LEARNING THROUGH STRUCTURED PEER DISCUSSION: AN OBSERVATIONAL STUDY

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Abstract

Background: Clinical experiences are an essential foundation of nursing education. While there have been many significant investigations into models of clinical education and student learning, how students 'make sense' of their experiences is less well investigated. Senior nursing staff in a tertiary health service partnered with nurse researchers to explore how students can learn more about practice through structured discussions with peers to promote shared understandings.

Objectives: The study aimed to evaluate the contributions to student learning from structured peer discussions about patient care.

Design: Exploratory observational study of the effects of learning circle discussions on individual understanding of patient care.

Setting: A metropolitan health service in southeast Queensland, Australia.

Participants: 72 Bachelor of Nursing students in Years 2 and 3.

Methods: Students developed concept maps about patient care prior to peer discussions, and subsequently added further concepts (in another colour of text) after those discussions. Researchers' review of student generated concept maps and coded concepts indicated a five *a priori* ways of knowing categories: empirical, aesthetic, ethical, personal and socio-political. Descriptive analysis of categories was then conducted.

Results: Empirical knowing was high in both groups, with more concepts included in Year 3 student maps. Aesthetic knowing was relatively high in both groups. Socio-political knowing was lower than anticipated overall. Personal and ethical forms of knowing were rarely included on the concept maps.

Conclusions: While clinical placement is valued for developing empirical and aesthetic forms of knowing, the other forms of knowing have value for patient and family care and warrant strategies to improve their further development. Developing strategies to support student learning of ethical and personal forms of knowing deserves further investigation.

Key words
Patterns of knowing; intersubjective learning; learning circles, concept map

INTRODUCTION

Clinical experiences are acknowledged internationally as being an essential foundation for nursing education. While there have been many kinds of investigations into models of clinical education and student learning through them, understanding how to assist students to 'make sense' of their clinical experiences is less well researched and understood. More importantly, how students develop **sustainable learning practices** to 'make sense' of their experiences is under researched. This study posits that learning from practice is enhanced through intersubjectivity - "the shared understanding of meaning by two or more persons either directly in relationship or over distance or time through language" (Cody, 1995, p.52). Such shared understanding is important for coherence in patient care by healthcare workers. As such, we propose that discussions with peers who hold different perspectives can create new and deeper understandings of practice for nursing students.

Intersubjectivity has been investigated in relation to the nurse-patient relationship in Australia (Aranda & Street 1999), students and infants in Brazil (Refrande et al., 2016), how work in healthcare is practiced in Brazil (Carvalho et al., 2012) and in health care practice more generally (Kinsella, 2005). Nursing work requires the capacity to work collaboratively intra and inter-professionally, thereby requiring processes to develop shared understanding amongst healthcare team members, as well as patients and their families. How nursing students develop the capacities to secure intersubjectivity is less well-established or understood.

Educational interventions, such as intentionally structured discussions about practice, require an active process of engagement, through which personal perspectives are shared, openly discussed and debated to achieve resolution and new learning. This is particularly important in light of a recent systematic review that found newly qualified nurses tended to adopt a passive, rather than active, pattern of engagement (Pfaff et al., 2014). Passive

engagement is a barrier for effective collaboration (Pfaff et al., 2014) and hence, developing shared understanding. Earlier studies suggest that intersubjectivity can be learned and promoted when learners articulate, share, appraise and elaborate shared disciplinary and person-professional positions, values and procedures (Billett, 2014). To promote ongoing collaborative conversations about practice that can enhance learning, senior nursing staff in one tertiary health service partnered with researchers to explore how student nurses can through facilitated discussions with peers learn more about practice and generate intersubjectivity.

BACKGROUND/LITERATURE

Nurse education is focused on producing competent nurses, with competence operationally defined in nursing standards (Australian Nursing & Midwifery Council 2012; European Federation of Nurses Associations 2015; American Nurses Association 2015). Although each national association has developed recommendations and/or standards for nursing education, how students should best learn to be competent nurses is not prescribed and remains a subject for research and development. In a landmark study into nursing education in the United States, Benner and colleagues (2008), proposed three 'apprenticeships' required for professional education that are best taught in fully integrated ways. The apprenticeships include cognitive knowledge, practice know-how and ethical comportment and formation. Yet, this focus on developing individuals as nurses may overlook that nursing competence is a shared enterprise. Not the least here is how these students can learn from and reconcile their experiences in diverse clinical placements, for instance. The range of learning environments experienced by nursing students are diverse, including university driven on-line provisions, nursing laboratories, classrooms and experiences in acute and subacute settings, residential aged care and community services

(Smith et al., 2018). Reconciling what is learned from the clinical areas with what is learned in the higher education setting continues to present pedagogical challenges. However, students seek value in their learning by interacting with other students, who are often in similar situations (Smith et al., 2018).

When learners have opportunities to articulate, share, appraise and elaborate shared disciplinary and person-professional positions, values and procedures with others, their understanding of their discipline can be enriched (Billett, 2014). However, in contemporary health care settings, opportunities for sharing perspectives are limited by the temporary, fleeting and partial everyday healthcare collaborations between nurses, patients, families, doctors and allied health professionals. Opportunities for students to genuinely engage with other students in discussions about practice need to be organised and structured to achieve the optimum outcomes.

Rather than see intersubjectivity as a complete endpoint of shared understandings, Billett (2014) suggests that intersubjectivity is "an ongoing process, through which similarities, commonalities and distinctive concepts of knowing and knowledge can be made accessible, shared and comprehended" (p. 207). The development of intersubjectivity is an interdependent process through which individuals construct new understandings by interacting with others (Billett, 2014). As a skill, developing intersubjectivity requires practice in order to be developed and refined. Post-clinical conferences, meetings of nursing students and facilitators, held to discuss learning on clinical placements, provide opportunities for students to develop intersubjectivity through dialogue with their peers.

Providing a formal structure for post-clinical conferences, with an emphasis on developing shared understandings, may enhance students' intersubjectivity. The learning circle is a structured, evidence-based pedagogic intervention commonly used in work-based learning (Hiebert, 1996; Sims et al., 2015; Walker et al., 2013) and its usefulness lies in its

ability to value and promote participants' diverse views (Hiebert, 1996). Learning circles have been found to lead to participants generating new perspectives and ideas about practice (Walker et al., 2011) and enabling frank disclosure (Walker et al., 2013). Through engagement in structured discussions with peers, participants can construct new meanings for their personal practices, which can lead to increased clinical competence (Tai et al., 2016; Stone et al., 2013).

While many studies of clinically-based learning meetings have focused on student perceptions of their experiences, there is little evidence about the effect of these discussions on students' construction of meaning for their own work. This practical inquiry aimed to describe the learning experienced by students who participated in structured learning circle activities.

METHODS

Design

In this observational study, students' hand-drawn maps were used to record concepts (i.e. concept maps) selected by participants as relevant to their individual practice situation. Concept maps are useful for comparing individual 'mental models', including facts and processes, and can reflect the person's beliefs and values about a topic (Sturgiss et al., 2019). We assumed that these student-generated concepts reflected their individual understanding of practice both before and after peer discussions in structured learning circles. Through these discussions, multiple forms of knowing come together to arrive at a mutually constructed understanding (Pierson, 1999), in this case an understanding of nursing care for patients. For this study, the patterns of knowing in nursing framework was adopted (Carper, 1978), with five patterns of knowing (White, 1995) used to group the student-generated concepts: empirical, ethical, aesthetic, personal, and socio-political.

Empirical knowing is the scientific basis for nursing, theories and general laws that can predict phenomena of special concern in nursing, with empirical indicators subject to direct observation (Carper, 1978). Ethical knowing is focused on matters of obligation or what ought to be done (Carper, 1978), and is closely aligned with personal knowing (White, 1995), where engagement in a caring disposition is required because nurses are required to strive to know oneself in relation to another human being (Carper, 1978). Aesthetics is the art of nursing (Carper, 1978), is context specific and non-transferable and emerges through experience (White, 1995). Socio-political knowing lifts the gaze of the nurse from the nurse-patient relationship to the context within which nursing and healthcare take place (White, 1995).

Intervention

Learning circles were identified as a strategy to increase the capacities of nursing students' critical appraisal of practice (Hiebert, 1996). The method draws upon the tradition of sharing 'ward' stories and is based on natural patterns of human interaction (Hiebert, 1996). Cooperation without competition in groups is recognised as promoting interpersonal attraction and thereby willingness to discuss and learn about others' perspectives (Johnson et al., 1983). In this study, learning circles can promote cooperation and skill development for cultivating proactive partnerships through facilitated group interaction (Walker et al., 2011). The learning circle is a structured process to enable participants to engage in critical examination and reflection on practices to promote individual growth and change (Walker et al., 2013).

The learning circles were led by clinical facilitators who provide supervision to nursing students on placement. Clinical facilitators attended a 2.5 hour training session on the conduct of learning circles. The training session included: definition and descriptions of the learning circle, concept maps, and intersubjectivity; skills for letting the students lead the

discussion (and when to intervene); and participation in a practice learning circle on the topic of student learning, where the clinical facilitators were in the student role and the researcher was in the facilitator role. A member of the research team attended the first learning circle to provide feedback on the pedagogical method. Students from one program year level (second or third year) attended one learning circle of between 45-50 minutes duration, facilitated by a clinical facilitator known to them. Students were undertaking placements in geographically diverse ward areas, so bringing experiences from a range of practices that were rarely known to each student.

Setting and participants

The study was conducted in a tertiary health service in southeast Queensland Australia between April and June 2017. A convenience sample of Bachelor of Nursing students in the second and third year of that course and who were on placement from one of two universities participated in the study. Students were recruited by the clinical facilitators, who provided information about the study at the first orientation session. The times for learning circles were distributed to students and those who attended provided informed consent at the beginning of the learning circle for data to be gathered about the processes and outcomes of these interactions.

Data collection

The 'products' of learning circle discussion – how the discussion enhanced students' knowledge in terms of their understanding of their individual nursing care work, and to secure some commonality in understanding (i.e. intersubjectivity) about that work, was a key focus for this inquiry. To assess their learning, we invited students to draw or map their ideas about a specific clinical situation onto a sheet of A4 sized paper (210 x 297 mm). These papers were called concept maps, which are a representation of meaning specific to a domain of knowledge and can be used to characterize all domains of knowledge (Novak, 1990). In a

specific social setting, such as a health care facility, there is a need for shared understanding in the conduct of work practice, including what is communicated and how. This context also provides a circumstance in which students can discuss concepts and through that generate common meanings for individual concepts that can be communicated using language (Novak, 1990). As such, concept maps are an important tool for students to articulate and record their understanding of meanings within a specific situation and then share, compare and contrast these with others.

Students prepared a concept map describing a specific clinical encounter before they began the learning circle discussion. The initial map was drawn using a blue or black ink pen. Following discussions in their learning circle, students were invited to make additions to their maps, based on what they had learned during the discussion and these additions were recorded in red ink. The maps were then photographed using mobile phone technology and stored for later analysis.

Data analysis

An interpretive approach guided *a priori* by the patterns of knowing (Carper 1978; White 1995) was used for data analysis. Two researchers reviewed the maps independently following two steps. Firstly, they judged whether the concepts were relevant to nursing care for a specific patient. Both researchers are experienced registered nurses and drew upon their personal experiences to make these judgements. Secondly, the concepts on each map were classified as one of the five patterns of knowing. The concepts recorded before the discussion (i.e. blue or black ink) and the concepts recorded after the discussion (red ink) were counted separately and entered into an Excel® spreadsheet. The totals for each category were averaged for each pattern of knowing for each learning circle group. While this quasi-experimental method is still novel, the use of the disciplinary frame of patterns of knowing in

nursing provided a solid and substantive logic to support these techniques, this is consistent with the definition of interpretive qualitative research (Thorne, 2008).

Ethical considerations

The practical enquiry was approved by hospital and university ethical review committees prior to conduct. Attendance at the learning circle activity was an optional addition to the clinical practicum and was included within recorded clinical hours. Participation (or not) in the learning circles did not influence the students' final grade and these two processes were kept wholly separate. Maps were non-identifiable beyond group characteristics, that is, year level and group discussion topic and all data were stored in password protected files.

DATA/RESULTS

Eighteen learning circles were conducted. The data from six of these were excluded on the grounds that the learning circle procedure was not followed (all students instructed to map the same topic, n=3), subsequent discussion was evidently instructor, rather than student, led (all students added identical concepts to the map post-discussion, n=2), or student maps and discussion were focused on a professional rather than a clinical matter (abuse towards nurses, n=1).

From the remaining 12 learning circles, 94 maps were completed but only 72 were included (77%). Individual maps were excluded when there was no evidence of clinical event (for example a theoretical response only, n=4), inadequate information was provided (n=4), or the focus was on a procedure rather than a person (n=9) or on a professional rather than a clinical issue (n=5).

For each student group, the average number of concepts listed in the concept maps before and after the learning circle discussion were recorded (See Table 1). A sample map is

provided (Figure 1). The topics that resulted in the highest additional (post-discussion) topics were post-surgical patient with drains (empirical=2.3; aesthetic=2.8), patient falling (socio-political=2.6), persons with chronic airways disease (empirical 8.3; aesthetic=3.8); heroin overdose (aesthetic=2.2), and care of the person who is aggressive (aesthetic=3.7).

[Insert Figure 1 here]

[Insert Table 1 here]

The average number of concepts in the categories of empirical and aesthetic patterns of knowing were consistently higher across all groups. The empirical concepts were predominated by those related to medical care such as pathophysiology, medications and treatments. The aesthetic concepts were often related to tasks, most commonly physical or psychological assessment. However, the number of concepts in the personal, ethical and socio-political patterns of knowing were consistently lower across groups. The average number of concepts generated per category were then calculated before and after the learning circle discussion and grouped by year of program (see Figure 2). When considered by year group, the students in third year listed more concepts in the empirical and socio-political pattern than second year students. Given that the concept maps consistently included a patient, the low frequency of concepts in the personal and ethical patterns is noteworthy.

[Insert Figure 2 here]

DISCUSSION

The concept map analysis revealed that the empirical pattern of knowing, particularly medical concepts, was the most dominant and this was higher in third year students than second year students. Through discussion, students commonly added concepts that reflected aesthetic patterns of knowing, with very few concepts reflecting personal or ethical forms of knowing. Several map groups were excluded, reflecting a possible challenge for clinical facilitators to step back from their role of teacher to one of facilitator. These findings raise important issues for the field of clinical education.

The focuses of the student concept maps, namely the dominance of medical (empirical) concepts, raised questions about curriculum. The students were undertaking a bachelor's program with full accreditation from the national professional nursing accreditation body (Australian Nursing & Midwifery Accreditation Council, 2012). The curriculum is well balanced with nursing practice constituting around 60%, bioscience around 15%, and 25% dedicated to law and ethics, research, psychology and communication. But some researchers suggest that a hidden curriculum exists, where unspoken or implicit values or norms exist in the educational setting (Alsubaie, 2015; Rabow, 2015; Day & Benner, 2015).

The hidden curriculum has been associated with the development of a professional identity that is enacted within a social context (Cardell & Bialocerkowski, 2019). In health, the hidden curriculum is effectively transferred through role models and peers, and observation of ritual events, and serves as a primary source of ethics training (Rabow, 2015). Students learn to navigate and reconcile the separate worlds of the university and the health setting and they use their personal beliefs to identify, engage in, and acknowledge valued learning (Smith et al., 2019). The students participating in this study appear to have learnt the importance of empirical medical knowing. Therefore, the lack of inclusion of concepts from the personal and ethical patterns may be attributed more to what students perceive as valued

in the exercise than what is actually practised in the field. Further research into the hidden curriculum in nursing is required to elaborate this specific process.

Aesthetic knowing emerged as the second most common form of knowing represented in students' concept maps. Students valued the skills required to provide care to patients and could identify specific skills required in their selected cases. The skills were similar to a task list, consistent with how nurses might think about their work. Student discussions commonly led to additional aesthetic knowing concepts on their maps, indicating that this form of knowing can be shared through dialogue as well as participation in practice. While the concepts related to the aesthetics of nursing were identified, the actual aesthetic – how practice is enacted – was not assessed. Other strategies to help students conceptualise the importance of how practice is enacted may be required to ensure this type of knowing is developed (see later example).

There were very few concepts on the students' maps that were categorised as personal or ethical knowing. Further, following the learning circle discussions, students did not make many additions to their conceptual maps in the areas of personal, ethical or socio-political knowing. This finding affirms concerns about ethical comportment (Benner et al., 2008), suggesting that ethical comportment, and specifically the need for a critical voice designed to protect patients' rights, may not be as well developed for nursing students. Person-focused practitioners meet the patient as a person, preserve the dignity and personhood of patients, respond to substandard practice, and learn to be present with patient and family suffering (Benner et al., 2008). One strategy to address personal, ethical, and socio-political knowing may be to change the directions for what should be included on the concept map.

For example, educators in one program sought a broader description of nursing knowledge through a reflective journal but found that the students persisted in submitting objective assessment data (Kidd & Tusaie, 2004). The educators had to amend the

assignment and ask students to write a poem about their experience or to write about the client's view of an experience (Kidd & Tusaie, 2004). Securing students' response that incorporates more of their personal and ethical knowing using the learning circle method, students might be invited to discuss a clinical event from the patient or family's perspective, identifying how their nursing actions would be perceived.

While clinical facilitators were trained in the learning circle method, several reverted to their usual facilitator-led discussion rather than supporting student-led discussion. We suggest that there is a place for both types of facilitation but for students to actively learn how to learn from discussions with peers, facilitation should be limited to correcting blatant errors in logic or fact. To adopt a change like this, facilitators would require more than one follow-up expert visit, and may require coaching or opportunities to appraise the procedures they adopted. Extending the training to include an emphasis on the role of facilitation as staying neutral, resolving differences, encouraging, reinforcing, suggesting and providing feedback is essential to respond to range of possibilities and options that arise.

The learning circles were conducted once for each group of students. While some students may have attended more than one learning circle, the groups did not meet consistently over time. The original learning circle model (Hiebert, 1996) suggests that students meet on a regular basis and take turns leading the session. The aim of the learning circles was to provide opportunities for students to share their ideas and learn from others through the intersubjective process of discussion. Perhaps not knowing the other students limited student confidence to share their personal knowing. Relationships grow over time, and how much we share of ourselves changes in respect of the relationship (Aranda & Street, 1999; Muth, 2009). How regularly learning circles should be conducted and whether the learning circle could be held in the university or online bears further investigation.

Limitations

The researchers on this study adapted two techniques. As discussed earlier, the learning circle technique was designed to be delivered several times with the same group (Hiebert, 1996) and has been used in this way in nursing (Walker et al., 2013). In the Hiebert (1996) example, the group started the discussions with a concept rather than with practice. In this study, like Walker and colleagues (2013), commenced with practice. These two adaptations may have limited the opportunity to discuss personal or ethical knowing. Further testing of this adaptation is recommended before widespread use is recommended.

The second adapted technique was the concept maps as a novel way to assess student learning. Several concept maps were excluded due to lack of focus on a patient case so improving the instructions for concept mapping to focus on the patient, and possibly the patient's perspective on the situation, may increase the concepts in the patterns of ethical, personal and socio-political knowing. This study proposed a relatively new use of concept mapping methods, which bears further development and evaluation in relation to learning.

Finally, the conceptual framework that was adopted did not include the latest inclusion in ways of knowing, that of 'unknowing' (Averill & Clements, 2007). The use of 'unknowing' as a category in future work should be explored.

CONCLUSIONS

Consistent with previous work, we found that the learning circle pedagogy can generate learning through discussion, including the promotion of shared understanding. However, the forms of learning were limited to empirical, and mostly medical, and aesthetic patterns of knowing. With this limitation in mind, it is suggested that learning circles should be used judiciously, as part of a suite of work-based strategies to support student learning.

Academics' awareness of the hidden curriculum is critical to the selection of educational strategies that can promote student learning in ethical deportment. One area for

further investigation is to evaluate the conduct of several learning circles with the same students over time. Intersubjectivity develops over time and familiarity within the group may promote discussion of more personal concerns, which have ethical importance.

Finally, the role of clinical facilitator requires much more elaboration so it can be effectively enacted. Current models of promoting clinicians into clinical facilitator roles with little training and support may be limiting the rich opportunities for learning offered to students in the clinical setting.

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Table 1. Mapped concepts categorized by ways of knowing

| Year	Discussion topic (n=72 students)		Average number of concepts by category				
			Empirical	Personal	Ethical	Aesthetic	Sociopolitical
2	Communication with a patient unable to speak (n=7)	Pre	1	1	0.1	2.6	0.5
		Post	0.3	0.3	0.7	2.1	0.3
2	Nursing care of the agitated patient (n=7)	Pre	2.9	0.9	0.6	4.3	0.6
		Post	0.3	0.6	0.4	0.9	0.1
2	Behaviours of the patient (n=9)	Pre	3.7	0.8	0.4	2.9	0.4
		Post	1.1	2.7	0.4	1.3	0.9
2	Difficult conversation (n=4)	Pre	3	0.3	0	3.3	0
		Post	0	0.5	0.3	3.3	0
2	Post-surgical patient with drains (n=4)	Pre	5.8	2.3	0	3.8	0.5
		Post	2.3	0	0.5	2.8	1
2	Patient falling (n=5)	Pre	2	1.6	0.2	3.2	0.2
		Post	2	0.4	0.4	1.2	2.6
2	Person with chronic airways disease (n=4)	Pre	3.3	0	0	2	0
		Post	8.3	0	0	3.8	2
2	Heroin overdose (n=6)	Pre	6.5	0.8	0.3	0.8	1.2
		Post	2.3	0.3	0	2.2	1.7
2	Medical emergency team response (n=8)	Pre	1.8	0.4	0.3	3.5	0.8
		Post	0.8	0	0.5	1.4	0.3
3	Care of the person receiving analgesia (n=2)	Pre	4	1	0	0.5	3.5
		Post	4	0	0	2	0.5
3	Death by pulmonary embolism (n=8)	Pre	4.3	0.5	0.1	2.9	0.3
		Post	3.9	0.5	0.3	1.7	0
3	Care of the person who is aggressive (n-8)	Pre	4.9	1.8	0.6	3.1	1.4
		Post	4	0.9	0.1	3.7	0.9

Figure 1. Example concept map
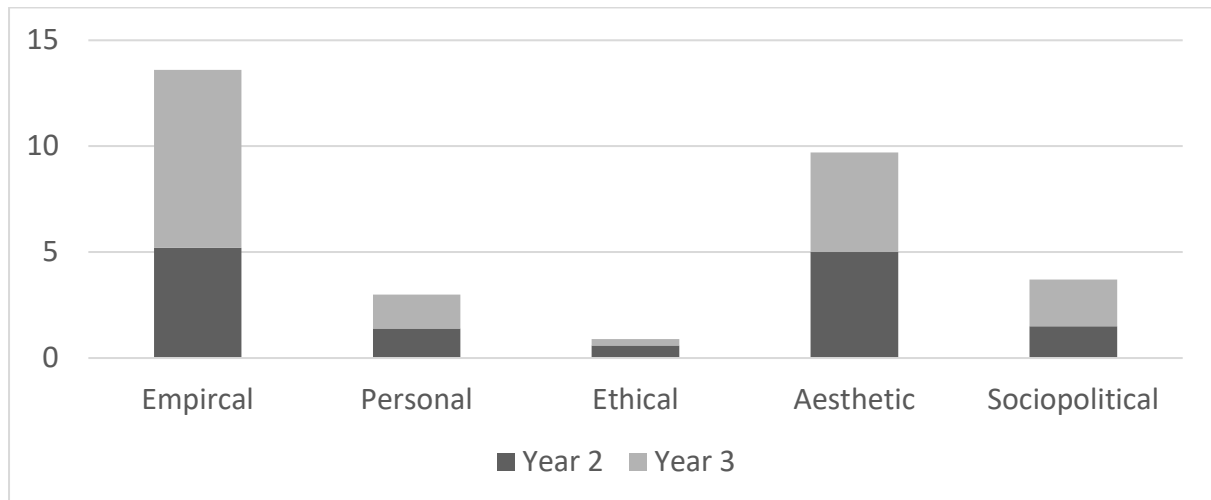
Figure 2. Average final number of concepts grouped by ways of knowing for two year groups