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Group concept mapping for evaluation and development in nursing education

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ABSTRACT

The value of course evaluations has been debated since they frequently fail to capture the complexity of education and learning. Group Concept Mapping (GCM), a participant-centred mixed-method was explored as a tool for evaluation and development in nursing education and to better understand students' learning experiences, using data from a GCM-based evaluation of a research training assignment integrating clinical practice and research data collection within a Swedish university nursing program. Student nurses (n = 47) participated in a one-day GCM exercise. Focus group brainstorming regarding experiences from the assignment that the students considered important and instructive yielded 98 statements that were individually sorted based on their student-perceived relationships, and rated regarding their importance/instructiveness and need for development. Quantitative analysis of sort data produced a 2-dimensional map representing their conceptual relationships, and eight conceptual areas. Average cluster ratings were plotted relative to each other and provided a decision aid for development and planning by identifying areas (i.e., "Research methodology", "Patients' perspectives", and "Interviewer role") considered highly important/instructive and in high need for development. These experiences illustrate the use and potential of GCM as an interactive participant-centred approach to evaluation, planning and development in nursing and other higher health science educations.

1. Introduction

Evaluation of courses and teaching modules is standard in higher education and can be conducted for a range of purposes, e.g., teaching development and improvement, identification of student needs, and course or teacher qualities (Cronbach, 1963; Gravestock and Gregor-Greenleaf, 2008). Traditional evaluations typically target students as the prime source of anonymous input and include predefined open- and/or closed-ended questions, aiming to assess the structure and content of teaching, such as course literature and other materials, audio-visual presentations, and teacher effectiveness (Algozzine et al., 2004; Beran et al., 2007). However, it has been found difficult to assess the multidimensional nature of teaching (Abrami, 2001; Algozzine et al., 2004; Beran et al., 2007). In addition, evidence suggests that factors such as student mood and personality characteristics of the teacher may impact evaluations (Algozzine et al., 2004; Beran et al., 2007; Edström, 2008; Wright, 2006; Zumbach and Funke, 2014). Qualitative methods may overcome some difficulties and provide a deeper understanding regarding the complex interaction of different aspects (Harper and Kuh, 2007). However, such evaluations and analyses are relatively time consuming and may be difficult to implement in routine praxis.

This paper focuses on evaluation as a tool for teaching development and improvement. In such situations, a primary goal is to identify strengths, weaknesses and areas in need of development. This may be considered from a variety of perspectives of which that of the students is the focus here. As outlined above, such evaluations are complex in nature and neither traditional quantitative nor qualitative methodologies alone may be optimal. One approach that may be a potentially viable alternative is Group Concept Mapping (GCM), a mixed quantitative/qualitative methodology that has been successfully used for evaluation and planning in a

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range of contexts since the 1980s (Trochim, 1989) including higher education, e.g., to define learning outcomes (Stoyanov et al., 2013). Here we explore its usefulness in evaluating and developing a teaching module in nursing education.

2. Background

2.1. Integrating theory and practice

Integration of theory and practice in higher education has long been emphasized, for example through the implementation of strategies encouraging active students instead of passive receivers. Consequently, the development of research-based education has been promoted and considered important in higher education, and it has been argued that the practical values of theoretical concepts need to be introduced (The Boyer Commission on Educating Undergraduates in the Research University, 1998; Wrenn and Wrenn, 2009).

The gap between theory and practice in nurse education has been related to the dissemination of research findings (Kajermo et al., 2000), separation of theory and practice, and deficient collaboration between clinical practice and educational institutions (Corlett, 2000). Nursing students experienced difficulties to understand the meaning of research related education (Andersson and Edberg, 2012; Ax and Kincade, 2001), and requested more clinical training instead (Mattila and Eriksson, 2007). However, this view changed to a better understanding of the importance of research utilization and scientific methods when students had contributed in a clinical research project (Andersson and Edberg, 2012). By reflecting critically on how an assignment is accomplished, the learning processes and skills may be strengthened and a deeper knowledge and understanding may be promoted (Biggs, 2003; Pee et al., 2002).

In this paper, the pedagogical framework for integrating research into practice was based on Dewey's philosophy of pragmatic pedagogy and "theory of experience" (Dewey, 1938). Accordingly, education should provide students with the opportunity to actively test and experiment to obtain relevant knowledge that stimulate, broadens and deepens professional as well as personal development. Action and reflection are seen as one entity or in a dialectical relationship to one another (Dewey, 1938). The Experiential Learning Theory (ELT), derived from these theories, outlines learning as a process where knowledge is produced by grasping and transforming experience (Kolb, 1984). To further develop and enhance learning by experience, the concept of learning spaces was introduced to promote experiential learning in higher education (Kolb and Kolb, 2005). One approach that integrates research into health professional education is the Research, Education and Collaboration integrated in Nursing education (RECN) assignment, a teaching module integrated as an assignment during clinical training (Henoch et al., 2014; Westergren and Edfors, 2013; Westergren et al., 2013). Qualitative and quantitative evaluations of RECN have found that students perceived an improved understanding for research and development on both a personal (Westergren and Edfors, 2013) and a professional level (Westergren et al., 2013). The RECN concept has also inspired other universities in Sweden to implement the RECN-assignment (Henoch et al., 2014).

2.2. Research, Education and Collaboration integrated in nursing education (RECN)

The RECN-assignment was introduced in 2005 and comprises student participation in "simulated" or actual clinical research. The purpose is to invigorate the learning processes and enhance the understanding of research processes by providing hands-on experiences of how research can be conducted in practice. A further intent is to stimulate critical thinking and reflection, and to increase knowledge about structured clinical assessment tools and how these can be used to identify risks and assess patient needs and outcomes (Henoch et al., 2014; Westergren and Edfors, 2013; Westergren et al., 2013).

During hospital based clinical practice courses in the 2nd and last (6th) semester (i.e., years 1 and 3 of the nursing program) students participate in a real or "simulated" research project focusing on patient safety, needs and/or outcomes assessment. Learning outcomes include being able to assess health aspects and risks, suggest relevant interventions, and argue for the role of research to improve nursing care (semester 2), and being able to participate in research and developmental projects, supervise students and staff, critically reflect on nursing interventions and propose evidence-based improvements (semester 6). Each student is assigned to prepare data collection (based on a given protocol), inform staff and patients, and to collect data from about 10 patients by means of standardized and validated assessment tools during one day. Data collection typically includes observations, structured interviews, and patient self-reports. Students then analyse, interpret and reflect on their results, report them to the staff and propose means to improve quality of care. Typically, at least two students at each unit collaborate on the assignment. If applicable, semester 6 students also take the role as supervisors for semester 2 students. In preparation for the RECN-assignment, students receive written and oral information about the assignment. They are also provided with information letters for unit managers and patients, respectively. Patients receive written and oral information by the students; informed consent and absence of dementia is required for participation (Westergren and Edfors, 2013; Westergren et al., 2013).

2.3. Group Concept Mapping (GCM)

GCM is a mixed qualitative and quantitative method that aims to facilitate the understanding of complex phenomena, reveal their structures, and discover new meaning (Kane and Trochim, 2007; Trochim, 1989). The methodology comprises generation of ideas (statements/items) through focus group brainstorming guided by a study-specific prompt, followed by conceptual sorting and importance rating of generated statements (alternative and additional ratings may be used). Sort data are then analysed quantitatively to map out relationships among individual statements, and cluster analysis is used to identify clusters of statements representing common aspects of the studied area. Finally, the map and its clusters are interpreted qualitatively together with rating data as a means to aid their use in, e.g., evaluation, planning and development.

2.4. Objectives

The main objective was to explore GCM as a tool for evaluation and development within nursing education. A secondary aim was to gain an understanding of students' perspectives of learning experiences from a clinical research assignment during their clinical training. This is illustrated by data from a student-based GCM evaluation of the RECN-assignment.

3. Methods

The study was approved by the local Head of the nursing program and was conducted in accordance with the Declaration of Helsinki of 1964 (amended 2013) (World Medical Association,