Leading Voices in Medical Education: Educational Scholarship

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Geisel School of Medicine at Dartmouth
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I serve as Board Director of Instruct AG (CASUS) in Munich, Germany) and hold shares of this company.

Instruct AG is a LMU spin-off for-profit company.
Value proposition?

Flour production or bakery?
Plan

- Ludwig-Maximilians-University (LMU) Munich and the Medical Faculty/University Hospital
- BEME and Outcomes
- (Educational) Scholarship and Detour
- Logic Outcome Model
- Evaluation Framework
- Summary and Outlook
Objectives

- Describe models of educational scholarship and how they should be applied
- Stimulate reflection on shortcomings of applying these models
- Propose ways to improve and expand on educational scholarship
Founded in 1472, 50,000 students, 18 faculties, #1 German research university, 2nd largest biomedical research complex in Europe, public...
... and the University Hospital

- 10 Basic sciences institutes (together with Technical Univ.)
- 14 Clinical-theoretical Institutes
- 44 Clinical Departments
- 2600 hospital beds, 1700 Faculty members
- about 6000 students (medical, dental)
Best Evidence Medical Education

Opinion-based teaching

Evidence-based Teaching
Show me the evidence! And what is our currency for measuring the evidence? [yell it!]... Improved scholarly outcomes!
Good education is, what all stakeholders jointly define and agree on as good education.

Hornbostel & Putz 2012, personal communication
A SPECIAL REPORT

SCHOLARSHIP RECONSIDERED
PRIORITIES OF THE PROFESSORIATE

ERNEST L. BOYER
Boyer’s Dimensions of Scholarship

- the scholarship of discovery,
- of integration,
- of application,
- and of teaching
“What we need, then, in higher education is a reward system that reflects the diversity of our institutions and the breadth of scholarship, as well. The challenge is to strike a balance among teaching, research, and service, a position supported by two-thirds of today’s faculty who conclude that, “at my institution, we need better ways, besides publication, to evaluate scholarly performance of faculty.”

E. Boyer, Scholarship Reconsidered 1990
Scholarship: Six Standards

- **Clear Goals**
  - Does the scholar state the basic purpose of his or her work clearly? Does the scholar define objectives that are realistic and achievable? Does the scholar identify important questions in the field?

- **Adequate Preparation**
  - Does the scholar show an understanding of existing scholarship in the field? Does the scholar bring the necessary skills to his or her work? Does the scholar bring together the resources necessary to move the project forward?

- **Appropriate Methods**
  - Does the scholar use methods appropriate to the goals? Does the scholar apply effectively the methods selected? Does the scholar modify procedures in response to changing circumstances?

Scholarship: Six Standards (cont.)

- **Significant Results**
  - Does the scholar achieve the goals? Does the scholar’s work add consequentially to the field? Does the scholar’s work open additional areas for further exploration?

- **Effective Presentation**
  - Does the scholar use a suitable style and effective organization to present his or her work? Does the scholar use appropriate forums for communicating the work to its intended audiences? Does the scholar present his or her message with clarity and integrity?

- **Reflective Critique**
  - Does the scholar critically evaluate his or her own work? Does the scholar bring an appropriate breadth of evidence to his or her critique? Does the scholar use evaluation to improve the quality of future work?

Medical education as an emerging field – really a discipline?

How much clinical expertise needed for credibility?

Publications and grant funding?

Interdisciplinary approach – Learning Sciences! NAPLES

Been in the US? Dartmouth!

Been at another university? Witten!
Teaching: 15 unquantified criteria, among them

- **Scholarship** in the area of education and teaching methodologies, including the development, dissemination and effective implementation (documented) of new courses, curricular content or novel teaching materials -- syllabi, web-based and/or computer-assisted instruction, films, or videotapes.

- Frequent invitations to serve as a **visiting Professor** or outside speaker, especially in endowed visiting Professorships or lectureships.

- **Peer-reviewed research** that involves the development or evaluation of teaching methods and/or new programs, or that defines important, innovative and effective (documented) changes in medical education.
### Challenges

- Provide mentoring
- Enable forward planning and role models
- Provide infrastructure and network for research
- Provide needs driven faculty development

### NAPLeS Programs

<table>
<thead>
<tr>
<th>University</th>
<th>Location</th>
<th>Master’s Program</th>
<th>Doctoral Program</th>
<th>Information</th>
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<tbody>
<tr>
<td>Carnegie Mellon University</td>
<td>Pittsburgh, PA, USA</td>
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<tr>
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<td>more...</td>
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</table>
Curriculum Development for medical education. A six step approach, 2008; D. Kern et al.

Curriculum Development Cycle

1. General needs assessment
2. Needs of targeted learners
3. Learning goals and objectives
4. Teaching methods and strategies
5. Implementation/integration
6. Evaluation and feedback
7. Maintenance and sustainability
Aims of the German MME

- Professionalizing of medical education
- Qualification of disseminators at the medical faculties (Teach the teacher)
- Promotion of educational research
- Intensifying the national network in medical education

→ Decision of the German Assoc. of Med. Faculties to implement a two-year master course in Germany (60 ECTS-points) in March 2004
Sites of f2f 5-day modules & composition of module teams

Start module: HD, M
1. HD, M, HH
2. TÜ, FR, HH, BE/CH
3. W/A, HD
4. ZH/CH, BE/CH, HD, D
5. HD, B
6. HD, M, SB
7. DD, HD, M, BE/CH
8. International module M, W/A, HD, BE/CH

Plus Elective module (2013 Maastricht)
# Curriculum Overview

<table>
<thead>
<tr>
<th>Module # (5-days)</th>
<th>Key topics</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Curricular design</td>
</tr>
<tr>
<td>2</td>
<td>Team-communication, project management</td>
</tr>
<tr>
<td></td>
<td>Start of educational project at home faculties (project)</td>
</tr>
<tr>
<td>3</td>
<td>Learning theories, large group teaching, MCQ</td>
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<tr>
<td>4</td>
<td>PBL, Skills &amp; clinical teaching, progress-test, portfolio</td>
</tr>
<tr>
<td>5</td>
<td>Simulated pat., e-learning, key-feature, OSCE, oral exams</td>
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<tr>
<td>6</td>
<td>Research in medical education</td>
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<tr>
<td>7</td>
<td>Leadership, conflict management, faculty development</td>
</tr>
<tr>
<td>8</td>
<td>Evaluation of the curriculum of an international host faculty</td>
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<tr>
<td></td>
<td>+ plus elective Module 9 based on participants’ preferences.</td>
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</tbody>
</table>
German MME key characteristics

1. Cross-institutional approach
2. Joint curriculum design with complete MME teaching staff
3. Multi-perspective presentation of content and methods
4. Successionally coordinated modules
5. Cross-modular longitudinal elements
6. Marketing through MFT (AAMC equivalent)
Logic Outcome Model

W.K. Kellog, Logic Model Development Guide 2004
Logic Outcome Model: Intended Results

- **Outputs**: direct products of program activities (MedU cases…)
- **Outcomes**: changes in program participants’ behavior, knowledge, skills, status and level of functioning.
- **Impact** is the fundamental intended or unintended change occurring in organizations, communities or systems as a result of program activities (7 to 10 years!).
Outcomes and Impact should be SMART:

- **S**pecific
- **M**easurable
- **A**ction-oriented
- **R**ealistic
- **T**imed

Educational outcome model: Good enough?

- **Reaction**: Did learners like the training?
- **Learning**: What skills & knowledge were learned?
- **Behaviour**: What was applied at the workplace?
- **Results**: What impact had it on the organization?

Inputs, Process, Outcome and Transfer for Impact!

Inputs
- Training
  - Goals
  - Contents
  - Design
  - Methods
- Participants
  - Learning preferences
  - Motivation
  - Previous knowledge
  - Previous experiences
  - Preparation
- Realization
  - Learning sequences
  - Media and materials

Training process
- Didactics
  - Problem-based learning
  - Cooperative learning
  - Self-directed learning
- Roles
  - Learner activities
  - Trainer activities

Outcomes
- Reaction
  - Satisfaction
  - Usefulness
- Immediate effects
  - Skills & knowledge
  - Attitudes
  - Self-efficacy
- Long-term effects
  - Project finalization
  - Career options

Transfer
- Usability of contents
- Application of skills and knowledge
- Support by coach by manager

Impact
- Added value
- Cost reduction
- Cost-benefit ratio

Context
- Workplace
  - Need for training
  - Line manager support

Training context
- Facilities
- Resources

Workplace
- Learning conditions
- Transfer conditions

Organization
AMEE GUIDE

Medical education scholarship: An introductory guide: AMEE Guide No. 89

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Abstract

This AMEE Guide provides an overview of medical education scholarship for early career scholars, based upon a summary of the existing literature and pragmatic advice derived from the experience of its authors. After providing an introduction to the principles of scholarship and describing questions that the Guide addresses, the authors offer a conceptual description of the complementary traditions of teaching and educational discovery, and advocate for the development of educational scholars with both traditions.
Future steps to increase your impact on educational scholarship

- Broaden ownership and participation through educational networks
- Define relevant research and integration projects with clearly defined measurable outcomes
- Involve cognitive psychologists and PhD-students
- Find mentors at an early stage of your scholarly career
Many thanks!

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