Trends in the Anatomical Sciences

How are we teaching North American Dental Students?

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Contemporary Buzz-words

- Integration
- Student Centered
- Inter-professional Experiences
- Evidence-based
- Competency Driven
- Critical Thinking
- Life-Long Learning
- Ethics and Professionalism
- Goals/Behavioral Objectives
Evolution of Dental Education

- Dental problems are as old as man
- Evolved from apprenticeship to a profession through educational standards
- 1530 – First textbook on dentistry published
- 1765 – First medical school founded
- **1840 – First dental school founded**
- **1891- 2 yr dental curriculum required**
- 1910 – Flexner’s Report on medical education
- **1917 – 3 yr dental curriculum required**
- **1926 – Gies’ Report on dental education**
- **1931 – 1st National Board exam administered**
- **1941 – Dental School accreditation standards published**
- 1970’s – ADEA Curriculum Guidelines Published
- **1994 – Chambers’ publications on competencies**
- 1995 – IOM report on dental education
- 2000’s – ADEA revisits competencies/foundation knowledge/curriculum guidelines
Institute Of Medicine - 1995

- The future of dental education will be shaped by scientific, technological, political, and economic factors that are beyond the profession’s control.
- Will dental educators choose to preserve the status quo – in effect, a path toward stagnation and eventual decline; or will they follow a more difficult path of reassessing and renewing their mission of education, research, and patient care to the university and the community.
What is the goal?

• Oral health is an integral part of total health
• Focus on prevention
• Dental education must be scientifically based
• Learning is life-long
• There must be an adequate qualified work force
• Necessity to serve all Americans, not just economically advantaged
• Reduce disparities in oral health status and access to care
Current State of Curriculum

• There is no defined “core” curriculum that all schools deliver
  – Content may be fairly consistent among schools, but when, where, and it is delivered is not necessarily consistent

• There has been a continual reduction in contact hours in BMS over the past 2 decade
  – BMS courses have to deliver more information in less time
  – Discipline silos are becoming less defined
Curriculum

• Superimposed upon the deployment of a competency based curriculum framework and the Commission On Dental Accreditation standard requiring “integration” of the basic and clinical sciences there has been a “curriculum change movement” in dental education for well over a decade
• Note that no two dental curricula are structured alike even though they are all evaluated by the same standards (CODA) and may contain the same “core curriculum”
• The result of this “change” has and continues to impact the biomedical sciences which are the foundation for the clinical sciences
• Institutions (Deans) want change and they want it to be GOOD, QUICK and CHEAP
Integrated and Competency-Based

- Competency-Based
  - Organized around functions undertaken in practice
  - Manner in which objectives of the curriculum are developed
  - Can be integrated
  - Focuses on “mastering” a skill set (becoming competent)
  - Each year builds on the previous
- Integrated
  - Increases problem solving skills (*critical thinking*)
  - Broad based preparation for the future professional life (*life-long learning*)
Effectors of Change

- Integration
- Student Centered
- Interprofessional
- Evidence-based
- Competency Driven
- Critical Thinking
- Life-Long Learning
- Ethics and Professionalism
- Goals/Behavioral Objectives
- Student learning modalities
Types of Change

- Move some of the biomedical sciences to pre-requisites
- Decrease contact hours (eliminate laboratories/reduce lecture hours)
- Integrate/streamline courses (reduce unnecessary redundancy?)
- Eliminate laboratories (conserve space)
- Combined courses with other professions
- PBL model
- Hybrid PBL model
- Module model
- Fly-in model
Curriculum Conundrum

• Importance of the survey and the necessity for “curriculum guidelines” for future educators coming into dental education
  – No two dental schools have the same curriculum sequence or content (content may be fairly consistent among schools, but when where and how it is delivered is not)
  – There is no defined “core” curriculum that all schools deliver
  – There has been a continual reduction in contact hours in BMS over the past decade
  – BMS courses taught by different groups
  – BMS courses have to deliver more information in less time
  – Discipline silos are becoming less defined
  – Makes formula for “change” difficult
  – Change will be implemented in a different manner
External factors driving Curriculum

• Where are BMS faculty housed?
• Timing of Part I National Boards – may go away – would enable more flexibility with scheduling
• Move to single Board Exam (2017)
• Standards for Accreditation
  – Currently allow schools considerable flexibility in defining the way they meet the standards which further diversifies curricula rather than standardizing it
• Technology
• Student learning modalities/expectations
• Budget/Faculty Numbers

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The Integration Ladder (Harden)

- **Transdisciplinary** – “real world” situations
- **Interdisciplinary** – loss of discipline perspective
- **Multidisciplinary** – many subjects together
- **Complementary** – themes/topics
- **Correlation** – only areas of common interest
- **Sharing** – joint teaching
- **Temporal Coordination** – synchronization
- **Nesting** – infusion with elements of other subjects
- **Harmonization** – connection, consultation, subject based
- **Awareness** – subject based but aware of others
- **Isolation** – fragmentation, subject based, silos
Important Considerations in Changing a Curriculum

• Preparation and adaptation of students (including Student learning modalities)
• Defining/Covering of essential subject matter (core curriculum)
• Reorganization and streamlining
• Assessment of students/Assessment of program (outcomes)
• Reliance of adequate learning resources (support services)
• Organizational infrastructure for education (technology/faculty numbers)
• Upfront investment vs maintenance costs (cost effective change)
• Costs vs. expected outcomes (investment)
• Sensitivity to student numbers (impact of class size)
• Teaching modalities (e.g., PBL, lecture, self-directed)
• Faculty development/Adaptation to your Faculty culture and environment
Why Evolve?

• Change is inevitable.
• “The only thing constant is change.”
• Change is necessary if growth, development, and success are to be achieved.
• There is no such thing as status quo.
• You are either improving or declining.
• **Laws of Physics**: If you are not moving forward, you are sliding toward decay.
Goals of Surveys

• Serve to help guide curricula in dental schools
  – 1st real snapshot; important adjunct to CCI Competency and Foundation Knowledge documents

• Assist educators in removing irrelevant, archaic information

• Aid in knowing what new information to incorporate

• Guide for test construction committees to know what information is generally taught and accepted as being relevant and contemporary

• Provide contact information of course directors to facilitate communication and networking
“It must be remembered that there is nothing more difficulty to plan, more doubtful of success, nor more dangerous to manage than the creation of a new system. For the initiator has enmity of all who would profit by the preservation of the old institution and merely lukewarm defenders in those who would gain by the new ones.”

-Machiavelli
Can you have it all?

• Cheap
• Quick
• Good
Curriculum is not a destination it is an ever changing, never ending journey......