MEDICAL EDUCATION RESEARCH & SCHOLARSHIP

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Overview

- Introductions
- Clinical vs Education Research
- Medical Education Research & Scholarship
- Research & Education Development Cycles
- Activity & Real World Examples

Types of Research

Clinical Research

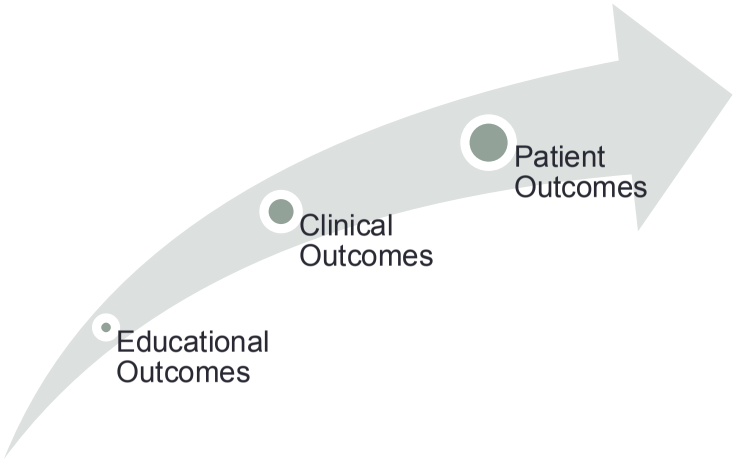
- Study of health and illness in people
- How to prevent, diagnose, and treat illness
- Controlled settings (Protocols)
- Scientific approach

Education Research

- Study of education and learning processes
- Describe, understand, and explain how learning takes place
- Naturalistic & (Semi-controlled) settings
- Social Science & Scientific approach

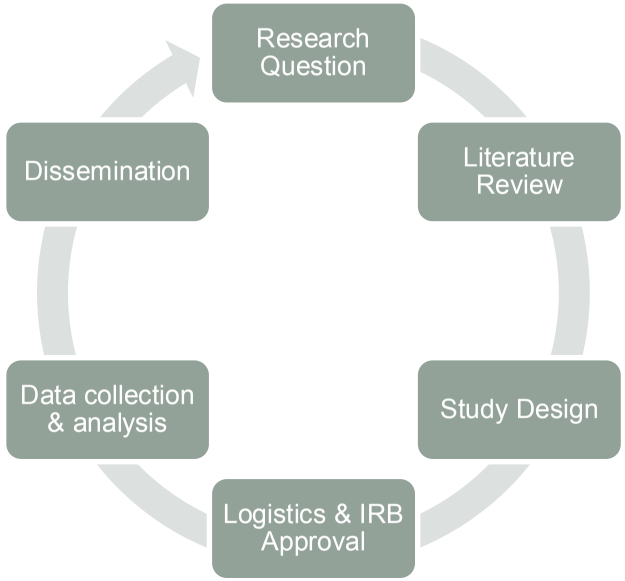
Medical Education Research & Scholarship

- **What (Purpose)** – Contribute new, peer-reviewed ***resources and outcomes*** that advance the field of medical education
- **Why (Goal)** – Improve educational outcomes & (indirectly) improve clinical & patient outcomes

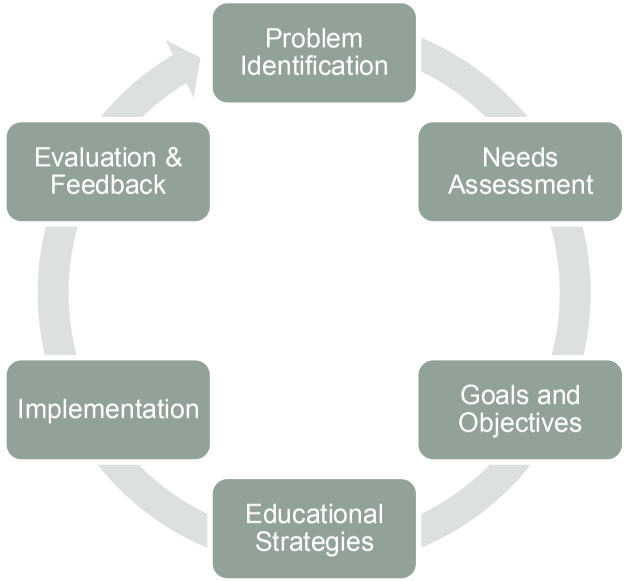


Research & Development Cycles

Research Process

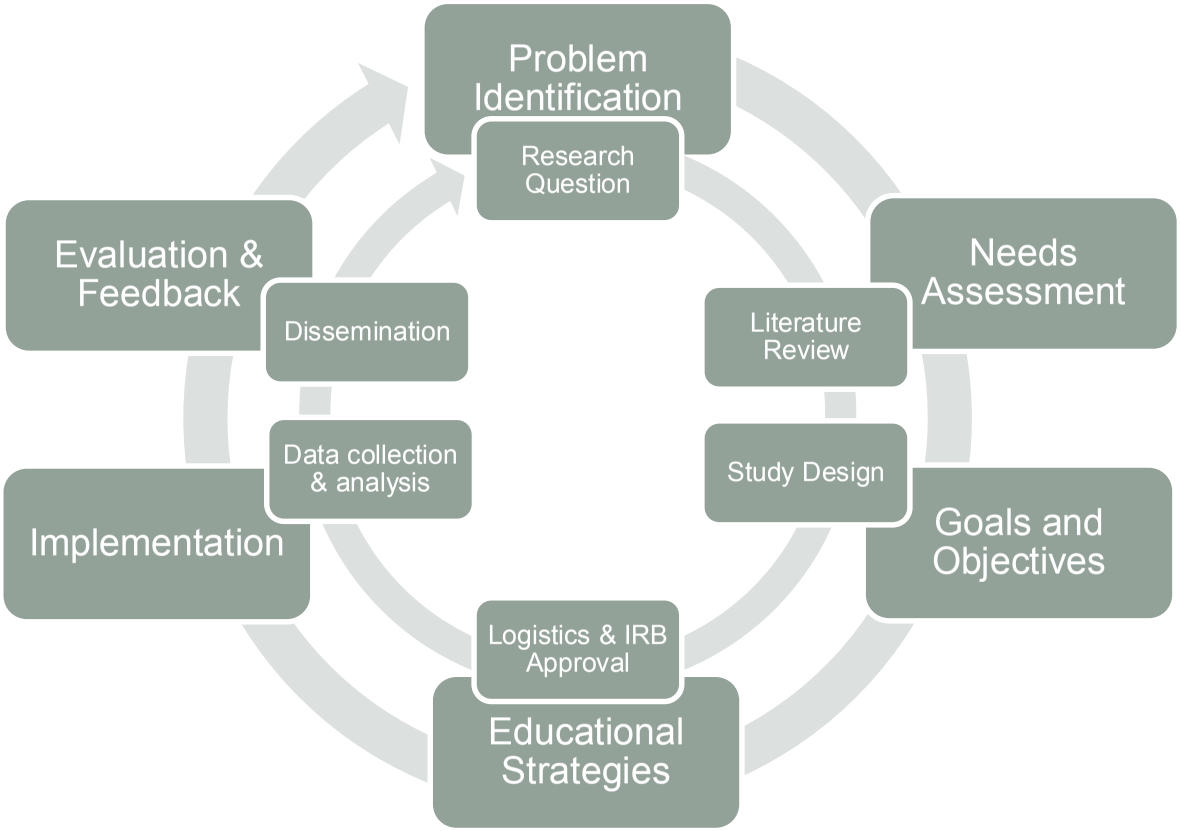


Development Cycle (Curriculum, Assessment, & Instruction)



See: *Curriculum Development in Medical Education* by David E. Kerns et al

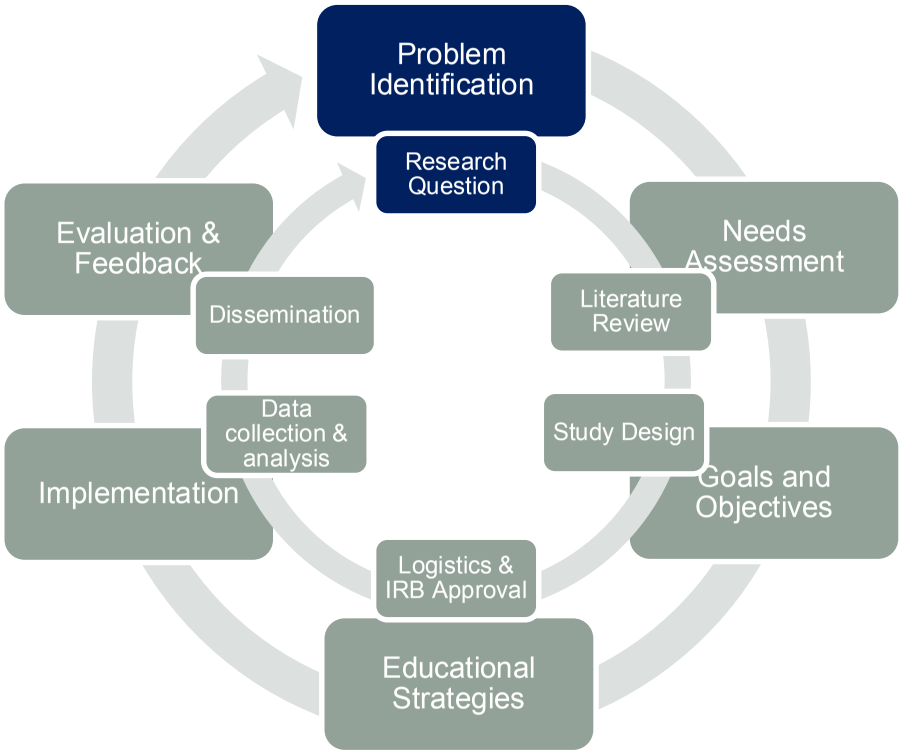
Medical Education Research Development Cycle



ACTIVITY

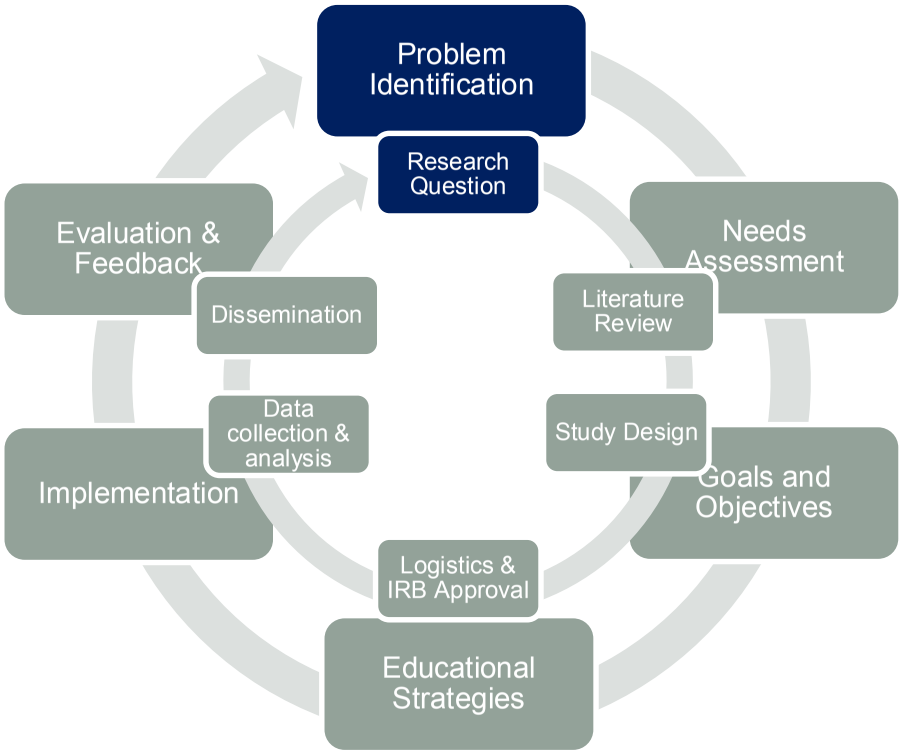
Think about an educational dilemma in your life…

Step 1: Problem Identification



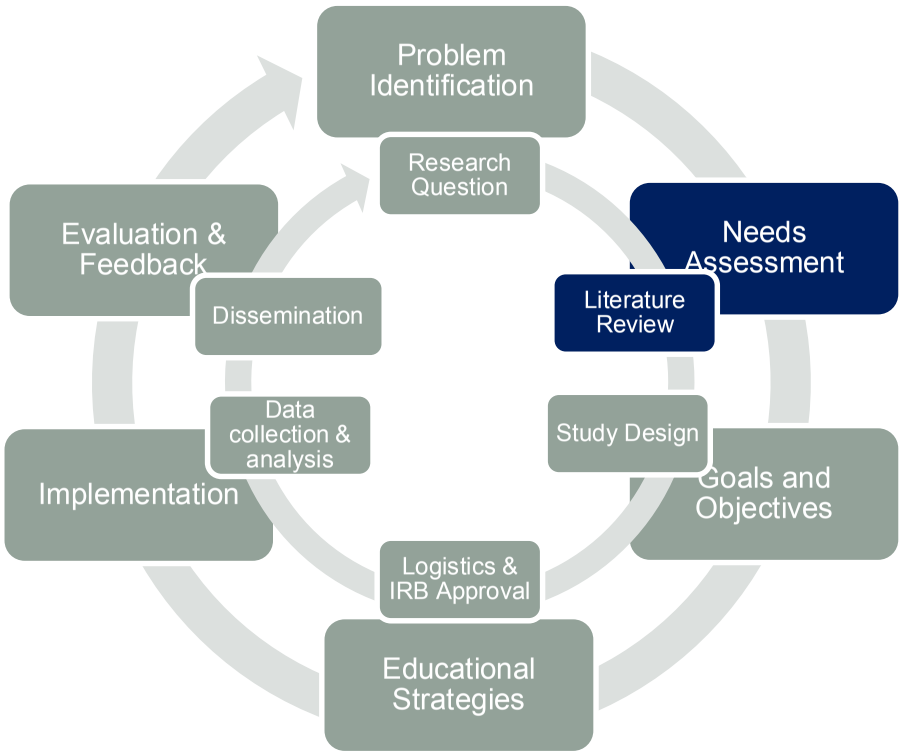
- **PICO**
  - **P**opulation, **I**ntervention, **C**omparator/Control, **O**utcome
  - PICO – quantitative
  - PO – qualitative / descriptive
- **Kirkpatrick's Four-Level Training Evaluation Model**
  - **Reaction** - perceptions of training
  - **Learning** - change in knowledge (educational outcomes)
  - **Behavior** - change in actions
  - **Results** – clinical/patient outcomes

Step 1: Example



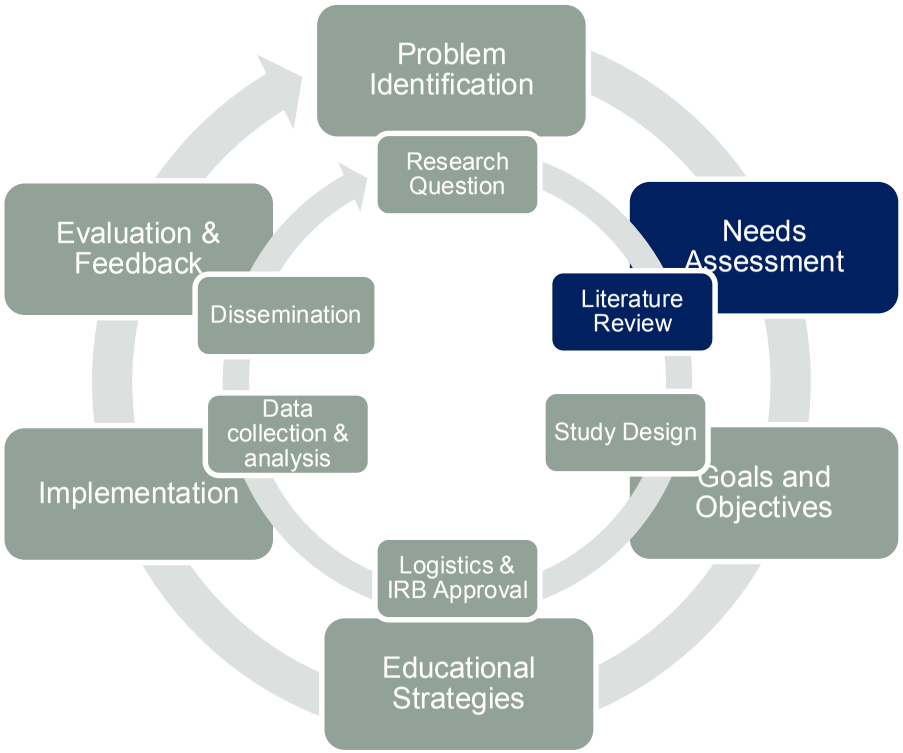
- What would be your research question? May start with a thought and refine question as you go…
- Ours was “Does a 2 hour workshop using the 5 Cs model improve pediatric residents’ skill in communicating with consultants?”
- Kirkpatrick level? Ours was change in action – but using simulation

Step 2: Targeted Needs Assessment



- **What is already known about the your topic of interest?**
  - Search engines: PubMED, Web of Science, EBSCOhost*, ERIC, etc.
- **Who is the targeted learner group?**
  - Ideal and actual characteristics of the group?
  - Ideal and actual characteristics of their environment?

Step 2: Example



- What is known and who are you targeting?
- In our example – communication skills specifically targeted in competencies; documented poor PC-specialist communication in peds; validated tool created for ED use

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- Workshops & Classes Descriptions
- Tutorials
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Tutorials

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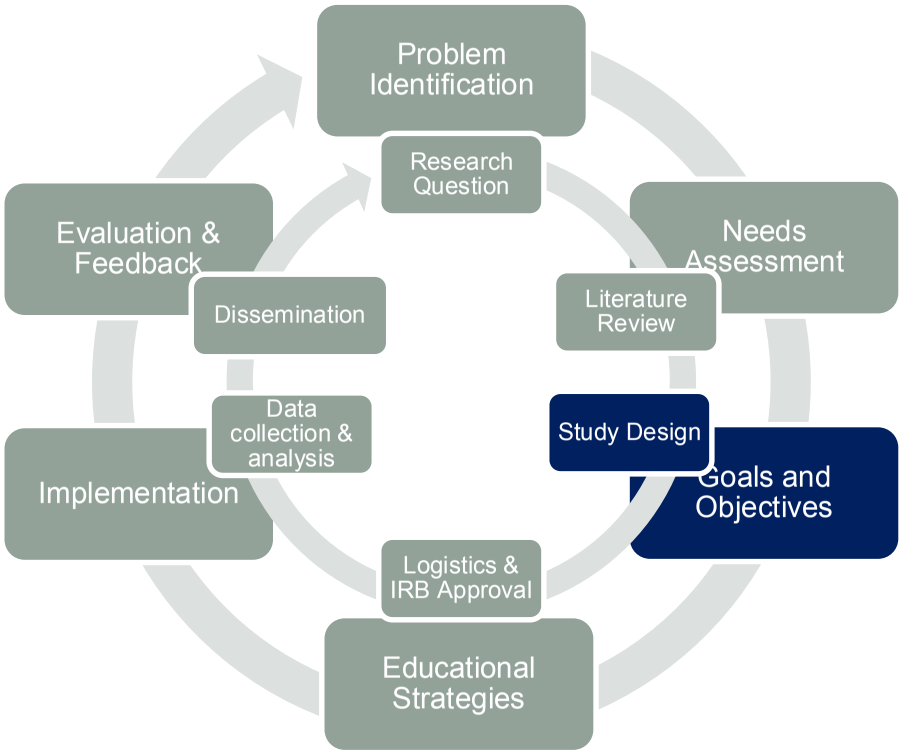
- Using the Library
- Evidence Based Medicine Resources
- Searching the Literature
  - Embase
  - PubMed (Various topics)
  - PsychInfo
  - Scopus
  - Web of Science

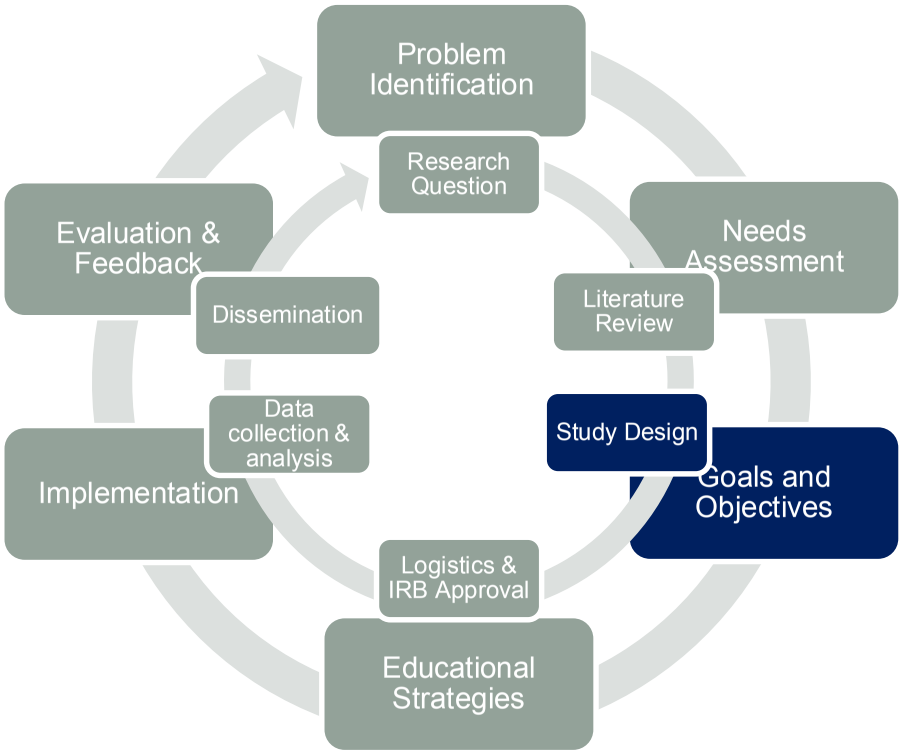
- Managing Citations and Bibliographies
- Writing & Grants

Step 3: Goals and Objectives



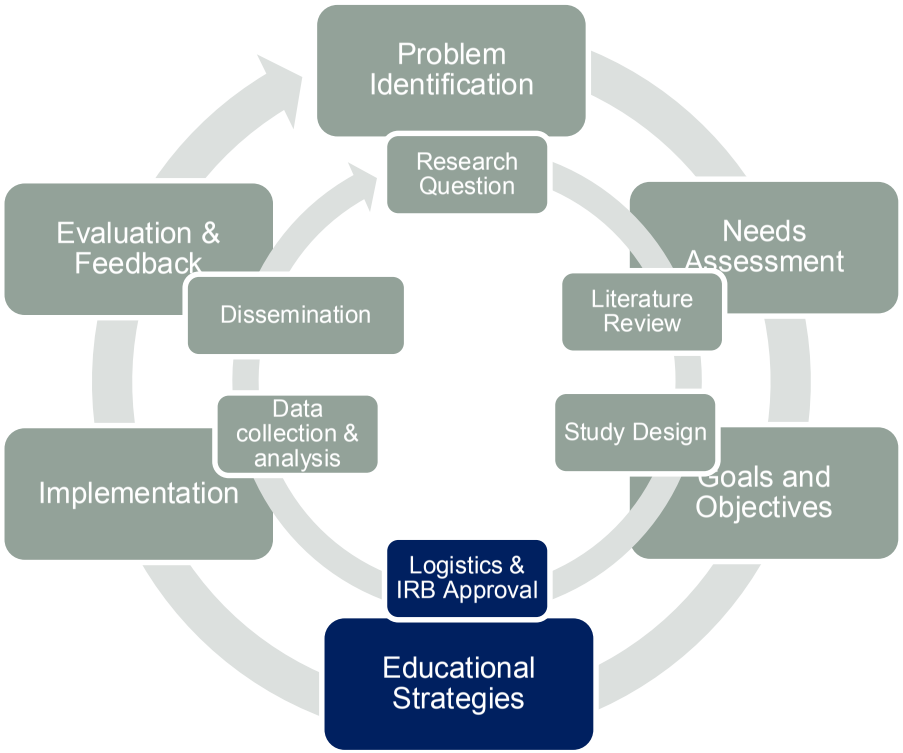
- **Quantitative Methodology**
  - Describe, explain, predict
  - Identify relationships (variables)
  - Test theory
  - **Approaches:** Cross-sectional, Cohort, Case-Control, Randomized Control, etc.
- **Qualitative Methodology**
  - Explore, discover, construct
  - Identify patterns (themes)
  - Increase understanding; Build theory
  - **Approaches:** Ethnography, Phenomenology, Grounded Theory, Case Study
- **Survey Methodology***
  - Describe

Step 3: Example



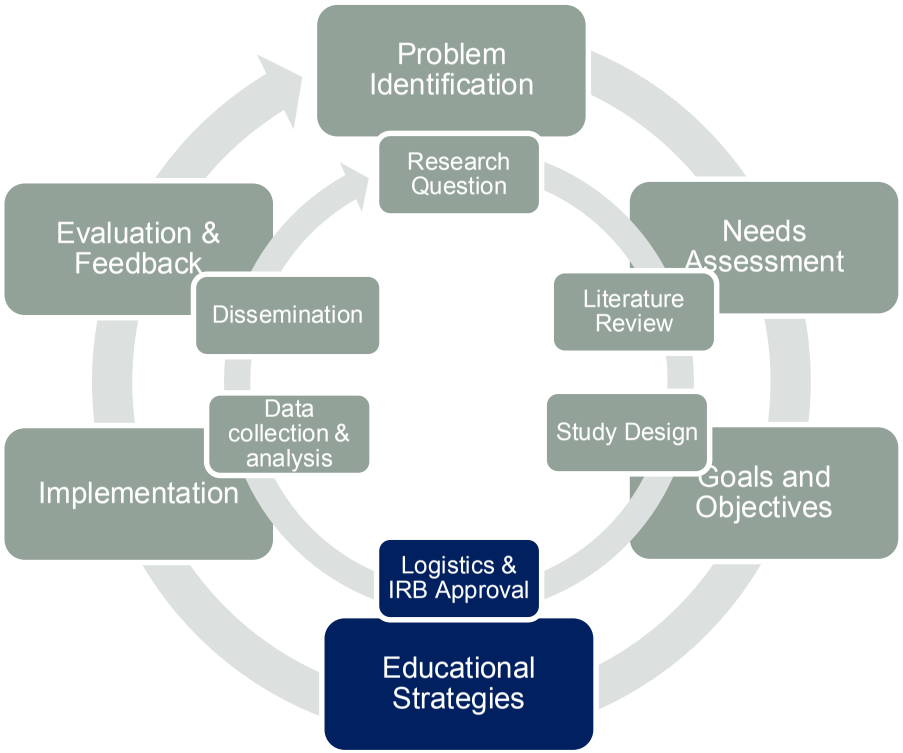
- How would you study your question?
- For us – performance before and after intervention

Step 4: Educational Strategies



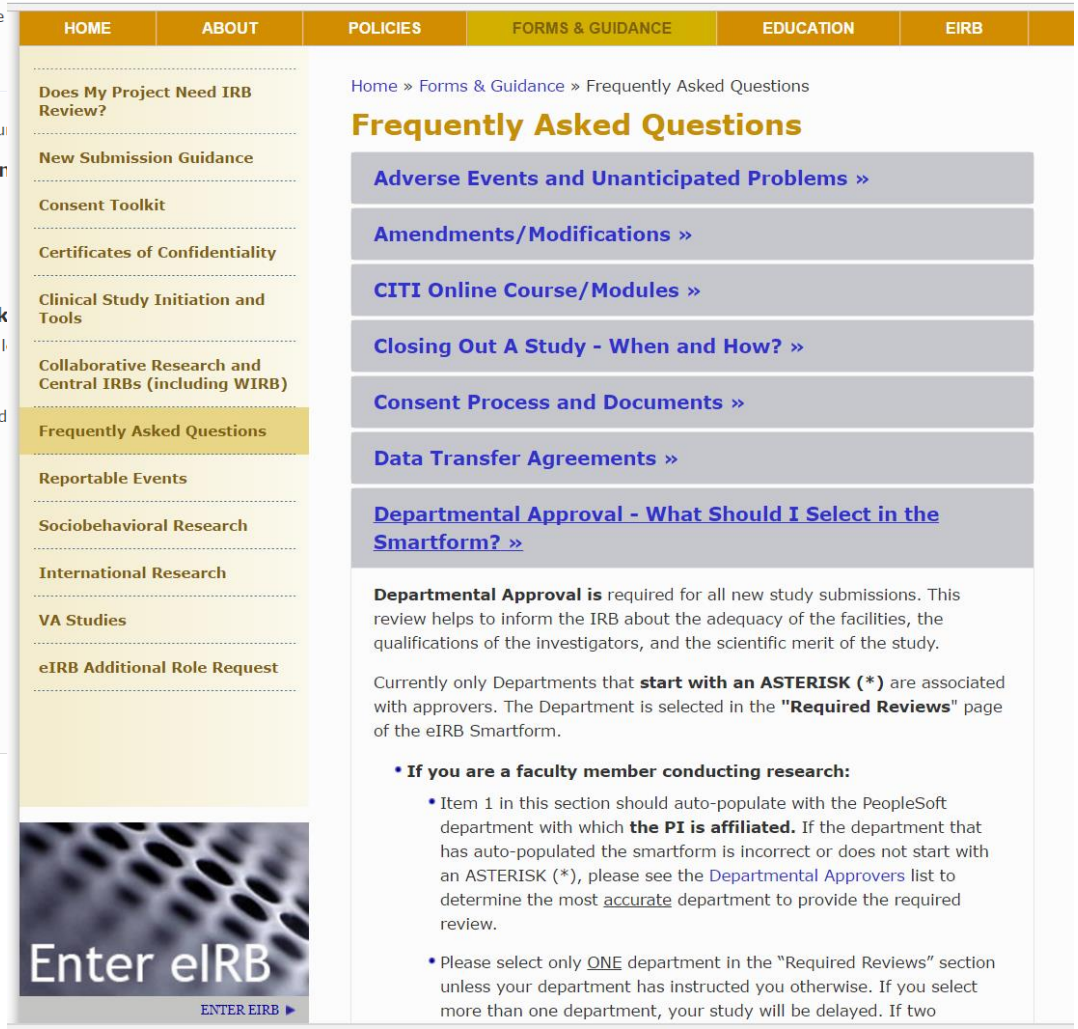
- ***Content***
  - What do you need to run your intervention?
  - What does your data collection instrument need to measure?
    - *Is there an existing tool you can use?*
- ***Methods***
  - Who will conduct data collection?
  - Who will conduct data analysis?
- ***Logistics & IRB***
  - Who are the participants?
  - Where is the study going to take place?
  - Who needs to approve the study?

Step 4: Example

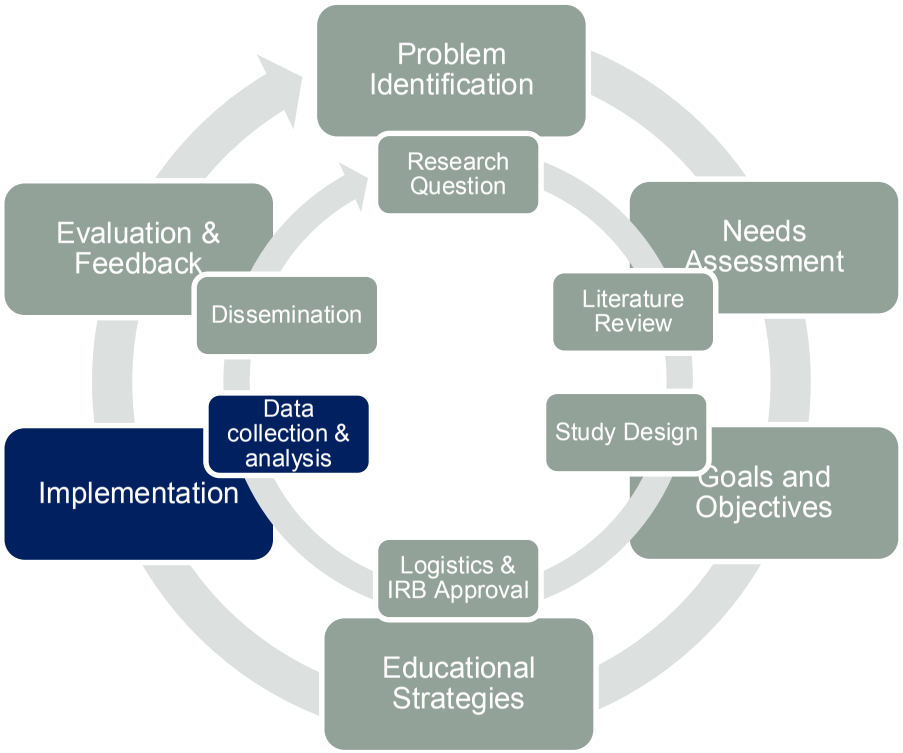


- What is your intervention and what approvals do you need?
- Intervention is 2 hour workshop based on 5 Cs. Got exemption from IRB. Also needed to create “test” by writing and piloting 2 cases.

irb.emory.edu

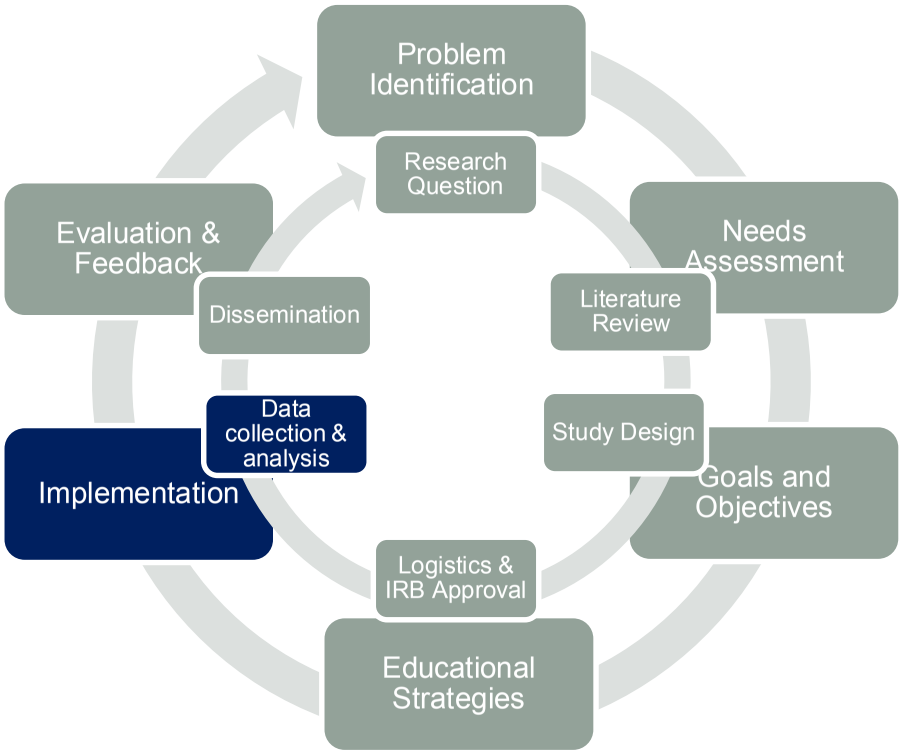


Step 5: Implementation



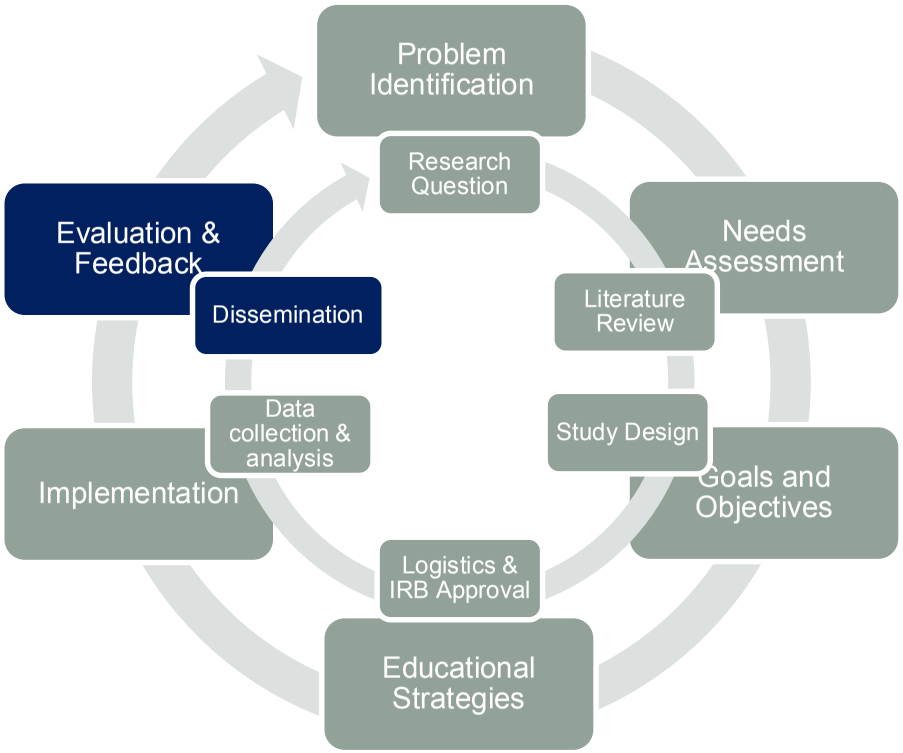
- **Quantitative Methodology**
  - Describe, explain, predict
  - Identify relationships (variables)
  - Test theory
  - **Methods**: Tests, Assessments, Questionnaires (Surveys*), Rating Scales, etc.
- **Qualitative Methodology**
  - Explore, discover, construct
  - Identify patterns (themes)
  - Increase understanding; Build theory
  - **Methods**: 1-1 Interviews, Focus Groups, Observations, etc.
- **Survey Methodology**
  - **Methods**: Questionnaires, Interviews

Step 5: Example



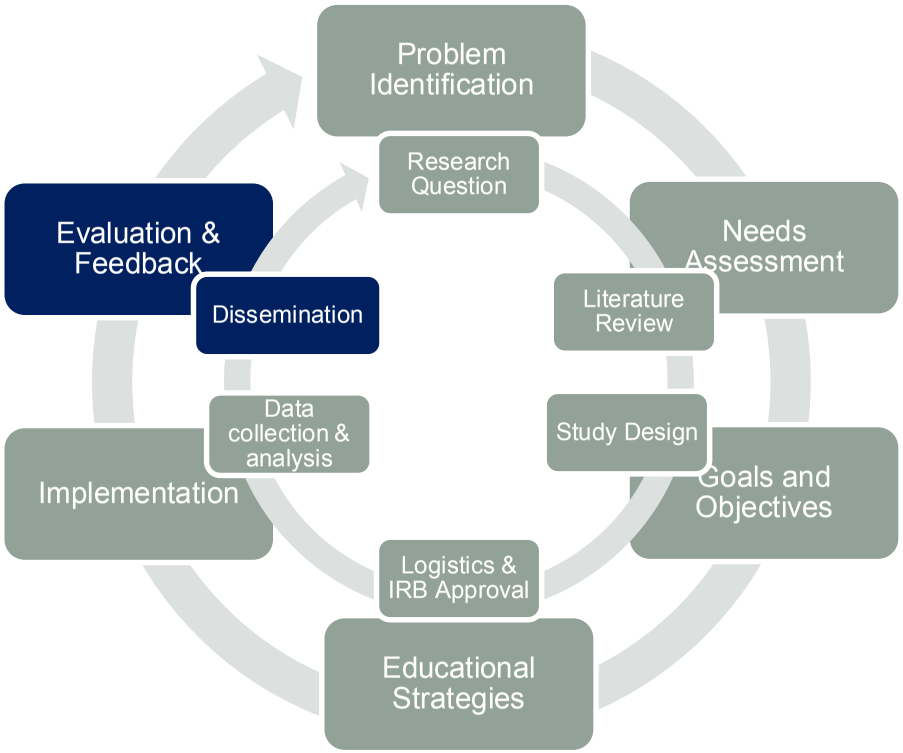
- How would you analyze your data?
- Did ratings of simulated consult calls before and after workshop. Also looked for inter-rater reliability to strengthen results, as well as time of consult calls.

Step 6: Evaluation and Feedback



- **Conferences**
  - AAMC – Research In Medical Education (RIME)
  - ACGME
  - AMEE (Association for Medical Education in Europe)
  - CCME (Canadian Conference on Medical Education)
- **Resource Publications**
  - MedEdPORTAL
- **Journal Publications**
  - Academic Medicine
  - Medical Education
  - Teaching & Learning in Medicine

Step 6: Example



- How would you disseminate this?
- Ours was presented at several national meetings – ESPR, APPD, and a manuscript has been submitted (and so far rejected)

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Journal of General Internal Medicine
August 2015, Volume 30, Issue 8, pp 1172–1177

Association Between Study Quality and Publication Rates of Medical Education Abstracts Presented at the Society of General Internal Medicine Annual Meeting

Authors

Edakkanambeth Varayil, Jayawant N. Mandrekar, Darcy A. Reed,

Disclaimer – Focus was on Quantitative Studies

Original Research

First Online: 27 March 2015

DOI: 10.1007/s11606-015-3269-7

Cite this article as:
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Resources at Emory

- **Step 2: Targeted Needs Assessment / Literature Review**
  - Emory Woodruff Health Sciences Center Library - http://health.library.emory.edu/
  - http://health.library.emory.edu/resources/find-information/systematic-reviews.html
  - "Ask a Librarian" - http://health.library.emory.edu/about/contact/ask.html
  - Mia S White - *Medical Education & Technologies Informationist*
- **Step 4: Educational Strategies / Logistics & IRB Approval**
  - Complete CITI Training! - http://www.irb.emory.edu/training/courses/citi.html
  - Emory IRB - http://irb.emory.edu/forms/review/index.html
  - ***NOTE***: Research involving Emory Medical Students must be approved by Curriculum Committee (Contact: Dr. Erica Brownfield)
- **Step 3: Goals and Objectives / Study Design & 5: Implementation / Data Collection & Analysis**
  - Qualitative Methods and Data Analysis Workshops ($) - https://www.sph.emory.edu/departments/gh/continuing-ed/
  - Quantitative Methods and Data Analysis Support (Free & $) - http://medicine.emory.edu/research/internal-research-resources/research-resources/biostatisical-support.html

Resources at Emory

- **Steps 1 – 6: Med Ed Research Consultations**
  - Residents/Fellows/Faculty – Dr. Ulemu Luhanga
  - Faculty/Administration – Dr. Hugh Stoddard
- **Steps 1 – 6: Medical Education Courses**
  - Medical Students – M4 Medical Education Elective / Capstone
  - Residents/Fellows – Medical Education specialty track (PENDING)

Other Resources

- Resources for educators (JGME: RIP OUTS): http://www.jgme.org/page/ripouts
- Annotated Bibliography of Journals for Educational Scholarship: https://www.aamc.org/download/456646/data/annotated-bibliography-of-journals-march-2016.pdf

THANK YOU!

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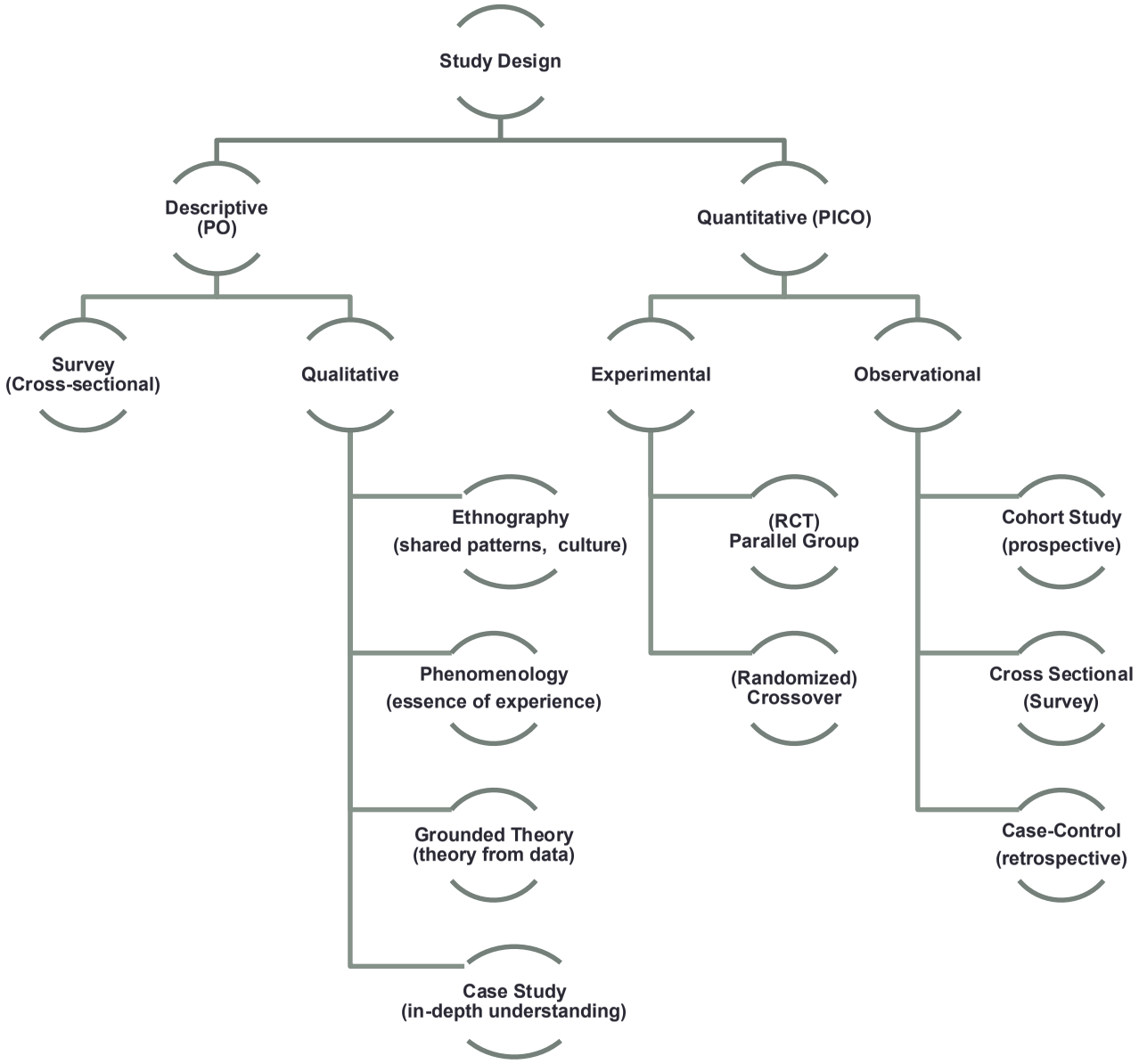
Dr. Linda Orkin Lewin – llewin@emory.edu

Summary of Research Study Designs



Adapted from: http://www.cebm.net/study-designs/

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More information: contact Alania Foster at 404-727-9734 or request a free consultation.

Institute for Quantitative Theory and Method:

Graduate Students: The Institute for Quantitative Theory and Method offers a statistic help dest for graduate students.
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