

# **Evaluation of Scenario Simulation on Nursing Students' Critical Thinking Abilities and Student Satisfaction as it Relates to Learning Style**

**Nancy H. Wagner, DNP, RN**

**Susan A. Lisko, DNP, RN**

**Valerie M. O'Dell, DNP, RN**

**Kimberly A. Serroka, DNP, RN**

*I hear and I forget. I see and I  
remember. I do and I understand.*

**(Confucius)**



# Introduction

- Simulation has been embraced by nurse educators in an effort to teach and empower students, and to promote critical thinking (Schoening, Sittner, & Todd, 2006)



# Problem

- Lack of evaluation regarding the effectiveness of scenario simulation on nursing students' critical thinking abilities as it relates to learning styles

# Purpose

- To evaluate effectiveness of a scenario simulation in enhancing students' critical thinking and satisfaction as it relates to learning styles

# Research Questions

- RQ1: Does scenario simulation enhance nursing students' critical thinking abilities?
- RQ2: Does debriefing following scenario simulation enhance critical thinking?

# Research Questions

- RQ3: What is student satisfaction following scenario simulation?
- RQ4: Do scores on the post-debriefing critical thinking test vary or differ by learning style?
- RQ5: Does student satisfaction differ by learning style?

# Background

- Nursing education is challenged to develop teaching-learning strategies to facilitate the development of undergraduate students' **critical thinking abilities** (Staib, 2003; Brunt, 2005; Shin, Jung, & Kim, 2006)

# Background

- Simulation is an alternative method to facilitate critical thinking skills while maintaining a safe environment (Jeffries, 2006; Schoening, Sittner, & Todd, 2006; Seybert, Kobulinsky, & McKaveney, 2008)

# Background

- Simulation followed by debriefing may provide:
  - Opportunities for students to discuss what they have learned
  - Ensure that activities are not left unfinished
  - Identify what they accomplished

(Cantrell, 2008)

# Background

- Simulation enables:
  - Experiential learning
  - Accommodates diverse learning styles
  - Allows students with varying backgrounds to benefit from the experience (Cioffi, 2001; Jeffries, 2005)

# Conceptual Framework

- Kolb's Experiential Learning Theory guided the study



Weatherhead School of Management, Case Western Reserve University

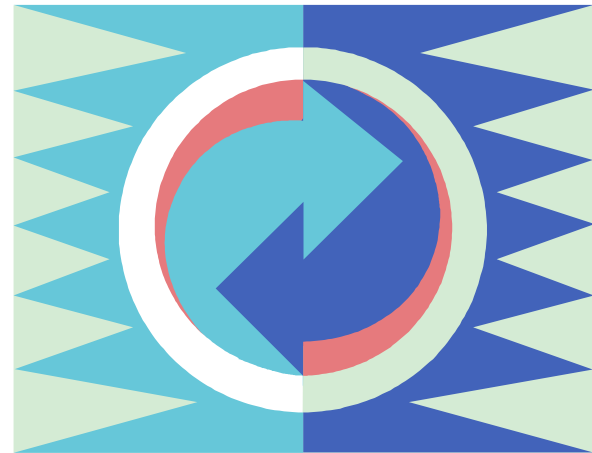
# Kolb's Learning Styles

- Accommodating
- Diverging
- Converging
- Assimilating



# Kolb's Learning Cycle

- Concrete experience
- Reflective observation
- Abstract conceptualization
- Active experimentation



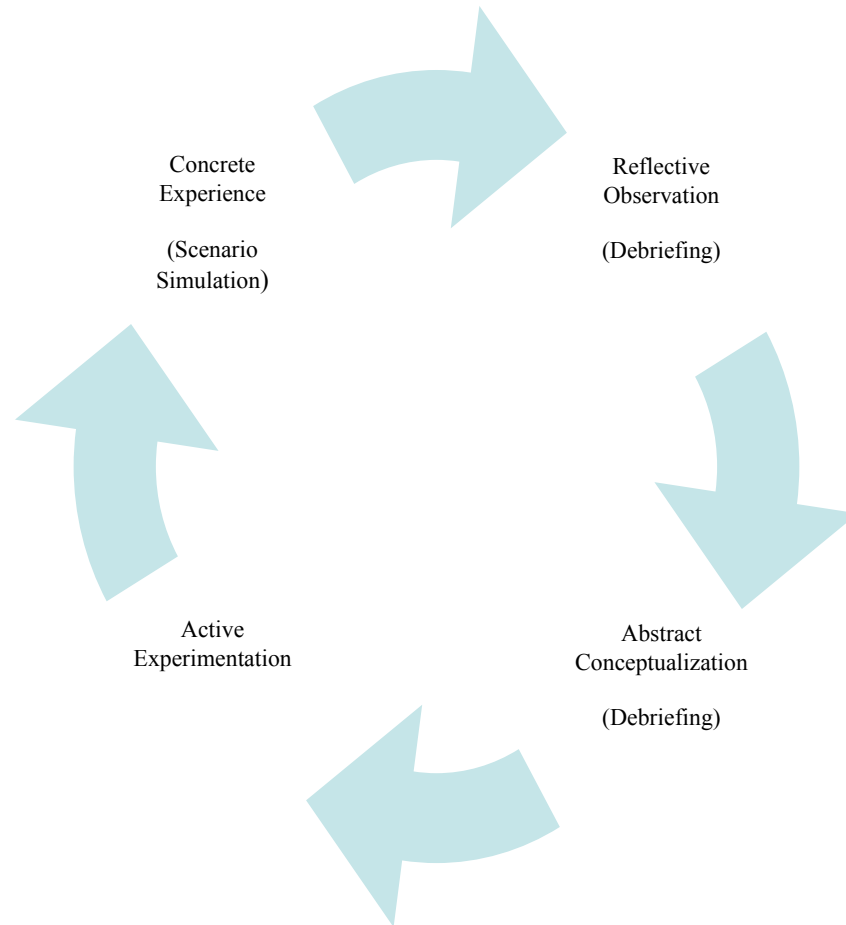
# Concepts of the Study

- Scenario simulation
- Debriefing
- Critical thinking
- Evaluation



# Evaluation of Experience

## Critical Thinking



# Literature Review – Critical Thinking

- Critical thinking has been identified as a necessary outcome of nursing education (NLNAC, 2004)

# Literature Review – Scenario Simulation

- Use of scenario simulation as a teaching-learning strategy in nursing education has become increasingly popular (Haskovitz & Koop, 2004; Reilly, & Spratt, 2006; Henneman, Cunningham, Roche, & Curnin, 2007)

# Literature Review – Scenario Simulation

- Use of simulation in undergraduate nursing education provides:
  - Opportunities to practice
  - Role model
  - Acquire a variety of skills in a controlled, monitored setting (Cantrell, Meakim, & Cash, 2008)

# Literature Review – Debriefing

- Integral element of simulation
- Allows students to be led through a purposive discussion of the experience so they can reflect on it (Lederman, 1992; Fanning & Gaba, 2007; Lasater, 2007a)

# Literature Review – Student Satisfaction

- Research studies have focused on evaluation of student satisfaction relating to innovative teaching-learning strategies

(Knight & Zhai, 1996; Feingold, Calaluce, & Kallen, 2004; Bearnson & Wiker, 2005; Parr & Sweeney, 2006; Devine Rentschler et al., 2007)

# Literature Review – Learning Styles

- Knowledge of learning styles:
  - Allows faculty to communicate more efficiently
  - Can help faculty respond to a more diverse student body

(Kolb, 1984; Hauer, Straub, & Wolf, 2005; DiBartola, 2006; Burris, Kitchel, Molina, Vincent & Warner, 2008)

# Methodology

- Design:
  - Descriptive
  - Pretest-posttest
  
- Setting:
  - Nursing skills laboratory
  
- Sample:
  - Junior level baccalaureate nursing students (N=83)

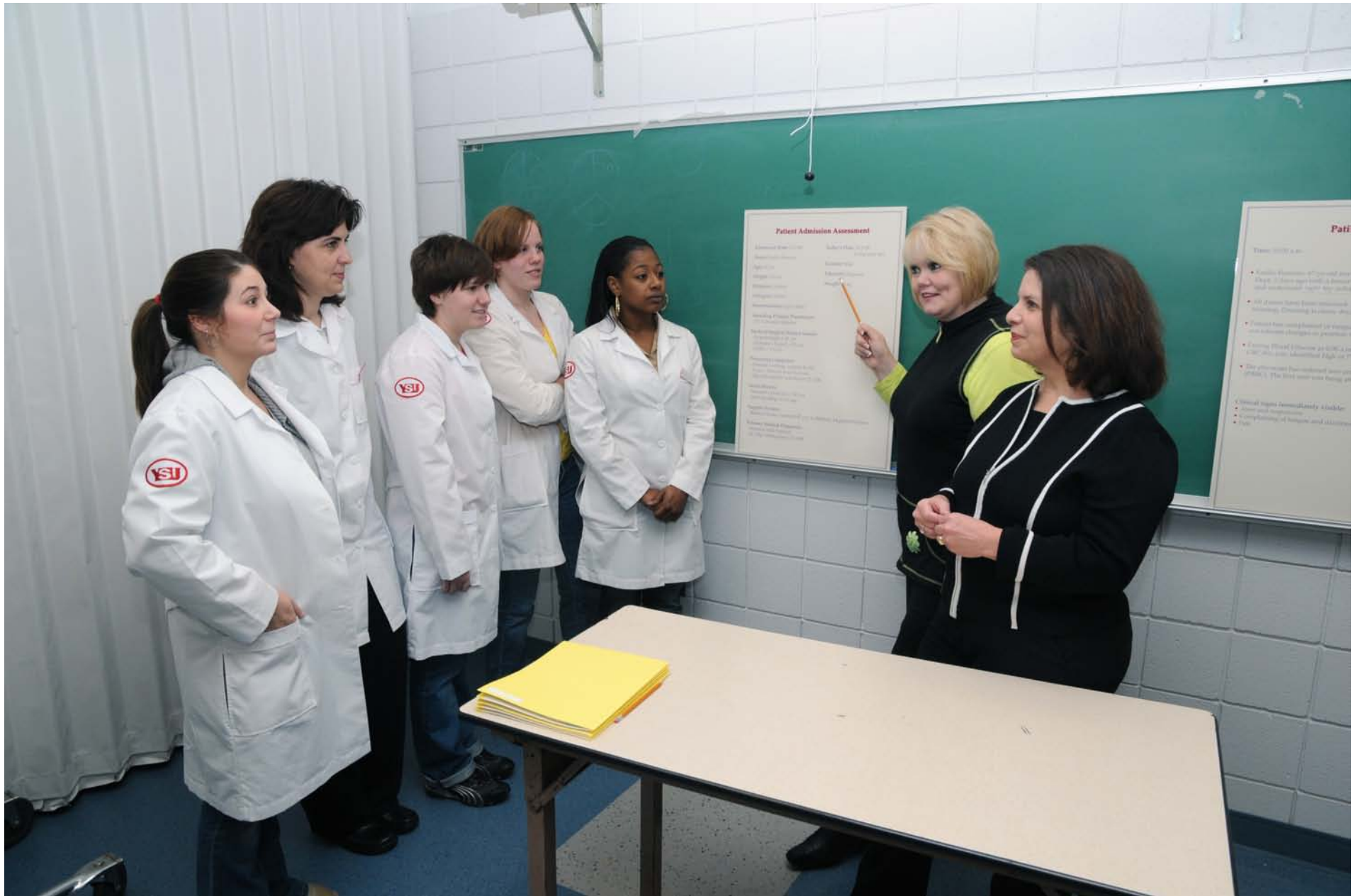
# Instruments



- Demographic Data Sheet
- Background Data Sheet
- Pretest
- Simulation Posttest
- Debriefing Posttest
- METI® Simulation Effectiveness Scale©
- Kolb Learning Style Inventory©

# Procedure

- Pretest
- Scenario Simulation
- Simulation Posttest
- Debriefing Session
- Debriefing Posttest
- Demographic & Background Data Sheets
- METI® Simulation Effectiveness Scale©
- Kolb Learning Style Inventory©





# RQ1: Does scenario simulation enhance nursing students' critical thinking abilities?

- Pretest
- Simulation Posttest
- No statistical significance found
- $p = .256$

## **RQ2: Does debriefing following scenario simulation enhance critical thinking?**

- Simulation Posttest
- Debriefing Posttest
- Statistical significance
- $p = .034$

## **RQ3: What is student satisfaction following scenario simulation?**

- METI<sup>®</sup> Simulation Effectiveness Scale<sup>©</sup>
- Mean = 23.04
- Median = 24.00
- Mode = 26.00

# RQ3: What is student satisfaction following scenario simulation?

## Range of Mean Scores on METI ® Simulation Effectiveness Scale©

Variable	Possible Score	Mean
Question 11 (decision-making)	0-2	2.0
Question 13 (debriefing valuable)	0-2	1.99
Question 1 (thinking critically)	0-2	1.98
Question 4 (understanding medications)	0-2	1.45

## RQ4: Do scores on the post-debriefing critical thinking test vary or differ by learning style?

Learning Style	<i>N</i>		Pretest	Debriefing Posttest
	<i>n</i>	%	M	M
Accommodator	19	24	11.84	11.63
Diverger	29	36.7	11.34	11.28
Converger	15	19	11.73	11.67
Assimilator	16	20.3	<b>10.44</b>	<b>11.38</b>

## **RQ5: Does student satisfaction differ by learning style?**

### **Descriptives of Learning Style and Student Satisfaction**

<b>Variable</b>	<b>n</b>	<b>%</b>	<b>Mean</b>
<b>Accommodator</b>	19	24	22.26
<b>Diverger</b>	29	36.7	22.41
<b>Converger</b>	15	19	23.33
<b>Assimilator</b>	16	20.3	24.25

# Implications

- Scenario simulation provides consistent experiences
- Debriefing is an essential component

# Limitations

- Convenience sample
- Lack of ethnic diversity
- One group pretest/posttest
- Videotaping not utilized
- Students not informed of their learning style

# Recommendations

- Include a control and experimental group
- Use of videotape
- Replication at various levels within curriculum
- Replication with a more diverse student population



*~ Thank You ~*