

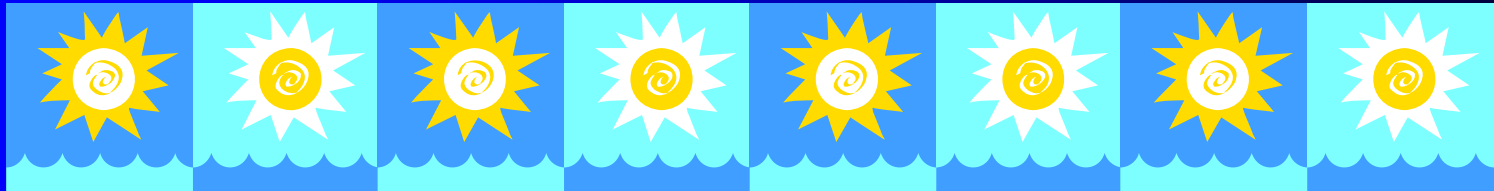
Disciplinary Scholarship and Best Evidence Medical Education



John Tam

Objectives

- Personal/Faculty Scholarship
- Institutional Scholarship
- Disciplinary Scholarship
- Best Evidence Medical Education
- Example



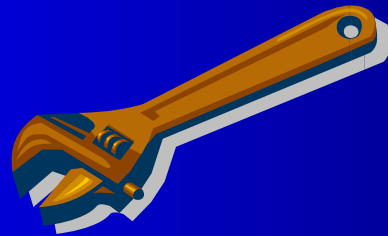
Scholarship

- Scholarship of Discovery
- Scholarship of Integration
- Scholarship of Application
- Scholarship of Teaching
 - Boyer 1990



Question

- What are some of the problems associated with their application at the *personal* , *institutional* , and *disciplinary* levels?



Personal/Faculty Scholarship

- “It is one of the paradoxes of scholar-teachers’ lives that teaching and research simultaneously enrich one another just as they also steal time from one another. The answer, of course is balance -- and a 90 hour week.”

- Cronin (1991)



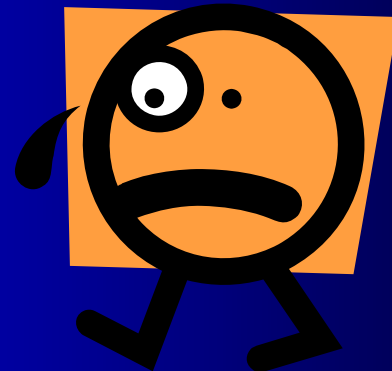
Personal/Faculty Scholarship

- Specialization can, and perhaps should, change over the course of one's career. Scholars obviously cannot do everything at the same time, but they can do everything over the course of a career.
 - Heinemann (1999)



Institutional Scholarship

- Operating definition of Scholarship
 - *Scholarship Assessed* by Glassick in 1997
- Lack of reward system
- Confusion of institutional roles and expectations, especially for small and medium size colleges



Institutional Scholarship

“While all four types of scholarship need to be included at any given institution, any single institution needs to clarify its primary purpose, and the remaining types of scholarship should be implemented and assessed to the extent that they contribute to that primary purpose.”

- Heinemann (1999)

Disciplinary Scholarship

- It is argued that developing the scholarship of teaching will only bring about change in their priorities if it is embedded in disciplines and departments.



Disciplinary Scholarship

- The primary allegiance of most academic staff is to their subject or profession
- Significant differences among disciplines in what academics do and how those activities are described and valued.



Disciplinary Scholarship

- “Improvements of teaching needs to be rooted in the intellectual substance of the field.”
 - Rice (1995)



Disciplinary Scholarship

- The characteristics of disciplines “define limits on the extent to which studies in one area can be generalized to areas whose subject matter is different.”
 - Biglan (1973)



Scholarship of Teaching

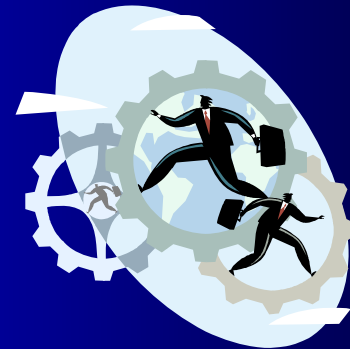
- Transmitting knowledge
- Transforming knowledge
- Extending knowledge
- Public
 - Susceptible to critical review
 - Reproducible
 - Accessible for exchange and use by other scholar

- Glassick (2000)



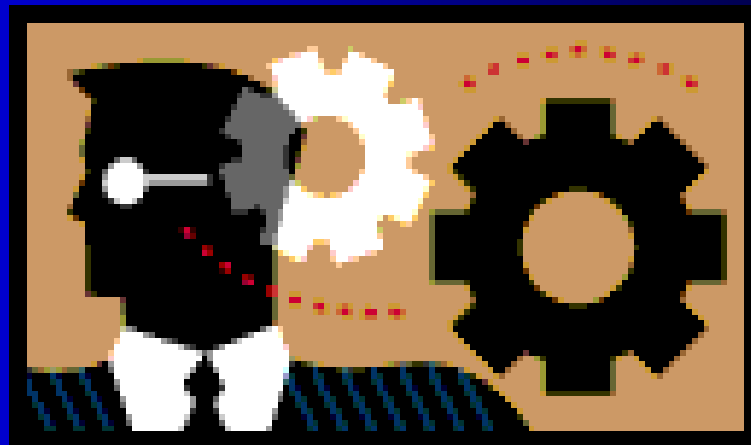
Scholarship of Teaching

- Consensus that scholarship of teaching involves three essential and integrated elements:
 - Martin 1999
- 1. Engagement with the scholarly contributions of others on teaching and learning



Scholarship of Teaching

2. Reflection on one's own teaching practice and the learning of students within the context of a particular discipline



Scholarship of Teaching

3. Communication and dissemination of aspects of practice and theoretical ideas about teaching and learning in general, and teaching and learning within a discipline



Medical Education

- Many different disciplines that are inter-related



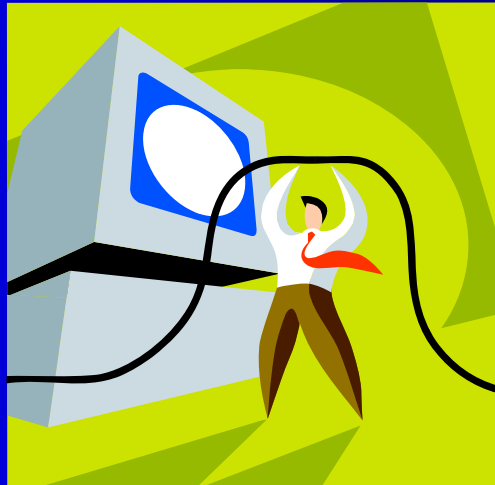
Medical Education

- Mass of information/knowledge



Medical Education

- Rapid expansion and change in the field



Medical Education

- Emphasis on higher level cognitive skills (problem solving, application)



Medical Education

- “Soft” skills (interpersonal, communication, leadership)



Best Evidence Medical Education

- Meeting on Evidence-based Policies and Indicator Systems in Durham, UK in July 1999

Best Evidence Medical Education

- Options

- Brighton, 2000

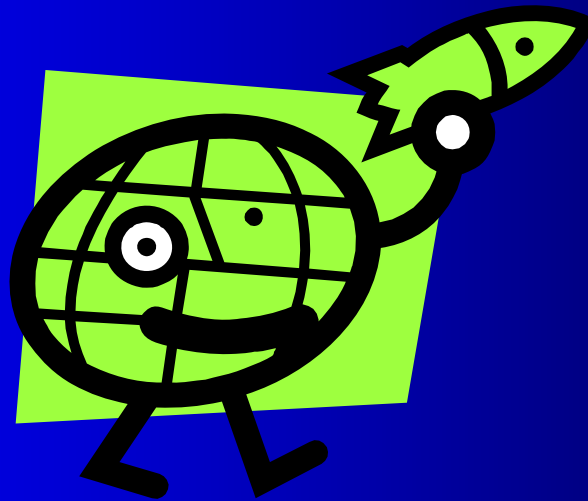
1. Basing decisions about teaching practices on evidence



Best Evidence Medical Education

2. Or....base decisions on the PHOG approach to teaching:

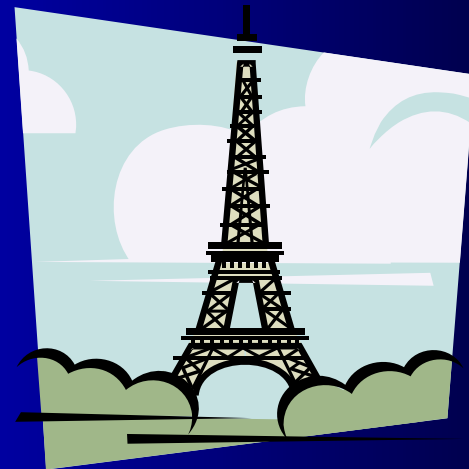
Prejudices, Hunches, Opinions, and Guesses



Dr. PHOG

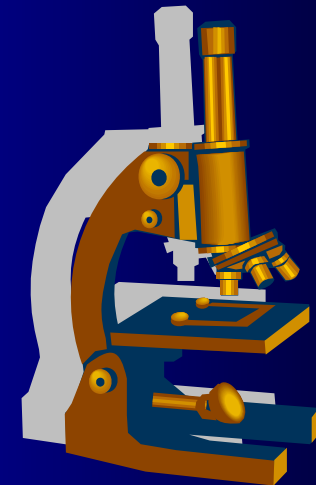
Best Evidence Medical Education

- The term “Best Evidence Medical Education” was coined in the meeting of the Association for Medical Education in Europe held in Linköping in August 1999



Definition

- BEME is defined as:
“the implementation, by teachers in their practice, of methods and approaches to education based on the best evidence available”
 - Harden et al., 1999



BEME encourages teachers to...

- Comprehensively and critically appraise the literature that already exists in the area, and categorize the power of the evidence available



BEME encourages teachers to...

- Identify the gaps and flaws in the existing literature and suggest appropriately planned studies to optimize the evidence



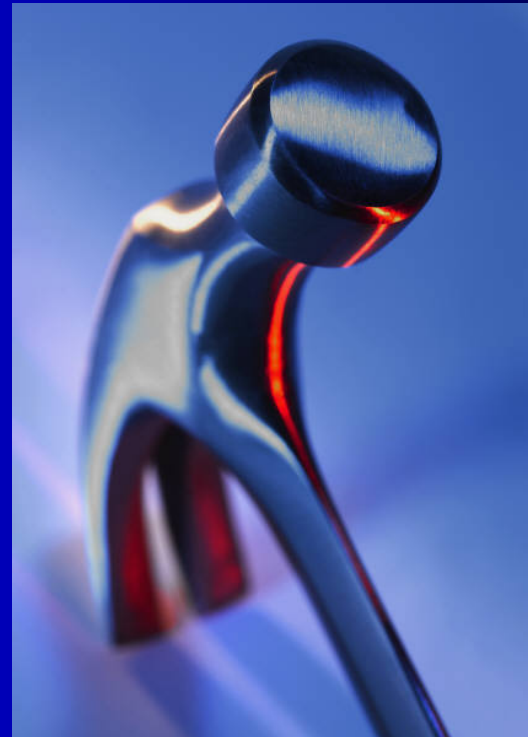
Best Evidence Medical Education

- Six steps:
- Frame the question
- Develop a search strategy
- Produce the raw data
- Evaluate the evidence
 - QUESTS criteria
- Implement change
- Evaluate the change



QUESTS criteria

- For evaluating the reliability and relevance of evidence (Harden et al., 1999)



QUESTS criteria

– Quality

- The type of evidence or research method and the rigor of the study

QUESTS criteria

– Utility

- The extent to which the approach described would need to be adapted for use in the teacher's practice

QUESTS criteria

– Extent

- The number of studies described and the size of the studies

QUESTS criteria

– Strength

- The clarity and lack of ambiguity of the conclusions

QUESTS criteria

– Target

- The extent to which the expectations of the researcher and the teacher are similar

QUESTS criteria

– Setting

- The similarity of the setting or context

QUESTS criteria

- Quality, extent, and strength are intrinsic to the research study
- Utility, target, and setting reflect the relevance of the studies to the teacher

Factors leading to individual resistance

- Inertia towards change - “what’s wrong with what we are doing now?”
- Priority of medical practice and research over teaching activities



Factors leading to individual resistance

- Failure to recognize that education is a science in its own right
- Ignorance of educational principles



Factors leading to individual resistance

- Lack of recognition and rewards for teaching activities
- Lack of educational support and advice services



Factors leading to institutional resistance

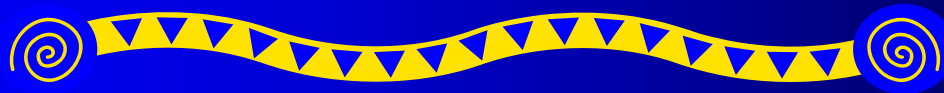
- Tradition
- Autonomy of departments and divisions in educational planning
- Competition for funds and resources form research and clinical services

Factors leading to institutional resistance

- Lack of long-term evidence for some new educational approaches
- Lack of an authoritative supportive leader for educational activities

Real change towards BEME will require

- External pressure
- International, national, public accountability and from accrediting bodies, licensing authorities, and other key medical education organizations
- Institutional championing from authoritative figures and opinion leaders



Real change towards BEME will require

- A supportive network of peers and professional educationalists
- An efficient system of information dissemination and opportunities for collaboration
- Support and rewards for the application of BEME principles to the educational process



Example



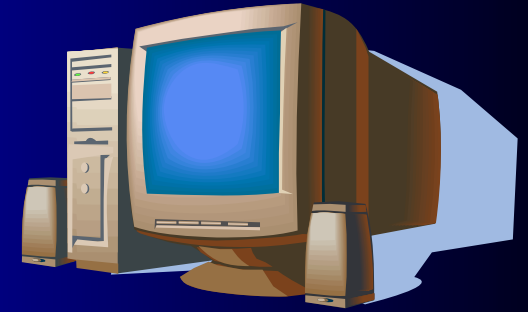
- Development of a CD-ROM internet hybrid: a new thoracic surgery curriculum (Gold, J. P. et al, *Ann Thorac Surg* 2002;74:1741-1746)
- Purpose
 - Thoracic surgery programs rely on a significant amount of information to have been mastered by the resident before initiating the formal thoracic surgery training
 - To develop and maintain a catalog of factual knowledge that would be optimally required for residents before initiation of the thoracic surgical residency

Example



- Development
 - To develop the content of prerequisite curriculum, to develop an implementation plan, and to develop a methodology to evaluate the effectiveness of the content and implementation of prerequisite curriculum during the course of several cycles of residents for a minimum of 5 years.

Example



- Development

- To develop a CD-ROM Internet Hybrid educational product that would allow the resident to study this curriculum with the most modern techniques of electronic-based education.
- 75 topics, which are divided into 13 textbook-like sections and also into 12 case-based sections

Example

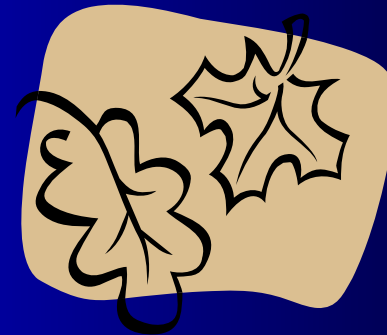
- Implementation

- Subjects - residents matched to the thoracic surgery program (n=139)
- Randomized into one of two groups
 - those receiving the full CD-ROM Internet Hybrid curriculum, and
 - those receiving only an outline and references of the content of the curriculum but no educational content materials



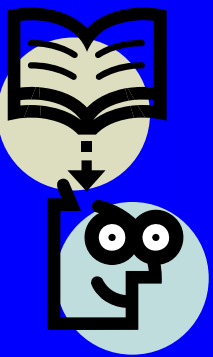
Example

- Raw data
 - American Board of Thoracic Surgery in-training examination
 - American Board of Thoracic Surgery fellowship examination
 - the psychological and comfort levels of the residents during training



Example

- Successful Implementation of a Novel Internet Hybrid Surgery Curriculum
 - Ann Surg 2004;240:499-509
 - Positive correlation of in-training examination performance to the use of CD-ROM curriculum
 - Improved overall knowledge and application of knowledge on faculty evaluation
 - Internet Hybrid curriculum rated by users as easy to use (8.3/10), a valuable study guide(7.7/10), and superior to traditional learning resources (7.9/10)



Example

- Six steps:
- Frame the question
- Develop a search strategy
- Produce the raw data
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- Implement change
- Evaluate the change



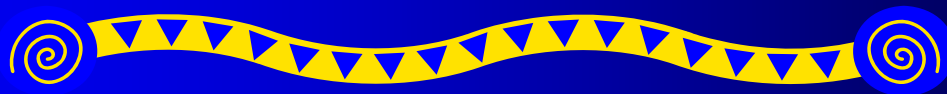
Conclusion



- Scholarship is at the heart of all institutions of higher learning, and it is central to the activities of all faculty
- There are various forms of scholarship, and this multi-dimensional nature of scholarship has implications at the personal, institutional, and disciplinary levels

Conclusion

- Scholarship may be best anchored within the disciplinary context
- There is a progressive movement towards Best Evidence Medical Education as the highest form of scholarship of teaching in the field of medicine



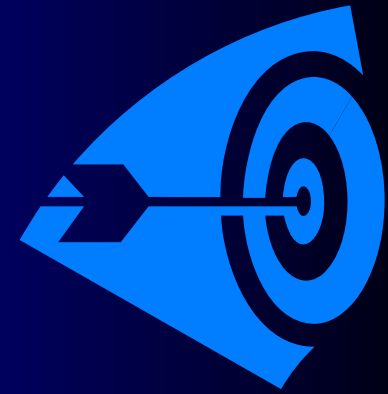
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THANK YOU