



The effect of reflective writing interventions on the critical thinking skills and dispositions of baccalaureate nursing students



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ARTICLE INFO

Article history:
Accepted 4 April 2013

Keywords:
Problem solving
Nursing students
Writing
Richard Paul
California Critical Thinking Skills Test
California Critical Thinking
Dispositions Inventory Test

SUMMARY

Background: The importance of critical thinking is well-documented by the American Association of Colleges of Nursing and the National League for Nursing. Reflective writing is often used to increase understanding and analytical ability. The lack of empirical evidence about the effect of reflective writing interventions on critical thinking supports the examination of this concept.

Objectives: Study objectives were:

- To test the effectiveness of a novel reflective writing intervention, based on Paul's (1993) model of critical thinking, for improving critical thinking skills and dispositions in nursing students.
- To determine the common characteristics of high-scoring participants.
- To determine relationships between scores and institution, gender, age, ethnicity, or experience.

Design: This study used an experimental, pretest–posttest design.

Settings: The setting was two schools of nursing at universities in the southern United States.

Participants: The convenience sample included 70 fourth-semester students in baccalaureate nursing programs.

Methods: Randomly assigned control and experimental groups completed the California Critical Thinking Skills Test (CCTST) and the California Critical Thinking Dispositions Inventory Test (CCTDI). The experimental group completed six reflective writing assignments. Both groups completed the two tests again.

Results: Results showed that the experimental group had a significant increase ($p = 0.03$) on the truthseeking subscale of the CCTDI when compared to the control group. The experimental group's scores increased on four CCTST subscales and were higher than the control group's on three CCTST subscales.

Conclusions: The results of this study make it imperative for nursing schools to consider including reflective writing—especially assignments based on Paul's (1993) model—in nursing courses. If future studies, testing over longer periods of time, show significant increases in critical thinking, those interventions could be incorporated into nursing curriculum and change the way nurse educators evaluate students.

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Introduction

Critical thinking is generally thought of as a process of analyzing, synthesizing, and/or evaluating information (Paul and Scriven, 1987). For decades, the concept of critical thinking has been recognized as an essential outcome for students at all levels and in all disciplines (Reed and Kromrey, 2001). Critical thinking is an important concept in nursing curricula because practicing nurses need these skills to complete nursing actions that directly affect patient outcomes. These actions include analyzing each patient's situation, weighing possible nursing measures, considering patients' feelings and circumstances, and recognizing when

it's appropriate to seek alternative treatments. The American Association of Colleges of Nursing (AACN) (2008) has emphasized the importance of graduating nurses who can apply critical thinking in all practice situations in order to improve patient health outcomes. The National League for Nursing (NLN) has stated that, to facilitate learning effectively, nurse educators must “create opportunities for learners to develop their critical thinking...skills” (National League for Nursing, 2005, p. 1).

Critical thinking skills also can help students pass the National Council of State Boards of Nursing (NCSBN) Registered Nurse certification test (NCLEX-RN). For example, a recent study of 218 baccalaureate nursing students showed that those who passed the NCLEX-RN scored significantly higher on critical thinking tests than those who failed (Giddens and Gloeckner, 2005). To promote high NCLEX-RN pass rates—and help alleviate the current nursing shortage—it is imperative that nursing faculty find ways to help build students' critical thinking skills.

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While the importance of equipping nurses with critical thinking skills is well-documented, it is unclear how best to accomplish this goal. Simply providing content does not produce problem-solving and analytical skills during patient interactions or teach post-interaction reflection or evaluation (McGuire et al., 2009). Yet published research shows that junior and senior level nursing students score higher on critical thinking tests than their freshman and sophomore counterparts (McCarthy et al., 1999). Further, students in baccalaureate nursing programs (BSN) had higher critical thinking scores than individuals in other degree tracks, such as Associate Degree Nurses (ADN) (Shin et al., 2006). While educators use reflective writing, writing assignments based on student experience, to increase understanding and the ability to reason and analyze (Kennison, 2006), there is little empirical evidence regarding this strategy's effectiveness in increasing critical thinking skills.

Literature

Several studies have compared California Critical Thinking Skills (CCTST) and California Critical Thinking Dispositions Inventory (CCTDI) test scores between samples – the same instruments used in this study. One study proposed that BSN students have higher scores than ADN and RN-to-BSN students (Shin et al., 2006). Two studies supplied evidence that test scores increase during a nursing program (McCarthy et al., 1999; Thompson and Rebesch, 2000), while another showed that the increase was not significant (Giddens and Gloeckner, 2005). One study provided evidence that experience does not increase critical thinking skills and education only produces minimal increases (Ingram, 2008). Giddens and Gloeckner (2005) concluded that CCTST and CCTDI test scores are higher in students who pass the NCLEX than those who fail. A literature review by Adams (1999) found no conclusive evidence that nursing education increases critical thinking skills. Overall, the studies mentioned above explained little about the similarities and differences between the compared samples or what strategies affected critical thinking skills and disposition, the affective component of critical thinking.

There is evidence, however, that Paul's (1993, described below) model of critical thinking can be used as a framework to teach critical thinking (Broadbear and Keyser, 2000), and that it can be used in combination with writing to increase critical thinking skills (Reed and Kromrey, 2001). There is no mention in the literature, however, of incorporating Paul's model (Paul, 1993) into a specific writing intervention to increase critical thinking skills and/or disposition.

Beginning in the 1980s as a result of college students' literary deficiency, the Writing Across the Curriculum (WAC) movement, which is based on the Writing to Learn (WTL) paradigm, emphasizes the importance of writing in college courses, particularly in programs of nursing (Allen et al., 1989). Graduates need writing ability to obtain jobs, as writing is considered a "threshold skill" for hiring and promotion (College Entrance Examination Board, 2004). WTL model assumptions—that writing is learning and that writing helps produce critical thinking—encourage nursing faculty members and administrators to include writing assignments in their curricula. Requiring short, in-class writing assignments or the assembly of portfolios (collections of writing samples from various courses) are two strategies for including writing in nursing curricula (Allen et al., 1989). While increased student support and improved faculty–student relationships have been reported after implementing these strategies, no empirical evidence shows that they improve critical thinking skills or disposition.

Reflective writing is specifically mentioned in the literature as a pedagogical strategy that can increase critical thinking in college students (Craft, 2005; Heinrich, 1992; McGuire et al., 2009; Rooda and Nardi, 1999). One study provided the components of a reflective journal assignment (Heinrich, 1992), however, the literature about such components is limited and vague. Faculty reported that developing strategies to improve critical thinking is difficult (Kataoka-Yahiro

and Saylor, 1994), indicating a possible deficiency in current nursing curriculum.

Analytical Framework

Paul's model for critical thinking was the guiding framework for this study (Paul, 1993). According to Paul and Scriven (1987, p.1), *critical thinking* is the intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information—gathered from or generated by, observation, experience, reflection, reasoning, or communication—as a guide to belief and action. According to Paul (1996) *critical thinking disposition* includes valuable intellectual traits, such as fair-mindedness and intellectual humility, which people develop as they become ideal critical thinkers. Both critical thinking skills and disposition are important elements of developing critical thinking abilities (Facione et al., 1994).

Paul's model centers around three aspects of thinking: elements of good reasoning, intellectual standards used to assess quality of thinking, and intellectual traits or dispositions. Of particular interest are the eight elements Paul states are necessary for any reasoning process: the purpose of the thinking; the problem to be solved; information such as data and observations; inferences, interpretations, or solutions; concepts such as theories or definitions; assumptions; consequences; and point of view (Paul, 1993; Reed and Kromrey, 2001).

Paul (1993) highlights the intellectual standards necessary for evaluating critical thinking and says they must be applied whenever students want to verify the quality of their reasoning about any problem, or situation. According to Paul (1993), thinking critically involves having command of these standards: clarity, accuracy, precision, relevance, depth, breadth, logic, and fairness. Paul also discusses the affective or dispositional component of critical thinking that addresses traits of the reasoning mind such as intellectual humility, intellectual autonomy, intellectual integrity, intellectual courage, perseverance, confidence in reason, intellectual empathy, and fair-mindedness (Paul, 1996; Reed and Kromrey, 2001).

Aims

The aims of this study were:

- To test the effectiveness of a novel reflective writing intervention, based on Paul's (1993) model of critical thinking, for improving critical thinking skills and dispositions in baccalaureate nursing students during an eight-week clinical rotation
- To determine common characteristics among participants who earn high scores on the instruments
- To determine if there are relationships between scores and institution, gender, age, ethnicity, and/or health care experience

Methods

Design

This study consisted of a reflective writing intervention that was administered to a group of baccalaureate nursing students. The design for this study was experimental, and more specifically, a level III pretest–posttest design. A level III study uses an experimental design to test variables. This study included an experimental group (whose members completed an intervention between pretest and posttest), a control group (whose members completed pre- and posttest), and random assignment of groups; therefore, a level III pretest–posttest design was most appropriate (Wood and Ross-Kerr, 2011; Fisher and Foreit, 2002). For this study, *reflective writing* was defined as a writing assignment about an activity that students have experienced (such as class readings, clinical rotations, or group activities)

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