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Effects of an educational program with interactive videodisc systems in improving critical thinking dispositions for RN-BSN students in Taiwan

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Abstract

The purpose of this study was to examine the effects of an educational program with interactive videodisc systems (IVS) in improving affective dispositions toward critical thinking for RN-BSN students in Taiwan. A pre-/post-test quasi-experimental design was used. The IVS program was provided. A sample of 126 students was obtained from one nursing college. The California Critical Thinking Dispositions Inventory was used. The results showed significant differences in all dispositions toward critical thinking, except inquisitiveness, between before and after the IVS program. With the IVS program, the subjects are educated in situations simulating real scenarios prior to clinical practice so that they not only have opportunities to learn how to approach the problem, formulate thinking, participate in discussions, and solve the problem, but they also are willing to keep thinking critically during clinical practice.

Keywords: Interactive videodisc system; Critical thinking; Affective dispositions; Professional judgment

1. Introduction

Faced with today's ever-changing information technology and knowledge economy, many professionals, including nursing staff, have been asked to equip themselves with a high degree of flexibility and adaptability when executing their professional judgments. Clinically speaking, nursing professional judgment is not only a demonstration of nursing care quality but also a critical factor affecting the patients' present and future quality of life. To be able to make professional judgment, it is essential to acquire critical thinking ability and cultivate the dispositions of using such ability proactively. Nursing professional judgment should be based on things such as the accumulation of professional knowledge and the application of logics as well as scientific methods, all of which as well as the actual experience can be acquired from education and training by means such as school education, clinical practice, and self-directive learning.

Since acquiring critical thinking is generally a long-term task, some scholars have suggested that we should start from students and employ teaching strategy to guide and induce student's critical thinking (Miller and Malcolm, 1990; Yeh, 2001b; Yeh and Tasy, 2001). Many researchers found that the utilization of computer and

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interactive multimedia assisted teaching systems can cultivate student's critical thinking (Fishman, 1994; Sparks and Kuenz, 1993; Yeh, 2000; Yeh and Chen, 2002; Yeh et al., 2002a,b). Several researchers asserted that proper design of patient care scenarios is beneficial in promoting learning effectiveness without harming the patients (DeTornyay, 1987; Fishman, 1994; Jelovsek and Adebonojo, 1993; Lowdermilk and Fishel, 1991; Razziolo, 1990; Sparks and Kuenz, 1993; Ward, 1992). With the help of these scenarios, nursing professionals can avoid the awkwardness of not knowing what to do and become more skillful at questioning, exploring, making judgments and decisions, and even demonstrating creativities when formulating professional judgment. Therefore, education should focus on putting students in situations simulating real scenarios so that they have the opportunities to learn how to approach the problem, formulate thinking, participate in discussions, and solve the problem. The authors believe that to produce a critical thinker, dispositions toward critical thinking and cognitive skills of critical thinking must be taught and nurtured as early as possible. In fact, students' critical thinking is a desirable outcome of learning, and the cultivation of critical thinking has been one of the primary goals of nursing education. To make sound professional judgments, students must learn how to apply critical thinking in real life scenarios.

1.1. The statement of purpose

The purpose of this study was to examine the effects of an educational program with interactive videodisc systems (IVS) in improving affective dispositions toward critical thinking for RN-BSN nursing students.

Research hypotheses:

1. Students demonstrate significantly different dispositions toward critical thinking after the educational program with IVS is implemented.
2. There are significant correlations between affective dispositions toward critical thinking and factors such as age, lecture grades, clinical practice grades and nursing related working experiences.

2. Literature review

Critical thinking is important for nursing education because critical thinking is an essential factor in making professional judgments. Critical thinking in nursing has been the subject of several investigations to understand the relationships between nursing education and professional judgments (Facione et al., 1995; Miller and Malcolm, 1990; Maynard, 1996; Pardue, 1987). Several efforts were also undertaken to understand the relationships between the development of critical thinking ability and the improvement of the nursing curriculum (Behrens, 1996; Bauwens and Gerhard, 1987; Gross et al., 1987; Miller, 1992; Saucier, 1995). A few research studies have found that critical thinking ability can be associated with educational background (Beenken, 1997; Howenstein et al., 1996; Pardue, 1987, Tiessen, 1987), academic achievement (Behrens, 1996; Howenstein et al., 1996, Ip et al., 2000; Miller, 1992), years of nursing experience (Howenstein et al., 1996; Yeh and Chen, 2003), area of expertise in nursing (Howenstein et al., 1996), and age (Bers et al., 1996; Behrens, 1996; Gross et al., 1987; Howenstein et al., 1996; Tiessen, 1987; Yeh and Chen, 2003). No matter what level of critical thinking skills a person possesses, they are of little practical value unless the person is disposed to utilize these skills (Facione, 1990). Dispositions toward critical thinking have been proved to be highly correlated with the use of critical thinking skills (Colucciello, 1997; Facione et al., 1994). Moreover, if nursing educators could reformulate their teaching strategies with an aim toward fostering critical thinking in students, not only students' cognitive skills can be reinforced but they also are more likely to inquire about issues or questions more critically (Miller, 1992).

The revision of teaching strategies may have the ultimate effect of improving critical thinking in students. Learning through computer-assisted instruction (CAI) systems contributes to facilitating knowledge acquisition and improving attitude as well as behavioral tendencies. Other benefits such as the strengthening of collecting and analyzing the completeness and correctness of data when making professional judgment has also been reported (Jelovsek and Adebonojo, 1993; Yeh et al., 2002a). Nowadays, IVS are produced by the more advanced videodisk techniques. IVS possesses all typical multimedia characteristics including interaction, image, animation, sound, picture, Internet linking, etc, but CAI systems do not. IVS have four major functions: (1) can provide simulated real clinical scenarios that can be practiced repeatedly, (2) can offer a non-destructive learning environment, (3) can be used as a tool for learning effectiveness evaluation, and (4) can specifically target at cultivating professional judgment dispositions and training recognition techniques (Yeh and Chen, 2002; Yeh et al., 2002a,b). IVS can be used in teaching to provide the following learning environment: (1) individual learning, (2) 2–3 person small-group learning, (3) instructor-led small-group learning, (4) classroom teaching, (5) as a preface to practical training, and (6) learning effectiveness evaluation. For nursing education, computer technology is regarded as an effective teaching strategy (Sparks and Kuenz, 1993; Yeh, 2000). It is well recognized that multimedia presentation is a good technique to gain learner's acceptance and draw learners' attention (Bosworth et al., 2000; Lowdermilk and Fishel, 1991; Yeh and Chen, 2002).