



## Original research

## Learning style preferences of Australian accelerated postgraduate pre-registration nursing students: A cross-sectional survey

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## ARTICLE INFO

## Keywords:

Learning styles  
 Experiential learning  
 Kolb Learning Style Inventory  
 VARK model  
 Master of Nursing Practice students

## ABSTRACT

Graduate entry programs leading to registration are gaining momentum in nursing. These programs attract student cohorts with professional, cultural, gender and age diversity. As a consequence of this diversity, such accelerated programs challenge traditional pedagogical methods used in nursing and require different approaches. To date, however, there has been limited research on the learning styles of students undertaking these programs to inform academics involved in their delivery. Kolb's Experiential Learning model has been used widely in a variety of educational settings because it is based on the theory of experiential learning. More recently VARK (Visual, Aural, Read/write and Kinaesthetic) model has become popular. The aim of this study was to investigate the learning styles of two cohorts of graduate entry nursing students undertaking an accelerated masters-level program. This was a cross-sectional survey of two cohorts of Master of Nursing Practice students enrolled at a large Australian university. The students were more inclined toward converging (practical) and least toward concrete experience (experiencing) learning styles. The majority of students were more inclined toward kinaesthetic and least toward aural learning style. Findings have implications for academics engaged in teaching graduate entry nursing students.

## 1. Introduction

Accelerated nursing programs provide fast-tracked pathways to nursing practice for graduates from disciplines other than nursing. Such programs are relatively new in Australia but in the United States of America, they have been offered for over thirty years (Aktan et al., 2009). The programs attract different students to those in traditional nursing cohorts such as more males, previously highly educated, along with very broad disciplinary and cultural diversity (McKenna and Vanderheide, 2012; McKenna et al., 2016). Furthermore, accelerated students have been shown to perform significantly better than traditional students in class test scores, laboratory skills and final course grades (Korvick et al., 2008).

Given the very different and diverse nature of these students, it is important to understand the ways in which they best learn in order to ensure pedagogical approaches are appropriate and effective. However, there has been a paucity of studies exploring the learning styles of graduate nursing students. One of the most widely used models of learning styles is Kolb's model of experiential learning (Kolb, 1984). Recently, the VARK model has become popular. VARK is an acronym for the four main sensory modalities used to experience new

information: Visual, Aural, Read/write and Kinaesthetic (Fleming, 1995). The aim of this study was to determine the learning style preferences of accelerated postgraduate nursing students using the Kolb's Learning Style Inventory, K-LSI 3.1 (Kolb and Kolb, 2005) and the VARK (Fleming, 2014).

## 2. Background

Learning styles refer to the way in which individuals approach learning situations to process information (Cassidy, 2004; Zoghi et al., 2010). Association between learning styles and learning achievement outcomes remains contentious (Norman, 2009); however, it has been generally accepted that individuals' learning styles have an impact on their performance and achievement of learning outcomes (Cassidy, 2004). Manolis et al. (2013) pointed out that educators need to know the learning styles of students so that they can tailor their teaching style and pedagogy to optimise student learning. This is consistent with the view of (Fletcher et al. 2008 p.383), who stated that "an understanding of the preferred learning style of an individual provides an insight into the teaching methods that are likely to be effective for that individual." However, it is also recognised that learning styles are not fixed (Turesky

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and Gallagher, 2011).

There has been a large body of research on learning style models, with a systematic review identifying 71 different models (Coffield et al., 2004). In an attempt to reduce the confusion regarding learning style constructs, Curry (1983) used the 'onion ring model' to describe the learning style framework. This model is based on a hypothetical onion, with each layer representing an aspect of learning style preference. The innermost layer represents cognitive personality style, or the individual's approach to assimilating information, and is considered the most stable dimension of learning. The middle layer is the individual's information processing style, and explores the intellectual approach to information assimilation. The outermost layer considers instructional preference, or the choice of learning environment. This layer is the most easily influenced and least stable aspect of learning style preference. A fourth layer termed social interaction was later included, which describes an individual's preference for social interaction during learning.

One of the most widely used models of learning styles is Kolb's model of experiential learning (Kolb, 1984), which falls into the middle layer of Curry's 'onion ring model'. According to Kolb, learning is "the process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping experience and transforming it" (Kolb, 1984 p.41). Kolb (1984) developed a model that describes four modes of learning: (1) concrete experience (CE; feeling), which favours experiential learning; (2) reflective observation (RO; watching), where extensive consideration is given to the task before action is taken; (3) abstract conceptualisation (AC; thinking), where there is a preference for conceptual and analytical thinking in order to achieve understanding; and (4) active experimentation (AE; doing), where there is a preference for testing and learning through trial and error.

From the combination of these learning modes, Kolb (1984) identified four learning styles that are associated with different approaches to learning - diverging, assimilating, converging, and accommodating. Divergers (CE and RO) are individuals who tend to consider situations from different perspectives. They are imaginative and emotional, interested in people, and have broad cultural interests (Kolb and Kolb, 2005). Assimilators (RO and AC) are individuals who are competent at creating theoretical ideas. These individuals are less focused on people and more interested in ideas and abstract concepts (Kolb and Kolb, 2005). Convergers (AC and AE) are individuals who have a strong ability in finding practical uses for ideas and theories, problem solving, and decision making through deductive reasoning (Kolb and Kolb, 2005). Accommodators (AE and CE) are individuals who prefer hands-on experience and actively engaging in new experiences (Kolb and Kolb, 2005).

Kolb's model has been widely used with healthcare to evaluate students' learning styles because it is based on experiential learning which incorporates growth and development and this aligns well with clinical practice. The model has been used to evaluate nursing students in several studies (D'Amore et al., 2012; Gyeong and Myung, 2008; Suliman, 2010; Zoghi et al., 2010). Gyeong and Myung (2008) surveyed 724 nursing students in Korean universities from first year to fourth year, of which the majority (29.6%) were in the second year of their nursing program. They found the dominant learning style was diverging (43.5% of participants), followed by accommodating (30.4%), with relatively small percentages in the other categories. D'Amore et al. (2012) surveyed students from first-year Bachelor of Nursing, Bachelor of Midwifery and Bachelor of Nursing/Bachelor of Arts in one university in Australia. While they also found divergers to be the largest group, at 29.5%, all other learning styles were well represented, with assimilators accounting for 28.8%, accommodators 23.9% and convergers 17.9%. Similar diversity was found by Suliman (2010) among nursing students in conventional undergraduate programs in Saudi Arabia, with divergers as the dominant category, followed by accommodators and assimilators.

In contrast, Zoghi et al. (2010), in their Australian study, found

nursing students were predominantly convergers. In the same study, data were also collected from health science students enrolled in other disciplines (dietetics and nutrition, midwifery, occupational therapy, paramedics, radiotherapy, radiation therapy, pharmacy, physiotherapy, and social work) and found all student groups had the same preference for the converger learning style. The response rate was only 26%, however, and each of the nine disciplines had less than 10% of the total sample size. A study of Australian physiotherapy and occupational therapy students found that physiotherapy students equally preferred converging and diverging styles, while occupational therapy students preferred the assimilating style (Brown et al., 2009). The study had a small sample size and was carried out from one university.

Only one study was found that evaluated graduate entry nursing students' learning styles using the Kolb model. Suliman (2010) compared the learning styles of students in this program with that of students in a conventional undergraduate program. All students were female and graduate entry students were predominantly biology and chemistry graduates. The diverger style was more dominant among graduate entry students than conventional students (45.8% vs 34%), with assimilator as the second most frequently occurring (31%). The sample size was small, however, with only 48 graduate entry participants.

Recently, the VARK model, which also falls into the middle layer of Curry's 'onion ring model', has become popular. VARK is an acronym for the four main sensory modalities used to experience new information: Visual, Aural, Read/write and Kinaesthetic (Fleming, 1995). Visual learners tend to have a preference for information presented in a visual way, such as through graphs, diagrams and charts. Aural learners prefer to hear information presented to them. Read/write learners favour information presented as words in textbooks and handouts. Kinaesthetic learners prefer to learn through simulation and real life experiences (Fleming, 1995).

Since the development of the VARK tool, studies have used it to examine learning styles of students in traditional undergraduate nursing programs. Several studies have identified such nursing students as multimodal learners, with strong preference towards kinaesthetic learning modes (Alkhasawneh, 2013; James et al., 2011). One study, examining learning styles of nursing students in an accelerated nursing program, also identified that most students were multimodal learners (Koch et al., 2011). However in the same study, students showed a preference for the Read/write learning style, instead of kinaesthetic (Koch et al., 2011).

Traditionally, Australian undergraduate nursing programs are three years in length (Australian Nursing Federation, 2009; Royal College of Nursing, 2009). However, there are a growing number of shorter programs aimed at providing accelerated pathways to nursing practice. These programs range from twelve to eighteen months and have been predominantly offered at bachelor level (Cangelosi and Whitt, 2005). However, similar programs have in recent times been offered at master's level.

An accelerated program, Master of Nursing Practice (MNP), was introduced at the authors' university in 2009. The course is a 24 months accelerated pre-registration program for individuals holding a bachelor degree in a discipline other than nursing. Despite the need for understanding the differences in this cohort, there has been a paucity of studies exploring graduate entry nursing students' preferred learning styles that could inform appropriate academic teaching practices. This is in contrast to the large body of studies exploring the learning styles of undergraduate nursing students. Hence, exploring the learning styles of accelerated postgraduate pre-registration nursing students is a way forward to help academics to review and structure their curriculum appropriately to maximise these students' learning.

### 3. Methods

This was a cross-sectional survey.

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