

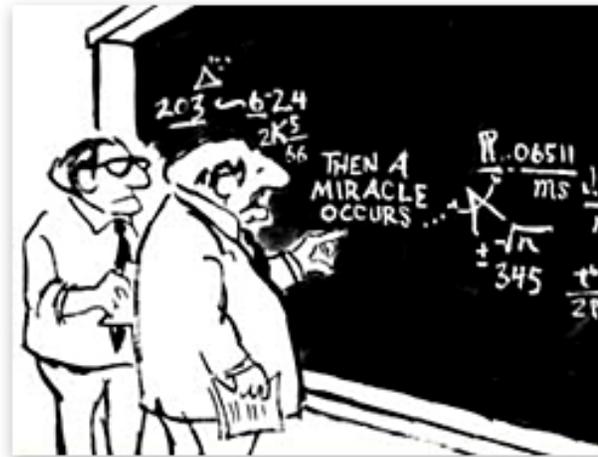
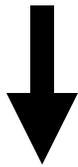


Competency Based Education

Elizabeth Hardie

NCSU/VEC

VetICE Veterinary
Internet Content Exchange



The evolution of medical training

- 1800's: Individual physicians took on apprentice
- Early 1900's: Science based didactic training, clerkships
- Late 1900's: Align training with realities of profession, define educational process



Why change? What was the problem?

- Students not prepared for practice
- Increase in # of facts per specialty: “gorge and purge”
- Little thought to long term learning or 4 year outcome
- Little appreciation for critical role of non-technical skills



Outcome based education

- Competency based training for both undergraduate medical curriculum and residencies
- Competency defined by cognitive knowledge, behaviors and technical skills
- Programs must assure performance assessment to remain accredited



Outcome based education

- A collectively endorsed mission statement that reflects commitment to success for all students and provides the means for translating that commitment into action.
- Clearly defined publicly derived 'exit outcomes' that students must demonstrate before they leave school.
- A tightly articulated curriculum framework of program, course and unit outcomes that derive from the exit outcomes.
- A system of instructional decision making and delivery that employs a variety of methods, assures successful demonstration of all outcomes and provides more than one chance for students to be successful.
- A criterion-referenced system of assessment.
- An ongoing system of programme improvement that includes staff accountability, effective leadership and staff collaboration.
- A data base of significant, visionary outcomes for all students, plus key indicators of school effectiveness, that is used and updated regularly to improve conditions and practices that affect student and staff success.

Outcome based education

1. Define outcome
2. Design measures and standards of performance
3. Develop learning experiences

Stephen R. Smith



Brown Medical School

- Mastery of medical knowledge base
- Achieve intermediate proficiency in nine key abilities
- Attain an advanced level in problem-solving and three other abilities of a student's choosing



Nine Abilities

- Effective Communication
- Basic Clinical Skills
- Using Basic Science in the Practice of Medicine
- Diagnosis, Prevention and Treatment
- Lifelong Learning
- Self Awareness, Self-Care, Growth
- The Social and Community Contexts of Health Care
- Moral Reasoning and Clinical Ethics
- Problem Solving

Example: Oral Communication

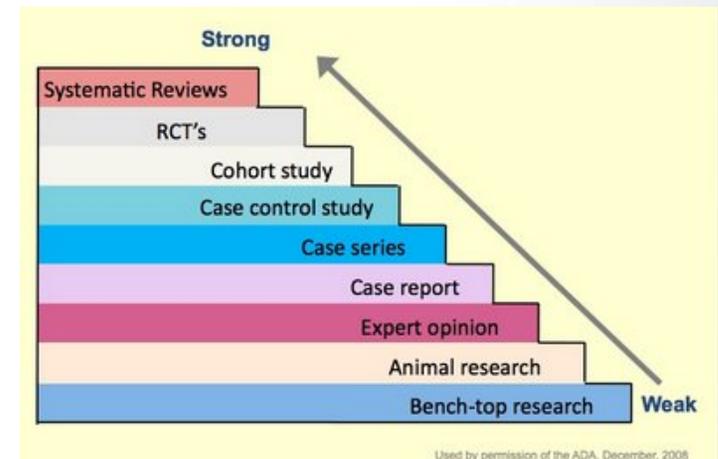
- Beginning: oral report, basic medical interview skills
- Intermediate: counsel a women about contraception, communicate with an adolescent
- Advanced: breaking bad news, manage a hostile or violent patient, provide counseling for victim of physical or sexual abuse



<http://courses.washington.edu>

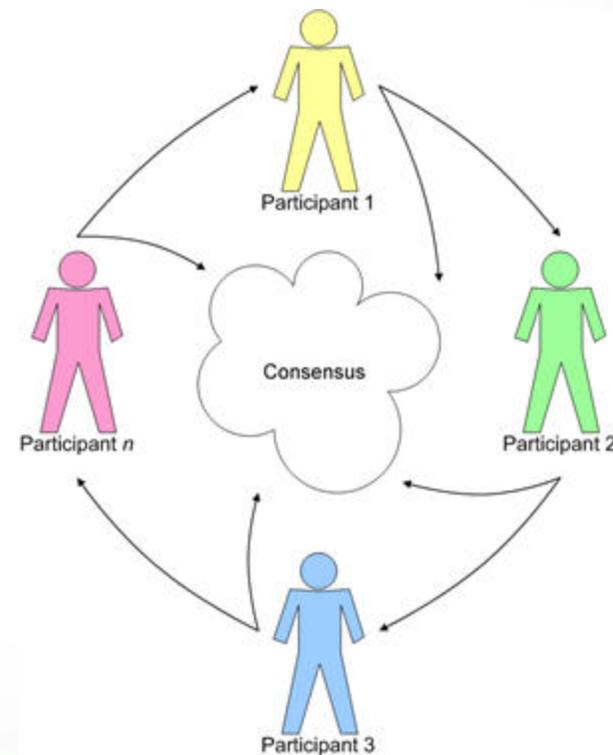
Example: Life Long Learning

- Beginning Level: Can research problem in PBL course and report back to group
- Intermediate Level: Can write a review of topic, perform a literature review, and rate strength of evidence
- Advanced Level: Can participate in the research process: frame question, sophisticated literature search, organize data, publish or present data



Process: Defining the Outcome

- Stakeholder input
- Delphi consensus process
- Jobs (task) analysis
- Content analysis
- Critical incident analysis
- Study of medical errors



The starting point



- 7 applicants/spot
 - 85% Female
 - 25 years of age
 - GPA 3.65/3.83
 - Urban/suburban
 - (I-E)STJ
 - Millennial mind-set
- **Biology (33%)**
 - Molecular/Genetics
 - Ecology and Evolution
 - **Animal Science (27%)**
 - Anatomy
 - Physiology

VEC Data on focus areas (8 schools)

- Small animal 47%
- Food animal 17%
- Mixed animal 16%
- Equine 12%
- “Other” 8%



Steve DiBartola



Clinician Scientist

Practice Ready Clinician

What do our graduates do?

- NCSU Data
 - 60-70% Small Animal Practice
 - 15-20% Mixed/Equine/Food Animal Practice
 - 10-15% Relief, Exotics, Industry, Government, Academia, Other
- Species
 - Cat>Dog>Horse>Cow>Exotics>Pig>Lab Animal>Small Ruminant>Poultry

What level do they enter at?

- 70-50% Enter practice directly
- 18-40% Internship
- 10-17% Residency
- 0-10% Master's-PhD

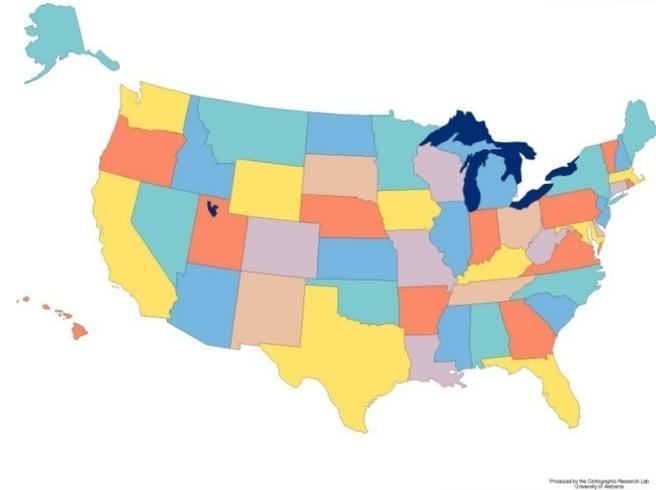
What happens over the first 5 years?

- Clinical Practice 85% → 65%
- Non-Clinical Employment 0 → 12%
- Additional Training 15%



A practice ready comparative biomedical
clinician scientist

Competing Competencies



Final Questions

- Practice Ready Comparative Biomedical Scientist in 4 years?
- Why opting out of practice after 5 years?
- State vs. National Priorities?
- Marketplace Incentives?
- What other forces will drive selection of competencies?

Websites

- <http://avmajournals.avma.org/action/doSearch?type=simple&searchText=competency>
- <http://ceres.cals.ncsu.edu/surveybuilder/Form.cfm?testID=9446>
- https://services.aamc.org/publications/index.cfm?fuseaction=Product.displayForm&prd_id=198&prv_id=239
- <http://www.rcvs.org.uk/Templates/Internal.asp?NodeID=95099&int1stParentNodeID=94964&int2ndParentNodeID=94970>