GETTING STARTED IN EDUCATIONAL RESEARCH

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THE PROBLEM
I want to write up my evaluations as a research paper *heartsink*
(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
Is medical education research ‘hard’ or ‘soft’ research?

Larry D. Gruppen
A well-designed *educational* research study is a well-designed research study

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?

Joining a conversation: the problem/gap/hook heuristic
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.
Tip # 2
What’s your research question?
I’m going to compare a simulation workshop with lectures

Why bother?
**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

Adapted from Dine et al 2015 Generating Good RQs in Health Professions Education

*Acad Med* AM Back Page
Tip # 3
Upskill in key areas
Understand the main approaches

<table>
<thead>
<tr>
<th></th>
<th><strong>QUANTITATIVE</strong></th>
<th><strong>QUALITATIVE</strong></th>
<th><strong>MIXED METHODS</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Scientific method</strong></td>
<td>Tests a hypothesis with data = <em>deductive</em></td>
<td>Generates a hypothesis from collected data = <em>inductive</em></td>
<td></td>
</tr>
<tr>
<td><strong>Aims to...</strong></td>
<td>Describe and predict effects and causes</td>
<td>Describe and explain social phenomena</td>
<td></td>
</tr>
<tr>
<td><strong>Data sampling</strong></td>
<td>Single or narrowly defined sources</td>
<td>Multiple sources and perspectives</td>
<td></td>
</tr>
<tr>
<td><strong>Study context</strong></td>
<td>Controlled, context free</td>
<td>Naturalistic, context specific</td>
<td></td>
</tr>
<tr>
<td><strong>Data collection</strong></td>
<td>Surveys, interviews, databases, records...</td>
<td>Surveys, interviews, records, focus groups, images, video...</td>
<td></td>
</tr>
<tr>
<td><strong>Data type</strong></td>
<td>Numerical only</td>
<td>Text, words, images</td>
<td></td>
</tr>
<tr>
<td><strong>Data Grouping</strong></td>
<td>Pre-defined categories</td>
<td>Categories defined through data analysis</td>
<td></td>
</tr>
<tr>
<td><strong>Data Analysis</strong></td>
<td>Identify statistical relationships</td>
<td>Identify patterns and themes</td>
<td></td>
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</table>
(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
Tip # 4
Do I need a “theoretical framework”?
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
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

<table>
<thead>
<tr>
<th>BE</th>
<th>A Peer Reviewer</th>
</tr>
</thead>
<tbody>
<tr>
<td>DO</td>
<td>Conferences, Working Groups</td>
</tr>
</tbody>
</table>
| SCAN        | **Subscribe to Journal ToC’s**  
          | Medical Education *eg Clinical Teacher*  
          | General medical journals  
          | Discipline specific journals  
          | Conference Abstracts, Reports  
          | Listservs, Social Media          |
| 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  

*Adapted from Exploring stakeholders’ views of medical education research priorities. Dennis et al, *Med Educ* 2014;48:1078-91*
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

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
Supporting Staff who Support Students


Activities and Impacts 2011-2016

3 rounds data collection, analysis – and ethics approvals
43 interviews at 8 sites in medical schools
4 video resources, training materials, 1 website
18 workshops to 163 participants in 3 countries
3 conference presentations, 2 abstracts
4 journal submissions, 2 publications
1 research internship, 2 requests to use resources
2 curriculum reports, many policy changes
……more data collection, workshops, publications

= $13,200
What did we do?

- Addressed questions that mattered
- Communicated internally & externally
- Leveraged existing resources
- Collaborated for complementary strengths
- Built our own community
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
Questions?

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Resources

To the point: a primer on medical education research.

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

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