

# Teaching & Learning Strategies for Simulation

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## Disclosures

- ⊕ Editorial Board Member:  
“Clinical Simulation & Learning”

## Objectives

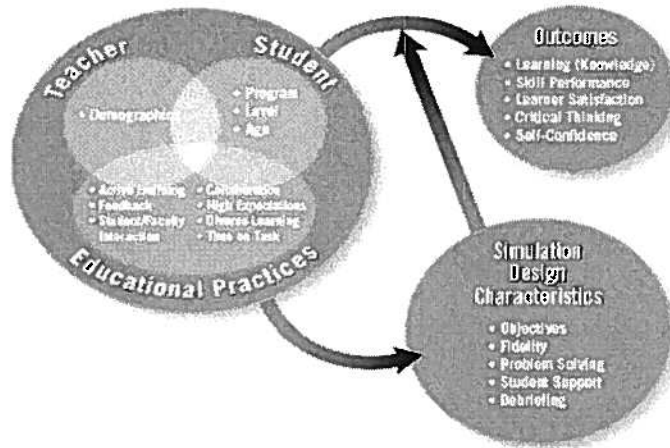
- ⊕ Identify teaching and learning strategies appropriate for simulation.
- ⊕ Explore techniques for applying simulation to pedagogy.
- ⊕ Describe multiple simulation modalities that may enhance the teaching and learning process.
- ⊕ Discuss teaching and learning strategies across the curriculum.

“Increasing use of technology in health care and higher expectations on the part of patients have encouraged the development and use of new training tools in healthcare education. Because of advances in simulation training, newly qualified professionals will soon be expected to be expert practitioners from the time they meet their first clients or patients, just as newly qualified airline pilots should confidently fly passenger planes after having only flown flight simulators.”

Atinier, Hunt, Gordon & Harwood, 2006, p. 360

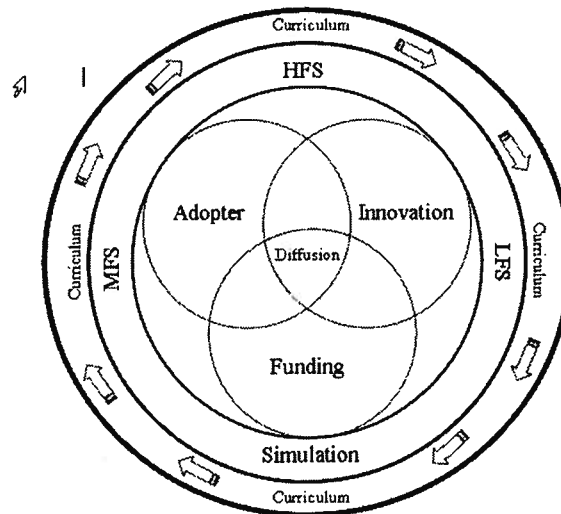
# The Value of Planning

## The Nursing Education Simulation Framework



Jeffries, 2005

# Addressing The Barriers



Hanberg, 2008

## Basis of Higher Education

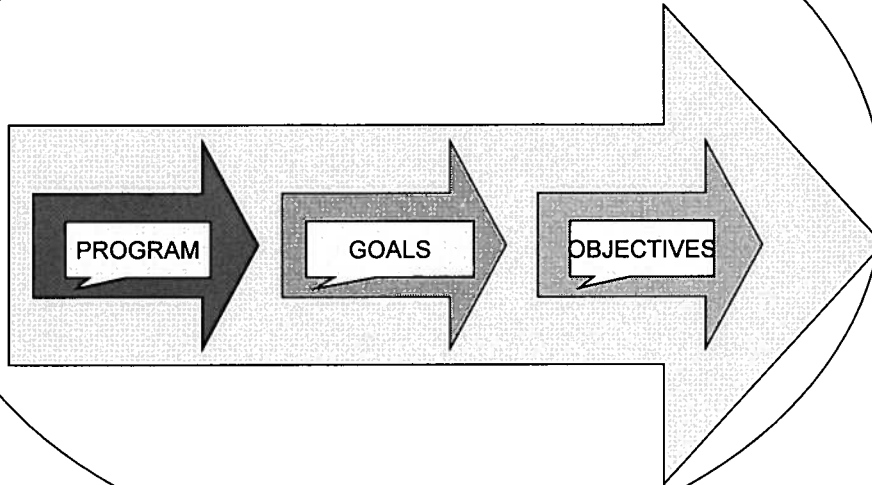
- ⊕ Should be designed on the basis of application of knowledge, interaction with ideas and people, experience, feedback, and reflection.
- ⊕ Simulation is structured precisely on these premises.

Hertel & Mills

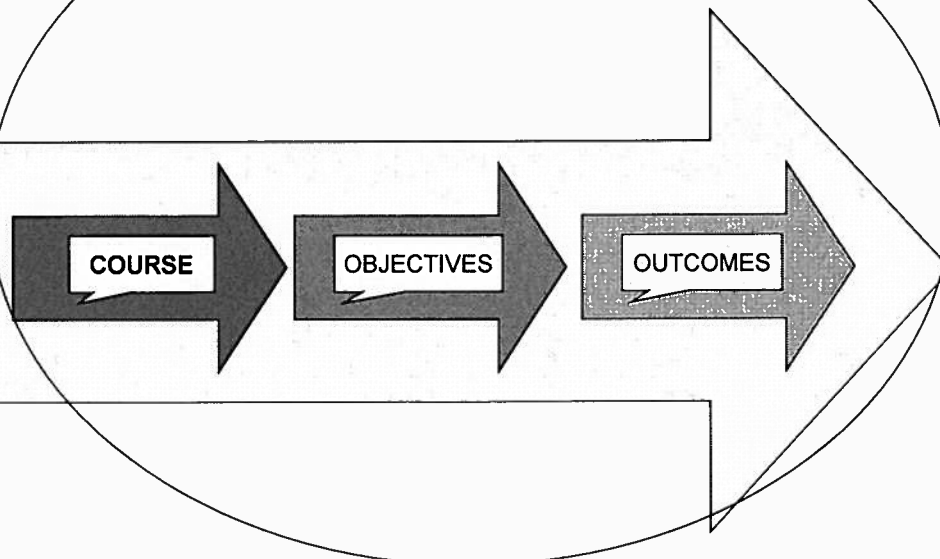
## Learning from Multiple Domains

- ⊕ **COGNITIVE:** Mental Skills (Knowledge)
- ⊕ **AFFECTIVE:** Growth in feeling or emotional areas (attitude).
- ⊕ **PSYCHOMOTOR:** Manual or physical skill.

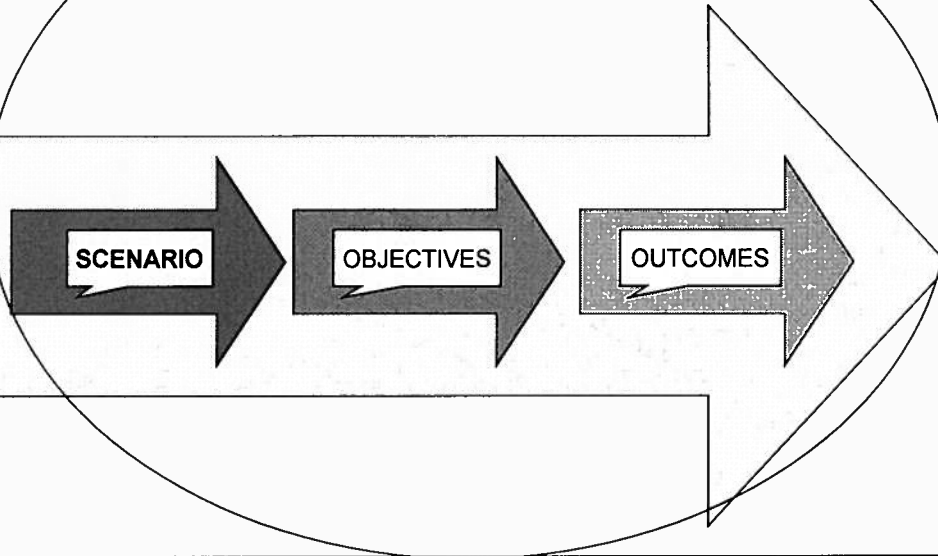
## So... Let's Start at the Beginning



## So... Let's Go Back To Planning



So... Let's Go Back To Planning



OBJECTIVES  
OBJECTIVES  
OBJECTIVES  
OBJECTIVES  
OBJECTIVES  
OBJECTIVES

## How Many Objectives?

- ⊕ The literature is confusing...
- ⊕ 2-4
  - ⊕ 8-10
- ⊕ Back to Planning... What Is Your Purpose?

## Are We Ready To Consider ... Scenarios?

- ⊕ Have you defined your program?
- ⊕ Have you identified the courses (curriculum)
- ⊕ Have you identified the scenarios?
  - ⊕ Threads
  - ⊕ Threads
  - ⊕ Threads

## Realistic Scenarios

- ⊕ Real problems
- ⊕ Allow students to suspend belief
- ⊕ Make it REAL
  - ⊕ Physical
  - ⊕ Conceptual
  - ⊕ Emotional
- ⊕ Experiences
  - ⊕ Task Training
  - ⊕ Lecture Animation
  - ⊕ Immersion

Gaba (2004), Rudolph, Simon and Raemer (2007)

## Physical Realism

- ⊕ Scale realism based on type of learning & OBJECTIVES
  - ⊕ When to use more
  - ⊕ When to use less
- ⊕ Manikins, Props, Moulage
- ⊕ Costumes
- ⊕ Disruptions

Aldrich, 2005

## Conceptual Realism

- ⊕ Level the simulation learning experience based on OBJECTIVES
  - ⊕ Didactic
  - ⊕ Task Training
  - ⊕ Lecture Animation
  - ⊕ High Fidelity Patient Care Immersion

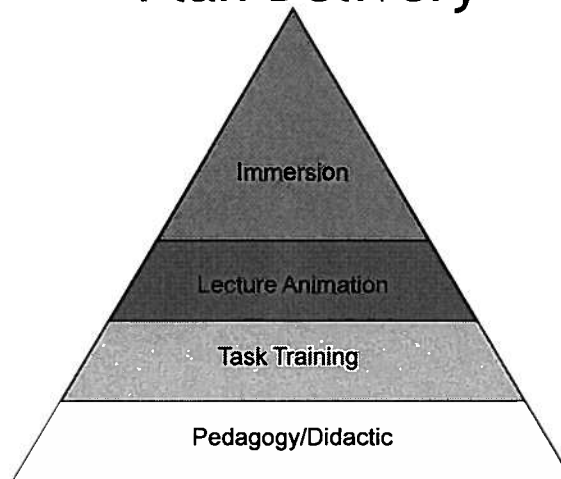
## Emotional Realism

- ⊕ Voices, vocal responses
- ⊕ Role appropriate recordings (i.e., age, gender).
- ⊕ Confederates
- ⊕ Learner - patient interaction

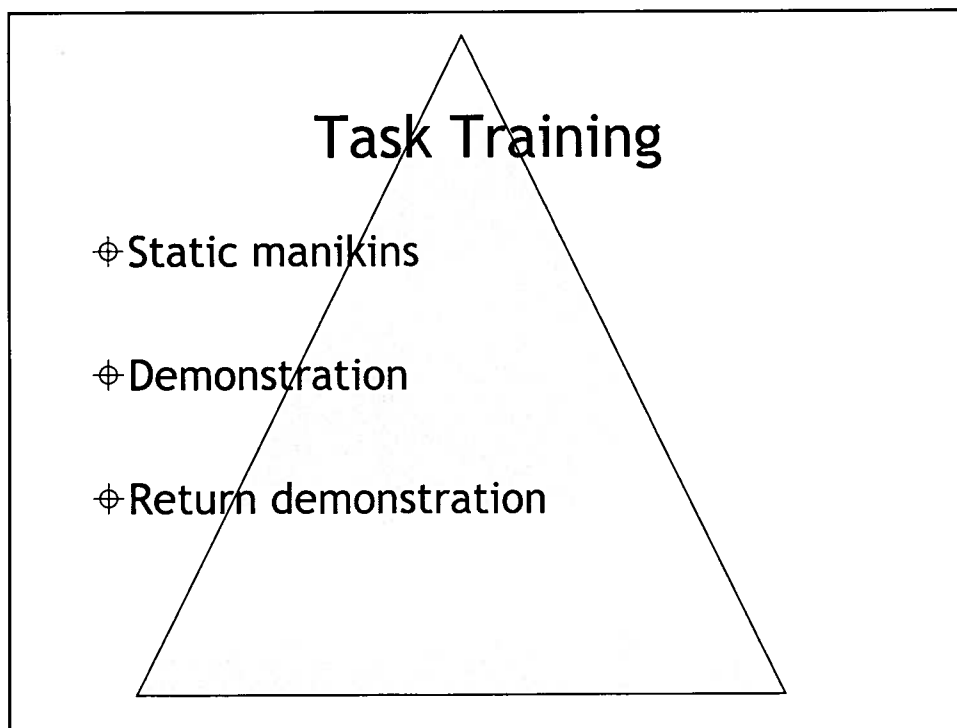
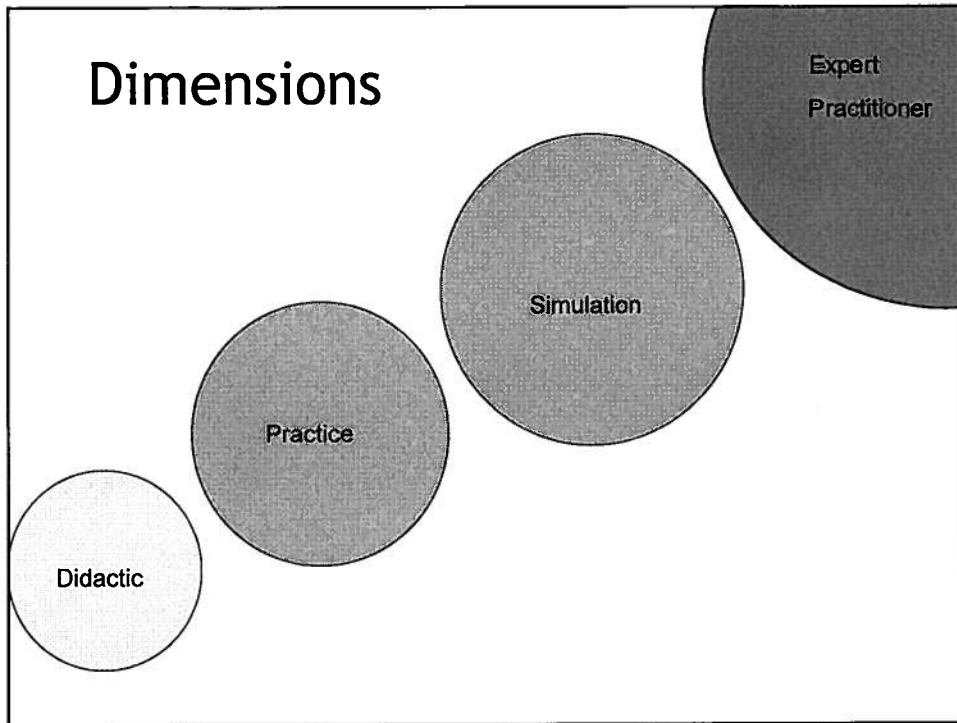
## Psychological Realism

- ⊕ Allow student to make mistakes
- ⊕ Allow the manikin or confederates to change the mood of the scenario.
- ⊕ Caution
  - ⊕ Allowing the patient to die remains controversial.
- ⊕ High stakes testing vs. evaluation

## Plan Delivery



OBJECTIVES! OBJECTIVES!  
OBJECTIVES!



## Lecture Animation

- ⊕ Simulator fidelity may vary
- ⊕ Demonstrate/discuss/illustrate
- ⊕ Return demonstration
- ⊕ Practice
- ⊕ Extensive faculty participation
- ⊕ May be followed by debriefing

## Patient Care Immersion

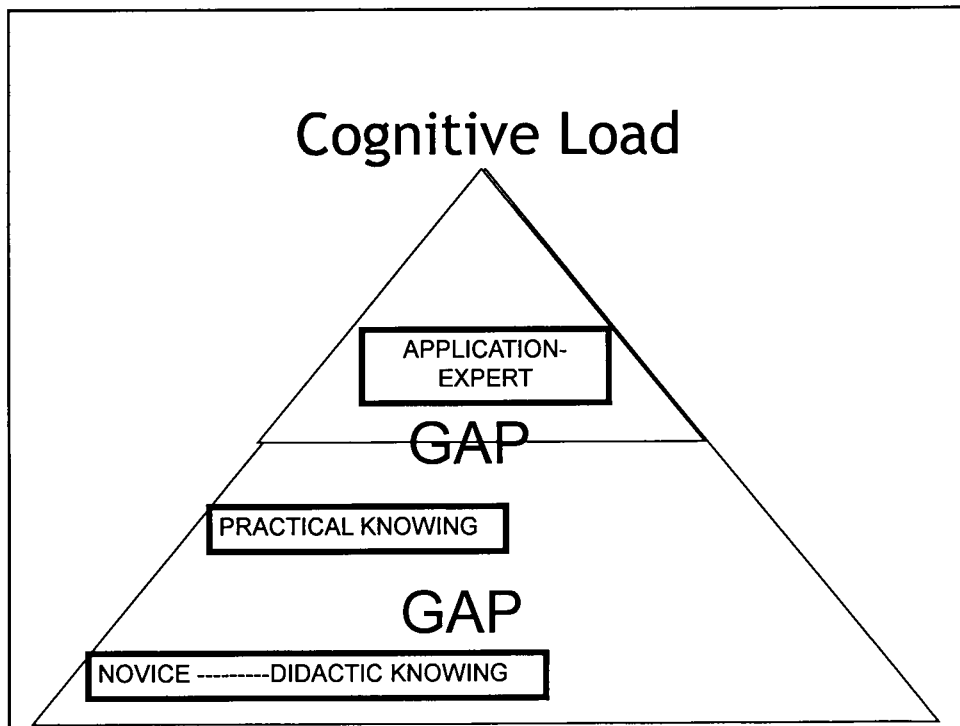
- ⊕ Led by facilitator
- ⊕ Replicates real environment & experience
- ⊕ Followed by debriefing

“Students learn in three ways; through participation in the simulated experience, observation of the experience, and debriefing, which strengthen student’s progression and mastery of learning.”

Rothgeb, 2008, p. 491

# Let's Talk About... COGNITIVE LOAD

⊕ Back to objectives... Planning



## Student Preparation

- ⊕ Student orientation
  - ⊕ Scripted orientation ensures consistency
- ⊕ Scenario
- ⊕ Setting
- ⊕ Role
- ⊕ Patient information
- ⊕ Approach the scenario realistically and professionally
- ⊕ Confidentiality agreement (student)
- ⊕ Turn off electronic devices

## Faculty Preparation

- ⊕ Review orientation information
- ⊕ Understand objectives
- ⊕ Check equipment, manikin, chart, supplies
- ⊕ Obtain confidentiality agreements
- ⊕ Ensure students have received didactic prior to attending simulation.

## Pre-Simulation

- ⊕ Environment
- ⊕ Simulated conditions
- ⊕ Student roles
- ⊕ Facilitator roles

## Environment & Manikin

- ⊕ Manikin
- ⊕ Software & hardware
- ⊕ Color code connections
- ⊕ Standardized patients

## Scenario & Equipment Storage

- ⊕ Box and organize every scenario separately.
  - ⊕ Include all supplies & props
  - ⊕ Copy of the template
- ⊕ Crash cart
- ⊕ Respiratory box
- ⊕ IV cart
- ⊕ Use TA's

## Manikin Preparation

- ⊕ Props
- ⊕ Costumes
  - ⊕ Wigs
  - ⊕ Beards
  - ⊕ Hats
  - ⊕ Clothing
  - ⊕ Tattoos

## Lab

- ⊕ Student attire
- ⊕ Faculty attire
- ⊕ Policies and procedures

## Student Role Assignments

- ⊕ Random assignment
- ⊕ Align assignment with objectives
- ⊕ Consider pre-assigning
- ⊕ Students should not play the role of an individual above their expected level of expertise

Rothgeb, 2008

## Facilitator Roles

- ⊕ Facilitator vs. content expert
- ⊕ Encourage
- ⊕ Manage student rotations
  
- ⊕ Student learning may be stifled if instructors step out of their role and interrupt the simulation

Hawkins, Todd & Manz, 2008

## Facilitator Location

- ⊕ At the bedside?
  
- ⊕ In the control room?

## Cueing

- ⊕ Via Confederate
- ⊕ Via Simulator
- ⊕ Bug In Ear?
  - ⊕ When To Use More
  - ⊕ When To Use Less

## Moulage & Props

- ⊕ Enhances realism
- ⊕ Easy to find
- ⊕ Use with caution
  - ⊕ Some may be permanent

## Simulated Electronic Health Records

- ⊕ Valuable informatics competency
- ⊕ Standardize the platform across every scenario
- ⊕ Level according to semester and needs
- ⊕ Apply it live before, during, after scenario
- ⊕ Debriefing tool

## Managing Flow

- ⊕ Set a time limit
- ⊕ Honor the schedule
- ⊕ Keep the scenario focused
- ⊕ Keep it student centered
- ⊕ Ground rules

## Scenarios

- ⊕ Scenarios on the fly
- ⊕ Programmed scenarios
- ⊕ Commercial vs. custom scenarios
- ⊕ Other:
  - ⊕ Simulation Case Library
  - ⊕ Med Ed Portal

## Conclusion

“Simulation is an innovative tool that can be used in all levels of nursing education. This tool provides educators with a standardized way to have students work as a team, collaborate with others, problem solve, make decisions, and use critical thinking in a safe environment.”

Rothgeb, 2008

## Conclusion

⊕ Your thoughts?

⊕ Comments?

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