Integration of Evidence-Based Veterinary Medicine into a PBL Curriculum

Paradigm Shift or Simple Extension?

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Introduction
- Problem-based learning (PBL)
- Evidence-based medicine
- Outcomes assessment
- Quality medicine/standards of care
- Practitioner-based clinical research
MSU-CVM Background

- 1974 – College established
- 1981 – Graduated 1st DVM class
- 1984 – Student computer requirement
- 1994 – Integrated PBL into veterinary educational curriculum
- 2000 – Modification to PBL curriculum
- 2003 – Restructuring current curriculum
MSU-CVM Curriculum

- Two Phases
  - Phase 1 – Freshman & Sophomore students
    - Covers normal and abnormal
    - Foundational knowledge background
  - Phase 2 – Junior & Senior students
    - Clinical Experience
    - Clinical Rotations
    - Externships
MSU-CVM Curriculum

First PBL Curriculum

Phase 1
- PBL used for all phases of instruction
- Students divided into small groups (6 students)
- All information was presented in PBL format
- Cases used to determine learning issues
- Foundation knowledge
- Self-directed learners
MSU-CVM Curriculum

- First PBL Curriculum
- Phase 2
  - Clinical Experience
  - Clinical Rotations
  - Externships
  - Utilized skills learned in PBL
Phase 1

- Year 1
- Year 2

PBL

- Normal Animal
- Abnormal Animal

- Cases
- Learning issues
- Foundation knowledge

Phase 2

- Year 3
- Year 4

Clinical Experience

- Self-directed learners
- Teaches “How to find” information
MSU-CVM Curriculum

- Modified PBL Curriculum

  - Phase 1
    - PBL used for all phases of instruction
    - Students divided into small groups (6 students)
    - Most information was presented in PBL format
    - Cases used to determine learning issues
    - Lectures given to supplement learning issues
    - Foundation knowledge
    - Self-directed learners
MSU-CVM Curriculum

- Modified PBL Curriculum
- Phase 2
  - Clinical Experience
  - Clinical Rotations
  - Clinical directed lectures given as supplement
  - Externships
  - Utilized skills learned in PBL
Phase 1

Year 1

Normal Animal

Phase 2

Year 2

Abnormal Animal

Lectures

Clinical Experience

Year 3

Clinical Rotations

Year 4

Externships

PBL

• Cases
• Learning issues
• Foundation knowledge

• Self-directed learners
• Teaches “How to find” information
Strengths and Weaknesses

**Strengths**
- More clinical experience obtained
- Develop self-directed learning skills
- Work in groups to solve problems

**Weaknesses**
- Some foundation knowledge missed
- Not trained to critically evaluate literature
- Not trained on how to effectively and efficiently search literature
MSU-CVM Curriculum

Current Curriculum

Phase 1

- Uses combination of didactic lectures and PBL
- Builds better foundation of knowledge
- Makes PBL more efficient and effective
MSU-CVM Curriculum

- Current Curriculum

- Phase 2
  - Clinical Experience
  - Clinical Rotations
  - Externships
  - Utilized skills learned in PBL
  - Reduces need for supplemental clinical lectures
Phase 1

Year 1: Normal Animal
Year 2: Abnormal Animal
Didactic Courses
Foundation Knowledge
PBL
- Cases
- Learning issues

Phase 2

Year 3: Clinical Rotations
Year 4: Externships
Clinical Experience
- Self-directed learners
- Teaches “How to find” information

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MSU-CVM Curriculum

Proposed Restructured Curriculum

Phase 1

- Uses combination of didactic lectures and PBL
- Builds better foundation of knowledge
- Introduce EBM to students
- Begin teaching EBM skills
- Makes PBL more efficient and effective
- Students begin thinking in EBM terms
Phase 1

Year 1

- Normal Animal
- EBVM Skills
- Didactic Courses

Year 2

- Abnormal Animal
- EBVM Skills
- Didactic Courses
- Foundation Knowledge

PBL

- Cases
- Learning issues
MSU-CVM Curriculum

- Proposed Restructured Curriculum
- Phase 2
  - Use EBM skills in clinical rotations
  - Utilize PBL on actual clinical cases
  - Begin to practice EBVM
  - Evaluate EBM practices of clinical faculty & self
  - Begin thinking in terms of outcomes assessment
  - Develop skills needed for lifelong learning
Steps in Practicing EBVM

- Asking answerable question
  - Knowledge-based
  - Foundation learning
Steps in Practicing EBVM

- Asking answerable question
- Finding the best available evidence
  - Literature retrieval skills
  - Knowledge of best information sources
Steps in Practicing EBVM

- Asking answerable question
- Finding the best available evidence
- Critically appraising the evidence
  - Statistical review
  - Literature evaluation skills
Steps in Practicing EBVM

- Asking answerable question
- Finding the best available evidence
- Critically appraising the evidence
- Applying the evidence to specific patient
  - Clinical experience
  - Client wishes
  - Utilize EBM skills
Steps in Practicing EBVM

- Asking answerable question
- Finding the best available evidence
- Critically appraising the evidence
- Applying the evidence to specific patient
- Evaluation
  - EBM practices
  - Outcomes
Evidence-Based Veterinary Medicine

Clinical Research

Current Knowledge

Education

Clinical Experience

Outcomes/Evaluation

Veterinary Practitioner

Veterinary Student

Veterinary Practitioner

Veterinary Practitioner

Veterinary Student
Goal of Proposed Curriculum

Produce veterinary practitioners who will understand and practice evidence-based veterinary medicine and conduct clinical research to add to the number of clinical studies and body of knowledge for EBVM.