Turning Your Educational Innovation into Scholarship

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Disclaimer

Much of this work has been done in partnership with Su-Ting Li, MD MPH, Melissa Klein, MD Med, Peter Szilagyi, MD MPH and Mary Ellen Gusic MD. I recently completed a three year commitment as the Editor for APPD Pages in Academic Pediatrics.
Learning Objectives

• Discuss strategies for the development of educational projects
  • Standards for Quality Scholarship
  • Making the Case

• Examine commonly utilized conceptual frameworks in medical education

• Assess strategies to enhance the outcome metrics of your medical education project

• Review Journal fit and disseminate checklist for authors
Standards of Quality Scholarship

• Clear Goals
• Adequate Preparation
• Appropriate Methods
• Significant Results
• Effective Presentation
• Reflective Critique

Establish clear and important goals

• Important, interesting to you
• Specific, simple to understand
• Measurable outcome
• Achievable
• Relevant and not rehashing
• Time-Bound
Road Map

• The “so what” – is this question important/innovative?
• Applying a conceptual framework
• Determining outcome metrics for evaluation
• Dissemination Options
• Common challenges in writing a manuscript
THE “SO WHAT”

Making the case that your topic is important
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
Example: Making the Case

Why is This Gap 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

Break up into tables
- Curriculum to improve endotracheal intubation
- Modify Noon Conference
- Improve the Mentorship Curriculum

Task (10 minutes)
- Build a convincing case for why this problem is important?
- Identify gap in literature (not today)
- Address how this study will fill gap?

Large group debrief (5 m)
INTRODUCTION TO CONCEPTUAL FRAMEWORKS
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
EXAMPLES OF HOW TO APPLY CONCEPTUAL FRAMEWORKS
Ericsson’s Deliberate practice

- Goal-directed task performance
- Immediate feedback from a teacher/coach
- Repeated task refinement
- Immediate feedback from a teacher/coach
- Revised mental representation of how to perform task

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

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 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?
Kirkpatrick’s Pyramid
A Model For Measuring Educational Outcomes

- Impact or Outcome
- What is done differently?
- What did they learn?
- Response to training?
Study Design and Outcomes

• Review the specific aim of your study
  • Avoid just describing a new curriculum
  • Push towards measurable outcomes
    • What is the impact you hope to have on your learners? On patients?

• Other factors that impact study design
  • Level of innovation of your project
  • Previous work in this area
Study Design

• Factors to consider
  • Demographics
  • Selection criteria
  • Study subjects

• Stakeholders

• Resources available +/- needed for the study
  • Simulation Center
  • Faculty observers
  • Tracking or scoring systems
  • Statistical analysis
Measuring Educational Outcomes

Article

Development, Implementation, and Dissemination of the I-PASS Handoff Curriculum: A Multisite Educational Intervention to Improve Patient Handoffs

Starmer AJ et al. Acad Med 2014; 89: 876-884,
The GAP: Communication and handoff failures are among the root causes in nearly two-thirds of “sentinel events,” which are serious, often fatal, preventable adverse events in hospitals.

- 81% to 96% of residents agreed/strongly agreed that the workshop promoted the acquisition of relevant skills for patient care activities
What did they Learn: Direct Observations

- 96% of residents articulated the features of a high-quality patient summary
Did Behavior Change?

Was there any Impact?

Starmer, et. al., IPASS Study Group. JAMA December 4, 2013 Volume 310, Number 21
What Changes Were Noted?

- Written handoffs were more comprehensive after the intervention (Med lists, dated lab results)
What was the Impact of the Project?

**After the Intervention**

- Medical errors decreased from 33.8 per 100 admissions to 18.3 per 100 admissions
- Preventable adverse events decreased from 3.3 per 100 admissions to 1.5 per 100 admissions
Small Group Work - Innovation

• Review your research question 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

• 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
• Review journal sections for best fit
  • Innovation section, brief report
• Impact factor
  • Consider submission at a reach journal
  • Well-thought out secondary options
Publishing Innovation

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