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THE PROBLEM

(Medical education) research is often small-scale, poorly conceptualised and under-theorised.

Lesley Pugsley, 2008

Expectation and experience: dissonances between novice and expert perceptions in medical education research *Medical Education* 2008;42:866-71

EDITORIAL

Is medical education research 'hard' or 'soft' research?

Larry D. Gruppen

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A well-designed *educational* research study is a well-designed research study
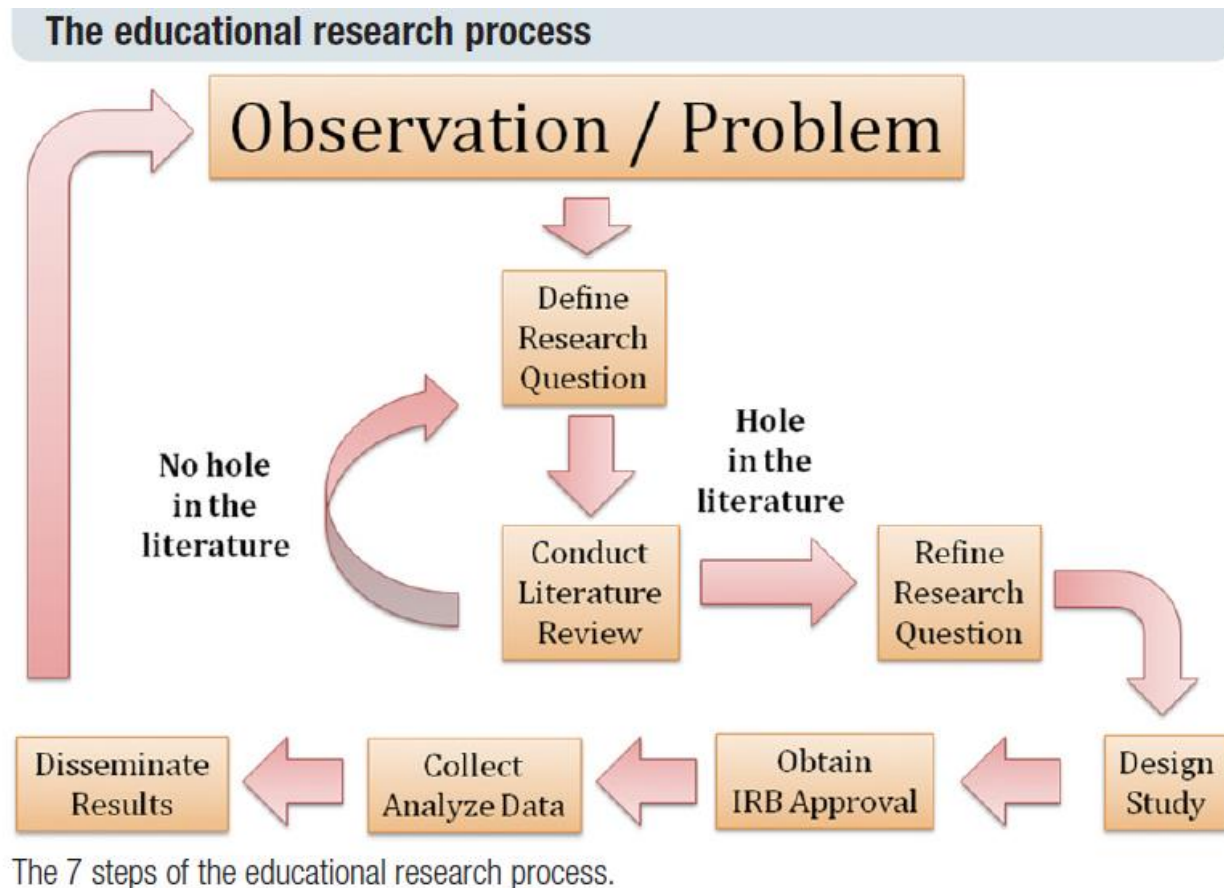

The educational research process

Observation / Problem

Define Research Question

No hole in the literature

Hole in the literature

Conduct Literature Review → Refine Research Question → Design Study

Disseminate Results ← Collect Analyze Data ← Obtain IRB Approval ← Design Study

The 7 steps of the educational research process.

Nuthalapaty et al 2012

Tip # 1
Conceptualising your research

Conceptualising research

PROBLEM-GAP-HOOK

- What's a **problem** that people are talking about?
- What's a **gap** in knowledge or thinking about the problem?
- What's the **hook** that will convince people that this gap is important?

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What interests, surprises or bothers you about teaching and learning?

Observations from daily practice can become innovative research

Are there questions about what you are doing already?

If something is worth evaluating, it *could* be worth researching

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www.marktoon.co.uk
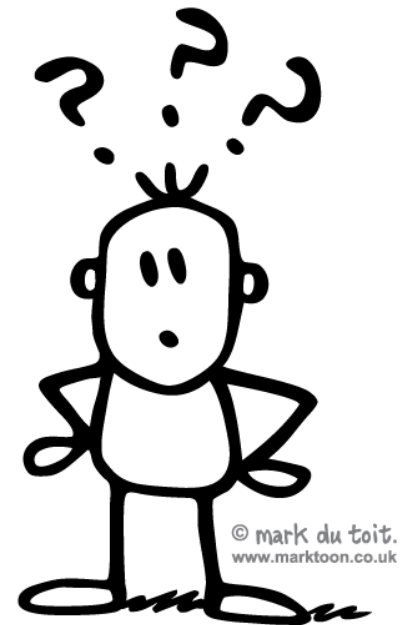
Tip # 2 What's your research question?

FINER: Is your question

Feasible?

Answerable with available resources

Interesting and Important?

To you, and to your professional community

Novel?

Adds to what is already known

Ethical?

Answerable without taking undue risks

Relevant?

Answering it matters to your institution *and* others

Tip # 3
Upskill in key areas

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Understand the main approaches

	QUANTITATIVE		*QUALITATIVE*
Scientific method	Tests a hypothesis with data = *deductive*		Generates a hypothesis from collected data = *inductive*
Aims to...	Describe and predict effects and causes		Describe and explain social phenomena
Data sampling	Single or narrowly defined sources		Multiple sources and perspectives
Study context	Controlled, context free	MIXED METHODS	Naturalistic, context specific
Data collection	Surveys, interviews, databases, records...		Surveys, interviews, records, focus groups, images, video...
Data type	Numerical only		Text, words, images
Data Grouping	Pre-defined categories		Categories defined through data analysis
Data Analysis	Identify statistical relationships		Identify patterns and themes

(Education) Research Skills 101

✓ **Searching the educational literature**

✓ **Appraising quantitative and qualitative research**

Medical Teacher: AMEE Guides, 12 Tips series

Academic Medicine: Last Page series

The Clinical Teacher: The Clinical Teacher's Toolbox

AM Last Page: How to Perform an Effective Database Search

Lauren A. Maggio, MS(LIS), MA, medical education librarian, Stanford University School of Medicine, Nancy H. Tannery, MLS, associate director for User Services, University of Pittsburgh Health Sciences Library System, and Steven L. Kanter, MD, vice dean, University of Pittsburgh School of Medicine
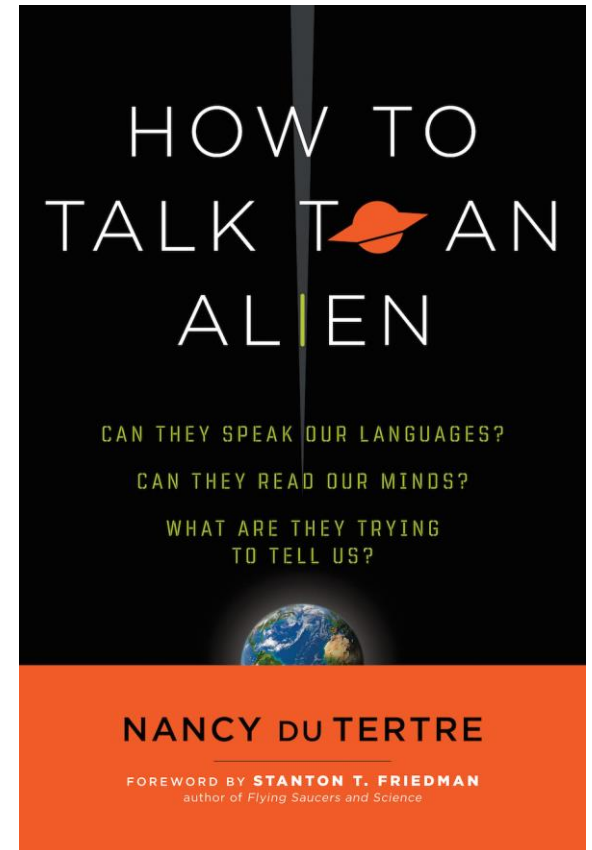
1. Choose a database

Database	Medline www.pubmed.gov	Google Scholar www.scholar.google.com	ERIC www.eric.ed.gov	CINAHL www.cinahl.com	Scopus www.scopus.com
Coverage	• Biomedical literature • Journal articles	• Diverse disciplines • Journal articles, book chapters, dissertations, abstracts	• Education literature • Journal articles, book chapters, Association of American Medical Colleges reports	• Nursing and allied health literature • Journal articles, book chapters, dissertations, audiovisuals	• Scientific, technical, medical and social sciences literature, citation searching • Journal articles, conference papers
Controlled vocabulary (See 2A)	Yes	No	Yes	Yes	No
Access	Open	Open	Open	Subscription	Subscription

**Tip # 4
Do I need a
"theoretical
framework"?**

EX

Instruc

Gre

R

Vygotsky's
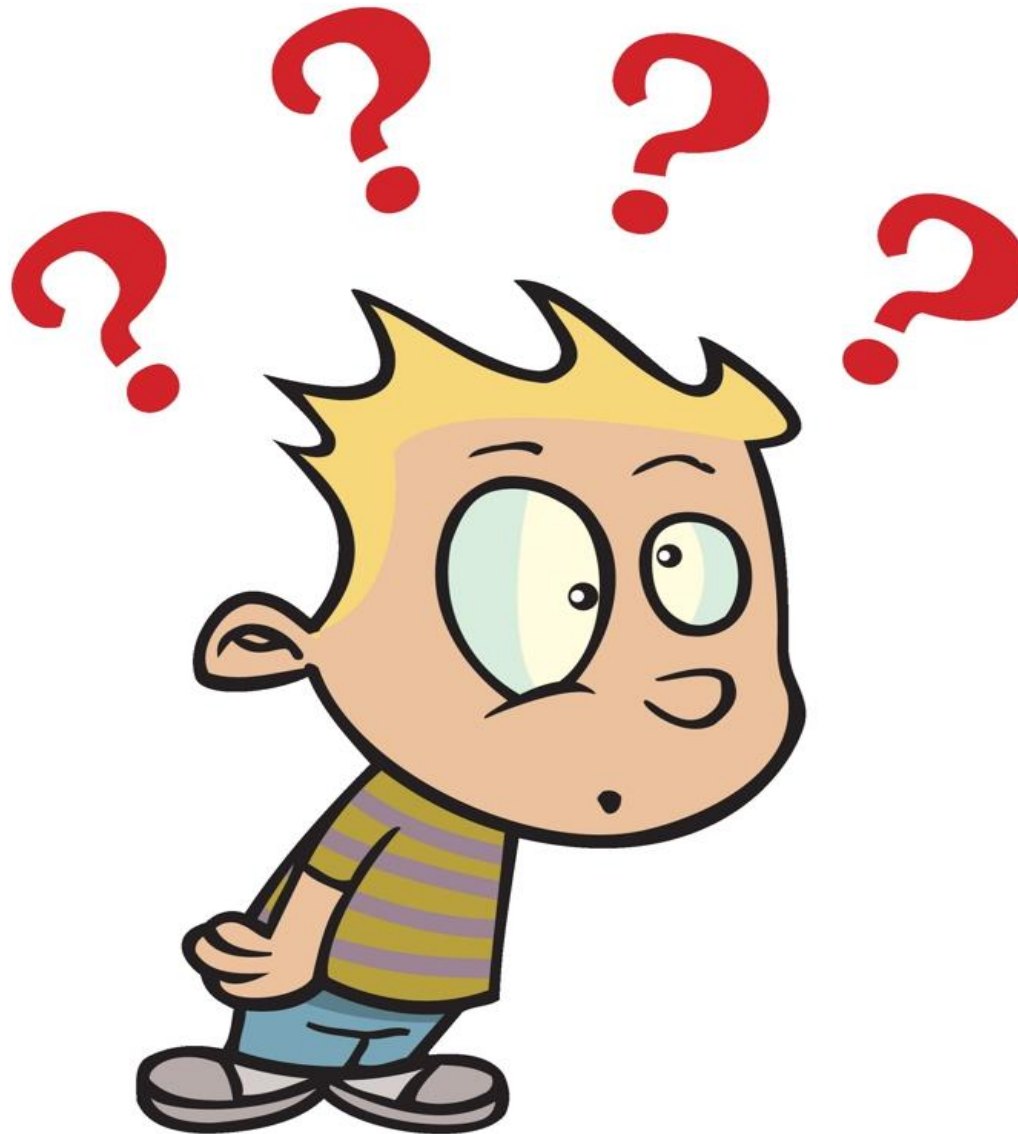
learner can
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NEY

Tip # 5
Educational research is an interdisciplinary team effort

Disciplines in Clinical Education

CLINICAL SCIENCES

CLINICIAN WITH PRACTICAL EXPERTISE

SOCIAL SCIENCES

EDUCATOR WITH THEORETICAL EXPERTISE

BIOMEDICAL SCIENCES

RESEARCHER WITH METHODS EXPERTISE

CURRENT TOPICS
THEORIES & RESEARCH
DATA SOURCES
METHODS & STUDY DESIGN
DISSEMINATION STRATEGIES
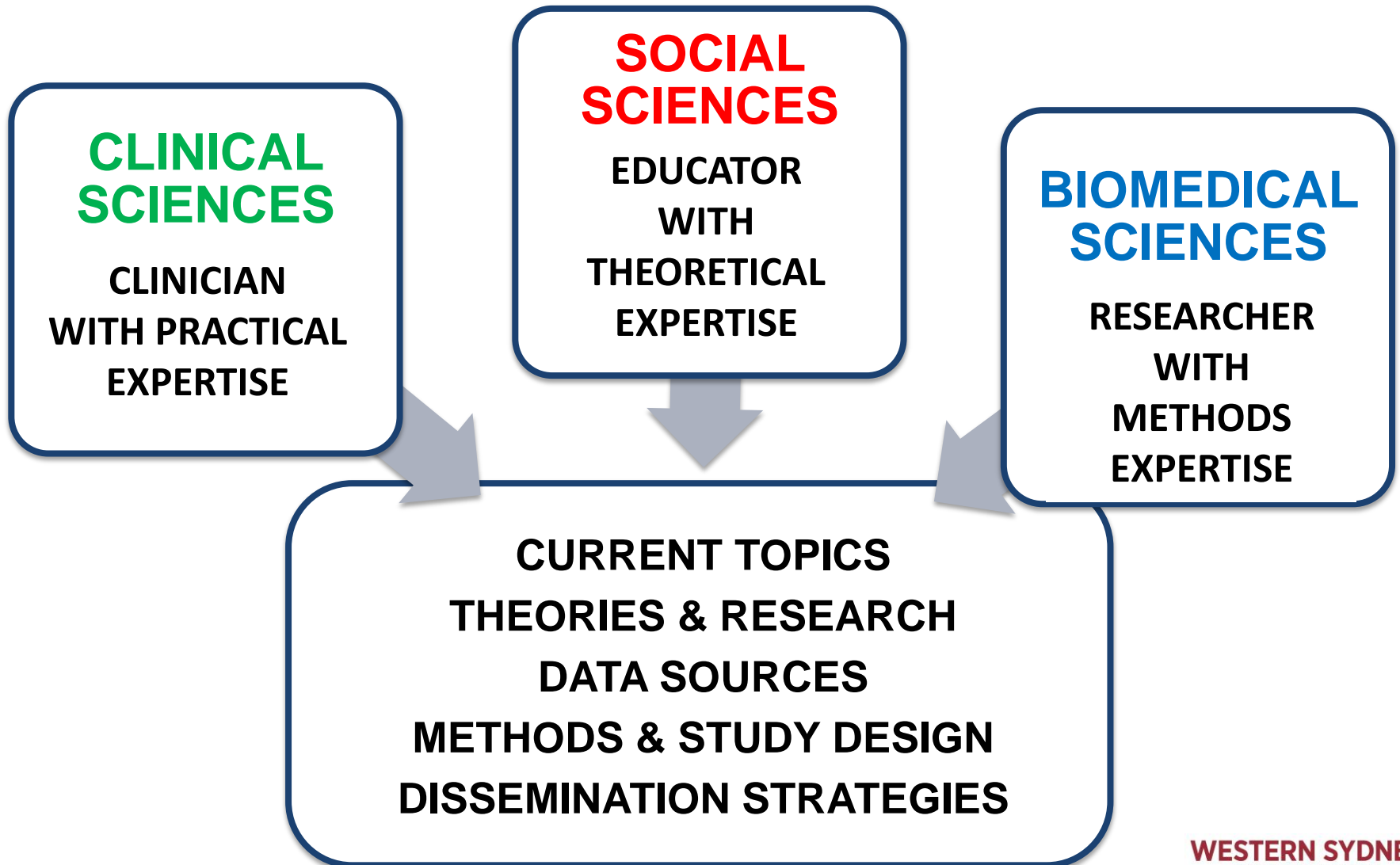
Building collaborations

Look for "complementariness" across

– **Professions and disciplines**

– **Institutions and training continuum**

Start small

Earn trust

Develop a common language

Healthcare Simulation
Dictionary

http://www.ssih.org/Dictionary

SSH

Society for Simulation in Healthcare

Tip # 6
Join the Health Professions Education community

And create your own community

- **Join a professional society or group**
  - ANZAHPE, AMEE….
  - An education interest group in your discipline
- **Form your own local community**
  - Locate like-minded colleagues, trainees, students
  - Meet, develop research strategies
  - Identify training needs, pool resources

Perry et al *West J Emer Med* 2015

Tip # 7
Recognizing what's *really* new

Identifying hot topics

BE	A Peer Reviewer
DO	Conferences, Working Groups

SCAN	**Subscribe to Journal ToC's**
	    Medical Education *eg Clinical Teacher*
	    General medical journals
	    Discipline specific journals
	Conference Abstracts, Reports
	Listservs, Social Media

Read the latest tweets from ASME

50
1966-2016
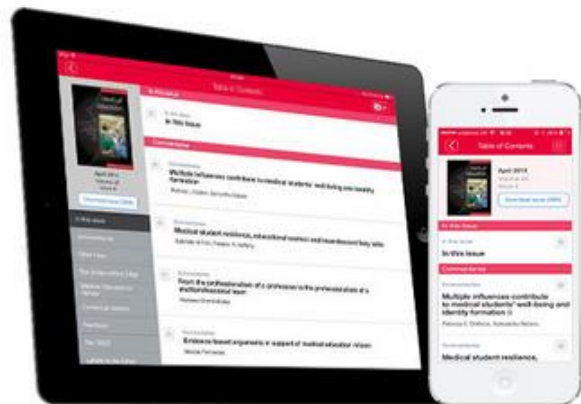
medical
education

New Podcasts available.

ASME WILEY

STUDENT TRAINEE	Selection Career choice Burnout, resilience and well-being
TEACHER SUPERVISOR	Training and supporting clinician teachers Careers in medical education
WORKPLACE LEARNING	Teamwork and inter-professional learning Professional and organisational socialisation
CURRICULUM PROGRAM	Communication skills Professionalism and fitness to practice
DELIVERY METHODS	Impact of technology Role of simulation
ASSESSMENT	Effective feedback Competency and readiness for practice

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Tip # 8

But I don't have a research grant

Being entrepreneurial

- **Funding**
  - **Internal**: Seed and improvement grants
  - **External:** Accreditation and Professional bodies, Community and Service Partners, Consumer groups
  - Anticipate the funding cycle
  - Income from courses, workshops

- **In-kind resources**
  - Non-clinical Staff, Trainees, Students
  - Equipment ⇦⇨ Expertise

- **Communication strategy**
  - Who are your internal and external stakeholders?
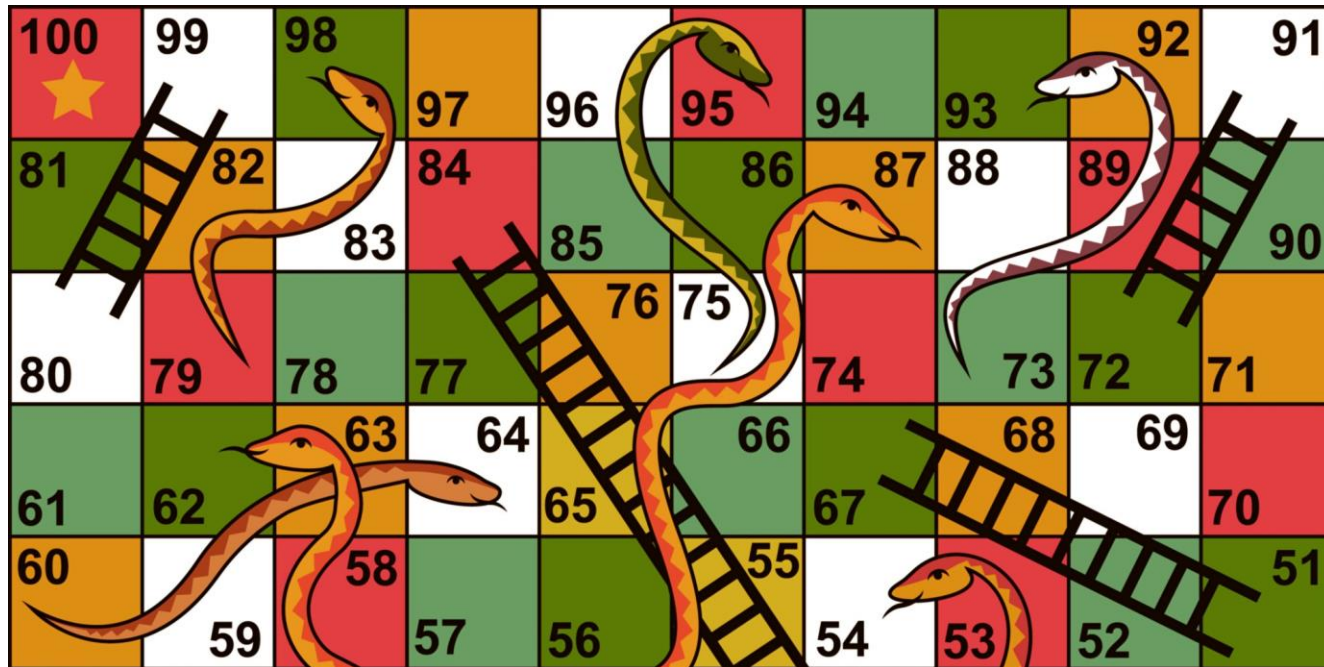
Tip # 9
Set up for publication

Get ethics early

- **Low and negligible risk**
  - Quality improvement? ✗
  - Educational evaluation? ✗
- **Strategies**
  - **University vs LHD as primary approver**
    - Who are the participants?
    - Where is the study to be done?
    - Impact on patient care
  - **"Umbrella" approvals**
  - **"Omnibus" or cohort designs**
- **Talk to your HREC**

Authorship…

Is based on

- Substantial contributions to the conception and design, OR acquisition, analysis, or interpretation of data; AND

- Drafting the work or revising it critically….AND

- Final approval of the version to be published; AND

- Agreement to be accountable for all aspects…..

Convention for order of authors may differ

ICJME Authorship http://www.icmje.org/recommendations/browse/roles-and-responsibilities/defining-the-role-of-authors-and-contributors.html

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Set up for publication *quality* by having:

A good research question ✔

A sound study design ✔

Tip # 10
Peer reviewed papers are not the only way to make an impact

Build a portfolio of educational scholarship

Educational outputs

- **Conference papers, posters**
- **Creation and uptake of teaching resources**

    MedEdPortal https://www.mededportal.org/

Peer Recognition

- **Peer evaluation, mentoring, invitations, awards**
- **Pre-print publication/ post-publication review:**

    MedEdPublish http://www.mededpublish.org/

Publishing educational innovations

Includes new techniques, methods, settings

Does NOT include standard evaluations or QI

HEALTH PROFESSIONS EDUCATION JOURNALS

- *The Clinical Teacher*

- *Perspectives on Medical Education*: Show & Tell

- *Medical Education*: Really Good Stuff

- *Medical Teacher*: How we…

- *Teaching and Learning in Medicine*: Case Reports

- *Advances in Simulation*: Innovations

OTHER JOURNALS

- *Some* discipline specific journals
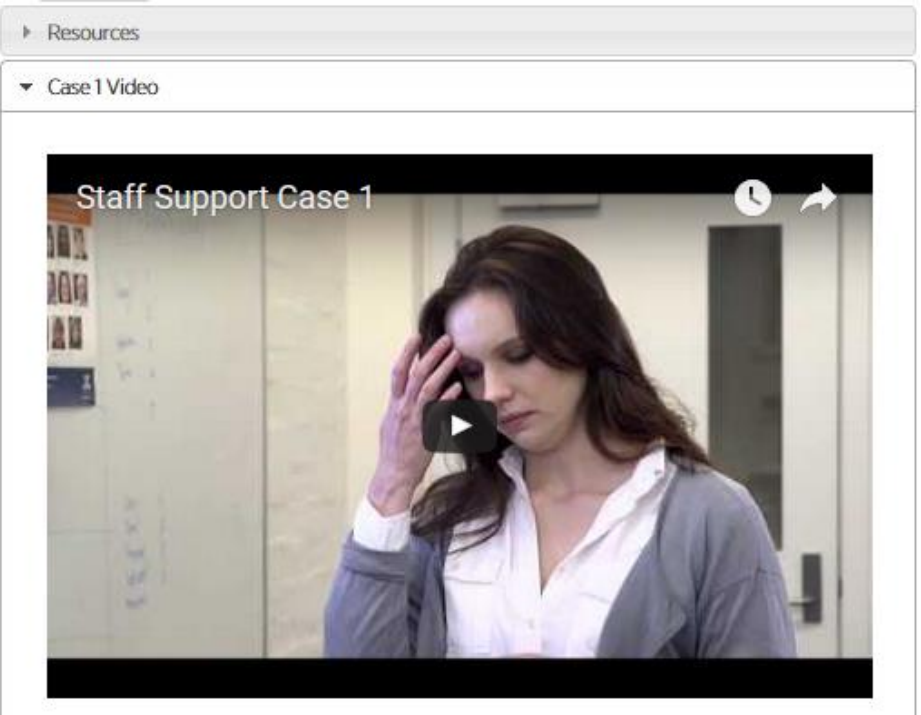
- Clinical quality improvement journals

AN EXAMPLE

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Supporting Staff who Support Students

Multimedia training resources for staff who deal with health professional students

Training for staff who support students. Flynn ER, Woodward-Kron R, and Hu W. *Clin Teach*, 2015. 12:1-6

From Paperwork to Parenting: Experiences of professional staff in student support. Hu W, Mann R, Flynn E, Woodward-Kron R. *Med Educ*, accepted June 2016

▸ Resources

▾ Case 1 Video

Staff Support Case 1

http://www.westernsydney.edu.au/medicine/som/medical_education/support

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acen AUSTRALIAN COLLABORATIVE EDUCATION NETWORK

ANZAHPE Australian & New Zealand Association for Health Professional Educators

Activities and Impacts 2011-2016

3 rounds data collection, analysis – and ethics approvals

43 interviews at ? sites ... medical schools

4 video resource ... aining ... rials, 1 website

18 workshops to ... participa ... s in 3 countries

3 conference presenta ... s, 2 abstracts
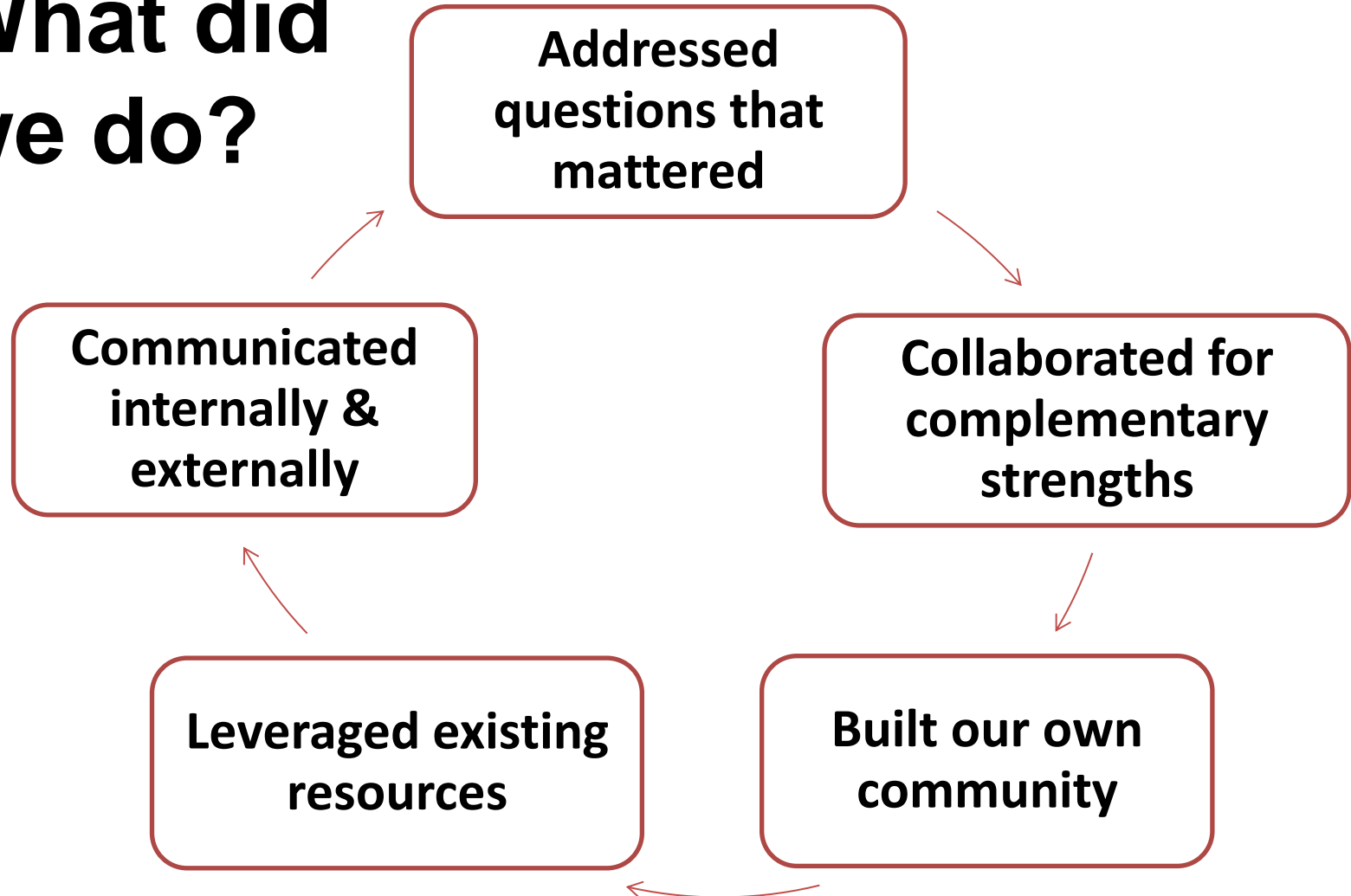
4 journal submissi ... s, 2 publications

1 research internship, 2 ... equests to use resources

2 curriculum reports, many policy changes

……more data collectio ... workshops, publications

= $ ... 200

What did we do?

```
        Addressed
        questions that
        mattered

Communicated                    Collaborated for
internally &                    complementary
externally                      strengths

    Leveraged existing          Built our own
    resources                   community
```

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Health Professions Education Research is

Clinical & Teaching Practice

| Clinicians: Supervisors | Educators: Faculty Trainers |

Research & Evaluation

| Clinicians: Topics, Data | Educators: Methods |

TRANSLATIONAL Research

Health Professions Education Research is

Improved patient care and outcomes
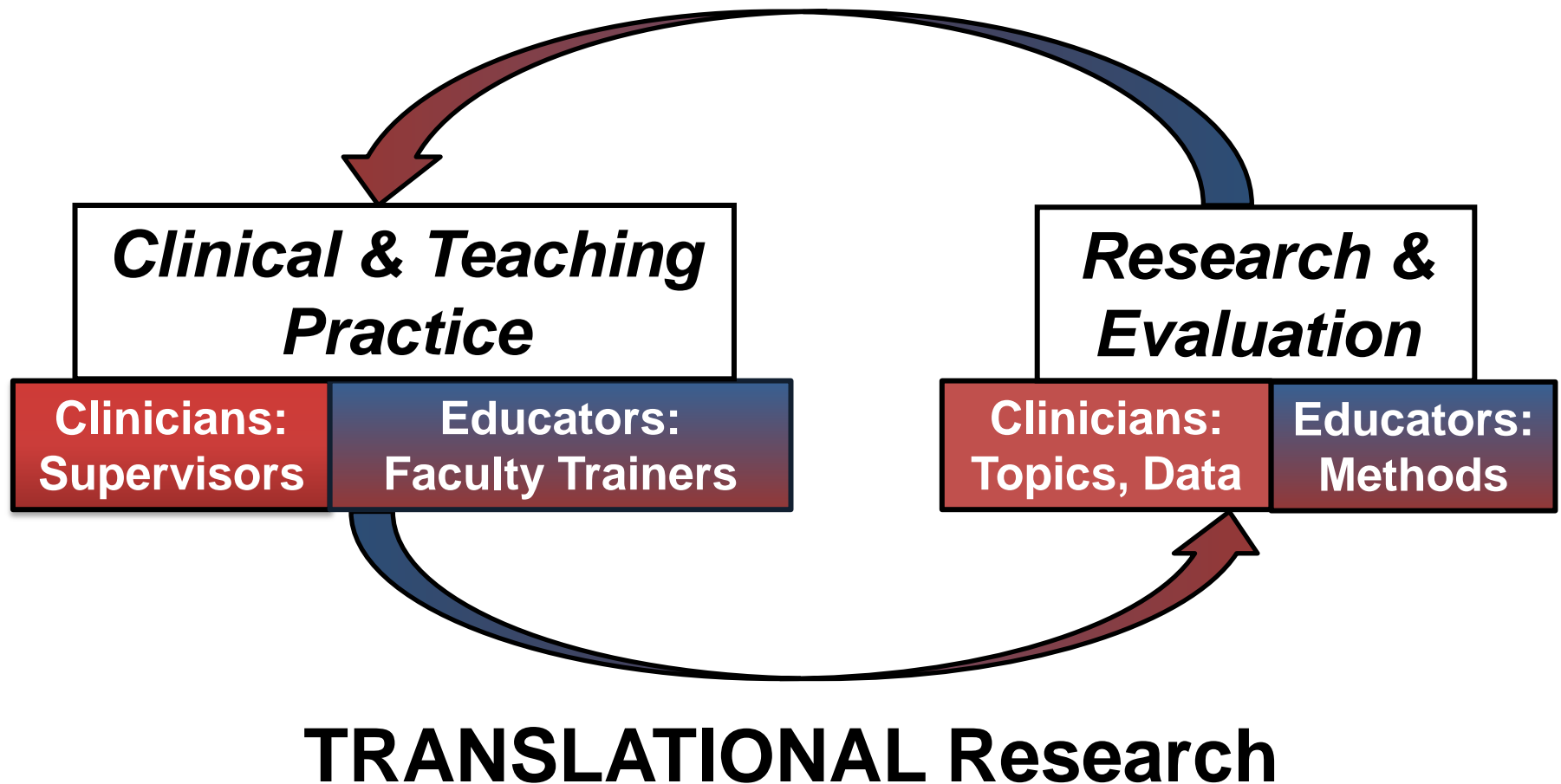
TRANSLATIONAL Research

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Questions?

Wendy Hu

w.hu@westernsydney.edu.au

Resources

To the point: a primer on medical education research.

Nuthalapaty FS et al *Am J Obstet Gynae* 2012;207(1):9-13

Conducting research in health professions education: from idea to publication.

Academic Medicine, Nov 2016 . AM Last Pages 2010-2016

Model for developing educational research productivity: the Medical Education Research Group

Perry M et al *West J Emer Med* 2015;6:947-951

Medical education scholarship: An introductory guide: AMEE Guide No.89.

Crites GE et al *Med Teach* 2014 36(8):657-74

The Writer's Craft (series)

Lingard, L *Perspectives on Medical Education*