Turning Your Educational Innovation into Scholarship

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APPD Meeting April 2017
INTRODUCTIONS
Learning Objectives

• Examine commonly utilized conceptual frameworks in medical education
• Assess strategies to enhance the outcome metrics of your medical education project
• Critique examples to illustrate options for dissemination of educational scholarship
Roadmap

• Introductions
• The “so what” –is this question important/innovative?
• Applying a conceptual framework
• Determining outcome metrics for evaluation
• Dissemination Options
• Lessons Learned
THE “SO WHAT”

Making the case that your topic is important

Introduction Section
The “So What”

• Making the case
  • Why is this topic important?
  • What is known in the literature?
  • Where is the gap in the literature?
  • How would your study fill the gap in the literature?
    • Study Question/Hypothesis
Why is this topic important?

• EPA
  • Refer patients who require consultation
• Pediatricians are not good at understanding when to refer
  • Difficulty recognizing red-flag referral criteria
  • Difficulty managing common complaints not requiring referral
  • Difficulty communicating effectively with parents/patients around when to refer
What is known in the literature?

- Syncope is common, but rarely due to a cardiac cause
  - Syncope occurs in 15% adolescents
  - 2-5.4% have underlying cardiac cause for syncope
- A majority of patients referred to cardiology for syncope are potentially avoidable referrals
  - 60% of pts with benign syncope referred to cardiology do not have red-flag criteria for referral
Where is the gap?

- It is unknown how to improve resident physicians’ ability to identify when to refer for syncope, manage syncope not requiring referral, and communicate about when to refer for syncope to parents.
How will study fill gap?

**Study Question**
- What is the impact of a syncope workshop utilizing didactics and standardized patients on reducing potentially avoidable syncope referrals?

**Hypothesis**
- A workshop on referral for syncope will reduce potentially avoidable syncope referrals by improving residents’ ability to:
  1. identify when to refer for syncope
  2. manage syncope not requiring referral
  3. communicate about when to refer for syncope to parents
Small Group Work: Making the Case

Does the background:

• Build a convincing case for why this problem is important?
• Identify gap in literature?
• Address how this study will fill gap?
• Clearly state study question/hypothesis?

• Small group work (10 min)
  • Discuss and edit the sample Introduction

• Large group debrief (5 m)
INTRODUCTION TO CONCEPTUAL FRAMEWORKS

Establishing how your idea and results build on and add to existing scholarly work
Applying Glassick’s criteria

• Clear goals
• **Adequate preparation**: critically appraise literature, including potentially applicable conceptual frameworks
• Appropriate methods
• Significant results
• Effective communication
• **Reflective critique**: critical analysis of results/data and use for refinement of framework to improve generalizability

Glassick CE. Acad Med 2000; 75: 877-880
Adapted from Crossing the Finish Line: Getting Your Medical Education Work Published, Li, Klein, Gusic, Vinci & Szilagyi, PAS 2016, 2017
Conceptual frameworks are theories, models or best practices

- Can be used to develop and evaluate educational scholarship
- Can illuminate and magnify an approach to a problem (emphasize different questions, variables, methods, outcomes)


Adapted from Crossing the Finish Line: Getting Your Medical Education Work Published, Li, Klein, Gusic, Vinci & Szilagyi, PAS 2016, 2017
Select your framework early

- Look to other disciplines/fields
- Consider various/competing frameworks
  - More than one framework may be relevant

How to apply your framework

• Introduction
  • Support the rationale for your approach to the issue/problem
  • Crystallize your research question

• Methods
  • Inform your methodology to match the question you want to address (type of intervention, variables, outcomes measured)

• Discussion
  • Lens through which to interpret your results
  • Help establish generalizability of your findings

EXAMPLES OF HOW TO APPLY CONCEPTUAL FRAMES
Bandura’s Social Cognitive Theory

• People learn from one another by observing and imitating others’ behavior.
  • In order to learn, you need to be paying **attention**.
  • You need to **retain** what you observed.
  • You then **reproduce** (imitate) the modeled behavior you observed.
  • You need to be **motivated** to continue to imitate the behavior by **positive reinforcement** or corrected with **negative reinforcement**.
Kolb’s Experiential Learning Cycle

• Learning happens through transforming experience through a 4-stage learning cycle
Cardiology referral example

Social Cognitive Theory

- **Research Question**
  - Does primed, active observation of a cardiologist improve syncope referral and management?

- **Methods**
  - RCT of use of syncope checklist to observe cardiologist during syncope evaluation, followed by SP scenarios with feedback using syncope checklist.

- **Outcomes**
  - Syncope checklist scores compared to peers

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Experiential Learning Cycle

- **Research Question**
  - Do SP scenarios on resident communication skills in deciding when to refer for syncope improve quality and appropriateness of syncope referrals?

- **Methods**
  - Pre/post study using SP, reflection, discussion

- **Outcomes**
  - Quality and appropriateness of referral
Small Group Activity

• Small Group - Develop a research question around wellness from the perspective of the assigned conceptual framework (15 min)

• Large Group Discussion (10 min)
  • Share your research question
OUTCOME MEASURES & EVALUATION

How will you study and determine the impact of your innovation?
Important Pyramids in Education
Kirkpatrick’s Pyramid

A Model For Measuring Educational Outcomes

- Impact or Outcome
- What is done differently?
- What did they learn?
- Response to training?
MILLER’S PRISM OF CLINICAL COMPETENCE (aka Miller’s Pyramid)

it is only in the "does" triangle that the doctor truly performs

- Performance Integrated Into Practice
  eg through direct observation, workplace based assessment
- Demonstration of Learning
  eg via simulations, OSCEs
- Interpretation/Application
  eg through case presentations, essays, extended matching type MCQs
- Fact Gathering
  eg traditional true/false MCQs

KNOWLEDGE
SKILLS
ATTITUDES

Based on work by Miller GE, The Assessment of Clinical Skills/Competence/Performance; Acad. Med. 1990; 65(9): 63-67
Adapted by Drs. R. Mehay & R. Burns, UK (Jan 2009)
Outcomes Measures and Innovation

• According to Merriam Webster, innovation is "a new idea, a new method, a new device."

• The degree of innovation is important
  • Impacts your outcome measures
    • Sample Size
  • Outcome measures may not be as rigorous

• When we discussed the “So What” question it was an attempt to think about the innovative nature of your work
Outcome Measure Challenges

• How will you measure the impact of your study?
• Use of comparison groups in educational research
  • Complicated in medical education research
    • Difficult to control for continued education and clinical experiences
    • Repetition improves long-term retention of skills
• Lack of comparison groups
  • Negatively impact strength of your conclusion
  • Your study may be powerful but its impact remains unproven
Small Group Work - Innovation

• Review your research question on wellness and develop evaluation metrics and learning activities to best answer your question (20 min)
• Choose a study design
  • Qualitative, quantitative, or mixed methods
• Design your study
  • Study population?
  • What is your study intervention?
  • Choose an instrument
  • Select measurable outcomes
  • What is your analysis plan?
• Large Group Debrief (10 min)
DISSEMINATION OPTIONS

How to find the “right” journal
Journal Fit

• Who is the audience you want to target?
  • Educators, academic pediatricians, clinicians

• Have your target journals published similar manuscripts in the past?
  • Review prior work published in the journal
    • Cite it!
    • Suggests that your work aligns with journal
Journal Fit

• Review journal sections for best fit
  • Innovation section, brief report
• Impact factor
  • Consider submission at a reach journal
  • Well-thought out secondary options
• Journal Selection Software
  • JANE (Journal/Author Name Estimator)
    http://jane.biosemantics.org
Publishing Innovation

- *Academic Pediatrics*
  - Scholarly Innovations
  - APPD Pages
- *JGME*
  - Innovations & New Ideas
- *Medical Education* – Really Good Stuff
- *Academic Medicine* – Innovation Section
Disseminating Curriculum

- MedEdPortal (AAMC)
  - Peer reviewed publication
  - Teaching resources and assessment tools
  - Requires evaluation

- MERLOT (Multimedia Education Resource for Learning and Online Teaching) [http://www.merlot.org](http://www.merlot.org)
  - Free, web-based resource and community
  - Online teaching and learning materials
  - ~1300 health sciences education
LESSONS LEARNED
Practical Tips for Success

• Meaningful and aligned work
  • Align scholarship with your passions and institutional/societal values

• Build on your previous work (thematic)

• Carve out protected time for scholarship

• Identify where you need help and seek mentorship

• Plan your evaluation when you plan your study

• Everything takes longer!
Additional Resources

• AAMC Review Criteria for Research Manuscripts, table on pages 12-13 of pdf
  • https://members.aamc.org/eweb/upload/Review%20Criteria%20For%20Research%20Manuscripts.pdf

  • http://journals.lww.com/academicmedicine/Fulltext/2001/09000/APPENDIX_1__CHECKLIST_OF_REVIEW_CRITERIA.37.aspx

• AAMC-Regional Groups on Educational Affairs (GEA) Annotated Bibliography of Journals for Educational Scholarship, 2015