Journal of Food Science Education, 2004, Vol. 3, p. 69–77.
- [6] M. E. McDonald: The Nurse Educator's Guide to Assessing Learning Outcomes. 2nd ed. Jones and Bartlett Publishers, 2007.
- [7] J. Nantl, P. Černíkovský: Q - RAM: National Qualifications Framework for Tertiary Education: Part 1 NATIONAL DESCRIPTORS, National Qualifications Framework for Tertiary Education: Part 2 SUBJECT AREAS, National Qualifications Framework for Tertiary Education: Part 3 EXPERIENCE AND RECOMMENDATIONS
- [8] OP VK projekt CZ.1.07/2.2.00/15.0178 named: Inovace studijního programu ošetrovatelství na Slezské univerzitě v Opavě. Available at: http://www.slu.cz/fvp/cz/uo/projekty/inovace/index_html
- [9] J. Ulfvarson, L. Oxelmark: Developing an assessment tool for intended learning outcomes in clinical practice for nursing students. Original Research Article, Nurse Education Today, 2012, Vol. 32, No. 6, p. 703-708.

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