Turning Your Educational Innovation into Scholarship

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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
The “So What”

Making the case that your topic is important/relevant

• Introduction Section
• Your work is making a claim or a statement.
• When asked “So What?” how do you respond?
The “So What”

• Why is this topic important?
• Literature Review
  • What is known?
  • Where is the gap?
• How does your study fill the gap?
• State significance of your work
• Hypothesis/Specific Aim
• Your “story” flows from here
Example: Making the Case

Are Graduating Pediatric Residents Prepared to Engage in Obesity Prevention and Treatment?

Mary Pat Frintner, MSPH¹, Janice L. Liebhart, MS², Jeanne Lindros, MPH³, Alison Baker, MS⁴, Sandra G. Hassink, MD, MS, FAAP⁵

doi:10.1016/j.acap.2016.01.016
Why is this topic important?

- **Magnitude of problem**
  - 17% of children/adolescents obese
  - 33% overweight/obese

- **Pediatricians can make a difference**
  - Important role in prevention, assessment and treatment of obesity/overweight

- **AAP Guidelines on overweight/obesity**
What is known in the literature?

• Motivational interviewing can help reduce BMI in children

• 2/3 pediatricians report inadequate competency using motivational interviewing

• Obesity assessment and management is beginning to be addressed during residency training
Where is the gap?

It is unknown whether motivational interviewing skills affect how prepared residents feel to counsel children with obesity upon graduation.
How will study fill gap?

National cross-sectional survey of graduating pediatric residents

Hypothesis/Specific Aim
Determine if confidence in motivational interviewing is associated with confidence in effectiveness of counseling overweight/obese patients.
INTRODUCTION TO CONCEPTUAL FRAMEWORKS
A framework for **curriculum development**

Problem Identification and Needs Assessment

- Health Care Problem
  - Current Approach
  - Ideal Approach

Targeted Needs Assessment

- Learners
- Learning Environment

Evaluation and Feedback

- Learners
- Program

Implementation

- Resources
- Support
- Administration
- Barriers
- Introduction

Kern’s 6-Step Approach

Goals and Objectives

- Broad Goals
- Specific/Measurable Objectives

Educational Strategies

- Content
- Methods

Support

Administration

Barriers
“In developing the I-PASS Handoff Curriculum, we used Kern and colleagues’ six steps of curriculum development for medical education as a framework (see Table 1).

<table>
<thead>
<tr>
<th>Curricular development step*</th>
<th>Associated I-PASS curricular development activities</th>
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| 1. Problem identification and needs assessment | • Literature on patient safety and medical education reviewed  
• Increasing frequency acknowledged with regard to accrediting organizations requiring more supervision of the handoff process  
• Targeted needs assessment conducted via focus group at each I-PASS study site with faculty, residents, and key stakeholders to determine current handoff practices and curricula |
| 2. Needs assessment of targeted learners | • Chief resident focus group conducted with representatives from seven participating sites |
| 3. Goals and specific measurable objectives | • Goals and objectives created for residents and for faculty, by a group of content experts using an iterative process |
| 4. Educational strategies | • Multiple educational strategies considered; those selected were:  
  o Highly congruent between objectives and educational methods  
  o Feasible with existing resources  
  o Multimodal |
| 5. Implementation | • Multifaceted implementation strategy developed, including formation of a campaign subcommittee to review transformational change literature and create innovative strategies supporting the communication, implementation, and sustainability of the curriculum |
| 6. Evaluation and feedback | • Resident and faculty evaluations collected following each training session, resident workshop, and at the end of the online module  
• Intensive debriefing, evaluation, and curricular revisions following each wave of curriculum implementation |

*Steps adapted from Kern et al.21

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
Repetition/refinement of task
Revised mental representation of how to perform task

Immediate feedback from a teacher/coach

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**.
Conceptual Frameworks
Choosing a Conceptual Framework

Review the literature to identify a conceptual framework

- What theories/models can be applied to understand this problem?
- What variables/aspects will you explore?

Refine your research question

- Narrow your research goal/general question to an ANSWERABLE, clear and specific question

Operationalize the selected framework in the introduction of your paper

- State the **assumptions and principles** related to the framework
  - **Do your homework:** examine existing evidence related to the framework
- Lay out **how the principles of the framework help explain the problem** and have guided the approach you are taking

“Self determination theory (SDT) has been studied extensively and applied to enhance motivation in business, education and health care settings.\textsuperscript{1-4}”

“SDT may prove useful in illuminating the dynamics of teacher-learner interactions in the residency training environment, where evolving evaluation systems and intensifying regulatory mandates\textsuperscript{8-10} as well as generational differences\textsuperscript{11,12} cause stress for residents and faculty alike.”

“To clarify and interpret these dissonant perceptions of resident autonomy and faculty support of resident autonomy, we used the tree constructs of SDT to create parallel resident and faculty surveys.”

Identify the conceptual framework you will use

More than one framework can be applied to a problem but the framework you select, helps you to define:

- The specific question you will address
- **NOTE:** one framework can lead to various foci of inquiry
- The design of your study
- The outcomes/results you will measure
- The foundation for the analysis and interpretation of your results

Bordage G Ringsted C, Hodges B, Scherpbier A. Med Teach. 2011;33(9):695-709;
Tavokol M and Sandars J. Med Teach 2014; 36(9): 746-756;
Our case for this activity...

You are a faculty member who works both in undergraduate and graduate medical education. You have noticed that learners seem to struggle with delivering difficult or “bad” news and so, you sought to design a teaching intervention to help interns improve their skills in sharing “bad” news.
The framework of deliberate practice

- Goal-directed task performance
- Immediate feedback from a teacher/coach
- Revised mental representation of how to perform task
- Repetition/refinement of task
**The teaching intervention**
Goal: to improve skills in delivering bad news

**Scenario 1**
Observation and feedback from a coach

**Scenario 2**
Observation and feedback from a coach

Using the feedback, resident creates a learning goal for their ILP

Standardized patient encounter

Didactic presentation w/ observation of recorded encounter
Small Group Activity (15 min)
Develop a research question about a teaching intervention to help learners improve their skills in sharing “bad” news

Large Group Discussion (10 min)
Report back research question developed
What if we had applied a different conceptual framework: Self-regulated learning

Although standardized patient encounters may still be used, the teaching intervention would not include feedback from a coach if this framework is used; rather the learner would use self-assessment to set goals; to observe and judge their performance; and as motivation for continued learning.

How does reflective writing after an encounter with a standardized patient contribute to residents’ abilities to develop SMART learning goals and an individualized learning plan to reach those goals?
Returning to Glassick’s criteria . . .

- Clear goals
- Adequate preparation
- Appropriate methods
- Significant results
- Effective presentation
- Reflective critique

We have talked about how the conceptual framework helped us to select the appropriate methods for the intervention...

Remember your choice of a conceptual framework also directs you to the outcomes you will need to measure to answer your specific question.

OUTCOME MEASURES & EVALUATION

How will you study and determine the impact of your innovation?
A framework for organizing results from an evaluation of an educational intervention

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
• Is your study generalizable
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

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
Journal Fit

• When choosing journal options, consider:
  
  • “Reach” journal
  
  • “Reasonable” journal
  
  • “Last Resort” journal
Identifying Potential Journals

- Journal Selection Software
  - JANE (Journal/Author Name Estimator)
  - http://jane.biosemantics.org
### Welcome to Jane

Jane is a tool designed to help researchers find relevant articles. If you've recently written a paper, you might want to find articles similar to your topic. Jane can help with this.

#### How to Use Jane

1. **Find Related Articles**: Type the title or abstract of your paper into the search box and click "Find articles." Jane will then search its database for articles that are similar to your paper.
2. **Search by Keywords**: Instead of using a title or abstract, you can search using keywords. Jane has millions of documents indexed by keywords. Click "Find by keyword" to search using keywords.

#### A New Home!

Jane has moved to a new home for improved stability. Many thanks to the European Health Data Science Institute for providing the hosting! Please update your bookmarks.

#### Additional Information About Jane

- **Scrubable**: Clear
- **Show or hide options**: On/Off
- **Find journals**
- **Find authors**
- **Find articles**

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### Articles Most Similar to Your Input

- **JANETEDUCA**: "Academic medicine: journal of the Association of American Medical Colleges"
  - Influence: 0.5733
  - Articles: Show articles
- **MEDTEACH**: "Medical teacher"
  - Influence: 0.4212
  - Articles: Show articles
- **AMJ**: "International journal of psychiatry in medicine"
  - Influence: 0.59012
  - Articles: Show articles
- **PEDS**: "Pediatrics"
  - Influence: 1.00801
  - Articles: Show articles
- **BMCmed**: "BMC medical education: Open access, PubMed Central after 0 months"
  - Influence: 1.49349
  - Articles: Show articles
- **CJANN**: "Canadian journal of anaesthesia = journal canadien d’anesthésie"
  - Influence: 0.59214
  - Articles: Show articles
- **AACAP**: "Academic psychiatry: the journal of the American Association of Directors of Psychiatric Residency Training and the Association for Academic Psychiatry"
  - Influence: 0.24579
  - Articles: Show articles
- **JGMEDED**: "Journal of graduate medical education: PubMed Central immediately"
  - Influence: 0.59285
  - Articles: Show articles
- **JRAHWA**: "Journal of rural health: official journal of the American Rural Health Association and the National Rural Health Care Association"
  - Influence: 0.89113
  - Articles: Show articles
- **AJPREV**: "American journal of preventive medicine"
  - Influence: 0.45331
  - Articles: Show articles
- **JFAM**: "Family & community health"
  - Influence: 0.57527
  - Articles: Show articles
- **JPSY**: "Journal of pain and symptom management"
  - Influence: 0.3242
  - Articles: Show articles
- **JMEDED**: "Journal of medical education: Open access, PubMed Central after 0 months"
  - Influence: 0.98217
  - Articles: Show articles
- **CLNO**: "Critical ultrasound journal: Open access, PubMed Central after 0 months"
  - Influence: 0.3242
  - Articles: Show articles
- **JMW**: "Journal of midwifery & women’s health"
  - Influence: 0.3242
  - Articles: Show articles
- **JPMED**: "Transfusion medicine reviews"
  - Influence: 0.98217
  - Articles: Show articles
- **THECL**: "The clinical teacher"
  - Influence: 0.3242
  - Articles: Show articles
- **JEMED**: "Emergency medicine journal: EMJ"
  - Influence: 0.27902
  - Articles: Show articles
- **Surgery**: "Surgery for obesity and related diseases: official journal of the American Society for Bariatric Surgery"
  - Influence: 0.06774
  - Articles: Show articles
- **ANNEM**:
  - Influence: 1.33213
  - Articles: Show articles
- **RJMED**: "Rhode Island medical journal (2013)"
  - Influence: 0.3242
  - Articles: Show articles
- **JNURS**: "The Journal of school nursing: the official publication of the National Association of School Nurses"
  - Influence: 0.3242
  - Articles: Show articles
- **ANIM**: "Animals: an open access journal from MDPI: PubMed Central after 0 months"
  - Influence: 0.3242
  - Articles: Show articles
Identifying Potential Journals

- Journal Selection Software
  - JANE (Journal/Author Name Estimator)

- AAMC Annotated Bibliography of Journals for Educational Scholarship
Top 10 Practical Tips

1. Shape writing into meaningful & aligned work
   - Align scholarship with your passions and institutional/societal values
   - Embark on career planning-series of studies

2. Build on your previous work (thematic)

3. Carve out protected time for scholarship

4. Identify where you need help early

5. Seek out mentorship (scientific, career)
6. Plan your analysis (paper or other deliverable) when you plan your study

7. Break larger projects into smaller steps

8. Edit and proofread *carefully*—clarity is critical

9. Understand everything takes *longer* than you anticipate, so write early and often!

10. Enjoy the process—this is creative!
Questions
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