

Educational Research:



Do We Know What We Are  
Trying To Do?

Eric Niederhoffer  
SIU-SOM

# Outline

- What to study
- How to design a study
- Role of statistics
- Discuss experiences



# What to Study

- **Groundwork**  
develop new insights into the systemic nature of medical practice and education
- **Investigations**  
extend theory by revealing causal relationships and specifying how/when they hold
- **Validation**  
demonstrate how a given approach accurately and adequately reflects the construct of interest
- **Observations**  
raise awareness of an issue not yet addressed in medical education and identify a specific need for further investigation or intervention
- **Educational Case Reports**  
detailed reflections on educational interventions tried at a single institution, includes context, process, and outcomes analysis of lessons learned



As defined by Teaching and Learning in Medicine

# What to Avoid

- **Student attitudes, intentions, and/or beliefs in isolation of other measures**  
disconnect between people's attitudes, intentions, and beliefs and their actual behavior except when the measures used are methodologically sound and conceptually based
- **Self-reported knowledge or growth, confidence, and/or self-efficacy**  
learners' self-assessment is inaccurate
- **Impact of learning styles**  
carefully controlled, experimental conditions are needed to demonstrate that learning styles have a meaningful impact on performance
- **Impact of technology**  
introduction of technology to the classroom produces "no significant difference" in academic outcomes
- **Opinion pieces and “me-too” efforts**  
opinions require detailed analysis of the literature and reproduction of published efforts in a different area need justification of their novelty



Based upon guidelines to Deputy Editors for Teaching and Learning in Medicine  
as written by Anna T. Cianciolo, Ph.D.

What have been your experiences?

