

An Action Teaching in the Course of Clinical Case Study and Practicum on Nursing Students' Abilities of Clinical Reasoning, Evidence-based Nursing, and Creative Thinking

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Outlines

- ▶ Background
- ▶ Purpose
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Background

- ▶ The college graduation threshold for American nursing students was based on the **evidence-based practicum** including promotion of safety and high quality of care on the patients, and applied **clinical reasoning** from simple to complex situations (American Association of Critical-Care Nurses, AACN, 2008).
- ▶ Shaneyfelt et al.(2006) systematically reviewed data from 1980 to 2006 on MEDLINE, EMBASE, CINAHL, HAPI, ERIC with total 347 evidences-based nursing literature and identified **searching and evaluating evidences** as most popular items among 104 evaluation tools of evidences practicum skills, while the new evaluation tools included **being able to inquiry answerable questions** and **apply evidences into the individual case**.

Background

- ▶ Clinical decision making based on evidences practicum required **clinical reasoning guide**, including searching appropriate research findings, basic and scientific knowledge, clinical knowledge, and experts' opinions (Higgs, Burn, & Jones, 2001; Shaneyfelt et al., 2006; Youngblut, & Brooten, 2001).
- ▶ **Clinical reasoning** is to apply literature and experts' knowledge into clinical situations to develop problem-solving strategies with the process of cognition, thinking, metacognition for achieving the criteria of clinical practicum (Banning, 2008).

Background

- ▶ **Clinical reasoning teaching** is to use the evidences literature having the good validity with the experiences of clinical experts for designing problem-solving strategies to alter the quality of care on the patients.
- ▶ **Creative thinking teaching** is to use the strategies of brainstorming, ATDE (asking, thinking, doing, evaluating), six thinking hats and six action shoes (Ku, 2011; Ku, Chang, Kuo, & Sheu, 2010; Tsai, et al., 2010).
- ▶ **Evidences-based nursing (EBN)** is the current and future trend in nursing education (Callister, et al., 2005; Emerson, & Records, 2008; Penz, & Bassendowski, 2006) and **clinical reasoning and creative thinking** could enforce nursing students to apply evidences-based information into the patients' care.

Purpose

- ▶ The purpose of this study was to explore the effects of merging **an action teaching method** into a course of **clinical case study and practicum** on nursing students' clinical reasoning, EBN and creative thinking abilities.

Methods

- ▶ The innovative course consisted of 14 weeks with four hours of teaching each week using multiple teaching strategies such as lecturing, inquiring, discussion, and guiding.
- ▶ This study was composed of two stages:
- ▶ During the first stage, the instructor introduced the nursing process of clinical reasoning and concepts of EBN to the nursing students.

Methods

- ▶ The students were divided to 4 groups and were guided separately by 4 instructors in debriefing their own case scenarios.
- ▶ Then each student drew the maps of relationships based on the health problems of their own cases.

Methods

- ▶ Each student used the **FLEI process (Focus, Literature, Expert, Integration)** modified by the concepts of EBN and **PICO**, to focus on the major problems of their clinical cases **(F)**, to find nursing solutions by searching evidence-based literature **(L)**, and to get suggestions from clinical experts **(E)**. Finally, each student decided which nursing interventions were appropriate for their clinical cases by integrating **(I)** the collected information.

Methods

- ▶ In the **second stage**, the instructor used the **creative teaching strategies** such as brainstorming, ATDE and six thinking hats and six action shoes to inspire the students' creativity in nursing process.
- ▶ Each group selected one case from their clinical situation and generated the creative nursing interventions or products with three teachers' guide.

Methods

- ▶ **This study was approved by Study Grant Program to Improve Teaching (FYU2400–100–15) and conducted on RN–BSN students who elected the course of Clinical Case Study and Practicum in the nursing program from Feb 2012 to September, 2012.**

Methods– evaluation methods

Two tools were used to evaluate the effectiveness of the course in the abilities of clinical reasoning, EBN, and creative thinking.

- ▶ Nursing students' self-perceived abilities by 1–10 point Visual Analogue Scale (VAS)

Low

High



- ▶ Reflection questions: [*What have you learned?*] and [*What should you consider to improve?*] were asked for each student to reflect their learning on clinical reasoning, EBN, and creative thinking .

Results—effects of the course

- ▶ RN–BSN students' self-perceived abilities of clinical reasoning, EBN and creative thinking all improved significantly after taking the course ($P < .001$).
- ▶ Additionally, four teachers evaluated each student's abilities of clinical reasoning, and EBN as improved significantly after taking the course ($P < .001$).

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Clinical Reasoning (pre-post)	76	.336	.003
Pair 2	Evidences-Based (pre-post)	76	.290	.011
Pair 3	Creative Thinking (pre-post)	77	.473	.000
Pair 4	Clinical Reasoning (pre-post)	103	.521	.000
Pair 5	Evidences-Based (Pre-Post)	103	.455	.000

Results—effects of the course

Paired t test

			Mean	SD	t	df	sig
Pair 1	Clinical Reasoning (pre-post)	N 76	-1.105	1.552	-6.208	75	.000
Pair 2	Evidences-Based (pre-post)	76	-1.132	1.636	-6.031	75	.000
Pair 3	Creative Thinking (pre-post)	77	-.701	1.505	-4.089	76	.000
Pair 4	Clinical Reasoning (pre-post)	103	-2.980	1.876	-16.117	102	.000
Pair 5	Evidences-Based (Pre-Post)	103	-3.000	1.954	-15.580	102	.000

Results—effects of the course

- ▶ In **clinical reasoning**, students learned data collection, cues classification, judgment, problems identification, caring abilities, self-thinking, self-confidence, and should improve the abilities of keen observation, organization, and clinical application.
- ▶ In **EBN**, students learned the application of evidences, including data collection, judgment, resources use, team cooperation, gaining achievement, and should improve the abilities of English literature searching and reading, reasoning and integration, clinical care plan reflection, and human resources application.

Results—effects of the course

- ▶ In **creative thinking**, students learned critical thinking, reflection, breaking through current state, imagination and association, team cooperation, peer learning, and EBN in promoting the quality of nursing care.
- ▶ Students should increase the sensitivity of clinical observation and responses, think openly and specifically.

Results – course evaluation

- ▶ Two nursing and educational experts were invited to evaluate the course design.
- ▶ Five-point Likert scale from strongly agree to strongly disagree was used to measure the course in five dimensions as course plan, course schedule, clinical reasoning nursing process, EBN process, and creative nursing products.

Results– Course plan

items	Likert Scale					Suggestions
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	
Course description	1	1	0	0	0	listing the important concepts of clinical reasoning & EBN
Course goals	0	2	0	0	0	none
Course outlines	2	0	0	0	0	separating lectures and demonstration for the clinical reasoning & EBN
Teaching methods	1	1	0	0	0	none
Evaluation methods	0	2	0	0	0	adding the evaluation items or use Rubric evaluation form

Overall comments :

- 1.This course is very creative, practical, and worth of extension.
2. Does the map drawing of case problems apply the principles of concept mapping ?

Results– Course schedule

items	Likert Scale					Suggestions
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	
Course topics fit for course goals	2	0	0	0	0	none
Appropriate order of course schedule?	2	0	0	0	0	none
Appropriate teaching hour for each course unit	0	1	1	0	0	none
Appropriate levels of practicality and difficulty in overall course	1	1	0	0	0	none
Benefits for students to apply in their nursing careers	2	0	0	0	0	none

Overall comments :

1. adding the Rubric evaluation form
2. adding one teaching hour for clinical nursing process and EBN process, so that teachers could have enough time to explain and give examples as well as students have chance to ask for questions

Results– Clinical reasoning nursing process

items	Likert Scale					Suggestions
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	
Appropriate assignments with case situation description, map drawing & analysis	2	0	0	0	0	Good
Assignments can present clinical reasoning process	1	1	0	0	0	academic basis
Appropriate evaluation methods & percentage	1	1	0	0	0	add Rubric evaluation form
Assignments fit for the level of 2-year RN–BSN students	1	1	0	0	0	none
Assignments can cultivate students' clinical reasoning abilities	2	0	0	0	0	Good

Overall comments :

1. Integration is very important and should put 1–2 more **pages?** to describe, adding Rubric evaluation form
2. This assignments are very beneficial to cultivate students' clinical reasoning abilities

Results– EBN process

items	Likert Scale					Suggestions
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	
Appropriate assignments with the contents of Focus, Literature, Expert, Integration	1	1	0	0	0	enhance integration
Assignments can present evidences-based nursing process	1	1	0	0	0	none
Appropriate evaluation percentage	1	1	0	0	0	add Rubric evaluation form
Assignments fit for the level of 2-years RN-BSN students	1	1	0	0	0	none
Assignments can cultivate students' EBN abilities	2	0	0	0	0	none
Overall comments : 1.Should the assignments for clinical reasoning and EBN be united together or separated ? 2. this assignment could cultivate students' abilities of EBN.						

Results–Creative nursing products

items	Likert Scale					Suggestions
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	
Appropriate assignments with the 10 contents	1	1	0	0	0	listing the Questions(?)
Assignments can present creative nursing process	2	0	0	0	0	none
Appropriate evaluation criteria & percentage for oral presentation	1	1	0	0	0	adding Rubric evaluation form
Appropriate evaluation criteria and percentage for written report?	1	1	0	0	0	none
Assignments fit for the level of 2-year RN–BSN students	1	1	0	0	0	none
Assignments can cultivate students' creative abilities	2	0	0	0	0	none
Overall comments : 1. enhancing the application of six thinking hats 2. proposing innovative or modified nursing interventions, instead of focusing on the problems–solving strategies, methods, & interventions						

Conclusion

- ▶ RN–BSN students' self–perceived abilities of clinical reasoning, EBN and creative thinking improved significantly after taking the course ($P<.001$).
- ▶ Two experts provided positive feedbacks for the course evaluation. They suggested the course could be divided to three parts in the future as clinical case study and practicum (I) : clinical reasoning, clinical case study and practicum (II) : EBN, and clinical case study and practicum (III): creative thinking abilities.
- ▶ The effects of the course has shown that the innovative teaching methods could effectively increased the abilities of clinical reasoning and EBN for each student, as well as improving creative nursing interventions or products for the four groups of nursing students.

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