

Clinician Educator Career Development Workshop

Medical Education Research

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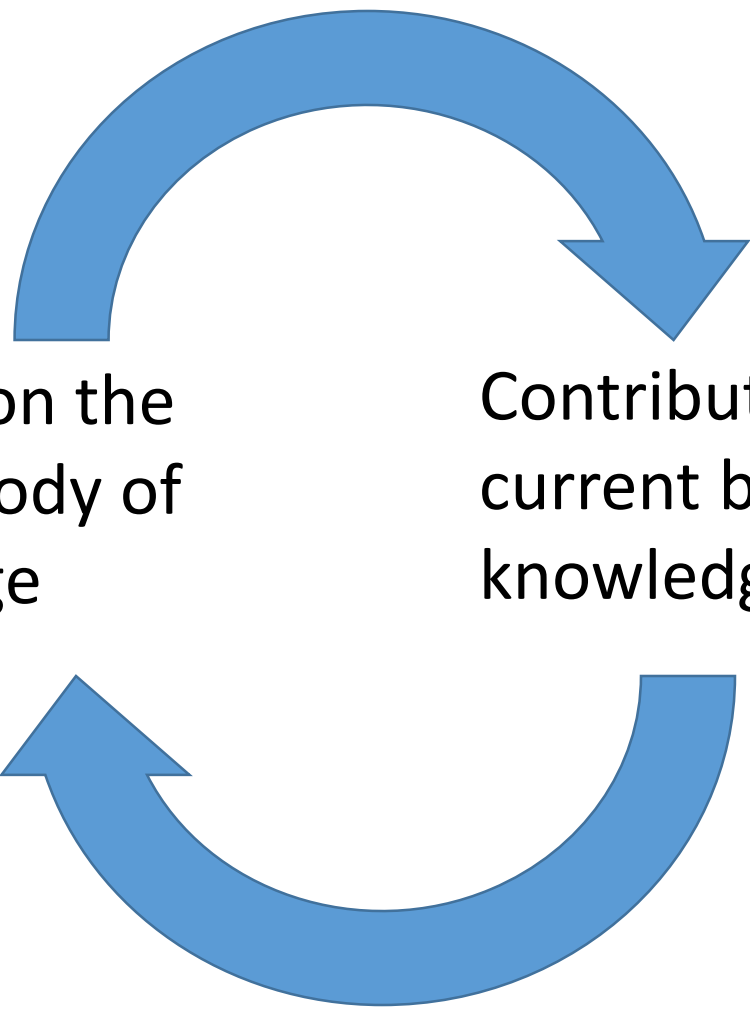
Department of Pediatrics

Speaker Disclosure

- The speaker has nothing to disclose

Learning Objectives

- Describe ideas for potential health sciences education research
- Explain four of the six steps of the scholarly process described by Glassick, et.al.
- Identify your next 1-2 steps to implement your research ideas



Drawing on the
current body of
knowledge

Contributing to the
current body of
knowledge

Research:

**A systematic, scholarly approach
to solving problems.**

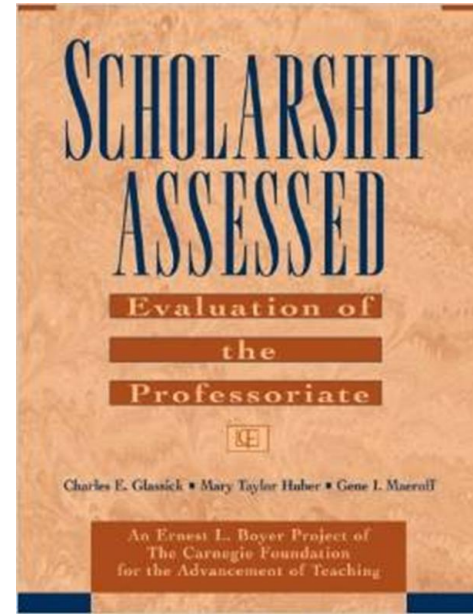
Four categories of Educational Scholarship

- Scholarship of **discovery**
 - Research
- Scholarship of **integration**
 - connects across disciplines and contextualizes
- Scholarship of **application**
 - Engagement; connections between research and practice
- Scholarship of **teaching**
 - Teaching and learning

What makes an activity scholarly work?

- Discuss with your neighbor the properties of a scholarly piece of work.

There are six criteria for Scholarly work - Glassick, et.al., 1997



- **Clear Goals:** Stated purpose, realistic objectives, important questions
- **Adequate preparation:** Understanding of the literature, appropriate skills, needed resources
- **Appropriate methods:** choice of methods that match goals, effective use and flexible application of methods
- **Significant results:** goals are achieved, results are important, field is advanced
- **Effective presentation:** presentation well organized, forums appropriate, message clear and sound
- **Reflective critique:** work critically evaluated, supported with good evidence, evaluation used to improve future studies.

Glassick, C.E., M.T. Huber, and G.I. Maeroff, *Scholarship assessed evaluation of the professoriate*. 1st ed ed. 1997, San Francisco, CA: Jossey-Bass.

Glassick, C.E., *Boyer's expanded definitions of scholarship, the standards for assessing scholarship, and the elusiveness of the scholarship of teaching*. *Academic Medicine*, 2000. 75(9): p. 877-80.

Criteria for Scholarly Work

1. Clear Goals

2. Adequate Preparation
3. Appropriate methods
4. Significant results
5. Effective presentation
6. Reflective critique

What problems/question(s) do you have related to your learners?

- Who are your learners?
 - Trainees – medical students, residents, fellows
 - Colleagues – physicians, nurses, other staff
 - Patients
- Take 2 minutes to write down any questions you may have about your learners.
- Share one with a neighbor
 - why you are interested in the answer to this question.

What learners are you primarily interested in studying?

- A. Medical students
- B. Residents
- C. Fellows
- D. Colleagues
- E. Patients



Criteria for Scholarly Work

1. Clear Goals

2. Adequate Preparation

3. Appropriate methods:

4. Significant results:

5. Effective presentation

6. Reflective critique

Adequate preparation involves searching the literature



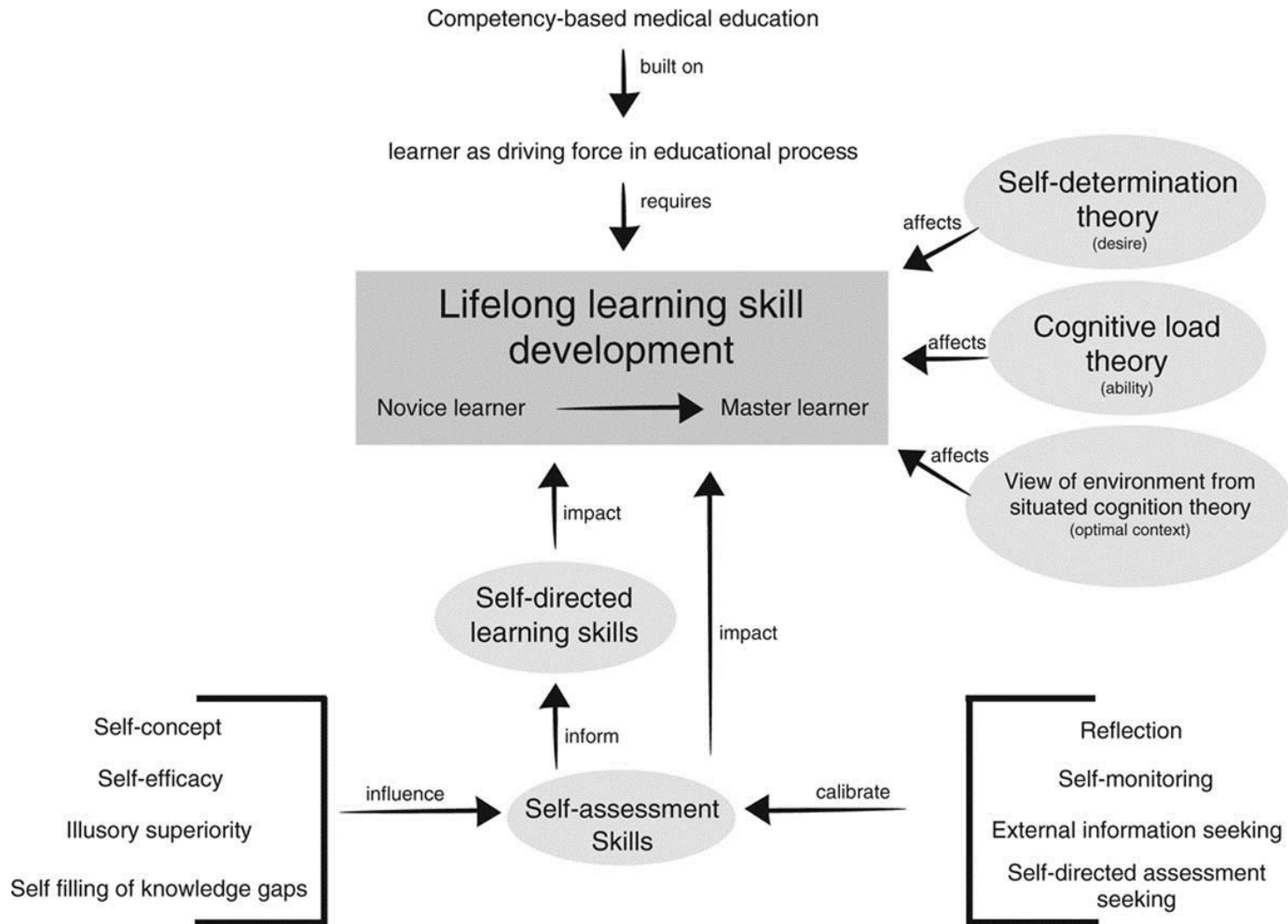
- Where is the education literature?
- What are some medical education journals?
 - AAMC Annotated list
 - https://www.aamc.org/download/184694/data/annotated_bibliography_of_journals.pdf
- Academic Medicine - AM Last Page
 - <http://journals.lww.com/academicmedicine/pages/collectiondetails.aspx?TopicalCollectionID=6>
 - http://journals.lww.com/academicmedicine/Fulltext/2011/08000/AM_Last_Page_How_to_Perform_an_Effective_Database.31.aspx
- Medical Teacher – AMEE Guides
 - Medical Education Scholarship: An Introductory Guide, 2014
- MedEdPortal - <https://www.mededportal.org/>

Education research is messy

- Lots of factors influence learning
 - The learner
 - The material
 - The teacher
 - The environment

Theory Drives Education Research

Forces and factors in developing the master learner.



[Developing the Master Learner: Applying Learning Theory to the Learner, the Teacher, and the Learning Environment](#)

Schumacher, Daniel J.; Englander, Robert; Carraccio, Carol Academic Medicine. 88(11):1635-1645, November 2013.

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Criteria for Scholarly Work

1. Clear Goals
2. Adequate Preparation
- 3. Appropriate methods**
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Education Methods include both Qualitative and Quantitative

Parameters	Quantitative Research	Qualitative Research
General Nature	Objective approach to seek precise measurement in numerical form	Subjective approach to seek in-depth description in narrative form
Knowledge of Study Variable	Variables are clearly understood & defined in advance by the researcher	Researcher may have only rough idea about variables in advance

Basic Experimental Design

- X=intervention, O=observation
- Posttest only
 - X - - O
- Pretest-Posttest
 - O - -X- - O
- Crossover Design
 - O - -X- - O- - - - -O
 - O- - - - - O - -X - - O
- No control group → can not conclude causation, only correlation

Select appropriate method(s)

- Discuss with your neighbor methods that can be used in education research.

Refine your question

F - feasible

I - interesting

N - Novel

E - Ethical

R - Relevant

Criteria for Scholarly Work

1. Clear Goals
2. Adequate Preparation
3. Appropriate methods
4. Significant results

5. Effective presentation

Academic Medicine - Review Criteria for Manuscript

<https://members.aamc.org/eweb/upload/Review%20Criteria%20For%20Research%20Manuscripts.pdf>

6. Reflective critique

What is your next step?

- A. Clear Goal
- B. Adequate preparation
- C. Appropriate Method(s)
- D. Submit IRB

Medical Education Resources

- *MedEdPortal DREAM: Directory and Repository of Educational Assessment Measures* (<https://www.mededportal.org/about/initiatives/dream>)
- Artino, A. R., Jr., La Rochelle, J. S., Dezee, K. J., & Gehlbach, H. (2014). Developing questionnaires for educational research: AMEE Guide No. 87. *Medical Teacher*.
- Blanchard RD, Artino AR, Visintainer PF. Applying Clinical Research Skills to Conduct Education Research: Important Recommendations for Success. *Journal of Graduate Medical Education*. 2014;6(4):619-22.
- Cook D. Twelve tips for getting your manuscript published. *Medical Teacher*. 2015
- Crites GE, Gaines JK, Cottrell S, Kalishman S, Gusic M, Mavis B, et al. Medical education scholarship: An introductory guide: AMEE Guide No. 89. *Med Teach*. 2014;1-18. 38:1, 41-50,.
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- Ringsted et al. *Medical Teacher*. 2011; 33(9):695-709. The research compass: An introduction to research in medical education (AMEE Guide No. 56)
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Relevant AM LastPage articles

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- Maggio, L. A., Tannery, N. H., & Kanter, S. L. (2011). AM last page: how to perform an effective database search. *Acad Med*, 86(8), 1057. doi: 10.1097/ACM.0b013e3182291716
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- van Loon, M. H., Kok, E. M., Kamp, R. J., Carbonell, K. B., Beckers, J., Frambach, J. M., & de Bruin, A. B. (2013). AM last page: avoiding five common pitfalls of experimental research in medical education. *Acad Med*, 88(10), 1588. doi: 10.1097/ACM.0b013e3182a36cc6

Conclusions

- Consider “problems” in your education setting to identify scholarly projects.
- Use a systematic approach –
 - Glassick’s Six Criteria for Scholarly Work
- Familiarize yourself with the education literature