

Journal of Public Deliberation

Volume 5, Issue 1

2009

Article 5

The Use of Deliberative Discussion to Enhance the Critical Thinking Abilities of Nursing Students

Heather Janiszewski Goodin PhD, RN*

David Stein PhD[†]

*Capital University, hjanisze@capital.edu

[†]The Ohio State University, stein.1@osu.edu

The Use of Deliberative Discussion to Enhance the Critical Thinking Abilities of Nursing Students

Heather Janiszewski Goodin PhD, RN and David Stein PhD

Abstract

Deliberative discussion is a teaching method that invites nursing students to engage in a shared inquiry regarding public issues. The purpose of this pretest-posttest control group experimental study was to investigate the effects of using the deliberative discussion method to enhance the critical thinking abilities of first year nursing students. Forty four students were randomly assigned to attend three deliberative discussion sessions over a 13 week period or to the control group. Using the California Critical Thinking Skills Test, no statistically significant differences were found in critical thinking scores between the two groups. The level and depth of students' critical thinking abilities during the discussions did not increase from session one to session three. The authors of this study suggest that participation in deliberative discussions may not produce an immediate effect on critical thinking and possible long term benefits are not known. Further considerations include having more exposures to the deliberative method and having opportunities to critically reflect after the discussions.

KEYWORDS: deliberative discussion, public deliberation, critical thinking, nursing students, CCTST

THE USE OF DELIBERATIVE DISCUSSION AS A TEACHING STRATEGY TO ENHANCE THE CRITICAL THINKING ABILITIES OF FRESHMAN NURSING STUDENTS

Introduction

Nursing education programs must graduate practitioners who can engage in critical thought (American Association of Colleges of Nursing, 2007; Glen, 1995; Malinski, 2001; National League for Nursing Accrediting Commission, 2006; Videback, 1997b). Since the ability to critically think is an expected competency of today's nurses (Edwards, 2007), it is imperative nurse educators use teaching strategies that foster critical thinking skills among learners throughout the nursing curriculum. The authors of this study will describe a strategy known as 'deliberative discussion', with the aim to improve critical thinking skills in nursing students.

The ability to critically think is a deliberate and active process. For that reason, teaching strategies should also be purposeful toward the promotion of critical thinking. The discussion method is one such teaching strategy that is believed to actively foster critical thinking (Brookfield, 1987; Brookfield & Preskill, 2005; Chilcoat & Ligon, 2001; DeYoung, 2003; Kindsvatter, 1990; Walker, 2003). According to Ironside and Valiga (2006), classrooms of the future encourage "lively exchange of ideas" and open discussions (p. 120). Further, it is the discussion of controversial issues that can encourage critical thinking among learners (Payne & Gainey, 2003). Hence, learners who participate in deliberative discussions may have the opportunity to practice and enhance critical thinking.

Purpose Statement

The purpose of this study was to investigate the effects of using the deliberative discussion strategy to enhance the critical thinking abilities of first year nursing students. The primary research question was: What effect does the deliberative discussion method have on first year nursing students' critical thinking abilities? Non-directional research hypotheses included:

- H₁: First year nursing students who participate in the deliberative discussion group will differ in critical thinking scores on the California Critical Thinking Skills Test (CCTST) than those in the control group.
- H₂: First year nursing students' in the deliberative discussion group will differ on the CCTST posttest than on the CCTST pretest.

- H₃: First year nursing students who participate in the deliberative discussion group will increase the level of their critical thinking from the first session to the last session, as measured by the Holistic Critical Thinking Scoring Rubric.

The relationship of discussion and critical thinking can be conceptualized as both a philosophical orientation toward thinking and a cognitive endeavor (Glen, 1995), characterized by confidence, contextual perspective, creativity, flexibility, inquisitiveness, intellectual integrity, intuition, open-mindedness, perseverance, and reflection (Rubenfeld & Scheffer, 2006; Scheffer & Rubenfeld, 2000). Critical thinking is a dynamic process rather than an outcome (Brookfield, 1987; Jacobs, Ott, Sullivan, Ulrich, & Short, 1997) and is not a set body of knowledge but rather a purposeful way of thinking (Videbeck, 1997a) that encompasses both cognitive and affective domains (Daly, 1998; Scheffer & Rubenfeld, 2000). The question of 'how' to enhance critical thinking continues to be a much-debated subject in relation to its use, promotion, assessment, and evaluation (Adams, 1999; Riddell, 2007; Simpson & Courtney, 2002, Staib, 2003). One common theme noted by researchers is the importance of employing active teaching strategies with nursing students to help them practice and enhance their critical thinking (Loving & Wilson, 2000; Oermann, 2004; Walker, 2003; Youngblood & Beitz, 2001).

However, very few research studies were found in the nursing literature that tested the effectiveness of the discussion method as a teaching strategy to promote critical thinking. Rossignol (1997) conducted a correlational, exploratory study on the relationship between selected discourse strategies used in nursing clinical post-conferences and student critical thinking. She found that the strategy of asking high-level questions was significantly associated with student critical thinking. Platzer, Blake, and Ashford (2000) evaluated the effectiveness of reflective practice discussion groups and the students anecdotally reported that participation in the groups contributed to the development of their critical thinking ability. Online discussions have been growing in popularity and are also believed to foster critical thinking (Ali, Bantz, & Siktberg, 2005; Harden, 2003; Leppa, 2004). While a variety of discussion methods exist, relatively unknown to nursing is the deliberative discussion.

The deliberative discussion is a purposeful and serious discourse that does not rush to a decision but rather toward careful consideration of alternative points of views and choices (Bridges, 1994; National Issues Forum Institute, 2006). Further, it is believed that the deliberative discussion method offers learners the opportunity to practice critical thinking within a forum designed to weigh the cost and consequences of public problems (Holt, Kleiber, Swenson, Rees, & Milton, 1998). Although deliberative discussion is believed to evoke critical thinking in its participants, empirical studies have not been found that utilized the process of deliberation as a teaching strategy in nursing. This study tests the effectiveness of deliberative discussion as an approach to enhance the critical thinking ability of nursing students.

Conceptual Framework

A deliberative discussion is a unique teaching strategy that may promote critical thinking. However, a dynamic and stimulating deliberative discussion cannot occur in isolation. A deliberative discussion encompasses elements of dialogue, questioning, and active engagement toward the practice and enhancement of critical thinking (Figure 1).

Figure 1

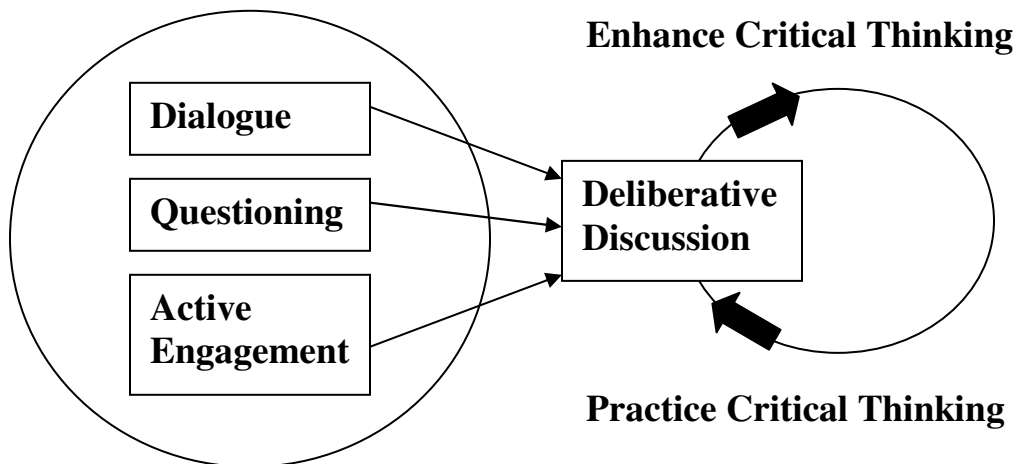


Figure 1. Conceptual Framework. The practices of dialogue, questioning, and active engagement are mutually interactive and necessary elements of deliberative discussion that allow learners the opportunity to practice and enhance critical thinking.

Teaching and learning with adults is best achieved in dialogue (Vella, 1994). A discussion format is the best arena to use dialogue to help learners express themselves and communicate with fellow learners. The ability to dialogue effectively is essential in a deliberative discussion. The concept of questioning helps the instructor set the tone of the discussion and engages learners to participate in the discussion. Questions prompt the initiation of dialogue and questions raised by the instructor or the learners also helps to sustain the continuity of the discussion (Brookfield & Preskill, 2005). The process of deliberation requires learners to ask questions regarding the issues at hand and helps to guide the discussion. Lastly, active engagement is also essential to deliberative discussions. According to Brookfield and Preskill (2005), democratic discussions work best when all participants contribute and feel that their contributions count. It is the work of the participants to engage themselves and each other during the deliberative discussion. Active engagement involves listening and using verbal and/or nonverbal participation. Deliberative discussions require interaction amongst the learners, which can be prompted through the use of questioning and stimulating dialogue.

When all the elements of an effective deliberative discussion come together, a learning environment is created. Learners dialogue, question, and actively engage themselves during a deliberative discussion. It is thought that these actions encourage learners to think critically and that the participation in deliberative discussion helps to continually promote these abilities.

Methodology

This study used a pretest-posttest control group experimental design. Random selection of the participants to the treatment or control group is the distinguishing factor of this experimental design over quasi-experimental designs (Campbell & Stanley, 1963). Critical thinking ability was measured by the first year nursing students' scores achieved on the CCTST. Further, the deliberative discussion sessions were video and audio taped to analyze the content and depth of the discussions. The content of the discussions was analyzed by The Holistic Critical Thinking Scoring Rubric (Facione & Facione, 1994).

Population and Sample

The sample was drawn from the entire population of all incoming first year nursing students (N = 71) into the Baccalaureate Traditional Nursing program at a small university. First year nursing students were at least 18 years of

age and were entering their first semester of study. Forty four Nursing students agreed to participate in the study and were randomly assigned to either the treatment group (n = 22) or control group (n = 22). Due to attrition, the number of students in the treatment group was 21 and 20 students were assigned to the control group. Of the 21 participants randomly assigned to the treatment group, 13 attended the first deliberative discussion, 7 attended the second session, and 5 attended the last session. Due to the overlap of some participants attending two or all three sessions, it was determined that 7 participants attended at least two out of the three sessions.

Procedure

First year nursing students were sent a letter to their home asking them to consider participating in the research study during first year orientation and were asked to attend a nursing research information session. Participants who agreed to participate in the study were randomly assigned to either the treatment group (n = 21) or the control group (n = 20). A moderator and a recorder who were trained by the National Issues Forums (NIF) were recruited to conduct the deliberative discussion sessions. The same moderator was used for all three sessions but the recorder was only able to attend the first deliberative discussion session. All of the deliberative discussion sessions were held on a Sunday evening from 7:00pm to approximately 8:30pm. Participants who attended at least two out of the three sessions were included in the study. The posttest was also administered within one week of the last deliberative discussion session.

Approval to conduct the research study was obtained by the Institutional Research Boards of the Ohio State University and Capital University. Participants were assured that they could withdraw from the study at any time and participation was not associated with any one course or class offered at the university.

Instrumentation

California Critical Thinking Skills Test (CCTST) Form 2000. The CCTST consisted of 34 standardized, multiple-choice items designed to measure critical thinking. Form 2000 was a revision of the CCTST Form A and provided item contexts that were more robust in the evaluation of critical thinking (Facione, Facione, Blohm, & Giancarlo, 2002). The CCTST has been documented as being a reliable and valid instrument. Kuder-Richardson-20 was estimated to be a reliability of .70 and validity was established through the American Philosophical Association Delphi consensus conceptualization of critical thinking (Facione, 1990; 1992).

Holistic Critical Thinking Scoring Rubric (HCTSR). Facione and Facione (1994) developed the HCTSR based on their previous work on critical thinking. The rubric was expressed in four levels where one was the lowest score and four was the highest possible score. Critical thinking is considered absent at level one and to receive a score at the fourth level, almost all of the following characteristics must have been present: accurate interpretations of the evidence, identification of salient arguments, thorough analysis and evaluation of alternative points of views, judicious conclusions, and explanation of assumptions and reasoning. Facione and Facione recommended at least two raters per evaluation to achieve consensus on a score.

Data Collection

Data was collected over a 13 week period. Participants were asked to complete at the information session: the consent form, demographic sheet, and the CCTST Form 2000 instrument. The participants in both groups were also asked to keep a log of their discussion activities weekly and to return the log to the researcher at the posttest session. The purpose of the log was to determine what types of discussions students were involved in on a daily basis and to control for extraneous variables. An extracurricular activity was considered time spent outside a university course that involved discussion with others. This may have included but was not limited to: campus/community organizations, church groups, honor society meetings, clubs, campus meetings, etc.

Participants who were randomly assigned to the treatment group were contacted via phone, email, and/or campus mail using the university directory and were given an information sheet which included a brief description of the deliberative discussion method, the incentives to participate, and time, date, and location of the three deliberative discussion sessions.

All of the public issues to be discussed in the deliberative discussions were developed by the NIF. Although there are many public issues to choose from (see the website www.nifi.org), three health-related topics thought to be of interest to nursing students were selected. The topic of the first deliberative discussion was entitled, "Alcohol: Controlling the Toxic Spill" and focused on issues surrounding alcohol consumption in society. The second topic was "Examining Health Care: What's the Public's Prescription" and focused on health care issues in United States society. The last deliberative discussion topic was entitled, "At Death's Door: What are the Choices" and focused on patient rights and medical ethics.

The moderator and recorder followed the NIF guidelines to conduct each of the deliberative discussions (NIF, 2002). The three sessions were equally spread out over 13 weeks. Participants received token incentives such as pens, mugs, canvas bags, and T-shirts at each of the deliberative discussion session as a way of showing participants that their time and effort was appreciated. Food and beverages were also provided at each of the discussion sessions.

Findings

All data collected on the pretest-posttest CCTST instruments were submitted to the publishing company, Insight Assessment, to ensure accurate, computerized scoring. The data was analyzed using the Statistical Packages for the Social Sciences (SPSS) version 13.0 for Windows and Microsoft® Excel spreadsheet package (Office 2000). Scores on the HCTSR for each deliberative discussion session were generated by two independent scorers and compared to reach interrater reliability.

Participant characteristics between the treatment (n = 7) and the control group (n = 16) were similar in demographic characteristics (Table 1). All participants were Caucasian and did not hold any previous college or university degrees. A t-test was used to show that the participants did not differ with respect to high school GPA, ACT scores, and CCTST pretest (Table 2). Therefore, the groups were assumed to be equal at the pretest.

Table 1

<u>Groups</u>	<u>n</u>	<u>Description of the Sample</u>					
		<u>Sex</u>		<u>Age</u>		<u>Previous College Course Experience</u>	
		F(%)	M(%)	Mean	Range	Yes(%)	No(%)
Treatment	7	86	14	18.3	18-19	29	71
Control	16	88	12	18.9	18-26	31	69

Table 2
Comparing Means Between Treatment and Control Groups

	<u>Treatment (n = 7)</u>		<u>Control (n = 16)</u>		t	p
	Mean	SD	Mean	SD		
H.S. GPA	3.69	.376	3.56	.375	-.751	.461
ACT Score	22.86	.334	23.88	.268	.779	.445
CCTST Pretest	16.14	4.67	17.00	3.08	.525	.605

*alpha set at the 0.05 level (two-tailed)

To control for the effects of extracurricular activities on critical thinking abilities, participants kept a log of discussion activities. Fourteen logs of extracurricular activities booklets were returned at the posttest session; 5 out of 7 booklets were completed in the treatment group and 9 out of 16 booklets were completed in the control group. Types of discussion activities that participants engaged in outside a university course either on or off campus were similar across both groups. The mean amount of time of extracurricular discussion activities was 1643 minutes for the treatment group and 1302 minutes for the control group. The subjective data recorded in the booklets provided further descriptions of other discussion activities participants engaged in and were deemed similar across both groups.

Using a t-test for independent group, Table 3 illustrated that there was no significant difference between the treatment and the control group on the CCTST posttest ($p = .413$). Therefore, the first year nursing students who participated in the deliberative discussions did not differ in their critical thinking scores from the control group and the first hypothesis was rejected. Further, there was no significant difference between the CCTST pretest and the CCTST posttest scores within the treatment group ($p = .833$). Hence, the first year nursing students in the discussion group did not differ on their critical thinking scores from pretest to posttest and the second hypothesis was rejected. The reliability coefficient between the CCTST pretest and posttest for the treatment group was .619 ($p < 0.05$, two-tailed) and .946 ($p < 0.01$, two-tailed) for the control group. Thus, the

CCTST Form 2000 was a reliable measure from the participants' pretest session and again 13 weeks later.

Table 3

Comparison of CCTST Scores Within and Between Groups

	Treatment (n = 7)	Control (n = 16)		
	Mean (SD)	Mean (SD)	Paired t Test (between groups)	p value
Pretest CCTST	16.14 (4.67)	17.00 (3.08)	.525	.605
Posttest CCTST	15.57 (5.22)	17.00 (3.01)	.834	.413
Paired t Test (within groups)	.216	.000	---	---
p value	.833	1.00	---	---

*alpha set at the 0.05 level (two-tailed)

Level of critical thinking in the deliberative discussion sessions was measured using the HCTSR. Cohen's Kappa could not be calculated because one of the rater's scores was a constant across all three sessions and lacked variability. The first rater assigned session one and two a HCTSR score of 3 and assigned session three a score of 2. The second rater assigned all three sessions a score of 3 each. Thus, the third hypothesis was rejected because the third deliberative discussion session was rated at a lower level of critical thinking than the two previous sessions and did not increase over the 13 weeks.

Discussion

Participation in deliberative discussions over a 13 week period did not increase the critical thinking abilities of first year nursing students as measured by the CCTST. There are a number of possible explanations that should be explored to determine why critical thinking did not change as a result of the teaching intervention including: changes in critical thinking over time; insufficient experience with deliberative discussions; and level of critical thinking in the deliberative discussion sessions.

Changes in Critical Thinking Over Time

The timeframe of 13 weeks was not long enough to see measurable changes in critical thinking among the first year nursing students. This assertion was confirmed by Tanner (2005) who stated that critical thinking is a fixed trait that is not subject to produce changes in a specific amount of time. Thus, it is conceivable that the amount of time passed from pretest to posttest was insufficient to develop critical thinking ability. Further, not everyone develops their critical thinking ability at the same rate (Ignavaticius, 2004). Some researchers have also suggested that perhaps a longitudinal approach to studying changes in critical thinking might be more appropriate (Adams, 1999; Rapps, Riegel, & Glaser, 2001). However, it would be difficult to identify a suitable timeframe, whether it be months or even years, to be able to measure growth in critical thinking among the participants.

The use of generic critical thinking instruments such as the CCTST may not be enough to measure growth in critical thinking. Evidence of critical thought might be best detected through the evaluation of the students' spoken or written words. This evaluative technique may give educators a better idea the students' level of critical thinking and be able to identify small changes in the students' written work or verbal expression of critical thought. Development of critical thinking skills in nursing curricula is encouraged, along with objective evaluation of critical thinking (Rogal & Young, 2008). Of course key to this measurement of critical thought would be the educator's continued diligence to evaluate the students' critical thinking ability over the course of the semester and in every encounter with the students in subsequent course work. Educators within the curriculum would need to communicate among themselves to share in the students' progress in critical thinking ability from course to course and year to year. Thus, it would be essential to incorporate opportunities for students to practice critical thinking throughout their studies and not limit it to one or two exposures in a few course assignments. Students who challenge each other's

thinking should be supported (Ironsides & Valiga, 2006). Multiple exposures to teaching strategies that promote critical thinking would probably be the most ideal learning situation for students.

Insufficient Experience With Deliberative Discussions

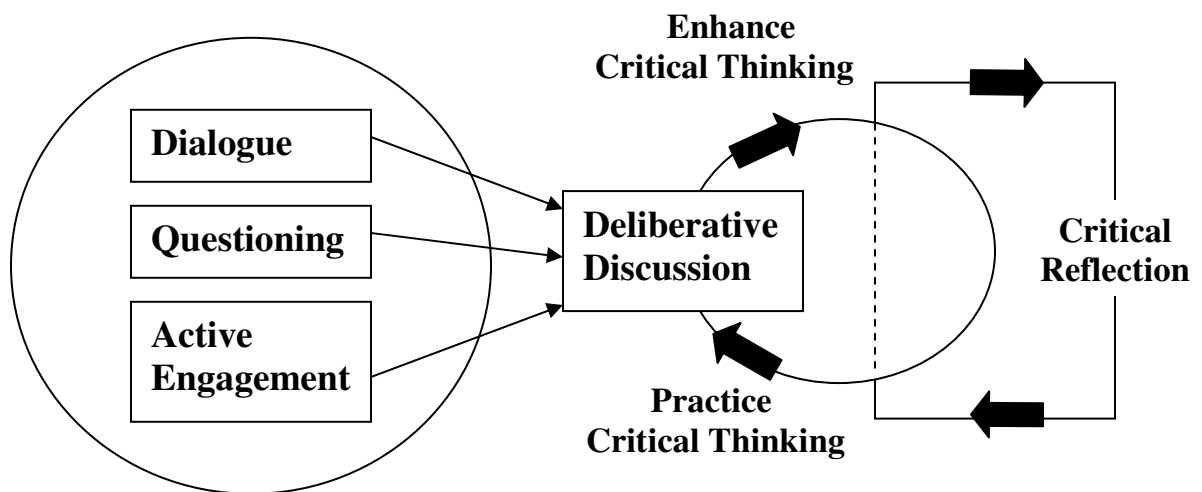
Participants in the treatment group came to three deliberative discussions over a 13 week period. It was believed that the first discussion would serve as an introduction to the teaching method, the second discussion would allow participants to practice deliberation, and in the third session, participants would demonstrate a proficient ability in deliberative discussion.

Participants may need several opportunities to practice and understand the process of deliberation for it to have an effect on learning (Gastil, 2004). The first year nursing students in the present study did not have prior experience with the deliberative discussion format and may have needed more than two or three exposures to the teaching method for it to have been effective. Even experience with the discussion method may have been limited among the participants thus further complicating the participant's understanding and familiarity with the deliberative discussion process.

It is perhaps unrealistic to expect students to engage in a fruitful deliberative discussion after one or two encounters of this 'new' teaching strategy. Participants might have needed more time to familiarize themselves with the work of deliberation before they could really begin critically thinking about the issues. Perhaps if the participants had the opportunity to critically reflect on the deliberative discussion as a whole, they could have perhaps gained insight into the deliberative process and applied what they learned at the next discussion session. Hence, the concept of critical reflection was incorporated into the revised conceptual framework (Figure 2). However, it is not known if the participation in critical reflection would have had any effect on the level of critical thinking in the deliberative discussions.

Figure 2

Revised Conceptual Framework



Revised Conceptual Framework. The practices of dialogue, questioning, and active engagement are mutually interactive and necessary elements of deliberative discussion that allow learners the opportunity to practice and enhance critical thinking and critical reflection.

Level of Critical Thinking in the Deliberative Discussion Sessions

Deliberative discussions did not have an effect on students' critical thinking in the short term. Although it was believed that participants were certainly prompted to critically think during the deliberative discussion, limited exposure to the teaching strategy may have contributed to the lack of growth in critical thinking. The challenge lies in moving these students who are young in their careers and have limited experience practicing to critically think toward participating in activities that will foster their critical thinking. Thus, participation in deliberative discussions has the potential to change thinking habits and enhance critical thought. In actuality, it may be impossible to realize the full impact of participating in deliberative discussions on the students' critical thinking ability. If the discussion sessions help participants' learn to question their personal values

and assumptions and scrutinize their taken for granted beliefs, they will take these learned experiences and apply them to other aspects of their lives. Perhaps they would continue to practice the critical thinking skills they learned in the deliberative discussions and engage in critical discussions in college courses with professors and/or colleagues.

Therefore, the effect of participating in deliberative discussions is two-fold. Students who take part in deliberative discussions would be participating in a learning activity that may foster critical thinking. The deliberative discussion format provides a shared learning opportunity that promotes critical thinking by having students engage in critical dialogue and questioning with each other. The second effect of participating in deliberative discussions is more difficult to account for or even measure. If critical thinking is conceptualized as a process that can be changed in small increments (if at all) over a long period of time, the full impact of participating in deliberative discussion on critical thinking ability cannot be determined. The deliberative discussion method encouraged students to practice and improve many of the components that comprise critical thinking. In essence, the participants were learning how to think and question their own thinking which leads to the self-scrutiny and critique of commonly held values and beliefs. Through this process, the participant could take these principles of how to think critically and apply them to other aspects of their lives. The possibilities are endless in terms of one accounting for how participating in deliberative discussions can enhance critical thinking.

The potential usefulness of deliberative discussions as a teaching strategy should not be discounted based on this research study alone. Further research is needed to study the effect of participating in deliberative discussions among students in various disciplines and over the long term. Because first year nursing students present an interesting challenge to educators in terms of their learning needs while beginning college for the first time, additional research with this population would also be beneficial.

Conclusion

Participation in a few deliberative discussions over a short period of time did not produce an immediate gain in students' critical thinking ability. Further, the deliberative dialogue did not demonstrate an improvement in the quality of critical thinking. Nevertheless, the deliberative discussion method may still be a useful teaching strategy to help nursing students practice and build their critical thinking skills over time. Multiple encounters to deliberative discussion participation might have a greater impact on critical thinking rather than

intermittent exposures to teaching strategies that are believed to enhance critical thought. A period of critical reflection incorporated into the students' learning experience with deliberative discussion may help students become more familiar with their role in the deliberative process.

Educators are ultimately responsible to engage students in learning activities that promote critical thought. Students' abilities to critically think could be nurtured and fostered throughout their educational experience if they have repeated opportunities to practice critical thinking. Students who practice to critically think may increase the likelihood that their critical thinking abilities might change over time. Therefore, growth in critical thinking is a possibility and the incorporation of teaching strategies such as the deliberative discussion method throughout the curriculum may help to foster this positive development in thinking among students. Investigation into students' participation in many deliberative discussions over an academic year may give educators a better idea of its full impact on critical thinking.

References

- Adams, B. L. (1999). Nursing education for critical thinking: An integrative review. *Journal of Nursing Education, 38*(3), 111-119.
- Ali, N., Bantz, D., & Siktberg, L. (2005). Validation of critical thinking skills in online responses. *Journal of Nursing Education, 44*(2), 90-94.
- American Association of Colleges of Nursing. (2007). *Revision of the essential of baccalaureate education for professional nursing practice: December 18, 2007*. Retrieved February 9, 2008, from <http://www.aacn.nche.edu/Education/pdf/BEdraft.pdf>
- Bridges, D. (1994). Deliberation and decision making. In J. T. Dillon (Ed.), *Deliberation in education and society* (pp. 67-80). Norwood, NJ: Ablex Publishing.
- Brookfield, S. (1987). *Developing critical thinkers*. Milton Keynes: Open University Press.
- Brookfield, S., & Preskill, S. (2005). *Discussion as a way of teaching: Tools and techniques for democratic classrooms (2nd ed.)*. San Francisco: Jossey-Bass.
- Campbell, D. T., & Stanley, J. C. (1963). *Experimental and quasi-experimental designs for research*. Boston: Houghton Mifflin Company.
- Chilcoat, G. W. & Ligon, J. A. (2001). Discussion as a means for transformative change: Social studies lessons from the Mississippi Freedom Schools. *The Social Studies*(September/October), 213-219.
- Daly, W. M. (1998). Critical thinking as an outcome of nursing education. What is it? Why is it important to nursing practice? *Journal of Advanced Nursing, 28*(2), 323-331.
- DeYoung, S. (2003). *Teaching strategies for nurse educators*. Upper Saddle River, NJ: Prentice Hall.
- Edwards, S. L. (2007). Critical thinking: A two-phase framework. *Nurse Education in Practice, 7*, 303-314.

- Facione, P. A. (1990). *Critical thinking: A statement of expert consensus for purposes of educational assessment and instruction*. Millbrae, CA: The California Academic Press.
- Facione, P. A. (1992). *The California Critical Thinking Skills Test (CCTST) Form B*. Millbrae, CA: California Academic Press.
- Facione, P. A., & Facione, N. C. (1994). *Holistic critical thinking scoring rubric*. Millbrae, CA: The California Academic Press.
- Facione, P. A., Facione, N. C., Blohm, S. W., & Giancarlo, C. A. F. (2002). *The California critical thinking skills test CCTST form A, form B, form 2000 test manual*. Millbrae, CA: California Academic Press.
- Gastil, J. (2004). Adult civic education through the National Issues Forums: Developing democratic habits and dispositions through public deliberation. *Adult Education Quarterly*, 54(4), 308-328.
- Glen, S. (1995). Developing critical thinking in higher education. *Nurse Education Today*, 15(3), 170-176.
- Harden, J. K. (2003). Faculty and student experiences with web-based discussion groups in a large lecture setting. *Nurse Educator*, 28(1), 26-30.
- Holt, M. E., Kleiber, P. B., Swenson, J. D., Rees, E. F., & Milton, J. (1998). Facilitating group learning on the internet. *New Directions For Adult and Continuing Education* (Vol. 78): Jossey-Bass.
- Ignatavicius, D. (2004). An introduction to developing critical thinking in nursing students. In L. Caputi. & L. Engelmann (Eds.), *Teaching nursing: The art and science* (vol 2) (pp. 622-633). Glen Ellyn, IL: College of DuPage Press.
- Ironside, P. M., & Valiga, T. M. (2006). Creating a vision for the future of nursing education: Moving toward excellence through innovation. *Nursing Education Perspective*, 27(3), 120-121.
- Jacobs, P. M., Ott, B., Sullivan, B., Ulrich, Y., & Short, L. (1997). An approach to defining and operationalizing critical thinking. *Journal of Nursing Education*, 36(1), 19-22.

- Kindsvatter, R. (1990). Teacher social power and classroom discussion. In W. W. Wilen (Ed.), *Teaching and learning through discussion: The theory, research and practice of the discussion method* (pp. 113-126). Springfield, IL: Charles C Thomas.
- Leppa, C. J. (2004). Assessing student critical thinking through online discussions. *Nurse Educator*, 29(4), 156-160.
- Loving, G. L., & Wilson, J. S. (2000). Infusing critical thinking into the nursing curriculum through faculty development. *Nurse Educator*, 25(2), 70-75.
- Malinski, V. M. (2001). Critical thinking and nursing science. *Nursing Science Quarterly*, 14(1), 14.
- National Issues Forums. (2002). *For conveners and moderators: Organizing for public deliberation and moderating a forum/study circle*. Dayton, OH: author.
- National Issues Forum Institute. (2006). *About NIF forums*. Retrieved July 17, 2006, from <http://www.nifi.org/forums/about.aspx>.
- National League for Nursing Accrediting Commission. (2006). *Accreditation manual with interpretive guidelines by program type for postsecondary and higher degree programs in nursing*. Retrieved February 9, 2008, from <http://www.nlnac.org/manuals/NLNACManual2006.pdf>
- Oermann, M. (2004). Using active learning in lecture: Best of both worlds. *International Journal of Nursing Scholarship*, 1(1), 1-9.
- Payne, B. K., & Gainey, R. R. (2003). Understanding and developing controversial issues in college courses. *College Teaching*, 51(2), 52-58.
- Platzer, H., Blake, D., & Ashford, D. (2000). An evaluation of process and outcomes from learning through reflective practice groups on a post-registration nursing course. *Journal of Advanced Nursing*, 31(3), 689-695.
- Rapps, J., Riegel, B., & Glaser, D. (2001). Testing a predictive model of what makes a critical thinker. *Western Journal of Nursing Research*, 23(6), 610-626.

- Riddell, T. (2007). Critical assumptions: Thinking critically about critical thinking. *Journal of Nursing Education*, 46(3), 121-126.
- Rogal, S., & Young, J. (2008). Exploring critical thinking in critical care nursing education: A pilot study. *The Journal of Continuing Education in Nursing*, 39(1), 28-33.
- Rossignol, M. (1997). Relationship between selected discourse strategies and student critical thinking. *Journal of Nursing Education*, 36(10), 467-475.
- Rubinfeld, M. G., & Scheffer, B. K. (2006). *Critical thinking tactics for nurses*. Sudbury, MA: Jones and Bartlett.
- Scheffer, B. K., & Rubinfeld, M. G. (2000). A consensus statement on critical thinking in nursing. *Journal of Nursing Education*, 39(8), 352-359.
- Simpson, E., & Courtney, M. (2002). Critical thinking in nursing education: Literature review. *International Journal of Nursing Practice*, 8: 89-98.
- Staib, S. (2003). Teaching and measuring critical thinking. *Journal of Nursing Education*, 42(11), 498-508.
- Tanner, C. A. (2005). What have we learned about critical thinking in nursing? *Journal of Nursing Education*, 44(2), 47-48.
- Vella, J. (1994). *Learning to listen: Learning to teach*. San Francisco: Jossey-Bass.
- Videbeck, S. L. (1997a). Critical thinking: A model. *Journal of Nursing Education*, 36(1), 24-28.
- Videbeck, S. L. (1997b). Critical thinking: Prevailing practice in Baccalaureate schools of nursing. *Journal of Nursing Education*, 36(1), 5-10.
- Walker, S. E. (2003). Active learning strategies to promote critical thinking. *Journal of Athletic Training*, 38(3), 263-267.
- Youngblood, N. & Beitz, J. M. (2001). Developing critical thinking with active learning strategies. *Nurse Educator*, 26(1), 39-42.

