A prospective cohort study examining the preferred learning styles of acute care registered nurses

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ABSTRACT

Objectives: This paper reports on the preferred learning styles of Registered Nurses practicing in acute care environments and relationships between gender, age, post-graduate experience and the identified preferred learning styles.
Methods: A prospective cohort study design was used. Participants completed a demographic questionnaire and the Felder-Silverman Index of Learning Styles (ILS) questionnaire to determine preferred learning styles.
Results: Most of the Registered Nurse participants were balanced across the Active-Reflective ($n = 77$, 54%), and Sequential-Global ($n = 96$, 68%) scales. Across the other scales, sensing ($n = 97$, 68%) and visual ($n = 76$, 53%) were the most common preferred learning style. There were only a small proportion who had a preferred learning style of reflective ($n = 21$, 15%), intuitive ($n = 5$, 4%), verbal ($n = 11$, 8%) or global learning ($n = 15$, 11%). Results indicated that gender, age and years since undergraduate education were not related to the identified preferred learning styles.
Conclusions: The identification of Registered Nurses' learning style provides information that nurse educators and others can use to make informed choices about modification, development and strengthening of professional hospital-based educational programs. The use of the Index of Learning Styles questionnaire and its ability to identify 'balanced' learning style preferences may potentially yield additional preferred learning style information for other health-related disciplines.

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Introduction

Front line healthcare providers in acute care settings must maintain an understanding of evidence-based practices and advances in healthcare delivery (Dyson et al., 2009; Ibrahim and Mahran, 2010). The majority of these providers are Registered Nurses (RNs) who participate in continuing education to meet the demands of their role (Wood, 2006). In previous research continuing education is cited as being a key determinant of high quality patient care delivery (Ibrahim and Mahran, 2010) and can consequently impact patient outcomes and healthcare costs.

Despite the need for RN continuing education, there are several barriers to their participation in hospital-based education including, but not limited to, competing demands for time and effort, difficulty obtaining education outside of the clinical arena, and the financial burden of providing education for healthcare services (Brown et al., 2009; Meyer et al., 2007). These issues span international clinical settings, highlighting the need for the most effective methods to be in place when developing and implementing education for RNs and other health disciplines across the globe. In this paper hospital-based education or hospital-based continuing education refers to activities aimed at improving clinical knowledge or performance, whether the activities are done for staff development or for contact hour credits.

Matching teaching activities with learning styles is one method that may address identified learning barriers. Research demonstrates that learning is more effective if education is provided in a way that suits individuals' learning style (Chai, 2006; Jen-Hwa Hu

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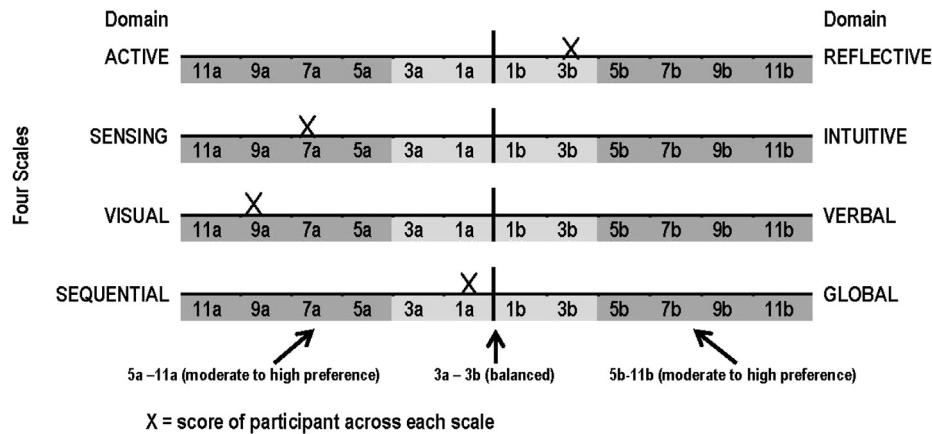
Fig. 1. Scoring example, across two domains for each of the four scales of the Felder-Silverman Learning Style Questionnaire. Adapted from Felder, R.M., and Soloman, B.A. (n.d.)

et al., 2007). Therefore, an understanding of RNs' learning style is important so that time efficient and cost effective hospital-based educational models are developed in a way that will ensure better information comprehension and meet RNs' needs.

Learning styles are individual preferences for taking on new skills and knowledge, and processing information (Felder and Spurlin, 2005; Palermo et al., 2009). There has been an extensive exploration of the learning styles of undergraduate nursing students (Smith, 2010). Others have investigated the learning styles of RNs enrolled in post-graduate education, including midwifery and master's level programs (James et al., 2011; Smith, 2010). A noticeable gap in the literature is studies exploring practicing acute care Registered Nurses' preferred learning styles. In addition to this gap little is known about the impact of gender, age and years since completion of undergraduate education on these RN learning style preferences (James et al., 2011). Some research suggests that learning styles may differ across gender and age, while others have found no clear difference (Molsbee, 2011; Seiler, 2011; Ward, 2009).

Ongoing education is a mandatory requirement of national nursing registration, within Australia, and therefore a crucially important element of RNs practice (Australian Health Practitioner Regulation Agency, 2011). In support of this requirement and the need to ensure competency of healthcare staff, hospitals offer ongoing education sometimes referred to as "staff development" (Ibrahim and Mahran, 2010). An understanding of RNs learning styles may benefit hospital-based educators as it can provide guidance to education program development that suits RNs' requirements and consequently improve knowledge uptake. In turn, this knowledge uptake may improve practice and influence safe patient outcomes (Sayers, 2012). The purpose of this paper is to report on the learning styles of RNs working in acute healthcare facilities in Australia. It will answer the following questions:

1. What are the preferred learning styles of acute care Registered Nurses?
2. Is there a relationship between gender, age, and years since post-graduate education with learning style preferences of acute care Registered Nurses?

Methods

A prospective cohort study design was used to explore the learning styles of RNs working within acute care hospital environments.

Participants

The study was undertaken in three acute care hospitals in South-East Queensland, Australia. The RN volunteer participants were recruited over six months via study information sessions held in each facility. An estimated total of 1250 RNs were employed in these acute care facilities during study recruitment. Because of shift work, including night duty, not all RNs were able to attend the study information sessions. Of all RN staff approximately 16% (205) attended the sessions and 175 (85% response rate) agreed to participate. Of these, 142 RNs completed the questionnaires and were included in the final analysis. The RNs were employed in a variety of clinical settings including surgical, medical, orthopedic, critical care and emergency departments.

Instruments

All RNs completed a participant demographic questionnaire and the Felder-Silverman Index of Learning Styles (ILS) questionnaire to determine preferred learning styles. Previous nursing research has utilized a variety of learning style instruments such as the Honey and Mumford's Learning Styles Inventory, Myers-Briggs Type Indicator (Chinese version), Kolb Learning Style Inventory and the ILS to understand preferred learning styles of nurses (Astin et al., 2006; D'Amore et al., 2012; Fleming et al., 2011; Li et al., 2008; Rassool and Rawaf, 2008; Smith, 2010). This study chose the ILS.

Although not used extensively in nursing research, the ILS tool was chosen for several reasons, including: it can be easily self-administered; there is no cost for use; its extensive use in other professions and its acceptable reliability using Cronbach's coefficient alpha across the four scales ($\alpha = .55-.77$) (Cook, 2005; Cook and Smith, 2006; Litzinger et al., 2007). However, the major reason for selecting this tool was its ability to allow learners to be balanced across learning style domains or have a moderate to strong preference for one domain. Identification of no strong preference for specific learning style (balanced) provides additional relevant information for hospital-based education. For example, when there is no strong preference for a particular learning style domain educators have added flexibility in the creation and implementation of educational programs as they can use varied formats whilst still meeting the needs of the students.

The ILS was originally developed to deliver some insights into teaching and learning in engineering education and was based on Kolb's theory of experimental learning (Felder and Silverman, 1988; Hsieh et al., 2011). It is used in other disciplines such as education, medicine and science (Arora et al., 2011; Cook et al., 2007; Hsieh et al., 2011; Palou, 2006; Sabry and Baldwin, 2003; Zhang and