MEDICAL EDUCATION in the DIGITAL AGE: REFORMS AND CHALLENGES

QS SUBJECT FOCUS SUMMIT – MEDICINE
Universities Innovating for Future Healthcare
Kaohsiung Convention Center
October 16-18, 2017

Ma. Lourdes D. Maglinao, MD, MHPEd, FICS, FAFN
Dean, Faculty of Medicine and Surgery
University of Santo Tomas, PHILIPPINES
MEDICAL EDUCATION in the DIGITAL AGE: REFORMS and CHALLENGES

QS SUBJECT FOCUS SUMMIT – MEDICINE
October 16-18, 2017
OUTLINE

• Brief historical background
• Traditional methods of teaching
• Outcome-based education
• Use of technology in Medical Education
• Challenges in adopting technology
• Trends in Medical Education
HISTORICAL MILESTONES

1959 - The Medical Act.
1967 – The Association of Philippine Medical Colleges was founded
1968 – Granting of MD degree after 4 years
1970 – content based curriculum converted to objective based curriculum
1978-81 – Competency based Curriculum “5 Star Physician”
1982 – Integration of Primary Health Care in Medical Curriculum.
1999 – The APMC affiliated with the Philippine Accrediting Association of Schools, Colleges and University (PAASCU)
2012 – Commission on Higher Education (CHED)- CHED MEMO #46 series 2012
2017 – 46 Medical Schools
MEDICAL EDUCATION in the DIGITAL AGE: REFORMS and CHALLENGES

QS SUBJECT FOCUS SUMMIT – MEDICINE
October 16-18, 2017
• Students
• COE
• Faculty
• Research
• Physicians Licensure Examination
• Programs
• Top performing school
• International linkages
2017 Best Philippine Schools to Study MEDICINE

Based on overall board exam performance, number of examinees, top performing examinees, accreditation status, and faculty-student ratio.

1. University of Santo Tomas - 96.11%
2. UE Ramon Magsaysay Mem. Medical Center - 95.49%
3. University of the Philippines-Manila - 85.52%
4. DLSU-Health Sciences Institute - 81.60%
5. FEU-Nicanor Reyes Medical Foundation - 80.82%
6. Saint Luke's College of Medicine - 77.03%
7. Cebu Institute of Medicine - 77.00%
8. Xavier University - 70.74%
9. West Visayas State University-La Paz - 70.13%
10. Silliman University - 67.70%
11. Saint Louis University - 67.47%
12. Pamantasan ng Lungsod ng Maynila - 67.44%

13-25
TRADITIONAL METHOD OF TEACHING
The Learning Pyramid

Average Learning Retention Rates

- LECTURE 5%
- READING 10%
- AUDIO VISUAL 20%
- DEMONSTRATION 30%
- DISCUSSION GROUP 50%
- PRACTICE BY DOING 75%
- TEACHING OTHERS 90%

Adapted from NTL Institute for Applied Behavioral Science
USE OF TECHNOLOGY IN THE TRADITIONAL SETTING
USE OF TECHNOLOGY IN THE TRADITIONAL SETTING

MEDICAL EDUCATION in the DIGITAL AGE: REFORMS and CHALLENGES

QS SUBJECT FOCUS SUMMIT – MEDICINE
October 16-18, 2017
“rationalizing medical education in the country with the end in view in keeping apace with the demands of national relevance and global responsiveness”
FRAMEWORK FOR OBE

MACROCURRICULUM

MICROCURRICULUM

Institution’s Vision, Mission & Goals
→ Institutional Outcomes
   (Competencies of Ideal Graduate)
→ Program outcomes
   (Curriculum map)
→ Course outcomes
   
   Assessment & Evaluation
   
   Course Design
   
   Learning Environment:
   Content & Methodologies
   
   Teaching-learning systems

Social, Environmental Context
Content Based or Input Based Education
- Focus on knowledge of concepts, theories, principles, and methodologies
- Emphasis is on the educational process

Competency Based Education
- Restricted to skills and competencies through a performance
- Learners need to know & be able to do in varied situations

Outcome Based Education
- Extended to high cognitive level
- Learner demonstrates what they know & are able to do
OUTCOMES BASED TEACHING AND LEARNING APPROACH

Student centered course

Teachers are facilitators of learning

Addresses the principle of constructive alignment
USE OF TECHNOLOGY IN MEDICAL EDUCATION

UST EdTech Center is the leading training center on ICT teacher professional development specializing on mass wide elearning deployment in the Philippines. The center’s impact and contribution to the advancement of ICT-based teacher professional education has been recognized both in international and national professional institutions.

Services Offered

- Media Production
- Digital Media Asset Management
- Digital Broadcasting
- Innovative Learning & Technology
- Technical Support Services
USE OF TECHNOLOGY IN MEDICAL EDUCATION
TPACK

MEDICAL EDUCATION in the DIGITAL AGE: REFORMS and CHALLENGES
## Flipping Online

<table>
<thead>
<tr>
<th>Before Class</th>
<th>Traditional Classroom</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Read and/or Watch lecture before class</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>During Class</th>
<th>Flipped Classroom</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Listen and take notes in class</td>
</tr>
<tr>
<td></td>
<td>Student centered discussion and formative quizzes. Students consolidate understanding</td>
</tr>
<tr>
<td></td>
<td>with professor</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>After Class</th>
<th>Traditional Classroom</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Students consolidate understanding</td>
</tr>
<tr>
<td></td>
<td>Students further consolidate and apply learnings.</td>
</tr>
</tbody>
</table>
The operating system of life - George Zaidan and Charles Morton

LESSON CREATED BY EARL LOUIS SEMPIO USING TED Ed
VIDEO FROM TED-Ed YOUTUBE CHANNEL

Let’s Begin...

Humans, octopi and pine trees alike are all made up of cells, tiny but sophisticated systems that keep life going. Cells are almost like tiny factories run by robots, with the nucleus, DNA, proteins, lipids, and vitamins and minerals all playing critical roles. George Zaidan and Charles Morton lay out the blueprint of a cell and explain how biochemistry binds all life together.

Watch
Think
Dig Deeper
Discuss
COMPREHENSIVE GUIDE TO PE: ONLINE

Comprehensive Guide to Physical Examination
Melvin R. Marcial, MD

Table of Contents

Chapter 1: History Taking Data Base

Chapter 2: Methods of Physical Examination
USE OF ONLINE TOOLS FOR TRADITIONAL METHODS

Guidelines for First year Students

Department of Biochemistry, Molecular Biology and Nutrition
Guidelines for First year Students
Rules on Computation of Grades and Student Promotion
Academic Year 2017-2018

Department Staff
1. Jose S. Blas, MD (JGB) - Department Chair
2. Mary Jocelyn Yu-Laygo, MD (JYL)
3. Imelda A. Dakis, MD (IAD)
4. Redario C. Laygo, MD (RCL)
5. Mary Josephine Ruby Dytuco-Tongson, MD (RDT)- Laboratory Supervisor
6. Noel Martin S. Bautista, MD (NSB)
7. Ma. Gina A. Macaranas, MD (GAM)- Chief of Section, Medical Nutrition
8. Peter R. Rio, MD, Ph.D, LLB (PPN)
9. Bien J. Matawaran, MD (BJM)- Department Secretary
10. Mary Anne D. Chong, MD (MDC)
11. Mark Francisco Tapang, MD (MFT)
12. Earl A. Sempio, MD (EAS)
13. Eric S. Mendida, MD (EMS)

Biochemistry as a Subject
- Biochemistry is a yearly subject, divided into 4 shifts and bears the weight of 8 units.
- The course is given twice weekly for 4 hours each meeting, allotted as follows:
WEB PRESENCE TO WEB-CENTRIC

### Medical Ethics III

#### Course Information

#### Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Topic</th>
<th>On-ground</th>
<th>Online</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1/16</td>
<td>Orientation</td>
<td>Simultaneous</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1/23</td>
<td>Human Life and Hippocratic Oath</td>
<td>Interactive</td>
<td>ReWrite Hippocratic Oath</td>
</tr>
<tr>
<td>2</td>
<td>1/30</td>
<td>Human Experimentation, Research, IRB and Bioethics committee</td>
<td>Interactive lecture</td>
<td>Multiple Choice pretest</td>
</tr>
<tr>
<td>3</td>
<td>2/6</td>
<td>Referrals / Honoring</td>
<td>Interactive</td>
<td>Multiple Choice pretest</td>
</tr>
<tr>
<td>4</td>
<td>2/13</td>
<td>Truth-Telling, Informed Consent and Professional Secrecy</td>
<td>Interactive Lecture</td>
<td>Multiple Choice pretest</td>
</tr>
<tr>
<td>5</td>
<td>2/20</td>
<td>Interviewing and Communicating</td>
<td>Interactive</td>
<td>Multiple Choice pretest</td>
</tr>
<tr>
<td>6</td>
<td>2/27</td>
<td>Phone and Internet Consultation</td>
<td>Interactive</td>
<td>Multiple Choice pretest</td>
</tr>
<tr>
<td>7</td>
<td>3/6</td>
<td>Integration</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>3/13</td>
<td>Shifting exams</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>3/20</td>
<td>Shifted in person</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>3/27</td>
<td>Shifted in person</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>4/3</td>
<td>Shifted in person</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>4/10</td>
<td>Shifted in person</td>
<td>None</td>
<td></td>
</tr>
</tbody>
</table>
MEDICAL EDUCATION in the DIGITAL AGE: REFORMS and CHALLENGES

QS SUBJECT FOCUS SUMMIT – MEDICINE
October 16-18, 2017
Human Life and Relationship with others

Pre-Test Questions will be available once the links are marked as read.

Hippocratic Oath

PMA Code of Ethics

Physician’s Oaths
http://www.susgnturo.com/publications/oaths/

Mark Reviewed

Course Work for Bioethics 3
Week 1 Human Life and Hippocratic Oath

Week 1 Pretest
Pretest questions will be available until Friday 5pm.

Human Life and Relationship with others
Pre-Test Questions will be available once the links are marked as read.
Hippocratic Oath
PMA Code of Ethics
Physician’s Oaths
http://www.susquehanna.edu/publications/oaths/
Reviewed

Course Work for Bioethics 3
# Learning Management System

## Needs Grading

Instructors can view attempts ready for grading or review on the **Needs Grading** page. Click **Grade All** to begin grading and reviewing immediately, or sort columns or apply filters to narrow the list. **More Help**.

<table>
<thead>
<tr>
<th>Category</th>
<th>Item Name</th>
<th>User Attempt</th>
<th>Date Submitted</th>
<th>Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignment</td>
<td>Human Experimentation</td>
<td>KRIZIA MARIE LIM</td>
<td>January 29, 2016 7:54:08 PM</td>
<td>January 31, 2016</td>
</tr>
<tr>
<td>Assignment</td>
<td>Human Experimentation</td>
<td>MYRIELLE MARIE MATAAYAG</td>
<td>January 30, 2016 8:41:00 PM</td>
<td>January 31, 2016</td>
</tr>
</tbody>
</table>
TUSKEGEE/MENEGELE EXPERIMENTATION

1) How does it violate human and patient rights?

The subjects were recruited with misleading promises of “special free treatment,” which were actually spinal taps done without anesthesia to study the neurological effects of syphilis, and they were enrolled without their informed consent. Furthermore, the subjects received heavy metals therapy, standard treatment in 1932, but were denied antibiotic therapy when it became clear in the 1940s that penicillin was a safe and effective treatment for the disease. When penicillin became widely available by the early 1950s as the preferred treatment for syphilis, this therapy was again withheld. On several occasions, the USPHS actually sought to prevent treatment.

Evidently, the rights of the research subjects were violated. The Tuskegee Study raised a host of ethical issues such as informed consent, racism, paternalism, unfair subject selection in research, malfeasance, truth-telling, and justice, among others. The first major ethical issue to be considered is informed consent, which refers to telling potential research participants about all aspects of the research that might
The subjects were recruited with misleading promises of “special free treatment,” which were actually spinal taps done without anesthesia to study the neurological effects of syphilis, and they were enrolled without their informed consent. Furthermore, the subjects received heavy metals therapy, standard treatment in 1932, but were denied antibiotic therapy when it became clear in the 1940s that penicillin was a safe and effective treatment for the disease. When penicillin became widely available by the early 1950s as the preferred treatment for syphilis, this therapy was again withheld. On several occasions, the USPHS actually sought to prevent treatment.

Evidently, the rights of the research subjects were violated. The Tuskegee Study raised a host of ethical issues such as informed consent, racism, paternalism, unfair subject selection in research, maleficence, truth-telling and justice, among others. The first major ethical issue to be considered is informed consent, which refers to telling potential research participants about all aspects of the research that might reasonably influence their decision to participate. It is a widely held notion among ethicists, medical practitioners and researchers that informed consent is one crucial factor that makes any research involving human subjects ethical. Moreover, the USPHS practiced deception in recruiting subjects for the study. It was never explained to the subjects that the survey was designed to detect syphilis. The term “bad blood,” which was a local colloquialism for everything from anemia to leukemia, was used by the doctors and never defined for the subjects. Subjects were never told they had syphilis, the cause of the long-term illness.
FLIPGRID is a video response platform that allows educators to host video based discussions with students.

Educators create topic grids and students respond with recorded videos to discuss, reflect, and share via webcam, tablet or mobile device.
FLIPGRID DISCUSSIONS

MEDICAL EDUCATION in the DIGITAL AGE: REFORMS and CHALLENGES

QS SUBJECT FOCUS SUMMIT – MEDICINE
October 16-18, 2017
Perspective

Saying Goodbye to Lectures in Medical School — Paradigm Shift or Passing Fad?

Richard M. Schwartzstein, M.D., and David H. Roberts, M.D.

CHALLENGES IN ADOPTING TECHNOLOGY
GENERATION GAP

ADMINISTRATION
Policy Maker

“Baby Boomers” (1946-1964)
(Age 47-65)

FACULTY
Baby Boomers Generation X
(1965-1982)
(Age 30-46)

STUDENTS
GENERATION Y OR MILLENNIALS
(1983-2002)
Peter Pan Boomerang Generation
Generation Me
(Age 19-29)
SAMR MODEL

- **Redefinition**: Tech allows for the creation of new tasks, previously inconceivable.
- **Modification**: Tech allows for significant task redesign.
- **Augmentation**: Tech acts as a direct tool substitute, with functional improvement.
- **Substitution**: Tech acts as a direct tool substitute, with no functional change.
Teacher confidence in use of technology
based upon the work of Mandinach and Cline

INNOVATION
Technology use is pervasive.
I am digitally literate as I am with pedagogy & subject knowledge.
I innovate & share.

IMPACT
Students & I are using tech effectively.
Tech is embedded in my lessons and planning, where appropriate.

MASTERY
I've received training.
I've practiced with apps.
I've trialled it in lessons with success.
I'm feeling more confident.

SURVIVAL
I'm scared of breaking it.
I don't know what to do.
I know I should use this in lessons but I don't know how.

LEVEL
EXPANSION

CONFIDENCE / COMPETENCE

MEDICAL EDUCATION in the DIGITAL AGE:
REFORMS and CHALLENGES

QS SUBJECT FOCUS SUMMIT – MEDICINE
October 16-18, 2017
WHAT IS **e-LEARNING**?

E-learning is an approach to administering education and training through the use of modern technology. Videoconferencing, shared chat, and digital course materials make it possible for entire classes to be held in the cloud rather than in a lecture hall. Below, we explore the two common types of e-learning and how they can be implemented at organizations.

**ASYNCHRONOUS e-LEARNING**

Asynchronous e-learning occurs when students begin and complete a training course at different times, according to their own schedule. Common features of asynchronous e-learning include:

- **Message Boards**
  Many such courses are augmented with message boards, allowing learners to post questions and comments on a central board for other users to see.

- **Discussion Groups**
  Going one step further than message boards, discussion groups allow students in the same course to discuss the material in real-time.

- **Self-Paced Courses**
  These are courses that can be completed at one’s own pace. There may be assignments and
New & Emerging Trends in Education

**Distance Learning**
- Courses are offered 24*7 from a location of student’s choice

**Open Learning**
- Provide distance education in a more flexible manner

**Online/Virtual E-Learning**
- Combines face-to-face teaching with internet-based learning.
Now is a Great Time to Enroll in an Online Medical School

By visiting the unique online school page for one of the thirteen medical schools displayed below, you'll be able to obtain comprehensive info to help you make an informed decision about where to enroll. Kaplan University, the highest ranking school below, will train students to become physicians, doctors, nurses, dentists, etc. and give them an outstanding chance at finding employment, directly comparable to an on-campus school. At present, according to the US Bureau of Labor Statistics there are 274,160 people employed as physicians and surgeons alone in the US, and their average annual salary is $173,860. Anesthesiologists make on average $211,750 per year and there are about 37,450 of them employed today.

Medical Common Job Tasks
- giving shots
- taking a medical history
- transcribing audio recordings

Popular Journals & Magazines
- Group Practice Journal »
- Healthcare Design »
- Clinical Examples in Radiology Newsletter »
- Cardiology Coding Alert »
WELCOME TO OCEANIA UNIVERSITY OF MEDICINE

Our unique blend of distance learning and hands-on clinical training brings med school to you.

WHAT WE ARE ABOUT
Oceania University of Medicine students have the best of all worlds...The challenging preclinical program is presented online followed by traditional clinical rotations arranged at affiliated teaching hospitals. Graduates are currently practicing or training in Australia, Canada, New Zealand, Samoa, and United States.

ADMISSIONS
If you always dreamed of becoming a physician but “life” got in the way, Oceania University of Medicine is right for you. The flexibility of online medical school allows non-traditional students to balance school with work and family obligations. The median age for OUM students is 40.5 with a range from 22 to 62 years of age.

HOW IT WORKS
The rigorous curriculum is based largely on American and Australian medical education models. The program is typically completed in four-and-a-half to five years. Accreditation provides a requisite credential that medical school graduates need for licensure and post-graduate training.
The Rise of the Empowered Patient

Once marginalized, consumers are taking more control over their own treatments

By Nicholas Brody  Illustrations by Greg Betza

The degree of trust that any industry’s consumers place in its most established authorities can have profound impacts on the nature and range of the products offered, the complexity of the transactions, and, ultimately, the prevailing business models that will determine the industry’s success or failure. Consider the recent global financial crisis. While many traditional financial institutions have survived this international recession, the faith that many personal investors once placed in the accepted “market authorities” —including investment house advisors and portfolio managers, many of whom encouraged consumer expectations of unfettered market growth—has been severely damaged. This erosion of trust has fueled increased regulatory scrutiny of the sector, skepticism among its core and peripheral constituencies, and a reevaluation
Paradigm Shift

The Industrial Age
- Episodic Activity
- Learner to Curriculum
- Teaching Centered
- Seat Time Equivalency
- Physical Access & Capacity
- 2 Tier Architecture
- Closed Curriculum Model
- Institutional Transcript
- Controlled Information Access
- Physical Learning Environment
- Bolt on Assessment
- Credentialed

The Learning Age
- Continuous Activity
- Curriculum to Learner
- Learner & Learning Centered
- Competency Based
- Digital Literacy, Access & Capacity
- 7 Tier Architecture
- Open Curriculum Model
- Lifelong Learner’s Transcript
- Open Information Access
- Digital Learning Environment
- Embedded Assessment
- Practice Ready