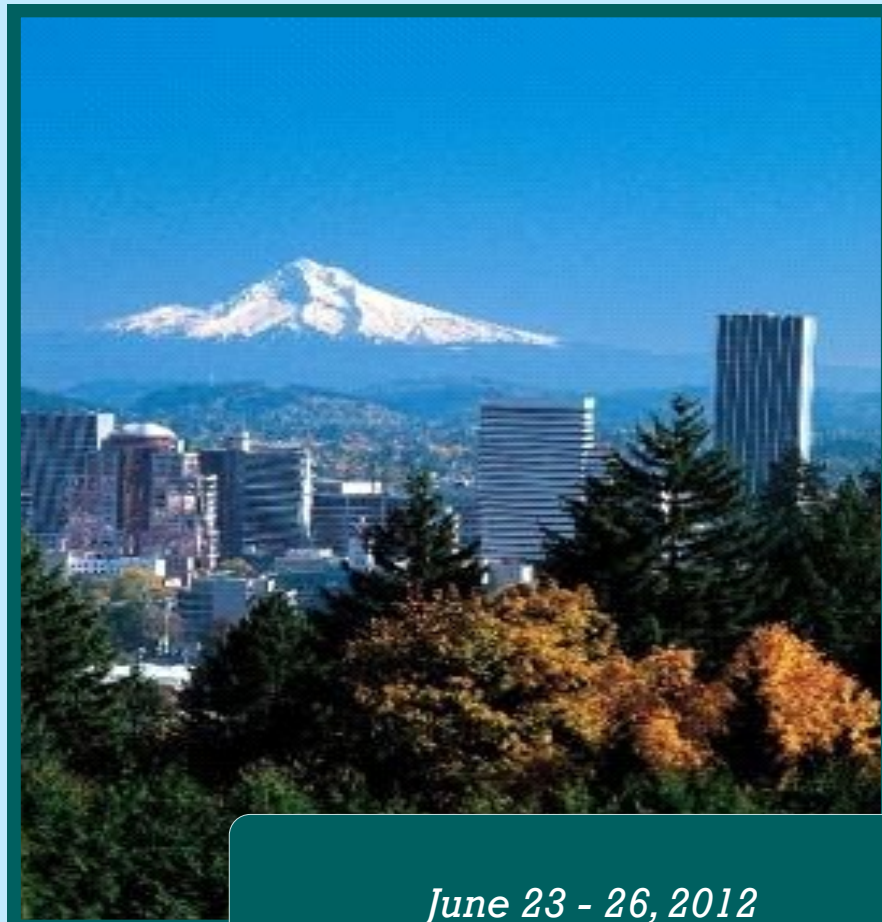


16th Annual Meeting
International Association of Medical Science Educators

Program



June 23 - 26, 2012

Hilton Portland
Portland, OR USA

INTERNATIONAL ASSOCIATION OF MEDICAL SCIENCE EDUCATORS

3327B U.S. Route 60 East * Huntington, WV 25705 U.S.A. * TEL: 1-304-522-1270 * FAX 1-304-523-9701



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www.iamse.org

Dear IAMSE Colleagues,

On behalf of the 2012 Program Planning Committee, it is with great pleasure that I welcome you to the 16th annual meeting of the International Association of Medical Science Educators.

We have endeavored over the past 15 months to plan a meeting for you that highlights a number of essential and timely topics in health professions education. The foundational premise with which the committee initiated planning was the recognition of the transforming landscape of medical education where organizations are reexamining approaches and asking how we can do better. Healthcare is globally a complex and rapidly changing environment, and educators are being challenged to produce physicians and healthcare professionals capable of successfully navigating healthcare systems at a time when rising costs, work force shortage, diminishing resources and competing curricular priorities are universal issues. We are, however, also entering a time of great opportunity. Revisions of admission tests and processes, accreditation standards, and licensing examination; reports on medical schools mission, scientific foundations for future physicians, reform of medical school and residency, interprofessional learning and practice; and the expanded availability of educational technology have all created an unprecedented opportunity for medical educators to write the script for the future of medical education. The 2012 program sessions, mostly viewed through the lens of basic science education, address a variety of related topics including technology, learner-teacher relationships, assessment approaches, research literacy, appreciative inquiry, interprofessional education and other contemporary topics. We hope that the meeting topics highlighted by the courses, plenary speakers, workshops, focus sessions, featured symposium, posters and eDemos will complement each other and provide us with the opportunity to reexamine what we do and add to our repertoire of tools in pursuit of excellence in medical education.

If this is your first IAMSE meeting, get ready to learn, meet new friends and return to your home institution inspired and full of ideas and new enthusiasm! If you have joined us previously, we welcome you back and thank you for your contributions to what is the collective wisdom, experience and hospitality that make us IAMSE.

Finally, this meeting was made possible by the dedication and hard work of the 2012 Program Planning Committee and its subcommittees on Technology and Peer Review, to whom I owe tremendous debt of gratitude. The creativity, devotion, perseverance of this committed group of international, interdisciplinary educators is amazing, and it was such a privilege to work with them. Thank you to Greg, Lou, Alice, Dave, Bob, Steve, Giulia, Elizabeth, John, Dale, Sandy, Richard, Vasan, Kevin, Peter, Amy and Julie.

Warmest regards for an enjoyable meeting,

Nehad El-Sawi, Ph.D.

Chair, 2012 Program Planning Committee

...supporting professional excellence

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PLENARY SPEAKER LISTING

“The Learner-Teacher Relationship: How Should it Evolve?”

Steve Kanter (USA)

“What Can Medical Education Learn from the Neurobiology of Learning?”

Michael Friedlander (USA)

“The Challenge of Training Healthcare Professionals: The Role of Simulation.”

Ian Curran (UK)

“Hybrid Curricula and How Core Competencies apply to Basic Sciences”

David Battinelli (USA)

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PROGRAM COMMITTEE LISTING

Nehad El-Sawi, Program Chair

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Dothan AL, USA

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Duke-NUS Medical School Singapore
Singapore, Singapore

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University of Medicine and Dentistry of New
Jersey
Newark NJ, USA

Peter de Jong

Leiden University Medical Center
Leiden, The Netherlands

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Rochester MI, USA

Louis Pangaro

Uniformed Services University of the Health
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Bethesda Maryland, USA

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Greg Smith 2012 Review Committee Chair

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St. Louis MO, USA

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Cleveland OH, USA

Frazier Stevenson, 2013 Program Chair

University of South Florida College of Medicine
Tampa, FL USA

Giulia Bonaminio

University of Kansas Medical Center
Kansas KS, USA

Steven Davis

Ohio University
Athens OH, USA

Alice Fornari

Hofstra North Shore - LIJ School of Medicine
Great Neck NY, USA

Elizabeth Kachur

Medical Education Development
New York NY, USA

Vasan Nagaswami

University of Medicine and Dentistry of New
Jersey
Newark NJ, USA

John Pelly

Texas Tech University Health Sciences Center
Lubbock TX, USA

Dale Quest

Texas Tech University Health Science Center
El Paso TX, USA

David Wiegman

University of Louisville
Louisville KY, USA

PAST PROGRAM CHAIRS

2011 - Amy Wilson-Delfosse

2010 - Susan Pasquale

2009 - Peter de Jong

2008 - Veronica Michaelsen

2007 - Frazier Stevenson

2006 - John Szarek

2005 - Nehad El-Sawi

2004 - Thomas Schmidt

2003 - Gary Rosenfeld

2002 - E. Pat Finnerty

2000 - Giulia Bonaminio

1999 - Henry Mandin

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Philadelphia PA USA

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David Geffen School of Medicine at UCLA
Los Angeles CA, USA

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Rochester Institute of Technology College of
Health Sciences and Technology
Rochester NY, USA

Bob McAuley

Oakland University William Beaumont School of
Medicine
Rochester MI, USA

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REVIEW COMMITTEE LISTING

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Michelle Barber
Palmer College of Chiropractic

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Eve Gallman
University of Georgia

Alan Hull
Cleveland Clinic

Lawrence Kaplan
Temple University School of University

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Federal University of Ceará

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John P. Aris
University of Florida

Jennifer K. Brueckner-Collins
University of Louisville

Friedo Dekker
Leiden University Medical Centre

Kerstin Höner zu Bentrup
Tulane University Medical School

Peter G.M. de Jong
Leiden University Medical Center

Amal Khidir
Weill Cornell Medical College in Qatar

Jinping Li
Mercer University School of Medicine,
Savannah Campus

Gail March
Boston University School of Medicine

Elza Mylona
Stony Brook University School of Medicine

John Szarek
The Commonwealth Medical College

Dale Quest
Texas Tech University Health Sciences Center

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This meeting is supported in part by educational grants from the following organizations:

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Netherlands Association for Medical Education

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DAILY PROGRAM SCHEDULE

Friday, June 22, 2012

9:00 - 5:00p	Essential Skills in Medical Education (Closed)	Directors Suite
1:00 - 8:00p	Board Meeting	Forum

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DAILY PROGRAM SCHEDULE

Saturday, June 23, 2012

8:00 - 6:00p	Registration Desk Open	Grand Ballroom Foyer
8:00 - 3:30p	Full Day Faculty Development Course - (Additional Fee Required)	
	FD1 Educational Scholarship 101: Taking Your Teaching to Publication	
	<i>Susan J. Pasquale, IAMSE Chair of Education Scholarship, Johnson & Wales University</i> <i>Kathryn Huggett & Floyd Knoop, Creighton University School of Medicine</i> <i>Dani McBeth, IAMSE Chair of Publications, City College of New York</i> <i>Peter de Jong, IAMSE Editor-in-Chief, Medical Science Educator, Leiden University Medical Center</i>	Galleria 1
	FD2 Simulation: Demonstrating the Clinical Relevance of the Basic Sciences	
	<i>John Szarek, The Commonwealth Medical College</i> <i>David Pederson, Diana Callender, Sean Gnecco, Paul Abney, Maria Sheakley & Reid Adams, Ross University School of Medicine</i>	Galleria 2
	FD3 iPad Applications and Integration in Teaching	
	<i>Suzanne Stensaas, Peter Jones & Peter Hannon, University of Utah</i> <i>Brian Tobin, Stanford University School of Medicine</i>	Galleria 3
11:30 - 12:30p	Lunch	
12:30 - 3:30p	Faculty Development Courses (Cont.)	
12:30 - 3:30p	Afternoon Workshops	
	AW1 Update on the Liaison Committee on Medical Education Accreditation Process - limit 30 (no additional fee required)	
	<i>Dan Hunt, Liaison Committee on Medical Education</i> <i>Session Coordinator: David Wiegman</i>	Senate

	AW2 Integrating Basic Sciences into Clinical Training	
	<i>Amy Wilson-Delfosse & Daniel Wolpaw, Case Western Reserve University School of Medicine</i>	Council
	<i>Session Coordinator: Julie Tebo</i>	
	AW3 Critical Reflections in Medical Education	
	<i>Marieke Kruidering-Hall & Patricia O'Sullivan, University of California - San Francisco School of Medicine</i>	Executive
	<i>Session Coordinator: Dale Quest</i>	
4:00 - 6:00p	MedSciEduc Reviewer Workshops (Closed)	Galleria 1
4:00 - 6:00p	IAMSE Fellowship (Closed)	Galleria 2
6:30 - 8:00p	Opening Ceremony and Reception	Grand Ballroom
	<i>Welcome by Amy Wilson-Delfosse, Joe Coletto & Thomas Boudrot</i>	

DAILY PROGRAM SCHEDULE

Sunday, June 24, 2012

7:00 - 8:00a	Breakfast with Exhibitors	
7:00 - 8:00a	Editorial Breakfast Meeting (Closed)	Alexanders
8:00 - 8:30a	Welcome	Grand Ballroom
8:30 - 9:30a	Plenary 1	
	The Learner-Teacher Relationship: How Should it Evolve?	
	<i>Steven L. Kanter, University of Pittsburgh School of Medicine Academic Medicine, Editor-in-Chief</i>	Grand Ballroom
	<i>Moderator: Lou Pangaro</i>	
9:30 - 9:45a	Coffee Break	
9:45 - 11:15a	Workshop Session I	
	1WS1 Developing Learning Objectives	
	<i>Tracy Fulton, University of California - San Francisco School of Medicine</i>	Studio
	<i>Session Coordinator: Janet Lindsley</i>	
	1WS2 Power of Why? - Introduction to Team-Based Learning (TBL)	
	<i>Dean Parmelee, Wright State University Boonshoft School of Medicine</i>	Directors Suite
	<i>Rick Sabina, Oakland University William Beaumont School of Medicine</i>	
	<i>Sandy Cook, Duke-NUS Medical School</i>	
	<i>Session Coordinator: Sandy Cook</i>	
	1WS3 Creating Meaningful Interprofessional Education Events in Medical Education	
	<i>Dawn M. Shocken & Frazier Stevenson, University of South Florida</i>	Council
	<i>Session Coordinator: Richard Feinberg</i>	

1WS4	<p>Qualitative Research: A Process for Understanding Phenomena</p> <p><i>Amina Sadik, Touro University Nevada College of Osteopathic Medicine</i> <i>India Broyles, University of New England College of Osteopathic Medicine</i> <i>Session Coordinator: Julie Tebo</i></p>	Galleria 1
1WS5	<p>Using Adobe Captivate to Transform Lecture Presentations into Online Self-Directed Learning Units</p> <p><i>Taeyeol Park, Georgetown University</i> <i>Session Coordinator: Peter de Jong</i></p>	Galleria 2
1WS6	<p>Just-In-Time Teaching (JITT) and Peer Instruction (PI) in Medical Education</p> <p><i>David S. Franklin & Craig W. Clarkson, Tulane University School of Medicine</i> <i>Session Coordinator: Regina Dehen</i></p>	Galleria 3
11:15 - 11:30a	Break	
11:30 - 1:00p	Workshop Session II	
1WS7	<p>Developmental Assessment: Core to Competency Based Models in Medical Education</p> <p><i>Alice Fornari & David Battinelli, Hofstra North Shore - LIJ School of Medicine</i> <i>Session Coordinator: Julie Tebo</i></p>	Galleria 1
1WS8	<p>It Can't Be That Hard! - Creating Effective TBL Modules</p> <p><i>Dean Parmelee, Wright State University Boonshoft School of Medicine</i> <i>Rick Sabina, Oakland University William Beaumont School of Medicine</i> <i>Sandy Cook, Duke-NUS Medical School</i> <i>Session Coordinator: Sandy Cook</i></p>	Galleria 2
1WS9	<p>Expanding the Role and Use of Mixed Method Approaches in Program Evaluation</p> <p><i>Matt Vassar & Mabelle Linsenmeyer, Oklahoma State University Center for Health Science</i> <i>Session Coordinator: Susan Coon</i></p>	Galleria 3

DAILY PROGRAM SCHEDULE

Sunday, June 24, 2012

	1WS10 Competencies in the Pre-Clerkship Curriculum	
	<i>Stanely J. Nazian & Frazier Stevenson, University of South Florida</i>	Studio
	<i>Session Coordinator: Janet Lindsley</i>	
	1WS11 Anxiety, Burnout, and Depression in Pre-Clinical Medical Students: What Can/Should Be Done?	
	<i>Stuart Slavin & Gregory Smit, St. Louis University School of Medicine</i>	Directors Suite
	<i>Session Coordinator: Mandy Fales-Williams</i>	
	1WS12 Using Adobe Captivate to Create Online Assessments with Feedback, Branching Scenarios, and SCORM-compliant Quizzes	
	<i>Taeyeol Park, Georgetown University</i>	Council
	<i>Session Coordinator: Bob McAuley</i>	
1:00 - 2:15p	Networking Lunch	Grand Ballroom
1:00 - 2:15p	New Members Lunch	Alexanders
1:00 - 2:15p	Harvard Macy Alumni Lunch	Grand Ballroom
2:15 - 3:15p	Plenary 2	
	What Can Medical Education Learn from the Neurobiology of Learning?	
	<i>Michael Friedlander, Virginia Tech Carilion Research Institute</i>	Grand Ballroom
	<i>Moderator: Giulia Bonaminio</i>	
3:15 - 3:30p	Break	
3:30 - 4:30p	Focus Session I	
	1FS1 Meet the Speaker	
	<i>Steve Kanter, University of Pittsburgh School of Medicine Academic Medicine, Editor-in-Chief</i>	Studio
	<i>Session Coordinator: Nehad El-Sawi</i>	

1FS2	Meet the Speaker <i>Michael Friedlander, Baylor College of Medicine</i> <i>Session Coordinator: Steve Davis</i>	Directors Suite
1FS3	How to Achieve Scientific Research Competencies in Medical Education <i>Mayke Vereijken, Iris Maas, Friedo W. Dekker & Peter G.M. de Jong, Netherlands Association for Medical Education</i> <i>Session Coordinator: Crawford Winlove</i>	Council
1FS4	Medical Science Objectives and Competencies: What Resources Exist and How Can We Best Use Them? <i>Tracy Fulton & Katherine Hyland, University of California San Francisco School of Medicine</i> <i>Janet Lindsley, University of Utah School of Medicine</i> <i>Session Coordinator: Dale Quest</i>	Forum
1FS5	Getting More Out of the Time We Spend with Students in the Classroom: Use of Podcasts <i>John Szarek & Jeff Holt, The Commonwealth Medical College</i> <i>Session Coordinator: Richard Feinberg</i>	Galleria 1
1FS6	Integrative Teaching for Integrative Medical Practice: Bridging Medical Sciences, Research and Complimentary Alternative Medical Education with Clinical Practice <i>Regina Dehen & Joseph Coletto, Oregon College of Oriental Medicine</i> <i>Session Coordinator: Elizabeth Kachur</i>	Galleria 2
1FS7	Competencies for the Medical Sciences - Skills for Curricular Transformation <i>Era Buck, University of Texas Medical Branch</i> <i>Session Coordinator: Diana Callender</i>	Galleria 3
4:30 - 6:30p	Essential Skills in Medical Education (Closed)	Director's Suite
4:30 - 6:30p	Poster & Exhibitor Viewing	Grand Ballroom

DAILY PROGRAM SCHEDULE

Monday, June 25, 2012

7:00 - 8:00a	Breakfast with Exhibitors	
7:00 - 8:00a	IAMSE Fellowship (Closed Session)	Galleria 2
7:00 - 8:00a	2013 Program Planning Meeting (Closed Session)	Galleria 1
8:00 - 9:00a	Business Meeting	Grand Ballroom
9:00 - 10:00a	Plenary 3	
	The Challenge of Training Healthcare Professionals: The Role of Simulation	Grand Ballroom
	<i>Ian Curran, London Deanery</i>	
	<i>Moderator: John Szarek</i>	
10:00 - 10:15a	Awards	Grand Ballroom
10:15 - 10:30a	Break	
10:30 - 12:00p	Workshop Session III	
2WS1	Course Faculty Assessment	
	<i>Bonnie Granat, Ronald Portanova & Tara Greco, New York College of Osteopathic Medicine</i>	Studio
	<i>Session Coordinator: Elizabeth Kachur</i>	
2WS2	Now You've Done It - Making it Better - Overcoming the Challenges of Implementing TBL	
	<i>Amanda Emke, Washington University School of Medicine in St. Louis</i>	Directors Suite
	<i>Amy Holthouser, University of Louisville School of Medicine</i>	
	<i>Paul Koles, Wright State University Boonshoft School of Medicine</i>	
	<i>Session Coordinator: Sandy Cook</i>	
2WS3	Case Reports: Translating Clinical Insights into Science	
	<i>Heather Zwickey, National College of Natural Medicine</i>	Council
	<i>Session Coordinator: Greg Smith</i>	

	2WS4	Helping Faculty Adapt to New Roles with Integrated Curriculum Innovation: from: "Sage on the Stage" to "Guide on the Side"	
		<i>Peter Anderson, University of Alabama at Birmingham School of Medicine</i> <i>Jeanne Schelesinger & Kimberly Fisher, Virginia Commonwealth University School of Medicine</i> <i>Ferhan Sagin, Ege University School of Medicine</i> <i>Session Coordinator: Diana Callender</i>	Galleria 2
	2WS5	Lightning Rounds: Demo of Favorite iPad Apps for Medical Education	
		<i>Suzanne Stensaas, Peter Jones, Peter Hannon & Amy Honisett, University of Utah Health Sciences Center</i> <i>Brian Tobin, Stanford University</i> <i>Session Coordinator: Peter de Jong</i>	Galleria 1
	2WS6	Mind Body Medicine	
		<i>Aviad Haramati & Michael Lumpkin, Georgetown University</i> <i>Session Coordinator: Mandy Fales-Williams</i>	Galleria 3
	2WS7	Developing Your Best Possible Grant Application	
		<i>Patricia Carney, Oregon Health & Science University</i> <i>Session Coordinator: Regina Dehen</i>	Forum
12:00 - 1:30p		Lunch	Grand Ballroom
12:15 - 1:15p		National Board of Medical Examiners Update	Grand Ballroom
1:15 - 1:30p		2013 Presentation	Grand Ballroom
		<i>Frazier Stevenson, Program Chair</i>	
1:30 - 1:45p		Break	
1:45 - 2:30p		Plenary 4	
		Hybrid Curricula: A Model for the Transition to Competency Based Education	
		<i>David Battinelli, Hofstra University School of Medicine</i> <i>Moderator: Alice Fornari</i>	Grand Ballroom
2:30 - 2:45p		Break	

DAILY PROGRAM SCHEDULE

Monday, June 25, 2012

2:45 - 3:45p

Focus Session II

2FS1 **Meet the Speaker**

Ian Curran, London Deanery
Session Coordinator: John Szarek

Studio

2FS2 **Meet the Speaker**

David Battinelli, Hofstra University School of Medicine
Session Coordinator: Alice Fornari

Directors
Suite

2FS3 **Defining Roles and Expectations for Professional Science
Course Directors**

Nehad El-Sawi, Alabama College of Osteopathic Medicine
*Louis Pangaro, Uniformed Services University of the Health
Sciences*
Session Coordinator: Lou Pangaro

Council

2FS4 **Teaching Basic Science in Medical Schools Around the
World: Issues Related to Problem-Based Learning in
Canada, Nepal and Australia**

Jane Gair, University of Victoria and British Columbia
Session Coordinator: Dale Quest

Forum

2FS5 **Data and Information Management**

Nicole Vasilevsky, National College of Natural Medicine
Session Coordinator: Bob McAuley

Galleria 1

2FS6 **Global Health - The Role of Health Sciences Educators to
Improve Health Education in Developing Regions**

*Peter G. Anderson & Matthew Anderson, University of Alabama
at Birmingham*
Susan Stensaas & Peter Hannon, University of Utah
Session Coordinator: Mandy Fales-Williams

Galleria 2

2FS7 **Innovations in Anatomy Education: Does Innovative Technology Inspire Innovative Teaching or Does Innovative Teaching Drive the Need for Innovative Technology? The Chicken and Egg Scenario of Advancing Medical Education for Anatomy and Histology Pedagogy**

Vaughn Kippers, University of Queensland School of Biomedical Sciences Galleria 3

Jonathan Wisco & Elena Stark, University of Central Los Angeles David Geffen School of Medicine

Mary Bee, Oakland University William Beaumont School of Medicine

Phyllis A. Shaw, Mount Sinai School of Medicine

Session Coordinator: Peter de Jong

3:45 - 5:30p	Poster & Exhibitor Viewing	Grand Ballroom
3:45 - 5:45p	Essential Skills in Medical Education (Closed)	Director's Suite
6:00p	Dinner	Grand Ballroom

DAILY PROGRAM SCHEDULE

Tuesday, June 26, 2012

7:00 - 8:00a	IAMSE Fellowship (Closed)	Galleria 2
7:00 - 8:00a	Publications Committee (Closed)	Galleria 1
7:00 - 8:00a	Breakfast with Exhibitors	
8:00 - 9:00a	Aligning Education and Assessment: Improving Medical Education Through Assessment	Grand Ballroom
	<i>Brownie Anderson, National Board of Medical Examiners</i> <i>Moderator: Nehad El-Sawi</i>	
9:00 - 10:45a	Poster Discussions	
	Assessment <i>Facilitators: Alice Fornari & Dale Quest</i>	Galleria 1
	Curriculum <i>Facilitators: Elizabeth Kachur & Pat Finnerty</i>	Galleria 2
	E-Learning <i>Facilitators: Lou Pangaro & Bob McAuley</i>	Galleria 3
	Instructional Methods <i>Facilitators: Richard Feinberg & Dave Wiegman</i>	Studio
	Professional Development <i>Facilitators: Nehad El-Sawi & Steven Davis</i>	Directors Suite
	TBL/PBL <i>Facilitators: Amy Wilson-Delfosse & Bob Noiva</i>	Council
10:45 - 11:00a	Break	

11:00 - 11:45a	Oral Presentations	
	Learning and Teaching Cultural Sensitivity: 10 Year Lessons from an Annual Cross-Cultural Workshop <i>Annie Tubman, Agneta Golan, Minsoo Kim, Jamie Bleyer Medical School for International Health, Ben Gurion University, Beer Sheva Israel; Soroka University Medical Center, Be'er Sheva, Israel</i>	
	An e-Learning Intervention to Enhance Medical Student's Competence in Oxygen Delivery Methods <i>Shana Godfred-Cato, MS IV, J. Michael Metts, DO, Greg Kolbinger, PA-C, Edward P. Finnerty, PhD. and Kyla Carney, DO Des Moines University, Des Moines, IA</i>	Grand Ballroom
	Impact of a Comprehensive Cadaver-Based Course in Emergent Bedside Procedures for Senior Medical Students <i>Samuel Clarke, MD, Harbor-UCLA Medical Center; Jonathan Wisco, PhD, David Geffen School of Medicine at UCLA; Elena Stark, MD, PhD, David Geffen School of Medicine at UCLA; Ravi Morchi, MD, Harbor-UCLA Medical Center; Wendy Coates, MD, Harbor-UCLA Medical Center</i>	
11:45 - 12:00p	Break	
12:00 - 1:00p	Featured Symposium	
	Educational Initiatives to Advance Research Literacy for Health Professions Students <i>Heather Zwickey, Mitch Haas & Deborah Ackerman Moderator: Aviad Haramati, Georgetown University</i>	Grand Ballroom
1:00 - 1:15p	Meeting Close	Grand Ballroom
1:30 - 4:30p	Essential Skills in Medical Education (Closed)	Director's Suite
1:30 - 4:30p	Post-Conference Workshop	
	PC1 Research Literacy Skills Part One: Tools and Methods for Teaching Research Concepts	Galleria 1
	PC2 Research Literacy Skills Part Two: Methods and Materials for Incorporating Research Information into the Medical School Curriculum <i>Sarah K. Brown & Jessica Ingram, University of North Texas Health Sciences Center</i>	Galleria 3

3:30 - 5:00p

PC3

Simulation Experience - Off-Site Session (Additional Fee Required)

Off-Site

*Hosted by the Oregon Health & Science University School of
Nursing Simulation & Clinical Learning Center
Moderator: John Szarek*

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ANNUAL BUSINESS MEETING AGENDA

Welcome	Bruce Newton
President's Address	Amy Wilson-Delfosse
<ul style="list-style-type: none">• Recognition of Outgoing Board Members• Installation of Incoming Members of the Board of Directors• Council of Academic Societies• Outcomes of the Annual Board Meeting	
Election of Members for the Nominating Committee	Thomas Schmidt
Annual Financial Report	Veronica Michaelsen
Standing Committee Updates	Amy Wilson-Delfosse
<ul style="list-style-type: none">• Executive Committee• Professional Development Committee• Nominating Committee• Membership Committee<ul style="list-style-type: none">◦ Recognition of 5, 10 & 15 Year Members• Organizational Development Committee• Publications Committee• Finance Committee	
Report from the Editor-in-Chief	Peter de Jong
Annual Association Meetings	
<ul style="list-style-type: none">• 2013, St. Andrews, Scotland, Frazier Stevenson, Program Chair	
Membership Forum	
Adjournment	

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IAMSE MASTER TEACHER AND SCHOLAR AWARDS

IAMSE Awards Program to Promote Teaching Excellence and Educational Scholarship in the Medical Sciences

Overview

The IAMSE established three prestigious awards in 2005 to recognize and promote teaching excellence and educational scholarship in the medical sciences. Below are brief descriptions. Complete details are available on the IAMSE website. All IAMSE members should read carefully the complete descriptions of these award programs before submitting nomination packets. Questions and comments should be directed to Dr. Joe Stein, Chair, IAMSE Awards Sub-Committee. (steinj@upstate.edu)

Best Poster Presentation Award

The Best Poster *Presentation Award* recognizes the most outstanding medical education peer-reviewed presentation at the IAMSE annual meeting. First authors must be IAMSE members in good standing. Using a multi-phased, peer review process and established educational scholarship criteria, finalists are identified from the accepted presentation proposals. Finalist presentations are recognized during the meeting. During the conference, peer-reviewers observe and assess finalists' presentations based on educational scholarship and effective presentation criteria. The award presentation is announced at the final conference session. The first author/presenter receives a plaque and one-year IAMSE Membership and access to the IAMSE WebCast Audio-Seminars. Co-authors are also recognized and receive certificates.

Master Teacher Award

This annual award was established to honor an IAMSE member who, over the course of many years, has consistently demonstrated extraordinary excellence in teaching both at his/her institution and within IAMSE. Any teaching can be recognized, but nominations of members who have been active teachers at the annual IAMSE meetings or web seminars are particularly encouraged. IAMSE members may self-nominate or be nominated by another IAMSE member. The Awards Committee reviews all nominations and supporting documentation based on established criteria and selects finalists. Final approval of each award recipient rests with the IAMSE Board of Directors. A finalist who does not win the award will be automatically reconsidered the next year, if they agree and update their nomination file.

Nominees should submit:

- three letters of support
- curriculum vita
- a list of teaching activities at their institution and at IAMSE

Documentation of the quality of teaching, which should include all of the following:

- student evaluations
- the number and nature of teaching awards, including who voted on the award (student, peers, etc.)
- peer evaluation of teaching quality
- evaluations of IAMSE sessions by members

The award recipient is recognized at the annual meeting and receives a plaque, and one-year IAMSE Membership and access to the IAMSE WebCast Audio-Seminars.

IAMSE MASTER TEACHER AND SCHOLAR AWARDS (CONT.)

Master Scholar Award

This award recognizes an IAMSE member who has a distinguished record of educational scholarship, including educational research and/or dissemination of excellent and scholarly approaches to teaching and education (e.g., development of multimedia medical educational programs, research in the areas of curriculum design and evaluation, student assessment, innovative programs and methods, etc.). IAMSE members may self-nominate or be nominated by another IAMSE member. Award recipients are selected based on the impact, ingenuity, and longevity of educational scholarship and their records of publications, presentations, and other forms of dissemination of educational scholarship. The Awards Committee reviews all nominations and supporting documentation based on established criteria and selects finalists. Final approval of each award recipient rests with the IAMSE Board of Directors. A finalist who does not win the award will be automatically reconsidered the next year, if they agree and update their nomination file. Final approval of the award recipient rests with the IAMSE Board of Directors.

Nomination packets must include:

- curriculum vita
- three letters of support
- examples of appropriate work

The award recipient is recognized at the annual meeting and receives a plaque, and one-year IAMSE Membership and access to the IAMSE WebCast Audio-Seminars.

Award Implementation Timelines

A general timeline for the implementation of the Master Teacher and Master Scholar nomination/application and review/selection process is shown below. Deadlines, instructions, forms, and up-to-date program descriptions are available on the IAMSE website.

Master Teacher and Master Scholar Awards General Timeline for Annual Implementation:

TIME PERIOD	ACTIVITY
January	Call for nominations via annual conference and follow-up email distribution
January-February	Nominations received
February 3	Deadline for receipt of nominations
February-March	Awards committee reviews nominations
March 30	Deadline for recommendation of awardees to Board of Directors
April/May 4	Board of Directors approves award recipients IAMSE President informs award recipients
June	Presentation of awards to recipients at annual meeting

2012 Master Teacher Award - Herb Janssen, MEd, Ph.D



Herb grew up on a ranch near Henrietta, Texas, a small community in the north central region of the state. This environment did several things for him. First, it convinced him that education was the right path and second, it taught him to understand and appreciate nature. He received his bachelor's degree from Midwestern State University, a master's degree in education and biology from Texas Tech University, and his doctorate degree in medical physiology from Texas Tech University Health Sciences Center. After completing his degree, he accepted a position in the Departments of Orthopedic Surgery and Physiology. Over the next 28 years he rose to the rank of professor in both departments and served as assistant chair in orthopedic surgery and associate chair for research. Four years ago Herb and his wife Suzanne moved to El Paso after he accepted a position as professor of physiology in the Department of Medical Education at the TTUHSC, Paul L Foster School of Medicine in El Paso. He currently teaches medical students, nursing students, and volunteers in outreach educational programs with local high schools. These outreach programs are designed to encourage high school students to pursue a career in the healthcare profession. Herb has four children, three of whom are directly or indirectly involved in healthcare. He is currently rewriting an interactive textbook on renal physiology and is preparing a "user-friendly" guide for students planning to apply to medical school.

2012 Master Scholar Award - Giulia A. Bonaminio, Ph.D



Dr. Bonaminio received her B.S. degree in Biology from Bowling Green State University and her M.S. and Ph.D. degrees in Molecular Genetics from The Ohio State University. She completed a postdoctoral fellowship in Medical Genetics at Stanford University. After completing her post-doc, she served for five years as the Biomedical Curriculum Specialist at the University of Kentucky College of Medicine. In 1997 she moved to the University of Kansas School of Medicine. Dr. Bonaminio is the Associate Dean for Medical Education, the Director of the Office of Medical Education, and Research Professor in the Department of Family Medicine. She has responsibility for oversight of the undergraduate medical curriculum, the standardized patient program and clinical skills lab, the evaluation of courses and the curriculum, and medical education research. Dr. Bonaminio has conducted faculty development workshops locally and nationally on topics including curriculum design, small group teaching and evaluation. She has been a member of IAMSE since 1997 and has served as a Board Member, Vice President, President and Past President. She is a founding member of the webcast audio seminar committee and has served on numerous annual meeting committees and chaired the annual meeting in 2001. Dr. Bonaminio has recently been named a fellow by the Hedwig van Ameringen Executive Leadership in Academic Medicine (ELAM) Program for Women at Drexel University College of Medicine.

IAMSE MASTER TEACHER & SCHOLAR AWARD WINNERS

Master Teacher Award Winners

2012 - Herbet F. Janssen, MEd, Ph.D, Texas Tech University Health Sciences Center

2011 - Jay H. Menna, Ph.D., University of Arkansas for Medical Sciences

2010 - Thomas Schmidt, Ph.D., University of Iowa

2009 - Uldis Streips, Ph.D., University of Louisville

2008 - Robert Klein, Ph.D., University of Kansas School of Medicine

2007 - Susan Gagliardi, Ph.D., University of Massachusetts Medical School

Master Scholar Award Winners

2012 - Giulia Bonamino, Ph.D., University of Kansas School of Medicine

2011 - Paul Haidet, M.D., M.P.H, Pennsylvania State University College of Medicine

2010 - Adi Haramati, Ph.D., Georgetown University

2009 - Thomas Nosek, Ph.D., Case Western Reserve University

2008 - Gary Rosenfeld, Ph.D., University of Texas, Houston Medical School

IAMSE MEDICAL EDUCATOR FELLOWSHIP

The International Association of Medical Science Educators (IAMSE) is pleased to offer the Medical Educator Fellowship. The Fellowship is composed of three phases that can be completed in 3 years, which includes completion of an Association for Medical Education in Europe (AMEE) Essential Skills in Medical Education (ESME) Program. The ESME program is offered several times a year at the AMEE Conference, Ottawa Conference and the Annual IAMSE meeting.

Program Objective:

Through targeted professional development in key aspects of medical education, the goal of this program is to develop well-rounded medical education scholars with additional evidence of specialized achievement that enhances and supports career advancement.

Program Description:

The program encourages proficiency in five content areas: curriculum design, teaching methods and strategies, assessment, educational scholarship, and leadership that can be attained in three phases:

Phase 1: Completion of the AMEE ESME Program. A certificate of completion is required.

Phase 2: Completion of two, day-long faculty development courses. One of the courses must be completed at an annual IAMSE meeting. The second may be completed either at an annual IAMSE, AMEE or Ottawa meeting. If taken at an AMEE or Ottawa annual meeting, a certificate of completion is required.

Phase 3: Completion of a required project, resulting in educational scholarship, which demonstrates application of content themes at the participant's home institution. Participants will be expected to submit a project proposal prior to the Annual Meeting.

Who Should Participate:

The program is designed for medical science educators who have completed an ESME program, and are seeking to become more knowledgeable as educators and leaders. Participants will complete a project portfolio that demonstrates how they applied program content areas at their home institutions.

Detailed information on the Fellowship is available on the IAMSE website at www.iamse.org

Application Requirements:

Completion of an ESME course is required for enrollment in Phases 2 and 3 of the IAMSE Medical Educator Fellowship. Applications to the Fellowship must be submitted by the IAMSE Annual Meeting Early Registration deadline via the Annual Meeting Registration Form. The Fellowship fee of \$550 USD includes the 3-hour conference workshop modules and materials. Payment is due in full by the meetings Early Registration deadline. Refund requests must be received in writing one month prior to the course. No refunds will be made after that date.

IAMSE Medical Educator Fellows

2012- Amina Sadik & David Pederson

2011 - David Pederson & Liris Benjamin

2010 - Vaughn Kippers

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EXHIBITOR DESCRIPTIONS



A.D.A.M., a business unit of Ebix, is the world-wide leader in innovative interactive health science content.

A.D.A.M.'s teams of educators and medical experts have developed award-winning online digital products for anatomy and physiology, allied health clinical applications, nursing programs, and medical institutions. A.D.A.M. is dedicated to disseminating accurate, reputable resources with visually enriched in-depth tools to help engage and teach.



ADInstruments' LabTutor Medical Laboratories are perfect for medical students studying medical physiology. The computer-based system brings real patients into the teaching laboratory using high-quality patient videos, patient data and test results. Physiological data acquisition and analysis exercises for the students are integrated in every laboratory. Students can: get hands-on practice measuring physiological parameters, access specialized test results (such as MRI and CT scans), view high-quality patient video interviews and compare their developed assessments with medical professionals.

Since 1988, ADInstruments' systems have been used for data acquisition and analysis by the world's best academic, government and private organizations.



The Alabama College of Osteopathic Medicine (ACOM) serves to address physician manpower needs for the State of Alabama and the surrounding region. ACOM was developed by and is an academic division of the Houston County Health Care Authority, which also governs the Southeast Alabama Medical Center. The College is located in Dothan, Alabama, where a new, state-of-the-art facility is under construction as of January 19, 2012. Students will be exposed to clinical medicine with an emphasis on osteopathic principles and practice through an integrated basic science and organ systems curriculum.

EXHIBITOR DESCRIPTIONS



The Association for Medical Education in Europe (AMEE) is an international Association with members in 85 countries throughout the world. AMEE helps teachers, curriculum developers, assessors, researchers, administrators and students to keep up to date with developments in medical and healthcare professions education. *The AMEE 2012 Conference* will be held in Lyon, France, from 25-29 August, with anticipated attendance by 3,000 participants from all phases of education. AMEE's *Essential Skills in Medical Education courses for teachers* have been delivered at a number of conferences on five continents, and some courses are now available online. AMEE publishes *Medical Teacher*, a leading international journal, and a series of *education guides* in both print and electronic format. AMEE is co-organiser of the biennial *Ottawa Conference on the Assessment of Competence*, the next conference to be held in Ottawa, Canada, from 26-30 April 2014. AMEE's interests span the continuum of education from undergraduate through postgraduate to CME. *MedEdWorld* provides an international network for sharing of ideas, resources and expertise. AMEE is also a sponsor of the *ASPIRE Initiative* to recognize excellence in education in medical schools. For further information on the above activities please see the website www.amee.org or contact amee@dundee.ac.uk



New from Amirsys®, AnatomyOne is the first online, comprehensive anatomy learning portal. This integrated, interactive single source for anatomy includes text, 2D Illustrations, Cadaver photography, Dissection guide, Radiological Image Atlas and Assessment tools designed to help medical students master human anatomy. Toggle between Systematic and Regional formats with a click, and delve into Clinical Insights and Imaging anatomy seamlessly. AnatomyOne's customizable tools provide faculty maximum flexibility to create and enhance the student learning experience. AnatomyOne meets the learning needs of each student, encouraging assessment along the way to mastery of anatomy.

Anatomage

Specializing in 3D medical technologies, Anatomage looks to advance the standard of anatomy presentation and instruction. The Anatomage Table allows for full-body virtual dissections on a life-size scale. Furthermore, the Table allows users to upload their own scan data collections for unlimited teaching material when developing new and innovative curricula.

EXHIBITOR DESCRIPTIONS



The American Physiological Society is a professional scientific membership organization devoted to fostering scientific research, education, and the dissemination of scientific

information. The APS supports a variety of educational activities including programs and fellowships to encourage the development of young scientists at the undergraduate and graduate levels, with a particular focus on women and underrepresented minorities. APS also supports refresher courses and teaching awards promoting continued excellence in education at the professional level. Founded in 1887, the Society's membership includes more than 10,000 professionals in science and medicine. The Society annually publishes 4,000 research articles in 14 scientific journals.



The mission of the Consortium is to advance the principles and practices of integrative healthcare within academic institutions. The Consortium provides its institutional membership with a

community of support for their academic missions and a collective voice for influencing change.

Goals:

- Support and mentor academic leaders, faculty, and students to advance integrative healthcare curricula, research, and clinical care
- Disseminate (information on) rigorous scientific research, educational curricula in integrative health, and sustainable models of clinical care
- Inform health care policy

Background

In July 1999, representatives from eight academic medical institutions convened a historic meeting at the Fetzer Institute in Kalamazoo, Michigan. The working conference was titled "The Consortium on Integrative Medicine" and strove to further develop the field of integrative medicine. At the second meeting in 2000, the group decided to formally become The Consortium of Academic Health Centers for Integrative Medicine. Membership currently includes 51 leading academic health centers and affiliate institutions in the US and Canada.



Exam Master provides online testing and exam administration via Exam Master OnLine and Academic Manager. Both feature high-quality

medical and health sciences question banks coupled to a powerful exam engine. Academic Manager includes a robust content manager, detailed score reporting, and the ability to deliver a variety of item types. Other features include advanced statistical reporting, meta tagging and search, and image management. Exam Master Online offers students detailed score reporting, and the ability to take exams in either test or study mode. Both systems are perfect for remediation and focused study, as well as high stakes exams.

EXHIBITOR DESCRIPTIONS



Easy. Secure. Reliable.

ExamSoft is a computer-based testing solutions company. Our powerful, easy to use suite of software supports the entire testing process including exam design, administration, delivery, and analysis. We enable our clients to test securely, anywhere, using any computer, including a student-owned laptop. We eliminate access to local files, software, at the Internet during the exam. Clients use our software to analyze learning outcomes, leveraging an unlimited number of user-defined categories, to provide detailed longitudinal student reports and improve remediation. Finally, institutions are able to measure whether they are meeting their learning objectives and detailed reports to simplify accreditation documentation.

Group for Research in PATHOLOGY EDUCATION
GRIFE

Leading the Way in Pathology Education



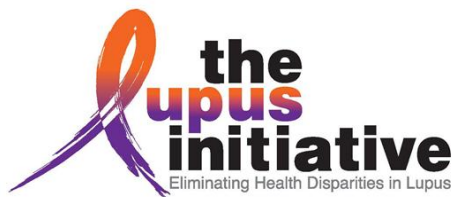
The mission of the Group for Research in Pathology Education

(GRIFE) is to advance the quality of pathology education through scholarly research and activities related to the definition of educational objectives appropriate to the learner, the development of effective modern teaching and learning techniques, and the accurate assessment of learner performance



Developed at Duke University School of Medicine, **LCMS+** is a fully-integrated, flexible and cost-effective learning and curriculum management system designed specifically for healthcare education. Its comprehensive curriculum mapping functionality helps make accreditation reporting faster, easier and more accurate.

LCMS+ offers a full suite of features including curriculum mapping, a sophisticated exam system, patient encounter tracking, clinical skills assessment, evaluations, faculty contribution tracking, automated notifications to faculty and students, support for modalities like team-based learning, and robust reporting functionality - all in an easy-to-use, calendar-based system with highly flexible role-based access and definable security levels. Learn more at www.lcmsplus.com



The Lupus Initiative is a non-profit program designed to reduce disparities in health care delivery to patients with lupus through provider education. Spearheaded by the Office of Minority Health (OMH) with the Offices on Women's Health (OWH) and the Surgeon General (OSG), The Initiative seeks to improve diagnosis, treatment and management of lupus among patient

populations disproportionately affected based on race, ethnicity, and gender. The Initiative develops and disseminates targeted educational resources for medical and health care professionals, in training and in practice. Visit www.TheLupusInitiative.org to learn more and to access our free resources.

EXHIBITOR DESCRIPTIONS



NBME®

The NBME® is an independent, not-for-profit organization that provides assessment services to medical schools, students and residents through a number of programs. Web-based **Customized**

Assessment Services allow medical school faculty to create exams tailored to local curriculum from a pool of test items commonly taught in basic science coursework. The **Subject Examination Program** includes the discipline-based basic and clinical science subject exams as well as the comprehensive basic and clinical science exams. The NBME also offers web-based **Self-Assessments** for US and international medical students and graduates which can also be purchased by medical schools.

Faculty Services include item-writing workshops to help enhance the quality of test items for use in examinations and programs offered at medical schools. Learn more at <http://www.nbme.org>



NVMO is an independent association that carries out activities for anyone involved in medical and health care education in the Netherlands and Flanders. The association has approximately 1000 members and resides in Utrecht. The objectives of the NVMO are to organize an annual national NVMO conference on medical education and to publish the journal Perspectives on Medical Education PME.

NVMO stimulates faculty development for medical and health care teachers and keeps contact with the government and national as well as international organizations on medical education, such as the Association for Medical Education in Europe (AMEE) and the World Federation for Medical Education (WFME). Each year a one day scientific meeting is organized for all PhD students engaged in medical education research. Visit www.nvmo.nl to learn more.



TEAM BASED LEARNING COLLABORATIVE

The Team-Based Learning Collaborative was established in 2004 to support the dissemination of team-based learning in health professions education and to facilitate a process whereby health science educators could engage in collaborative discussion, share instructional materials, and learn

how to develop team-based learning modules in their courses and curricula. In addition, the Collaborative promotes evaluation and scholarship of TBL in health professions education. Membership in the Collaborative includes educators in medical, dental, nursing, veterinary, and allied health science fields. Educators in these fields are welcome to contact the leadership of the Collaborative to engage a 'consultant' to coach them through the development of a module, conduct workshops on TBL, observe an on-going TBL course at a health science school, or obtain more information on strategy. Visit www.tblcollaborative.org to learn more.

TOUCH OF LIFE



TECHNOLOGIES

The VH Dissector provides an interactive cadaver experience. Based on the Visible Human Project data, this revolutionary software is used to teach anatomy, allowing students to dissect and rebuild the human body. In addition, it provides customizable lesson plans. Visit www.toltech.net to learn more.

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SESSION DESCRIPTIONS

Saturday, June 23, 2012

FD1 **Educational Scholarship 101: Taking Your Teaching to Publication**

After completing this workshop, participants will be able to (1) describe elements of scholarship and assessment criteria and apply them to the products of their teaching activities; (2) identify key strategies for moving their teaching activities to peer-reviewed scholarship; (3) create an action plan for moving their teaching to published research.

FD2 **Simulation: Demonstrating the Clinical Relevance of the Basic Sciences**

This will be a fully interactive workshop with the focus of enhancing basic science subject retention and transfer through clinical context activities. The model for the workshop will be a “prepare, simulate, debrief” framework with an emphasis on the principles of adult learning. The participants will: 1) Participate in clinical task training simulation for reinforcement in anatomy. 2) Participate in cardiovascular system simulation focused on cardiovascular physiology and the incorporation of specific media elements to enhance the learners understanding and retention of lecture material. 3) Participate in a high fidelity simulation that addressed medical ethics, medical errors, and healthcare systems. 4) Participate in a high fidelity simulation that incorporates the basic science disciplines of biochemistry, physiology, pharmacology, microbiology and immunology. 5) Develop outlines of task trainer and high fidelity simulation activities for use in their institution to reinforce basic science teaching. 6) Develop 4 learning objectives for a basic science lecture or activity that could incorporate simulation at their institutions. At the conclusion of each simulation event the workshop participants debrief as it would be done at the end of any academic simulation session. They will then engage in small group work to develop a similar activity at their institution; then share that with the larger group for further comments and collaboration.

FD3 **iPad Applications and Integration in Teaching**

Intended Audience: The session will focus on an exchange between two types of attendees:

1. Novices, curious, someone told them to find out about it. Stanford, Irvine envy. Want to look current and cool. Just got one and want to know what to do with it. Want a reason to buy one. These participants are is to ask lots of questions and get an overview.
2. Power users with experience as faculty, implementers or providers of tech support in their institution. These participants will share their tricks, solutions, favorite tools and network with novices and other power users. We want students, librarians, tech support staff, deans, clinical physicians and classroom teachers for their unique perspectives. These participants will add depth, commentary, and demo making the session interactive and spontaneous.

AW1 **Update on the Liaison Committee on Medical Education Accreditation Process - limit 30**

During the session, participants will: 1) discuss recent changes in LCME policies, practices, and standards; 2) review common areas of noncompliance with accreditation standard; and 3) practice applying accreditation standards to common teaching scenarios.

AW2 **Integrating Basic Sciences into Clinical Training**

This interactive workshop will take participants through the process of designing a curriculum for integrating basic science into the clerkships, including establishing a conceptual framework, developing meaningful assessment, and addressing challenges, barriers, and necessary resources – drawing on the experience and lessons learned at Case Western Reserve School of Medicine.

AW3 **Critical Reflections in Medical Education**

Introduction: Recent literature suggests that reflection improves professional behavior, teamwork, self-monitoring, and clinical performance^{1,2}. As a result, there is a growing mandate to incorporate reflection into all levels of medical education. Accrediting bodies and oversight organizations recognize reflection both as a requisite skill for the new generation of medical providers and as an important tool for assessing the greater array of competencies now acknowledged in medical education. However, although many educators have incorporated reflection into their teaching, there is marked variability in the format and intent of these exercises³. Critical reflection is the process of analyzing, questioning and reframing an experience in order to make an assessment of it for the purposes of learning. At UCSF, we have developed guidelines for teaching and learning critical reflection and a system for providing feedback on reflective skill development in addition to reflective learning on the assigned topic.

Methods: During this workshop, participants will: Discuss reflection in medical education in response to a brief, interactive introductory didactic. Rate critical reflections by trainees from more to less effective. Become familiar with the LEAP approach to critical reflection. Write a critical reflection. Practice applying feedback guidelines to reflections and get feedback on their feedback.

SESSION DESCRIPTIONS

Sunday, June 24, 2012

1WS1 **Developing Learning Objectives**

Learning objectives can serve as a guide for both educators and students, specifying for the learner what needs to be learned, and specifying for the educator what needs to be taught, how it should be taught, and how it should be assessed. As outcomes-based education becomes more and more important in medical education, many faculty need to practice the skills in defining and developing objectives.

A well-crafted set of learning objectives is arguably one of the most important tools in an educator's toolbox. In this workshop participants will critique and improve sample learning objectives, and will develop some specific, measurable learning objectives for their own teaching or courses.

1WS2 **Power of Why? - Introduction to Team-Based Learning (TBL)**

Team-Based Learning (TBL) is an instructional strategy that is particularly well-suited for the health professions education. It can be used for classes as large as 200 and as small as 12. It transforms the large classroom setting into active, small group learning with a single content-expert faculty member. It encourages the development of professional competencies such as interpersonal skills, communication, teamwork, and peer feedback, and it requires students to both master content and be able to solve problems using the content. This workshop about TBL is conducted in the TBL format: there is an advance assignment, a readiness assurance test on the assignment, creation of teams, and an application exercise. There are no Powerpoint slides or lecture presentation, but the facilitators will ensure that participants understand the strategy from the learner's perspective.

1WS3 **Creating Meaningful Interprofessional Education Events in Medical Education**

Healthcare is undergoing a comprehensive paradigm shift to Interprofessional team-based practice. Teaching an interprofessional curriculum to early learners who have yet to formally practice in their health care field has been seen as one method to enhance this paradigm shift. The Interprofessional Educational Collaborative (IPEC) published a set of core competencies in May 2011 which reflect a collective need to have future health care providers be more patient centric with enhanced patient safety as a core of their practice. The need for medical institutions to provide formal education to incorporate these competencies into their curriculum has been reinforced with recent LCME guidelines requiring institutions to demonstrate meaningful interprofessional educational opportunities for their students. The development of meaningful and comprehensive IPE activities for preclinical and early clinical learners can represent an institutional challenge both in scheduling and in comprehension. Adoption of measurement tools that can adequately assess effectiveness of the educational initiatives can prove problematic. This workshop has been developed to review each of these challenges, address these changes and offer the course participants an opportunity to develop their own meaningful interprofessional educational events as an enduring material.

1WS4 **Qualitative Research: A Process for Understanding Phenomena**

Physicians and medical educators are known to be extremely busy people. Unless funded through grants, they are often unable to hire adequate personnel to conduct bench research or large cohort experimental studies. However, for career advancement and peer recognition as a scholar, publications and scholarship activities are a requirement. Many institutions will not promote faculty without a research track despite the fact that physicians are overwhelmed with teaching and/or practice in their clinic. The majority of these professionals do not realize that there is another path to scholarship and publications as a means for advancement in their areas of expertise - qualitative research. Scholarship in medical education is more closely aligned to various social and behavioral research and evaluation paradigms. The clear majority of medical educators think that quantitative research is required for high quality publications. Fortunately, there is a growing body of evidence that qualitative research is a more appropriate and rewarding methodology in medical education research.

1WS5 **Using Adobe Captivate to Transform Lecture Presentations into Online Self-Directed Learning Units**

Course instructors are often looking for ways to help students get more from their lecture presentations. Higher student-content interaction leads to more thorough comprehension of the material, and one way to achieve this is to turn lecture presentations into self-directed learning units. Adobe Captivate is an easy-to-use application that converts PowerPoint presentations into Flash-based online self-learning tools. These tools allow students to interact with the content and test their understandings to ensure they have retained the information being presented.

1WS6 **Just-In-Time Teaching (JITT) and Peer Instruction (PI) in Medical Education**

Just-In-Time Teaching (JITT) and Peer Instruction (PI) provide an alternative to traditional lecture-based instruction. JiTT combines a self-study period, a web-based assessment and a follow up active-learning session where students work together to apply their basic knowledge to important principles and concepts. By tailoring the active-learning session to the needs of the students, the instructor can maximize the efficiency of the learning environment. These instructional methods also increased student preparation before class, help students keep up with the material being covered, encourage student-faculty contact, and foster a cooperative team environment (or PI) between students. Students also benefit from a feeling that they control certain aspects of their learning process. As medical students are entering with a diversity of educational backgrounds, interests, and capabilities, JITT and PI are directly applicable and relevant methods for today's multi-disciplinary and integrated medical school curriculum.

SESSION DESCRIPTIONS

Sunday, June 24, 2012

1WS7 **Developmental Assessment: Core to Competency Based Models in Medical Education**

An international community will have the opportunity to discuss the framing principle “assessment drives learning”. Educators focus on learning experiences for students and must seriously plan an assessment strategy, which is developmental, supports learning and aligns with core competencies. Formative and summative components must be equally balanced to assure outcomes data can be used to improve curriculum and assess progress of the learners.

1WS8 **It Can't Be That Hard! - Creating Effective TBL Modules**

This workshop is for instructors who have completed an introductory workshop on Team-Based Learning (TBL) and are therefore familiar with what the learner experiences in a TBL session. The entire workshop is conducted in a TBL format: there is an advance assignment, a readiness assurance test on the assignment, creation of teams, and an application exercise that highlights the power of a good why question. We will focus on two very important aspects of building an effective TBL module: the *4S's* and *backward design*.

1WS9 **Expanding the Role and Use of Mixed Method Approaches in Program Evaluation**

Program evaluation is a timely and important matter in medical education. Administrators, residency directors, program directors, course directors, faculty and staff are always looking for ways to improve their program evaluation processes. With program evaluation, one objective is often to assess the attitudes or perceptions of various stakeholders involved in the program. For example, evaluators might be interested in examining students' perceptions of a standardized patient program or in understanding the motivation of standardized patients to participate in encounters. In such cases, subjective data are collected through a variety of means, both quantitative and qualitative, and the evaluator is left to interpret the results. Mixed method approaches lend themselves well to program evaluation data because you can take advantage of both qualitative and quantitative methodologies. For example, from a quantitative perspective evaluators can examine increases in board scores, pass rates, grade point average, etc. while from a qualitative perspective evaluators can take an in depth approach at understanding the quantitative data (i.e. study strategies for board exams) or other areas not easily measured through quantitative approaches.

1WS10 **Competencies in the Pre-Clerkship Curriculum**

A growing trend in medical education is the concept of a competency based curriculum. However most competency objectives concentrate on skills and knowledge appropriate to the clinical arena and cover the basic science disciplines with a single item. “Understands the sciences basic to medical practice” would be a typical example. If these are truly basic to the practice of medicine a more detailed list of competencies is appropriate.

1WS11 **Anxiety, Burnout, and Depression in Pre-Clinical Medical Students: What Can/Should Be Done?**

The mental health of medical students should be a serious concern to all involved in the medical education continuum. The figures are grim- as many as 25-30% of medical students are depressed, 50% are burned out, and there is compelling evidence that overall mental health of students declines in the preclinical years. New initiatives are needed to improve student well-being.

1WS12 **Using Adobe Captivate to Create Online Assessments with Feedback, Branching Scenarios, and SCORM-compliant Quizzes**

Guiding learners through case-based scenarios and providing them correct/incorrect feedback with explanations are effective components of online assessments for self-directed learning. Participants will learn, using Adobe Captivate, how to create Flash-based question and feedback slides, branching scenarios, and SCORM-compliant quizzes allowing instructors to monitor students' progress in an LMS, such as Blackboard.

1FS1 **Meet the Speaker**
Steve Kanter

Meet with Steve Kanter to continue the discussion regarding their session "The Learner-Teacher Relationship: How Should it Evolve?"

1FS2 **Meet the Speaker**
Michael Friedlander

Meet with Michael Friedlander to continue the discussion regarding their session "What Can Medical Education Learn from the Neurobiology of Learning?"

1FS3 **How to Achieve Scientific Research Competencies in Medical Education**

The European project MEDINE tries to define competencies in the field of "Ability to apply research principles, methods and knowledge to medical practice and research". In this focus session we will give some European examples of how these competencies can be obtained in the medical curriculum. In addition, we want to explore methodologies of implementation.

1FS4 **Medical Science Objectives and Competencies: What Resources Exist and How Can We Best Use Them?**

Competency-based medical education (CBE) is here to stay. Several basic science professional organizations have begun to move toward competency-based educational guidelines by creating detailed learning objectives and in some cases mapping them to competency domains. Some have written competencies to identify the skills, knowledge, and attitudes medical students should develop at the end of a 4-year curriculum. A dialogue amongst representatives of these organizations about their best practices and challenges in effective utilization of their work will benefit all medical science educators.

In this panel discussion, representatives of several discipline-based medical education professional societies will discuss their organization's approach to creating learning objectives and/or competencies for their discipline. The panel and the audience will engage in dialogue to address how objectives and competencies can be used as tools to drive curricular improvement.

SESSION DESCRIPTIONS

Sunday, June 24, 2012

1FS5 Getting More Out of the Time We Spend with Students in the Classroom: Use of Podcasts

Current trends in education of medical students promote less in-class didactic time in favor of more interactive sessions with students. Certainly, there is a vast array of educational tools and resources available to help students learn obviating the need for didactic sessions but there is a concern regarding the relevance for medical student education. To help direct students in their study of relevant resources, we devised a curriculum in which didactic lecture time has been reduced to essentially zero through extensive use of faculty-developed pre-recorded podcasts. Since many schools are struggling with curriculum changes in their schools, our discussion of how we implemented this change will have broad interest to members of IAMSE as a means of addressing a specific educational problems, reducing didactic time in class and promoting interaction. In this session we will describe our curriculum and development of podcasts. Subsequent to this we will have a discussion of the solution using focused discussion triggers including questions pertaining to faculty evaluation, revision of podcasts, and whether they should be shared across institutions.

1FS6 Integrative Teaching for Integrative Medical Practice: Bridging Medical Sciences, Research and Complimentary Alternative Medical Education with Clinical Practice

As evidence based medicine becomes the accepted model of clinical practice, we need clinicians and educators who can model how to use evidence in teaching and clinical decision making. The move toward integrative medical clinics requires different types of teaching. Patients are using integrative medicine in substantial numbers. Bodily systems - anatomical, physiological, and biochemical - are more commonly being seen as interrelated to a greater degree than in the past. Clinicians need to be educated in new ways in order to know how to communicate with patients who are coming to them from a wide variety of perspectives on health. Bringing an integrative perspective into medical education will help educate students and requires some creative preparation and conceptual mapping on the part of educators.

1FS7 Competencies for the Medical Sciences - Skills for Curricular Transformation

Competency-based education is an emerging framework for medical education. The literature identifies four steps in transforming curricula: 1) identification of competency domains and competencies, 2) explicating components and performance levels, 3) evaluation, 4) program evaluation. In this workshop, participants will apply theoretical concepts to a curricular scenario.

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SESSION DESCRIPTIONS

Monday, June 25, 2012

2WS1 **Course Faculty Assessment**

Students can provide a valuable and unique perspective on the quality and delivery of instruction in medical education. The Course/ Faculty Assessment program has been developed to elicit meaningful student feedback which can be used in course design and faculty development. This assessment process increases collaboration between students, faculty and administration, while offering students an opportunity to problem solve, and author constructive, professional feedback. It has helped to create a dynamic curriculum which has truly benefitted from student suggestions. Our students value the opportunity to contribute to their learning environment and speak highly of the Course Faculty Assessment (CFA) process.

2WS2 **Now You've Done It - Making it Better - Overcoming the Challenges of Implementing TBL**

Team-Based Learning™ is a well-established educational strategy with a growing body of evidence showing its potential to enhance learners' performance and engagement. Although the structure and process appear simple, it is often a challenge to implement TBL successfully. Faculty encountering difficulty may "give up" after one or two trials. This workshop is for those who have given it a try and want to learn how to make it work well.

2WS3 **Case Reports: Translating Clinical Insights into Science**

Writing a case report teaches medical students how to critically think about the diagnosis and treatment plan for a specific patient, and can provide a great way to initiate them in their scholarly writing. A well-written case report can be an outstanding educational tool for both the author and the reader, and can contribute to the advancement of medical science. Case reports can also serve as assessment tools for clinical education, and may be incorporated longitudinally throughout medical education.

2WS4 **Helping Faculty Adapt to New Roles with Integrated Curriculum Innovation: from: "Sage on the Stage" to "Guide on the Side"**

At any given time, many schools are implementing curriculum reform in small or large ways. When this happens, faculty are often expected to take on new teaching tasks that move them out of their comfort zones. Discipline-specific content delivered via lecture may evolve into small group collaborations that incorporate topics from multiple disciplines in a newly integrated curriculum. Faculty development in the areas of small group facilitation skills and how to collaborate in an integrated curriculum can be invaluable to the success of curriculum innovation.

2WS5 **Lightning Rounds: Demo of Favorite iPad Apps for Med Ed**

Share your favorite iPad Med Ed Apps and we will share ours! Each 5 minute demo is designed to explore a large variety of applications in multiple disciplines by proficient users. Projector and connector provided. Bring your iPad or be a voyeur. (If you want to demo contact: Suzanne.Stensaas@hsc.utah.edu. For an in-depth review and opportunities for discussion, attend the Saturday workshop.

2WS6 Mind Body Medicine

As part of a comprehensive educational initiative to integrate complementary and alternative medicine (CAM) into the medical curriculum, faculty at Georgetown University School of Medicine have developed an 11 week experiential and didactic module that introduces medical students and faculty to a variety of mind body techniques (e.g., mindfulness meditation, autogenics and biofeedback, guided imageries, movement, and writing exercises) with the goal of enhancing professionalism by improving stress management skills and promoting wellness. The course integrates basic science with experiential learning; each group of 10 students is facilitated by two trained faculty members from across the medical center (educators, researchers and clinicians). This workshop (limited to 25 participants) will be a combination of short (10-15 minute) didactic presentations, extended group discussion, and a 45 minute experiential learning exercise.

2WS7 Developing Your Best Possible Grant Application

This workshop will provide information on how to develop grant applications to the NIH as well as foundations and other funding sources. Specific topics will include how to write specific aims, hypotheses, methods, budget development and justification, developing your research team and grant development timeline. Grantsmanship tips will also be provided to be sure the review process is considered as part of the grant development process.

2FS1 Meet the Speaker
Ian Curran

Meet with Ian Curran to continue the discussion regarding their session “The Challenge of Training Healthcare Professionals: The Role of Simulation”.

2FS2 Meet the Speaker
David Battinelli

Meet with David Battinelli to continue the discussion regarding their session “ Hybrid Curricula: A Model for the Transition to Competency Based Education”.

2FS3 Defining Roles and Expectations for Professional Science Course Directors

This is a brainstorming session to discuss whether IAMSE could propose a set expectations for course directors in the basic sciences; such as abilities we should possess or develop, tasks we are expected to perform, and training and resources to be provided. This could be modeled on the position paper of the Alliance for Clinical Education, that led to increased protected time and resources for many CDs.

2FS4 **Teaching Basic Science in Medical Schools Around the World: Issues Related to Problem-Based Learning in Canada, Nepal and Australia**

Teaching the basic sciences in a medical school has always been a contentious issue. While it is important and essential to create a foundational understanding of science for medical practitioners, can a Problem-Based Learning (PBL) curriculum be trusted to deliver? Can the vast amount of basic science content necessary for a medical graduate to learn be delivered in this way? With PBL still being introduced in new medical schools worldwide, is it the right thing to do? Solutions to this issue will be useful for the medical schools currently undergoing curriculum renewal and to those new medical schools around the world with this same issue.

2FS5 **Date and Information Management**

As students are trained in medical science, a great deal of data is accumulated through coursework, research, literature searches and so on. Data that leads to publication is archived and preserved, but the majority of data that does not make it to publication is not well preserved or easily accessible. Availability of such data is useful for reuse and sharing and can prevent duplication of efforts. Developing good practices for data and information management early on is invaluable and is something that is not often taught during science and medical training. Beyond the use of laboratory notebooks, proper data management can include tracking of metadata about resources used and consistent naming and organization of digital files. Databases and resource tracking systems have been developed to aid in this process. Promoting of these resources and teaching ways to track and organize data can be extremely beneficial to students over the course of their careers.

2FS6 **Global Health - The Role of Health Sciences Educators to Improve Health Education in Developing Regions**

The purpose of this workshop is to engage medical educators in discussions on ways to share instructional resources with health professions faculty in less developed countries. We will also review various funding mechanisms for faculty to participate in faculty exchange programs.

2FS7 **Innovations in Anatomy Education: Does Innovative Technology Inspire Innovative Teaching or Does Innovative Teaching Drive the Need for Innovative Technology? The Chicken and Egg Scenario of Advancing Medical Education for Anatomy and Histology Pedagogy**

New medical schools are being established and existing schools are expanding, so there is a need for new anatomy teaching facilities, resources and pedagogies. These issues will be addressed by panelists representing the disciplines of gross anatomy and histology within medical schools in the process of curriculum redesign.

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SESSION DESCRIPTIONS

Tuesday, June 26, 2012

Educational Initiatives to Advance Research Literacy for Health Professions Students

This Featured Symposium will describe NIH-funded educational initiatives to enhance research literacy among students and faculty at 3 academic institutions that train students in complementary and alternative medicine professions. Presentations will focus on the competencies addressed, as well as the strategies employed to teach and evaluate evidence-based medicine skills.

PC1 Research Literacy Skills Part One: Tools and Methods for Teaching Research Concepts

PC2 Research Literacy Skills Part Two: Methods and Materials for Incorporating Research Information into the Medical School Curriculum

In part one participants will increase their skills in teaching research concepts by practicing with a novel guide for reviewing research articles. The PRLS-ART18 teaches students and practitioners to systematically and critically evaluate research articles. Participants complete a pre and post workshop assessment of knowledge and confidence in research literacy.

In part two participants will acquire useful methods and materials for assessing and teaching research literacy skills, as a component of the Practice Based Learning and Improvement core competency. Participants practice with learning tools to increase student research literacy competencies and facilitate student development of research projects.

PC3 Simulation Experience - Off-Site Session (Additional Fee Required)

3:30-3:45 Introductions

3:45-4:00 Simulation - What is it and how is it used in healthcare and teaching strategy?

4:00-4:45 Hands on experiences with simulation patients (high-fidelity manikins)

4:45-5:00 Debriefing, Wrap up and Questions

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POSTER ABSTRACTS

Abstracts by Category

- Assessment
- Curriculum
- E-Learning
- Instructional Methods
- Professional Development
- TBL/PBL

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SIMULATION IN TRAUMA SCENARIOS

Osaree Akaraborworn MD. Gloyjai Kumkong B.Ed. Department of Surgery, Faculty of Medicine, Prince of Songkla University, Thailand

PURPOSE

Initial management in trauma patients, while being a crucial situation, is a hard-to-arrange learning experience for medical students in real situations because it is limited by the number of cases, the time at which patients arrive at the Emergency Department, and patient safety issues. Simulation is an alternative teaching tool that is widely used in emergency scenarios. This study evaluates the efficacy of a simulation sessions.

METHODS

Medical students in their final year at Prince of Songkla University were divided into two groups. The first group rotated in the university hospital for the first six months of the year while the other group rotated in the community hospitals. Simulation sessions were conducted for the group in the university hospital when they were rotating in the surgical department. Objective Structured Clinical Examination was used to evaluate both groups of students before they switched their rotation from the university hospital to community hospitals. The assessment was divided into communication skills and medical performance components.

RESULTS

Of 176 students, 71 students practiced with simulation (intervention group) and 96 students did not (control group). In the communication skills, medical performance and total score portions, the control group and the intervention group did not show a statistically significant difference in mean scores (20vs 20 ;p= 0.385, 53.8 vs 50.2;p=0.082, 72.8 vs69.3;p=0.106,respectively)

CONCLUSIONS

Simulation did not show positive results in initial management of trauma patients. This suggests that the teaching methods in trauma management need to be improved.

Notes: _____

INITIAL RESULTS USING AN ASSESSMENT TOOL TO TRACK BASIC SCIENCE KNOWLEDGE OF MEDICAL STUDENTS

Mark A.W. Andrews, Ph.D. and Christopher C. Keller, Ph.D. Dept. of Preclinical Medical Education, The Lake Erie College of Osteopathic Medicine at Seton Hill, Greensburg, PA, and at Erie, PA, USA

INTRODUCTION

In order for medical educators to deliver the optimal educational experience to their students, there is a desire and need to assess basic science knowledge of students upon matriculation, and to track academic progress through the preclinical years. To address this need, we developed a series of longitudinal examinations to assess basic science knowledge as students progress from entry to medical school through a preclinical curriculum.

METHODS

Three assessment exams were created and administered to a cohort of medical students (n=110) upon matriculation (exam 1), at the end of the first preclinical year (exam 2), and near the end of the second preclinical year (exam 3). Multiple exams were used to limit the repeated assessment effect, however, items on all exams covered the same basic science concepts.

RESULTS

We hypothesized that the average score would increase, and both the range and standard deviation (SD) of scores would decrease with repeated examinations. On Exam 1 the average score, range, and SD were: 37.9%, 21-57%, and 15.64%, respectively. For exam 2, the average score increased (53%), while, as expected, the range (35.5-66%), and the SD decreased (13.4%). For exam 3, the average score again increased (56.8%), and though the range increased (38-81%), the SD again decreased (12.14%).

CONCLUSIONS

The assessment tool worked as predicted, generating information on the basic medical science knowledge of students upon matriculation, and allowed tracking of academic progress through the two preclinical years. While this tool will undergo further validation, with such knowledge, curricula may be enhanced, and specific interventions could be made on an individual basis, so that the most knowledgeable and best prepared physicians may be developed.

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WHAT TYPE OF MULTIPLE CHOICE QUESTION SIMULTANEOUSLY ASSESSES KNOWLEDGE CONTENT AND DECISION MAKING?

David B. Averill¹, Herbert Janssen², Bruce E. Wright³, ¹The Commonwealth Medical College, ²Texas Tech University Health Sciences Center, and ³Ross University School of Medicine, USA

PURPOSE

Multiple choice questions (MCQ) may assess knowledge content through simple recall of isolated fact(s) which are presented as one best answer. Other types of MCQs may assess higher order thinking by requiring a test-taker to organize a set of facts, and possibly synthesize knowledge, in the process of choosing one best answer. However, assessment of a test-taker’s ability to draw upon a set of knowledge and explicitly arrive at a logical decision are absent from these types of MCQs.

METHODS

To simultaneously assess knowledge content and decision-making, we developed another form of the MCQ. The test-taker is presented with a description of clinical situation (i.e. vignette) at the end of which is an interpretative statement (IS) (e.g. diagnosis). The test-taker is then asked to pick the best answer from the following set of choices. 1) The IS is correct as it stands. 2) & 3) The IS may be correct and a specific set of additional information is needed to support the IS. A different piece of specific information is provided with options 2 and 3. 4) The IS may be incorrect and a specific set of information is needed to refute the IS. One may include specific information with this choice. 5) The IS is incorrect as it stands.

RESULTS & CONCLUSIONS

We have chosen to label this type of MCQ as the interpretive statement multiple choice question (IS-MCQ). We believe the IS-MCQ powerfully assesses fifth order evaluative analysis of a fund of knowledge which includes highly developed ability to make logically supported decisions. The IS-MCQ is uniquely designed to assess a student’s ability to use evidence-based medicine. The IS-MCQ concept may also serve as a useful starting point for Team-Based Learning activities.

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MEDICAL SCHOOL PREREQUISITES: WHAT WORKS AND WHAT DOESN'T FOR OSTEOPATHIC MEDICINE: A SURVEY

Judith Binstock, PhD and Tipsuda Bahri, MD Touro College of Osteopathic Medicine Department of Basic Biomedical Sciences New York, New York, USA

PURPOSE

The Flexner Report and the MR5 report by the AAMC on Basic Science(BS) prerequisites for medical school admissions have not concentrated on the opinions of osteopathic medical students or their faculty. We created a survey to ask osteopathic medical students and faculty which BS prerequisites were most useful for their medical school coursework and their Osteopathic Manipulative Medicine training (OMM).

METHODS

A general survey question for prerequisite preparation as well as those on concepts needed for BS and OMM coursework were sent online to students and faculty from three Colleges of Osteopathic Medicine. SPSS statistical software was used for survey validation and statistical analysis. Results are considered significant at p value <0.05.

RESULTS

(1)Response by students and faculty to the general survey question as to 'whether the current prerequisites provide sufficient preparation for medical school' was neutral but showed disagreement on this question for their OMM coursework. (2)Bio concepts(e.g. Anatomy) were most important to students and faculty for their BS coursework but those of ORGO and Physics show no/low importance as prerequisite concepts. None of the prerequisite concepts except for Bio were important to students and faculty for their OMM coursework. (3)Students and faculty would increase/add Physiology and Biochemistry as prerequisites.

CONCLUSIONS

(1)Students and faculty deemed Bio>Chem> ORGO>Physics in importance for prerequisites.(2)Both students and faculty agreed that the ORGO/ORGO Lab and Physics/Physics Lab prerequisites should be decreased. These prerequisites could be replaced with more relevant topics to medical education,e.g.Anatomy, Physiology and Biochemistry.(3)Prerequisites for OMM are presently insufficient.

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DOES STUDENT’S PERCEIVED STRESS DURING HIGH FIDELITY SIMULATION ACTIVITIES AFFECT ACADEMIC PERFORMANCE?

Jenifer Cannon, Meredith Sacks, David Sacks, David Pedersen, Diana Callender, Ross University School of Medicine, Dominica WI, USA

PURPOSE

The first link between performance and stress was theorized in 1908 by Yerkes and Dodson. To determine the effect of stress during high fidelity simulation, we compared student stress perceptions to their academic performance.

METHODS

In this IRB-approved study, a total of 682 first year medical students participated in a high fidelity renal simulation that involved a one-hour emergency room scenario, which included the management of hypovolemic shock and cardiac arrest. 479 students completed a post test which tested knowledge and recorded how students ranked their perceived stress on a Likert scale (1=low stress to 10=high stress). Students were also asked if their perceived stress during simulation enhanced or detracted from their learning. Student responses from the Likert scale questions were evaluated in rank order and then compared with the corresponding post test score.

RESULTS

For both the May 2011 class (N=242) and the September 2011 class (N=236), the majority of students responded that the level of stress they experienced enhanced the simulation (85.1% and 81.5% respectfully). Students that ranked their stress level as high (i.e. selected a 10, 9, or 8) scored 3% lower on the academic post test questions compared to students that ranked their stress level as low (i.e. selected a 1, 2 or 3). However, this difference did not reach statistical significance (p=.204).

CONCLUSIONS

Educators need to be cognizant of creating learning environments that are challenging enough to allow student to be “optimally aroused” but not overwhelming. We feel that the level of stress created during this high fidelity simulation did not affect the students learning experience.

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THE COMPETENCY-BASED MODEL IN SURGICAL TRAINING AND REAL LIFE

Charlotte Green Carlsen, MD, Center of Medical Education, Aarhus University; Merete Ipsen, MD, PhD, Aalborg Hospital; Peder Charles, Professor, DMSci, Center of Medical Education, Aarhus University, Denmark

PURPOSE

Surgical training in Denmark was changed in 2003 in favor of the competency-based model in order to meet future challenges and demands from society and patients. Formerly the training was randomly distributed and too dependent on local traditions in each hospital. Accordingly, educational programs and individual plans were introduced for each trainee, and we investigated the operative skills training following this educational model expecting a more cogent training, less influenced by local traditions.

METHODS

A questionnaire was distributed to all surgical trainees in Denmark in august 2010 (N=112). We asked how many procedures they had performed (hernias, cholecystectomies, appendectomies, hemicolectomies, open as well as laparoscopic) during their career until now and their year of education. They also answered whether they were confident in the procedure using a 5-point Likert scale.

RESULTS

67% answered the questionnaire, female:male ratio 1:2, which was equal to the total group. Number of performed operations of a given type varies between individual trainees from less than 60 to more than 125 within the years of training. Further, the operative skills training is randomly distributed within the years. The trainees' procedure confidence depends on the number of performed operations.

CONCLUSIONS

Surgical training still seems bound to local traditions and coincidences. As the competency-based model enables structured training, we suggest an even more intentional use of the educational programs, such as a fast-track model, which may overcome local traditions. Further, planning of work need to be emphasized to secure training goals to be reached as quickly as intended and thereby fulfill the competency-based model for training in operative skills.

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CORRELATION OF STUDENT PERFORMANCE ON DIFFERENT TYPES OF EXAM QUESTIONS WITH USMLE STEP 1 SCORES

Eric Ermie, David P. Way, and Dale D. Vandr , The Ohio State University College of Medicine, Columbus, Ohio, 43210 U.S.A.

PURPOSE

The ability of using overall student performance criterion in a pre-clinical medical curriculum as a predictive tool for performance on the USMLE Step 1 exam has limitations. We recently developed and implemented a method for tagging multiple choice questions in order to provide students and faculty a detailed breakdown of performance on internal assessments. We examined whether this categorical data correlated with USMLE Step 1 performance or could be used to better identify those students at risk for USMLE Step 1 failure.

METHODS

Tags were applied to exam items used throughout the entire Med 1/2 curriculum. Each question was assigned to one of four categories that reflected question type including, 1) Recall of factual information; 2) Interpretation or analysis of an image or data; 3) Basic science vignette; and 4) Clinical science vignette. Longitudinal performance in these categories was determined along with overall course performance for each student. Performance was then analyzed with regard to their USMLE Step 1 scores.

RESULTS

Student performance on Clinical science vignettes correlated nearly as well as the overall Med 2 scores with Step 1 results, even though vignette questions accounted for a smaller portion of the exams than recall questions. Further, performance on vignette items was more accurate in predicting which students were at risk for USMLE Step 1 failure. No single performance criterion that was examined, however, provided an absolute correlation with USMLE Step 1 scores for every student.

CONCLUSIONS

The most accurate prediction of USMLE Step 1 performance requires utilization of a combination of category scores. This performance data will better identify those students at risk, and will aid in evaluating areas of strength and weakness.

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LEARNING BY QUIZ: BASIC INSTINCTS FOR BASIC TISSUES IN HISTOLOGY

Raj Ettarh and David Jerrett, Tulane University School of Medicine, New Orleans, LA 70112, U.S.A

PURPOSE

One routinely used method of evaluating learning is to test student knowledge by quiz or examination. Students understand this approach - an appreciation that has led to the dictum "assessment drives learning". This study explored the idea that increased frequency of testing should cause students to prepare more frequently for assessment and thus improve learning.

METHODS

First year medical students taking a histology course were assessed, over a 3-week period, for recall of information relating to recognition of cell and tissue characteristics. Performance between tested and un-tested students in multiple choice formatted quizzes administered prior to and immediately following each histology laboratory, and in practical and written components of one summative examination, was evaluated.

RESULTS

In tested students, there was an improvement in post-lab quiz performance over pre-lab performance in 50% of quizzes. Tested students demonstrated better recall of information for identifying cell and tissue characteristics in the practical component of the summative assessment than they showed during quizzes but there was no significant difference in this ability or in recall of didactic information when compared to students who were not quizzed in lab during this period.

CONCLUSIONS

These findings suggest that quizzes are useful for identification skills and knowledge acquisition in histology but the use of quizzes may need to take account of other factors and circumstances to achieve benefits for students.

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ACADEMIC PERFORMANCE OF FIRST YEAR MEDICAL STUDENTS IN TAMIL NADU, INDIA

Mayil Vahanan Natarajan¹, Sivasangeetha K², R. Srilakshmi³, S. Mini Jacob⁴, Mohan Das Joe Chandra⁴. ¹Vice Chancellor, The Tamil Nadu Dr MGR Medical University, Chennai, India ²Controller of Examinations, The Tamil Nadu Dr MGR Medical University, Chennai, India ³Registrar, The Tamil Nadu Dr MGR Medical University, Chennai, India ⁴Deputy Controllers of Examination, The Tamil Nadu Dr MGR Medical University, Chennai, India

PURPOSE

There are 27 Medical Colleges in Tamil Nadu affiliated to Tamil Nadu Dr MGR Medical University. The different components of the examinations include Theory, Viva voce, clinical/practical and internal assessments. The objective of this study was to assess the examination performance of 1st year MBBS students against each component as per the University regulations and to compare the results with the national medical examination guidelines of India.

METHODS

Medical Students scores were collected from the database after the examinations for the following subjects of Anatomy, Physiology and Biochemistry. Each had Paper I and II. A candidate is said to have passed in a subject if he/she has scored 50% of marks in each component as per University guidelines. We compared the scores against the national medical examination guidelines where in each of the subjects, a candidate must obtain 50% in aggregate with a minimum of 50% in Theory including orals and minimum of 50% in practical.

RESULTS

On the whole 3173 students appeared for the examination in August 2011. Sixty three percent were from Government colleges and 37% were from private institutions. The overall pass as per University regulations was 60% (Anatomy 76%, Physiology 84% and Biochemistry 73%). However, overall 82% passed as per national medical examination guidelines. According to University regulations, many students were not able to pass in theory paper alone and passed only when it was combined with the marks of viva voce.

CONCLUSIONS

A significant number of students passed as per the national guidelines. Majority of the students failed Anatomy I, Physiology II and Biochemistry I. This brings out the trends of medical students focusing more on lighter part of the syllabus and avoiding the difficult parts. A medical student must pay equal attention to the entire syllabus which can be brought by improving both teaching and learning methodologies.

Notes: _____

TEST ITEM ANALYSIS CAN SUPPORT CRITERION REFERENCED TESTING FOR ASSESSMENT OF STUDENT COMPETENCE

Edward C. Klatt MD, Mercer University School of Medicine, Savannah, GA 31404, U.S.A.

PURPOSE

Test item analysis to promote student achievement of mastery for demonstration of competence is described. Test item performance limits can adjust the test average to support competency-based education and yield an acceptable passing rate.

METHODS

For multiple-choice tests based upon classical test theory (CTT) a student’s observed score is related to the standard error (SE) of the mean. The proportion of students correctly answering a CTT item is the difficulty index, and better students should do better on any item. A discrimination index (DI) is calculated by comparing scores of the top minus the bottom scores of test takers. A higher positive value for DI is desirable. Criterion-referenced testing (CRT) ascertains if students have achieved mastery. The CRT passing level is based upon the minimum acceptable level of competence. CRT accepts many test items with low difficulty and DI at or near zero. The desired CRT outcome for test takers is correctly answering all test items, and for the school passing all students. If the majority of test items match CRT criteria, then a passing level set from 65 to 70% may yield few failures. Test analysis is applied to 300 CTT items with SE of 6.5, and DI (comparing the top and bottom 27%) derived from a single cohort of 100 students. The % of students passing is calculated from the z-score distribution: (Test average - Passing score) / SE.

RESULTS

Test averages, passing levels, and student failures using increasingly stringent item performance limits applied to 300 test items, discarding questions with higher difficulty and lower discrimination are shown. Test Average Discarded Items % Students Passing at 70% % Students Passing at 65% 67% 0 32 62 70% 20 50 78 73% 42 68 89 76% 63 72 95 80% 100 94 99.

CONCLUSIONS

As the test average moves positively away from the passing level, with fewer test items of higher difficulty, and fewer minimal or negative discrimination index items, student failures decrease. More stringent limits on test item performance yield a test closer to CRT, so that the key issue is setting the passing score at an acceptable level of confidence.

Notes: _____

CULTURE AS A COMPONENT OF THE BASIC SCIENCE CURRICULUM: PERCEPTIONS OF FIRST AND SECOND YEAR MEDICAL SCHOOL STUDENTS

Sana Loue and Kristen Limbach, Case Western Reserve University, Cleveland, Ohio, USA

PURPOSE

Health researchers and care providers must be adequately trained to face challenges inherent in providing effective care for diverse groups. This study examined the perceptions of first and second year medical students with respect to the adequacy of the basic science curriculum in addressing issues of diversity and the importance they attributed to an understanding of such issues in providing effective patient care.

METHODS

Student views were assessed with a web-based anonymous survey of all first year (n = 167) and second year medical students (n=166), 2 focus groups with second year medical students (n=14), and a Case Inquiry group (Problem-Based Learning) with second year students in which students examined a case of a Puerto Rican woman suffering from schizophrenia.

RESULTS

Of those responding, 70.2% of first and 53.9% of second year students rated patient interview skills as being of great importance to effective patient care (p=0.05). 55.8% of first and 54.2% of second year students rated understanding of patients’ cultural beliefs as being of great importance(p=0.32). 81.6% of first and 54.2% of second year students rated self-reflection on one’s own culture and values as important to their performance as a physician (p=0.26). 40.8% of first and 61.5% of second year students feel uncomfortable or only somewhat comfortable identifying patient beliefs that may affect management (p=0.07). Focus groups indicated discomfort with cultural issues and a desire for improved communication skills.

CONCLUSIONS

A large proportion of students do not believe that reflection regarding one’s own cultural biases or understanding diverse patient cultural beliefs is important in effective patient care and are unsure how to approach culture-related issues arising in patient care. The lack of statistically significant difference in responses of first and second year medical students, despite having completed the majority of the cultural curriculum, suggests a need for better integration and effectiveness in the teaching and learning of these skills in a basic science curriculum.

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ARE VIGNETTE MCQ MORE DIFFICULT OR DISCRIMINATING THAN TRADITIONAL MCQ?

Stanley J. Nazian and Frazier T. Stevenson, University of South Florida, Morsani College of Medicine, Tampa, FL USA

PURPOSE

Methods of instruction have evolved in an attempt to move medical student learning to higher levels of the revised Bloom's Taxonomy. Licensing exams have also moved away from recall by incorporating vignettes of varying complexity. We have also shifted our testing to include more vignettes. We hypothesized that a vignette based question would be more difficult and more discriminating.

METHODS

Multiple Choice Questions originated with individual instructors and were edited at question vetting sessions. Questions were assigned to one or more of our Competencies (Structural, Molecular, Functional) and assigned a category: Recall had no context; Pseudo-vignette had a clinical or scientific context not needed to correctly answer the question; Vignette1 or Vignette2 questions required 1 or 2 pieces of information to arrive at the correct answer. Difficulty (Diff), Discrimination Index (DI) and Point Biserial Correlation Coefficient (PtBiS) were provided by our testing software.

RESULTS

To date 587 questions used during the first year have been analyzed. Recall and Pseudo-vignettes constituted 85.6% of Structural, 87.3% of Molecular and 68.4% of Functional questions. We anticipated a shift to more vignettes as the year progressed, but this did not occur. Questions that were categorized as either Pseudo-vignette or Vignette had significantly higher Diff, DI and PtBiS ratings.

CONCLUSIONS

The presence of a vignette, whether or not it provided necessary information, resulted in questions that were more difficult and more discriminating. The Competency appeared to influence the type of questions that our faculty wrote. These baseline data will help guide future faculty and test development.

Notes: _____

THE RELATIONSHIP BETWEEN CRITICAL THINKING SKILLS AND PERFORMANCE ON THE USMLE STEP I

Kevin D. Phelan and Bruce W. Newton, University of Arkansas for Medical Sciences, Little Rock, AR, USA.

PURPOSE

Critical thinking (CT) skills of freshman medical students were previously reported as significantly correlated with USMLE Step I scores (Scott & Markart, 1994). However, their study was limited to one class of students and confounded by different curricular tracks. The present study explores this relationship further by determining which CT skills are correlated with success on the USMLE Step I and by comparing the performance of the high CT (HCT), middle 3/5s (MCT) and low CT (LCT) quintile groups of students.

METHODS

Volunteer M1 students in three successive classes (2009-2011) were given the Watson-Glazer Critical Thinking Assessment (WGCTA) in an untimed fashion during orientation.

RESULTS

Total WGCTA scores exhibited a significant positive correlation with Step I scores ($r=0.17$, $p<0.001$, $n=392$) though this only existed for MCTs and not HCTs/LCTs. Three of the five WGCTA subtest skills were correlated to Step I performance: recognition of assumptions, deduction and interpretation ($p<0.05$). There was no significant difference in WGCTA or subtest scores between first time takers that passed ($n=355$) versus failed ($n=37$) ($p>0.05$, t-test). LCT students exhibited a failure rate of 15.1% compared to 7.8% of MCT and 6.5% of HCT students. The average Step I score of LCTs (214.9 +/- 22.5, mean +/- SD) was significantly different than HCTs (226.4 +/- 25.2) ($p<0.05$) but not MCTs (217.4 +/- 23.4) or combined HCT/MCT groups.

CONCLUSIONS

These results confirm a weak but significant positive correlation between the CT skills of matriculating medical students and their performance on the USMLE Step I. Although the low critical thinking group exhibited a higher failure rate, their average Step I score was not significantly different than students with higher CT skills.

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EXAMINATION PREPARATION OF PRECLINICAL YEAR MEDICAL STUDENTS, KHON KAEN UNIVERSITY, THAILAND

Pimolrat Phaopongpaiboon, Yoothapong Raruenrom, Roongtip Chaiyapornpokin, Patthawee Mongkolnak, Piracha Tangtrongpairoj, Suchada Paileeklee Faculty of Medicine, Khon Kaen University, Thailand

PURPOSE

Faculty of Medicine, Khon Kaen University has launched new preclinical learning syllabus in 2009, changed from a region-oriented system to modular one, which reduce the amount of time to allot to each module. This study aimed to study medical students' behavior related to 2010 final exam preparation, learning approaches including learning style.

METHODS

Stratified random sampling was applied to obtain 135 second year and 124 third year medical students of year 2010. A five-part, structured questionnaire, to gather general information, learning behaviors, examination preparation behaviors, learning style, and suggestions. Data were analyzed to obtain descriptive statistics.

RESULTS

The response rate was 94.6% (245/259). The most popular means of exam preparation by 2nd- and 3rd-year medical students was to transcribe recorded lectures (73.5%) and to use lecture hand-outs (73.1%) respectively. The 2nd-year students favored the latter (90.5%) while 3rd-year students preferred the former (88.2%). Most 2nd- and 3rd-year medical students started their exam preparations in earnest two weeks prior to the exams (57.9% and 45.4%, respectively). With regard to class attendance, about 80% of 2nd-year students were present (72.6%). Learning style could be categorized in four fairly similar dimensions: (1) solitary study (56.08%, 52.65%); (2) studying facts (52.08%, 66.95%); (3) using illustrations (63.52%, 52.25%); and, (4) whole system conceptualization (51.76%, 56.9%).

CONCLUSIONS

Tape transcription was the favorite method of study. Second-year students began serious exam preparations two weeks before and they were also more faithful about class attendance (>80%). Student used four learning styles to help to memorize the curricular material.

Notes: _____

FACTORS RELAVANT TO STUDENT’S SATISFACTION IN A NEWLY OPENED MEDICAL EDUCATION CENTER

Sukanya Paileeklee and Supaluk Raiyawa. UdonThani Medical Education Center, UdonThani, Thailand

PURPOSE

The UdonThani Medical Education Center has newly started Clinical year teaching in 2009. This study aimed to obtain factors relevant to student’s satisfaction to improve teaching.

METHODS

Small groups of focal point interviews were conducted to elicit factors relevant to student’s satisfaction. Then, questionnaire was developed, comprised of satisfaction with teaching style, instructor, and department, with 5 levels of Likert’s scale rating. Data were collected from 5th year medical student in 2011.

RESULTS

The factors related to teaching style were being punctual, class postponed or cancelled, well prepared lesson, providing teaching objectives and teaching material, and, unfair grading. The factors related to instructor were being rigorous, understandable explanation, opportunity to feedback, comprehensive content, personality and competency. The response rate was 80.0% (24/30). The major relevant factors related to teaching style were well prepared lesson, providing teaching objectives and material, class postponed or cancelled, mean score of 4.33, 4.25 and 4.21, respectively. The major relevant factors related to instructors were competency, understandable explanation, providing comprehensive content, mean score of 4.63, 4.63 and 4.13 respectively. Department of Otorhinolaryngology, got highest satisfaction means score of 4.83, followed by Obstetric-Gynecology, Anesthetic, and Rehabilitation, score 4.46, 4.43 and 4.21 respectively.

CONCLUSIONS

The major relevant factors were instructor’s competency, understandable explanation, well prepared lesson, and providing comprehensive content. Students were most satisfied with department of Otorhinolaryngology.

Notes: _____

USING AUDIENCE RESPONSE QUESTIONS TO ASSESS STUDENT PERFORMANCE IN A YEAR 1 NEUROSCIENCE COURSE, II

Samuel Saporta, University of South Florida, Tampa FL, USA

PURPOSE

Little data exists regarding the level of student preparation and successful completion of the first year of medical school. In an attempt to assess student educational background and student performance, audience response questions to determine specific student background were asked during active learning sessions in a year 1 Medical Neuroscience course. Data were gathered over two academic years.

METHODS

Demographic data provided by 319 medical students were analyzed against their performance in active learning sessions and final course grade. Complete data were collected for 211 medical students. The Spearman Rank Correlation (r) and Wilcoxon Rank Sign Tests for paired data were used to determine covariance and statistical significance.

RESULTS

There was a statistically significant covariance in combined data between students who had an advanced degree and final course grade ($r=0.3598$; $p<0.0002$). Similarly, course performance significantly covaried with students who previously had a neuroscience course ($r=0.2552$; $p=0.0002$). Though there was not a statistically significant effect of course performance and having had an undergraduate neuroscience course in each of the past two academic years, there was a significant covariance when both years were combined ($r=0.2516$; $p=0.0002$). There also was a significant covariance of a graduate degree and course grade ($r=.3486$; $p=0.0008$) in combined data from both academic years, as well as each year.

CONCLUSIONS

These data suggest that prior exposure to the neurosciences at a graduate or undergraduate setting, and/or having an advanced degree, enhances student performance in a first year Medical Neuroscience course. This trend is especially interesting as the number of medical students with advanced degrees increases.

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ASSESSMENT OF AN ADJUSTED VS. FIXED PASS LINE FOR STUDENT PERFORMANCE IN A MEDICAL SCHOOL CURRICULUM

Andreas Seyfang, Stanley J. Nazian, Samuel Saporta, Craig A. Douppnik, William E. Johnson and Frazier T. Stevenson, University of South Florida, Morsani College of Medicine, Tampa, FL, USA

PURPOSE

Starting in Fall 2011, USF Morsani College of Medicine has implemented a new pass-fail grading system using an adjusted pass line for the assignment of grades in year 1 basic science courses, which incorporates the class mean and distribution of exam grades ('mean - 2 SD' pass line). This replaces the prior fixed pass line of 70%. Here, we report on resultant changes in class performance.

METHODS

Student performance in each course was evaluated based on 3-4 exams per course. The adjusted pass line was calculated at the end of each course as the percentage of class mean of correct answers minus 2 standard deviations. Students that scored below the pass line had to take a comprehensive remediation exam for that course within one week. For the remediation exams, the fixed 70% correct answers pass line was used.

RESULTS

The adjusted pass lines for the first three courses were 76%, 79%, and 76%, respectively, based on remarkably high and homogeneous mean class performances (means of 87.4%, 88.1%, 86.3%) combined with a small grade distribution range (SDs of 5.7%, 4.7%, 5.0%). Out of the 141 students total, only 4, 2, and 2 students, respectively, scored below the adjusted 'mean - 2 SD' pass line in courses 1-3, and all subsequently passed their remediation exams. For comparison, with the fixed 70% pass line system these numbers would have been 1, 0, and 0 students falling below the pass line in these courses.

CONCLUSIONS

We conclude that an adjusted pass line for course evaluation better responds to variability in class performance between different courses. Paired with the change to pass-fail grading, it led to improved student performance, in particular when combined with monitoring and feedback of student competencies.

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ASSESSMENT MODELS TO ENSURE HIGH LEVELS OF COMPETENCY IN PHARMACY RELATED NUMERACY

Alison Shield, University of Canberra, Bruce ACT 2617, Australia

PURPOSE

There is a perception that numeracy amongst pharmacy students has been declining and a general feeling of maths anxiety within student populations. Past teaching methods rely on the inherent ability of students to apply calculations methods; this may preclude a deep understanding of subject material, reinforce misconceptions and erode confidence leading to multiple attempts to pass exams. The aim of this study was to reduce the number of attempts required for MPharm students to pass their mandatory calculations exam (100% pass mark).

METHODS

Calculations material was introduced by sequentially building on basic concepts and weekly tutorial material was used to help students gain requisite knowledge. A 'practice' exam was administered to provide feedback, along with additional support as required. Importantly when students undertook their final exam they were given an opportunity to self-correct their papers.

RESULTS

Prior to implementation 17% of students (N=52) obtained full marks for their final exam. The remaining students took an average of 3 attempts to successfully pass, with a subset requiring >5 attempts. Post implementation the average grade for the 'practice' exam was 7.7/10 with 8% of students obtaining full marks (N=140). This improved to 29% of students obtaining full marks for the final exam; 75% of students who got <10/10 were able to self correct their errors and none required >2 attempts to pass.

CONCLUSIONS

Our step-wise method increased student ability to successfully complete their calculations exam. We speculate that our approach reduced exam anxiety and allowed students to become confident about their ability to undertake pharmacy related calculations. We are currently evaluating whether this method ensures retention of this knowledge.

Notes: _____

IMPLEMENTATION AND UTILITY OF THE CBSE IN A PBL CURRICULUM: THE EXPERIENCE OF A PRIVATE UNIVERSITY IN ECUADOR, 2006-2011

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PURPOSE

Few Medical Schools in South America have implemented an International Progress Test to evaluate student's progress. Since 2006, the Comprehensive Basic Science Examination (CBSE) from the National Board of Medical Examiners (NBME) was implemented at a private medical school in Ecuador as a complementary method of evaluation. A minimal score of 60 points is a requirement for graduation. The aim of the study was to evaluate the progress of students in basic sciences over the six years of schooling through the NBME-CBSE in order to assess students and adjust the curriculum.

METHODS

The results of each subject are reported in a qualitative performance band which did not permit for quantitative statistical analyses of the scores. Therefore, a 1-5 scale was developed based on the band length. Higher scores reflect better performance.

RESULTS

From 2006 to 2011 a total of 353 exams were taken by 2nd to 6th year medical students (n=93). Mean score during 2nd and 6th year were 39.3 ± 5.6 and 52.5 ± 6.7 , respectively. The best and worst performance subjects were hematology 2.1 ± 1.2 and general principles of health and disease (GPHD) 1.1 ± 0.4 . Scores increased as the students advanced in their studies. Limited progress was observed in genetics, anatomy, histology and GPHD. All sixth year students scored ≥ 60 points, however, about 5 chances are offered to students during their sixth year.

CONCLUSIONS

This is the first report from a Medical School in Ecuador that evaluates the usefulness of the NBME-CBSE. This test has allowed this Medical School to improve its curricula, monitor student's progress and has helped them take international exams for residence programs. Repeated testing and guided independent studies are important to improve scores.

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EVALUATING THE EFFECTIVENESS OF MANDATORY WEEKLY ASSESSMENTS ON END-OF-YEAR SUMMATIVE PERFORMANCE

David M. Thomas, David W. Rodenbaugh, Robert A. Augustyniak, Minhee Seo, Richard L. Sabina and William C. Forbes. Oakland University William Beaumont School of Medicine, Rochester, MI, USA

PURPOSE

Medical students are expected to assimilate vast quantities of material; however, their learning is often assessed using just a few high stakes exams. As a result, students are prone to memorize subject matter immediately before exams, failing to integrate materials for the long term. To examine the “spacing effect” in our assessments, this study is designed to test the effectiveness of mandatory, graded, weekly assessments on students’ retention of information.

METHODS

First-year medical students will be exposed to a variety of courses, each utilizing weekly on-line quizzes to varying degrees. One utilizes non-evaluated, voluntary, weekly quizzes. A second uses non-evaluated, sporadic, voluntary quizzes. Two others utilize graded, mandatory, weekly quizzes. A year-end summative examination integrating topics from all first-year courses will be used to assess student learning of materials covered throughout the year. Topic-specific performance on the year-end exam will be compared to like-content performance in courses offered during the year.

RESULTS

The two courses utilizing mandatory, graded quizzes will be completed by April, 2012, and the year-end summative examination will follow two weeks later. While simply qualitative, students have anecdotally reported the benefits of weekly quizzes for assimilating materials. It is anticipated that students will perform at a higher level on content that was assessed within courses that afford graded, mandatory, weekly quizzes.

CONCLUSIONS

It is anticipated that weekly quizzes will prove beneficial to student performance within courses and on the year-end exam. At the very least, the students’ perceptions that weekly quizzes are beneficial to their success are sufficient to warrant their continued inclusion in our curriculum.

Notes: _____

FIRST-YEAR MEDICAL STUDENT ATTITUDES ON NUTRITION TOPICS BEFORE AND AFTER A NUTRITION COURSE

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PURPOSE

The objective of this study was to evaluate students' changing attitudes on the following: importance of including nutrition in their medical curriculum, influence of a nutrition course on their eating habits, beliefs about how they will spend time counseling future patients, and ability to provide information to patients on the relationship of nutrition to major chronic diseases.

METHODS

Online surveys were sent to 154 first-year osteopathic medical students, pre and post a medical nutrition course. A 1-5 rating scale was used for each survey statement. Data was compared by the Mann-Whitney rank sum test.

RESULTS

Response rates were 98% pre-course and 79% post-course. Nutrition-related survey items, all at $P \leq 0.001$ post-course compared to pre-course, included: interest, education importance, prescription use, and health of patients and self. Comparison of Pre to Post course responses on the item about ability to supply patients valid information on the relationship of nutrition to the following conditions was: for cancer ($P \leq 0.001$); metabolic syndrome ($P = 0.005$), coronary artery disease ($P = 0.009$), hypertension ($P = 0.003$), and aging ($P \leq 0.001$).

CONCLUSIONS

Students value the inclusion of nutrition topics in their medical education. More students conclude that having taken a nutrition course, they will be able to offer valid information to patients about the relationship of nutrition to cancer, metabolic syndrome, coronary artery disease, hypertension, and changes associated with aging than they did prior to the course, and they predict they will spend more time counseling patients on nutrition. Students' attitudes on nutrition are influenced by taking a course in the first year of medical school, and they believe this will transfer to behaviors in practice.

Notes: _____

ASSESSING RESIDENT'S UNDERSTANDING OF ACGME CORE COMPETENCIES THROUGH CREATIVE EXPRESSION

Lorraine Fugazzi, Timothy Sullivan, MD, Brahim Ardolic MD, Staten Island University Hospital, USA

PURPOSE

Residents are regularly evaluated as to their understanding of the six ACGME Core Competencies. The evaluation typically relies on standard, multiple-choice written examinations on course content, as well as discussion and review with their Program Director and other key clinical faculty. Achievement of satisfactory performance in all six core competencies is necessary for successful completion of the program. The study objective is to explore whether describing and evaluating residents' creative responses to the six Core Competencies augments the educators' assessment of the learning process, and also whether it enhances the residents' educational experience.

METHODS

After participating in presentations on the Core Competencies, 58 residents were given a template with six blank spaces bearing headings reflecting each of the six Core Competencies. They were simply asked to draw their responses to each of the Competencies in whatever way they chose. They could illustrate the concept of the Competency, or their reaction to it, as they wished.

RESULTS

In the first phase of this study the investigators will subject the drawings to a systematic analysis, to determine thematic content, emotional content, and literal content with respect to how accurately the drawings reflect their intended object (i.e. one of the Core Competencies). It is hypothesized that the intense stimulus represented by the "Core Competencies," will yield insights into their imaginative responses to key stressors occurring during their professional development. Drawings will be evaluated, with guidelines established by the investigators in consultation with a psychologist experienced in the interpretation of psychological tests, by blinded raters.

CONCLUSION

Data evaluation is in process and will be presented at the poster session.

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HOW TO ENSURE AN EFFECTIVE LEARNING ENVIRONMENT IN A MEDICAL INSTITUTION, A MIXED METHOD

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The number of students experiencing academic difficulty continues to be a phenomenon plaguing medical schools worldwide. While some studies have investigated the causes of underperformance by these medical students, none has listed academic markers of “at risk” students. This study aims to find identifiers of this type of student based on the differences in learning practices between students with low, medium and high performance. Three cognitive tests were administered and a questionnaire was prepared to assist in this process. The preliminary data indicate that high performing students tend to utilize more techniques to aid their learning and seemed to seek additional resources when methods of teaching were not congruent with their way of learning. High performing students also attributed their success to their own efforts, ability, and motivation. Medium performing students learned best when given practical applications of the material. The majority of low performing students found the volume of material to be overwhelming and needed improvement in study skills, suggesting that the lack of preparedness for the rigors of medical school played a major role in their underperformance. Using Kolb Learning Style Inventory, the majority of low performing students have a diverging learning style; the medium performing students were predominately of accommodating learning style, whereas the greater part of high performing students have an assimilating learning style, which is the style required for effectiveness in information and science careers. Thus far, the data suggest that in order to promote academic success for the majority of medical students, means should be put in place to assist them in finding the best learning style via cognitive testing and interviews. Additionally, a combination of study skills and time management learning tools should be provided to those identified to be “at risk” academically.

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MOVING FROM GOOD TO GREAT: THE PLANNING AND EVALUATION OF THE EDUCATION WORKSHOP IN IZMIR, TURKIYE ENTITLED "TRENDS IN UNDERGRADUATE BIOMOLECULAR SCIENCE EDUCATION AND TIPS FOR POSTGRADUATE STUDENTS AND BEYOND"

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Education workshops are used widely to deliver novel concepts and techniques, to address special challenges in current practice and to enhance professional growth. However, determining the beneficial impact of these workshops is a challenge for the organizers. Planning is the phase in which one aims to develop an effective workshop by adhering to principles as determined in the literature. Collison (2000) describes 2 of these principles: clarity of aim and target population, and a systematically designed program to meet the contextual needs of the participants, with the focus on enhancement of personal and professional growth by broadening knowledge, skills and positive attitudes. Evaluation is the phase where one assesses how successfully these principles were applied. For the FEBS (Federation of European Biochemical Societies) education workshop to be held in Izmir, Turkiye on March 29 – 30, 2012, an empirical investigation will be conducted and a survey research method employed. A closed-answer questionnaire will be administered to the participants to collect biographical data, to measure the relevance and personal value of the workshop (if it met the specific needs, what their views were on the time they had spent and the sacrifices they had made), to assess the measurable outcomes, and to determine the influence (impact) of the workshop on the participants' teaching or professional development approach. The questionnaire will be applied a week after the workshop to measure the short term (1 week) impact and this data will be evaluated in a deeper approach with the long term results (same questionnaire will be applied again in September to determine the long term-6 months impact). An additional aim of the questionnaire is to determine if factors such as teaching position, age, gender, or qualifications have an influence on these views.

Notes: _____

THE INTRODUCTION OF NUTRITION EDUCATION INTO THE MEDICAL SCHOOL CURRICULUM USING AN ELECTIVE COURSE

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PURPOSE

In an effort to address the lack of formal medical nutrition education at the University of Texas School of Medicine at San Antonio, a nutrition elective has been created (1) to teach medical students fundamental concepts in nutrition and (2) to determine student perspectives on the need for structured nutrition instruction.

METHODS

Two second year medical students with formal training in nutritional sciences and public health collaborated with education leaders at the School of Medicine to design a comprehensive nutrition elective for medical students. Through a total of ten contact hours, enrolled students participate in lectures, discussions, and brainstorming sessions on the science and public health of nutrition. Guest professors are invited to share their expertise on more technical topics. By the end of the course, students work together in teams and apply key concepts to successfully design feasible solutions to prevalent nutrition-related issues.

RESULTS

Since the course's commencement in the fall of 2011, forty-two medical students have completed the nutrition elective. A survey is used as the primary tool for understanding student perspectives on the teaching methods used by course instructors. Based on data collected from the first cohort of students, 86% of students stated that they learned new information from the nutrition classes, 90% enjoyed the course format, and 100% would recommend the course to other students. **CONCLUSIONS:** The establishment of a nutrition elective has been fundamental in stimulating student interest in nutrition. Based on survey results and feedback given to senior school administrators, there is strong evidence to support that nutrition education is considered by medical students to be a key part of medical training.

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DEVELOPING A FOUR- YEAR GERIATRIC TRACK FOR THE MEDICAL STUDENTS AT THE UNIVERSITY OF TEXAS MEDICAL BRANCH. (UTMB)

Liliana Andrade, MD. University of Texas Medical Branch Anthony (Tony) DiNuzzo, PhD. University of Texas Medical Branch Oma Morey, Ph.D. University of Texas Medical Branch, USA

BACKGROUND

As the population ages with the current expectation of a high standard of good health, and the current and projected shortage in geriatricians, medical students must redefine their views on aging and their approaches to aging and medicine. Consequently, the Geriatric Division of the University of Texas Medical Branch (UTMB) wishes to introduce an innovative approach to geriatric education. The approach seeks to help students view aging as a multidimensional process, to challenge stereotypes about aging, to help them learn about factors in healthy aging, and to explore the medical conditions typical of older patients.

PURPOSE

To provide future physicians with the unique opportunity to enhance their ability to provide higher-quality and more cost effective care to older people with chronic conditions.

METHODS

The Geriatrics Track will include various preclinical and clinical electives, as well as different activities, such as the Summer Program in Aging Research, The Lefebvre Winter Series on Aging, Forum on aging, Geriatric Journal Club, etc. Students participate in patient care in a variety of inpatient and outpatient settings. Faculty mentors will work with students throughout the four-year program, which includes the design and completion of a clinical or basic sciences/humanity research project.

RESULTS

Students who complete the Geriatrics Track will receive a Certificate of Educational Achievement in Geriatrics and a letter of accommodation in the medical school file. Students also will conduct a clinical or basic sciences/ Humanity research project that will have a positive impact on the care of seniors. A research faculty mentor will help students develop the research question, design a study, collect data, and analyze the results.

CONCLUSIONS

Many studies have demonstrated neutral to negative attitudes toward geriatrics. In the United States, only 4% of students are interested in becoming geriatricians. In fact, for physicians and students alike, geriatrics is consistently rated as the least-prestigious medical subspecialty. Some studies reveal no improvement in medical students' attitudes toward geriatrics despite improvements in knowledge of how to care for older patients. As the proportion of older adults increases, the current cohort of medical students will be expected to care for elderly patients regardless of the specialties they choose. Regarding curriculum development, students may find an integrated geriatric curriculum to be more relevant to their careers than a stand-alone curriculum. Clinical clerkships might be in a better position to emphasize the positive aspects of geriatrics. We believe that implementing a geriatric track in the medical school will result in critical changes, initiated and supported by students and faculty which will provide students with the unique opportunity to enhance their ability to provide higher-quality and more cost effective care to older people with chronic and complex conditions.

DEVELOPING PRECLERKSHIP GERIATRICS IN A CLINICAL PRESENTATION SCHEME-BASED INNOVATIVE CURRICULUM

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PURPOSE

The fastest growing patient population in the US is the geriatric patient. This requires medical schools to go through curricula reform to better prepare medical students to address this rising patient population. In response to this, the AAMC has recently published the AAMC Geriatric Competencies for Medical Students (GCMS). These competencies represent a consensus on the minimum competencies in Geriatrics for a graduating medical student.

METHODS

It is difficult, however, in an already too full curriculum, to add more lecture time. This poses obvious challenges, including getting Faculty/student buy-in and time constraints while supporting the ongoing curriculum. There is no place for creating new courses in Geriatrics. Therefore, in this project we discuss the process by which we have identified where basic science content related to the geriatric patient could be integrated in our existing curriculum, as well as our choice of the delivery mechanism. We used an experiential-based process. Through consultation with MS III students, the GCMS and the help of geriatricians as content experts, gaps in our exiting curriculum related to Geriatrics were identified. We have developed a series of short content-rich videos (Camtasia) in the context of a specific older adult patient. These Camtasia cover atypical presentation of disease in older adults.

RESULTS

Once the project is implemented, student’s performance will be assessed through pre and post tests.

CONCLUSION

Students are expected to increase their performance on Geriatrics. Ultimately, this will help students as future physicians to better care for geriatric patients. We want to share our process and experience with others in the hope that others can implement Geriatrics in their curriculum.

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DEVELOPMENT AND IMPLEMENTATION OF A CARDIOVASCULAR ORGAN SYSTEM COURSE AT A NEW MEDICAL SCHOOL

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PURPOSE

Traditionally, medical curricula are discipline-based, and teaching of normal and abnormal processes are separated by long periods of time. This approach makes it difficult for students to integrate across disciplines and the normal to abnormal spectrum. An integrated, organ system curriculum should circumvent this. Here we describes the development and implementation of a 6-week, integrated, cardiovascular organ-system course for M1 students.

METHODS

A basic scientist and a clinician served as co-course directors to ensure the appropriate balance of course content. It was decided that there would be two broad goals. First, the course was structured so that the initial two weeks focused on normal function to provide a foundation for the remaining four weeks that each focused on a disease block. Additionally, each week would conclude with a student-centered activity designed to integrate the key concepts that were presented within a given week.

RESULTS

Weeks 1-2 focused on physiology, anatomy and histology. Week 3 content focused on coronary ischemia/myocardial infarction. During Week 4, valvular disease/congestive heart failure was taught, while week 5 focused on peripheral vascular disease. The last week focused on congenital heart disease. The weekly, student-centered activities included an ECG/heart sounds lab, team-based learning and case-based learning. Weekly cumulative quizzes provided low-stakes formative assessments to prepare the students for a high-stakes NBME customized exam.

CONCLUSIONS

At the time this abstract was written, the course was in its third week of implementation. Anecdotally, the feedback on the structure of the course, the weekly quizzes and the first two student-centered activities is positive.

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HOW TO NURTURE CLINICAL SKILLS WITH BASIC SCIENCES?

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PURPOSE

The medical curriculum continues to evolve. Today with the embryogenesis of the organ systems-based curriculum, the traditional medical curriculum has been challenged. Barriers between individual curriculum disciplines are being broken down while the basic sciences and clinical curriculum become integrated. With this new birth, however, there is a need to continuously monitor its implementation process. The aim of this study is therefore to evaluate the effectiveness of teaching and learning methodologies during delivery of the basic sciences and clinical skills curriculum.

METHODS

This study is an analysis of research studies previously conducted by the authors on basic sciences and clinical skills integration. These studies are namely 1) "Practical training in eliciting tendon reflexes in the basic sciences improves Neuroscience MCQ scores" 2) "Does learning a practical skill like taking blood pressure improve understanding of cardiovascular concepts?" 3) "Factors Influencing Neuroscience Grades of Medical Students" 4) Quality Control in Medical Students' Reporting. The results of these studies are compared and their conclusions summarized.

RESULTS

The Blood Pressure lab study demonstrated that non-attenders did significantly more poorly on a multiple choice exam with cardiovascular physiology questions than attenders. Similarly, in the deep tendon reflexes study, attenders scored 2.2% better on reflexes related questions in a Neuroscience exam, than non-attenders, $p=0.04$. The latter two studies involved the use of electronic support in teaching and learning. Students who spent more hours reviewing delivered lectures on media site were more likely to have higher Neuroscience grades ($p=0.04$). Secondly, the plagiarism software program, Turnitin, was effective in detecting similarities in reports written by medical students.

CONCLUSIONS

Doing clinical skills labs compared with not doing them had a positive outcome in learning. Additionally, electronic support using media site (webcasting) and plagiarism software is effective for teaching and learning of basic sciences and clinical skills.

REFERENCES

- 1) Cooles P, Benjamin L, Malaker K. Doing tendon reflexes improves neuroscience MCQ scores. Association for Medical Education in Europe (AMEE) conference 2009. Poster abstracts. Malaga, Spain.
- 2) Cooles P, Sheakley M. Does learning a practical skill like taking blood pressure improve understanding of cardiovascular concepts? Association for Medical Education in Europe (AMEE) conference 2008. Poster abstracts. Prague, Czech Republic.
- 3) Benjamin L, Cooles P, Martin A, Welke L, Benjamin G. Factors Influencing Neuroscience Grades of Medical Students. Journal of International Association of Medical Science Educators (JIAMSE) 2010. Poster abstracts. Volume 20-2s 217
- 4) Benjamin L, Cooles P, Benjamin G. Quality Control in Medical Students' Reporting. Building Healthcare Professionals in a Medical Science Curriculum. Poster Abstracts, 15th Annual Meeting of the International Association of Medical Science Educators, St Petersburg, FL, USA, June 18-21, 2011. Medical Science Educator 2011 Volume 21(3S) 303.

FREE CLINIC EXPERIENCES INCREASE POSITIVE ATTITUDES TOWARD UNDERSERVED POPULATIONS

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PURPOSE

Caring for underserved patients is an obligation of physicians. Medical education leaders have emphasized the importance of training altruistic physicians. However, studies have documented that student attitudes toward underserved populations decrease as training progresses, particularly in male students.

METHODS

At Mayo Medical School, all second year medical students see patients in a free clinic as part of the curriculum. Students filled out a previously validated survey to assess their attitudes toward underserved populations before and after their year long free clinic experience. Survey results were analyzed as matched pairs, with each student serving as their own control.

RESULTS

There was statistically significant ($p=0.0075$) positive change in student attitudes about physician responsibilities to underserved populations. Males had a significant ($p=0.0319$) positive change in attitude compared to females. There were also significant changes in services students felt should be available to patients such as immunizations ($p=0.0051$), liver transplantation ($p=0.0272$), and heart transplantation ($p=0.0336$).

CONCLUSIONS

Incorporating free clinic experiences into medical school curriculum positively affects student attitudes toward underserved populations. This change appears to be more significant in male students, who traditionally have more negative attitudes toward this population when compared to their female peers. Our data suggests that incorporating free clinic experiences into medical school curriculum positively affects student attitudes towards the underserved and may be a particularly effective educational modality for male students.

Notes: _____

THE BREWSTERS: A NEW RESOURCE FOR INTERPROFESSIONAL ETHICS EDUCATION FOR HEALTH PROFESSIONAL SCHOOLS

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PURPOSE

The purpose of this project was to develop an introductory text on interprofessional ethics and implement its use in all of the six schools (medicine, dentistry, nursing, bioinformatics, public health, biological sciences) of UTHealth. The goal was to enhance student learning of ethics and professionalism in all of the schools using an interprofessional approach. This abstract describes the project and its progress to date.

METHODS

The introductory text (The Brewsters) consists of both fictional narrative and fact-based instructional materials. It is modeled after "Choose Your Own Adventure" books and is meant to be fun and entertaining as well as informative and educational. The story follows members of the Brewster family through their encounters with students, physicians, dentists, dental hygienists, nurses, and epidemiologist, and researchers. The story unfolds in three acts: Professionalism; Clinical Ethics; and Research Ethics. In each act, students can choose the character they would like to be and are faced with multiple decisions to make, with each decision taking them to a different point in the story. After each act, students read corresponding instructional materials that cover various topics. A 30-item multiple choice quiz was administered to assess specific learning objectives.

RESULTS

The Brewsters was implemented at UTHealth at all six schools during the 2011-2012 academic year and was used by 755 students. An overall average of 87% was obtained on the post-test. Substantial knowledge gain was observed at two schools at which a pre-test was administered. Student evaluations were very favorable (avg = 4.26/5).

CONCLUSIONS

The Brewsters has been demonstrated to be an excellent way of introducing ethics and professionalism at a health science center.

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CAN CLINICAL CASES DRIVE ALL COMPONENTS OF A MEDICAL CURRICULUM?

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PURPOSE

Can learning be driven entirely by clinical case scenarios, structured so that all curricular components are organized around cases and still provide broad scope/depth in the requisite basic medical sciences and traditional pre-clinical curricula?

METHODS

Representative medical school curricula primarily in the US and Canada were reviewed, during the past year. Selected model campuses were visited and representatives from others were invited to present at the KU School of Medicine - Wichita. A small faculty group used these experiences to draft a curriculum designed to drive all components from clinical cases.

RESULTS

Case-based/PBL/patient-centered curricula frequently engage only part of a program of study, e.g. 10-h/wk of PBL paralleled by a similar number of lecture hours that may not be directly tied to the PBL. A draft curriculum composed of weekly cases and independent study mini-cases appears capable of driving all elements needed in a full medical curriculum that uses adult learning principles to provide content through text, video, podcasts, web pages, selected lectures, small group sessions and live patient presentations. Achievement of objectives can be tracked digitally for each case and reviewed to assess remedial needs on an organ system or disciplinary basis, facilitating review for summative examinations and NBME tests. The curriculum transcends the traditional basic/clinical science divide allowing for a cohesive curriculum across 4 years.

CONCLUSIONS

A fully case-driven curriculum can be constructed based on adult learning principles using educational technology. With digital tracking of the mastery of learning objectives on a case-by-case basis student learning can be documented and interventions implemented when needed.

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IMPACT OF A COMPREHENSIVE CADAVER-BASED COURSE IN EMERGENT BEDSIDE PROCEDURES FOR SENIOR MEDICAL STUDENTS

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PURPOSE

Proficiency in performing invasive procedures is essential, but learning on live patients is undesirable. Cadaver-based teaching enhances understanding of anatomy and provides an accurate substrate for procedural training. We developed an elective combining didactics and deliberate practice on unpreserved cadavers and live patients and studied its impact on students' knowledge of anatomy, physical exam, imaging, clinical reasoning, and procedural proficiency.

METHODS

4th year students were eligible for the 2-week course. Topics included airway, ENT, vascular access, extremity, laceration, ultrasound, and thoracic procedures. Students performed procedures on unembalmed cadavers, followed by live patients during supervised clinical ER shifts. In this quasi-experimental study, students completed 44-item cognitive pre/post-tests and a 12-item survey assessing comfort performing emergent procedures. A simulated encounter involving two emergencies on cadavers was the objective outcome measure. Performance was graded using critical-actions checklists. The study was approved by our IRB. Statistical analysis consisted of Wilcoxon signed-rank tests for pre- and post-test cognitive exam and attitudinal survey scores.

RESULTS

11 of 12 enrollees (92%) consented to the study. Pre- vs. post-test scores showed significant positive change ($p < .001$) for all indices: cognitive knowledge; understanding of indications/contraindications for procedures; and procedural confidence.

CONCLUSIONS

The course conferred significant gains in knowledge and self-confidence regarding invasive procedures. A follow-up study has been planned which will measure knowledge retention as well as a survey of residency directors regarding these students' procedural competency during the PGY-1 year.

Notes: _____

STUDENTS' INTELLECTUAL DEVELOPMENT IN THE FIRST YEAR OF MEDICAL SCHOOL

Jennifer Eastwood, Minhee Seo, Victoria Lucia, Jill Stefaniak, and Holly Reed, Oakland University William Beaumont School of Medicine, Rochester, MI, USA

PURPOSE

Models of intellectual development, such as Perry's (1979) scheme describe adults' progression from viewing knowledge as unambiguous and authority-driven (positions of dualism) to navigating complex situations based on evidence, context, and personal standards (positions of relativism and commitment). Advanced positions of intellectual development closely resemble aspects of professionalism highly valued in medical curricula (Swick, 2000). However, there is a paucity of published studies of intellectual development in medical students. As part of a four-year longitudinal study, we examined students' intellectual development over the first semester of medical school.

METHODS

To identify positions along the Perry scale, the modified Learning Contexts Questionnaire (LCQ; 26 items using a 6-point Likert scale) was employed. LCQ was administered at the beginning of the first and second semesters of medical school. On the second administration, an open-ended item was added to obtain deeper insights about students' approach to their education. Chi-square tests were performed to compare differences in Perry positions between the two semesters. Open-ended questions were qualitatively analyzed.

RESULTS

Thirty-nine students (78% of the class) completed both LCQ administrations. Reliability estimates were .57 and .56, respectively. The majority of students were in the intermediate position of multiplicity for both pre and post tests. More students moved to a lower position than to a higher position. Chi-square tests indicated that changes were statistically significant ($\chi^2=36.9$, $p<.05$).

CONCLUSIONS

Experiences in the first semester of medical school impacted students' intellectual development, as supported by quantitative and qualitative data. Some students moved toward dualism, suggesting strategies to cope with complexity (Perry's "retreat"). A few students advanced their Perry positions in response to their first semester experiences. Implications for medical education as well as end of year results and student interviews will be discussed.

Notes: _____

INTEGRATING ACGME CORE COMPETENCIES INTO PRECLINICAL UNDERGRADUATE MEDICAL EDUCATION AT ROSS UNIVERSITY

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PURPOSE

In 2010 Ross University School of Medicine (RUSM) adopted an organ system-based undergraduate curriculum which also incorporated the six core competencies required for graduate trainees by the Accreditation Council on Graduate Medical Education (ACGME).

METHODS

Systems-based practice (SBP), improvement in practice, professionalism, and relationship-centered care (RCC) are introduced in lectures, problem based learning (PBL), and simulation. Topics include: finding and critical appraisal of evidence; using evidence for decision making; systems thinking and process literacy, including cause and effect diagrams; using measurement to understand system function; and understanding how to make and evaluate change in systems. Semester three and four students complete a personal improvement project (PIP) to apply these concepts to a personal change such as diet or sleep patterns. Professionalism, communication, and patient-centeredness are also covered in all instructional modalities.

RESULTS

By December 2011, the 1st cohort of 219 students had completed four semesters, and two cohorts, totaling 602 students had completed three semesters of the new curriculum. The average class score on MCQs over the four semesters was 66.2% for improvement in practice, 71.6 % for RCC, and 64.3 % for SBP. Faculty evaluation of the PIPs showed that students grasped the concepts, made use of techniques such as cause and effect diagrams, and reflected on the challenges of making change even in a personal system.

CONCLUSIONS

Preclinical medical students demonstrated knowledge of the core competencies and can apply key principles in their personal improvement projects, simulation and PBL. A future challenge will be to assess retention and application of these concepts in later years.

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DOWNLOADING LEARNING OBJECTIVES INCREASES STUDENT EXAM SCORES IN AN INTEGRATED COURSE: PILOT STUDY

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PURPOSE

Although most basic science medical education is based on learning objectives it is unclear whether students actually use them to organize their studying. We hypothesized that students who viewed learning objectives would learn more than those who didn't. To test this hypothesis, we compared the exam performance of students who downloaded learning objectives with those who didn't.

METHODS

Blackboard can be set to track when and if medical students download or access specific documents. We utilized this feature to identify which second year medical students downloaded topic specific learning objectives prior to an exam testing higher order (Bloom's taxonomy) subject knowledge. We compared end-of-module exam scores of students who downloaded learning objectives (downloaders) which those who did not (non-downloaders).

Results

Learning objective downloaders had higher mean exam scores ($79.7\% \pm 1.09$ SEM; $n = 39$) than non-downloaders ($71.0\% \pm 1.77$ SEM; $n = 24$; $p = 0.0001$). During the examination review session we reminded the students that each test question was based on a specific learning objective and provided examples. Following this exam the percentage of students downloading learning objectives increased from the observed 62% to greater than 90%. This level of greater than 90% downloading of learning objectives has been stable for the subsequent 3 months.

CONCLUSIONS

Downloading of learning objectives by Year 2 medical students appears to be associated with increased mean exam scores and was associated with continued downloading in subsequent modules. The question remains, however, whether students use the objectives in preparation for examinations.

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**THE CHALLENGE OF FITTING A ‘SILO’ COURSE INTO AN INTEGRATED CURRICULUM-
WHAT HAVE WE LEARNED TO DATE?**

Kerstin Höner zu Bentrup, PhD, Jennifer W. Gibson, PhD** Tulane Medical School, *Dept. of Microbiology and Immunology, **Office of Medical Education, 1430 Tulane Ave, New Orleans, LA, USA.*

PURPOSE

Integrated curricula have become the norm in medical schools. The medical education literature contains numerous reports of curriculum change but none refers to integrating a former ‘silo’ course into an already existing integrated curriculum. We describe the process and evaluation of revising a Medical Microbiology course - taught originally as a 5 week block at the beginning of the 2nd year - into an existing Organ Systems curriculum.

METHODS

Before beginning the integration process, we conducted a literature review, discussed perceived hurdles with teaching faculty, obtained student feedback, and discussed relevant placement of course content within the existing curriculum. At the end of the course, a survey was sent to teaching faculty to obtain feedback on the integration process and to solicit suggestions for improvement. Qualitative responses were analyzed for themes.

RESULTS

The integrative process resulted in a Microbiology course that began with a 2-week basic principles block followed by specific sessions interspersed throughout the existing systems-based curriculum. Faculty feedback revealed that communication among instructors from differing disciplines needs improvement and may help reduce redundancy of content. Also, training sessions clarifying the process and reasons for integration would be helpful.

CONCLUSIONS

This study, which began at the end of the first year of integrating a ‘silo’ course into an existing integrated curriculum, elucidated significant problems with the execution of curricular changes, but also considerable covenant in how to overcome these challenges. More research will be needed as the new curriculum matures to discern how to truly integrate the subject material into a curricular framework that optimizes student learning.

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COMBINING EDUCATION, RESEARCH AND COMMUNITY SERVICE - LESSONS FROM A STUDENT RESEARCH PROJECT

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PURPOSE

PLFSOM requires student participation in a scholarly activity or research project (SARP). Herein we describe a SARP project with a purpose to provide opportunities for scholarly activity and research in the area of public health and to improve local behaviors with regards to flu vaccines. Studies on the Barriers to seasonal influenza indicate fear of side effects, inconvenience, perceived ineffectiveness of the vaccine, and a fear the vaccine itself causes influenza. This SARP project will determine if education about herd immunity affects the attitudes and behaviors of adolescents overcoming barriers to vaccination in our region.

METHODS

Subjects were recruited from a summer camp for high school students interested in science. Participants were surveyed on knowledge of and attitudes toward vaccines, and individual and family history of flu vaccination. After an interactive demonstration and lecture on herd immunity, participants were given an exit survey to assess changes in knowledge and attitudes. At the end of the next flu season, participants will be contacted to ask whether they or their immediate family received a flu vaccine.

RESULTS

The medical student (MSI) successfully developed a highly interactive demonstration and lecture on influenza vaccination and immunity. The student developed Surveys for data collection and forms for parental consent, and implemented the educational module on influenza vaccination. During the pilot run of the project, participants were found to be receptive to learning about influenza vaccination and herd immunity in this context.

CONCLUSIONS

The SARP program gives PLFSOM medical students the opportunity to learn about medical research as well as have opportunities to educate and interact with the community.

Notes: _____

CURRICULUM FOR CLINICAL SKILLS REPEAT TRAINING FOR MEDICAL STUDENTS IN PEKING UNIVERSITY PEOPLE'S HOSPITAL

Guanchao Jiang, Peking University, People's Hospital, Dept. of Thoracic Surgery; Qinghuan Zhou, Peking University, People's Hospital, Dept. of Education. Hong Chen, Peking University, People's Hospital, Dept. of Cardiology. Shan Wang, Peking University, People's Hospital, Dept. of Surgery, China

PURPOSE

The traditional apprentice model is now being weakened by a number of factors including loss of indigent care patients to the private sector, fear of malpractice lawsuits, and change in faculty physicians' practices. Simulation based medical education has become more and more popular in China for clinical skill training. For more than 10 years the medical literature has increasingly documented the need for standardized curriculum components in which students can learn, practice and demonstrate competence in basic clinical knowledge and skills. In 2009, Peking University People's Hospital launched a new clinical skills training project, Curriculum for Clinical Skills Repeat Training, in which the simulation based medical education have been incorporated into the traditional medical curriculum and the clinical skills have been trained repeatedly in various way at different time.

METHODS

The new curriculum began to implement in 2009. After 2009, All the medical students in our hospital were enrolled in this training program. The simulation based clinical skills training was practiced in the clinical skills lab. So far, there were 215 medical students have been training in this program.

RESULTS

There are 70 routine technical procedures which a medical student is expected to be competent to perform before graduating from our medical school. For each procedure, the training will include 4 steps. Step 1, Study the related knowledge. In this step, the student will attend a didactic training session on indications, risks and complications, procedural technique, post-procedure interpretation, and a step-by-step demonstration of this procedure on the simulator. All students are required to pass a multiple choice written examination prior to enter next step. Step2, Simulation based training. The students will perform the procedure on the simulators under the guidance of a full time teacher until they finished mastery learning on this procedure and pass the examination. Step 3, Perform on patients. Different from the western countries, students will study 8 years in our medical school. In the last 3 year, they will rotate as clerkship and intern. Depend on the invasiveness of the procedure; students may perform some of non-invasive or less invasive procedures on the patients, such as physical examination, IV puncture. Student may be an assistant or an observer to participate some invasive procedures. In this stage, each student must perform or observe a certain number of the procedure. Step 4, Final test. All students will undertake the clinical skills test before they graduate. The test will cover all 70 routine technical procedures. Students will be required to perform 10 to 15 randomized choose procedures on simulator.

CONUSIONS

The 'Curriculum for Clinical Skills Repeat Training' is not to replace real clinical patient experiences. Our experience demonstrated that the new curriculum has incorporated simulation based clinical skills training into the traditional medical curriculum. Under this project, the clinical skills have been trained repeatedly at different time in various ways; it can improve the students' performance.

INTEGRATION ON ALL LEVELS: INTER-PROFESSIONAL EDUCATION FOR MEDICAL AND PHYSICIAN ASSISTANT STUDENTS

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PURPOSE

A pilot project was organized a. To explore an Inter-professional Education (IPE) model that utilizes small group teaching, Standardized Patients (SPs), a multi-visit continuity case (illustrating the biopsychosocial aspects of diabetes & cardiac disease) and the technological opportunities of a simulation center. b. To enhance the relationship between two departments within one institution. This poster will describe the program and elaborate on the evaluation results.

METHODS

The Sophie Davis School of Biomedical Education (SDSBE) includes a BS/MD and a Physician Assistant (PA) program. Despite co-location and shared administrative oversight, students have not had prior opportunities to learn together. This full-day program consisted of a lecture and panel on the Patient-Centered Medical Home (PCMH) and Team-Based Care as well as a small group SP exercise. The latter included assessment and intervention tasks typical in the care of chronically ill patients: establishing care, compliance issues, loss of insurance and hospitalization follow-ups. Small groups were formed consisting of three BS/MD and PA student pairs and faculty from each profession. The audio-visual technologies available at a modern clinical skills center allowed for unobtrusive observations of SP interactions and dynamic group discussions.

RESULTS

Students from both programs demonstrated significant learning gains as evidenced through pre- and post-intervention surveys and narrative responses. Satisfaction with the SP small group session far outweighed the perceived value of the preparatory reading, the lecture and the panel. Faculty and student program evaluations revealed a strong desire to expand the exercise and make IPE a routine element of each training program.

CONCLUSIONS

Program evaluations showed that this was a successful pilot although it included only 2 professional programs (BS/MD and PA). Initially there were some concerns that medical and PA students were not optimally matched in terms of clinical experience. Consistent faculty report revealed that while the PA students were clinically more advanced, the BS/MD students had significantly more communication skills training and thus performed much better with relationship building, interviewing and counseling tasks. IPE can be beneficial even if circumstances appear less than optimal.

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STRUCTURE: AN INTERDISCIPLINARY COURSE IN HUMAN FORM

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PURPOSE

Structure, a 2-year course in human form, comprises part of the integrated UME curriculum at the Hofstra North Shore-LIJ School of Medicine. Traditionally, content related to human structure is fragmented across the undergraduate medical curriculum, dividing study of form into separate courses on normal macroscopic (anatomy), microscopic (histology), abnormal (pathology and histopathology), developmental (embryology), and clinical (medical imaging) topics. Our course (“Structure”) brings these topics together, allowing students to explore human form in an integrated context.

METHODS

Laboratory sessions feature active small group learning with content expert facilitators. Small group sessions involve Socratic questioning by faculty and progression from recall of knowledge to its application. Anatomical dissection is conducted through focused “problem-based dissections” that revolve around clinical cases and require students to integrate structural topics. Physical exam instruction and use of ultrasound have also been integrated into the course curriculum. This course was developed by assembling an interdisciplinary team that developed learning objectives, weekly laboratory sessions and assessments that were aligned with institutional educational program objectives.

RESULTS

This curriculum was implemented in the Fall of 2011 with our inaugural class. Student reviews of this course have been very positive and educational research projects are underway to assess the efficacy of this program in increasing retention and application of clinically oriented topics in human form.

CONCLUSIONS

As UME curricula continue transitioning to an integrated model, traditionally separate topics in human structure may also require significant modification. We believe that our model for such integration holds great potential for linking together basic and clinical sciences in a relevant context.

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A LABORATORY FOR EDUCATION IN MOLECULAR MEDICINE: A DEDICATED RESOURCE FOR MEDICAL STUDENT RESEARCH

Curt M. Pfarr, Amy Trott, Debra Bramblett, Tanis Hogg, David Osbourne, Rosalin Cooper, Heather Balsiger & Martine Coue Paul L. Foster School of Medicine, El Paso, TX, USA

PURPOSE

Achieving meaningful results in research projects is a serious challenge to undergraduate medical students. Several constraints, primarily time, limit the depth and progress of student projects; often these constraints dictate that the student's efforts be only a small part of a larger project directed by more dedicated research personnel. To provide a deeper research experience we have developed a unique laboratory resource at the new Paul L. Foster School of Medicine that allows our students to pursue mentored research projects in basic and translational projects.

METHODS

This Laboratory for Education in Molecular Medicine (LEMM) is a fully equipped molecular biology BSL-2 lab that is outfitted with state-of-the-art instrumentation that is essential for a wide variety of cellular and molecular biology techniques. This instrumentation facilitates the level, scale, and accuracy necessary for the student research projects. These equipment and instrumentation items have been carefully selected to form an integrated core ensemble that allows the entire standard repertoire of modern molecular medicine techniques and methodologies to be performed. In particular, the laboratory is 100% radioactivity-free, relying exclusively on light-based techniques for signal detection (absorption, scattering, fluorescence, bio- and enzyme-based luminescence). The LEMM is available for students to access and use anytime, with bench space and allocated materials for each project. In addition, a dedicated support staff maintains equipment and instruments, oversees safety training and overall lab organization. As the LEMM is in the same building as used for other curriculum courses, the students have easy access to their projects and can work part-time during the academic year.

RESULTS

Several 'consortium' projects are being developed that will include small groups of students and faculty that will allow synergy and continuity: these include focus areas of both cancer and muscular dystrophy. The first full-scale use of the LEMM will occur summer 2012 and will include an initial group of 8-10 students.

CONCLUSIONS

The LEMM model will evolve to accommodate our growing class size and experience. Several identified opportunities and challenges will be discussed, including funding sources, staffing issues and project design and organization.

Notes: _____

INTEGRATED LONGITUDINAL CASES IN MEDICAL CURRICULUM: AN EXAMPLE CASE OF CEREBRAL TOXOPLASMOSIS

Ann Poznanski^{1,2} and Kelli Sullivan¹, ¹University of Michigan, Ann Arbor, Michigan 49109 U.S.A.,

²Oakland University William Beaumont School of Medicine, Rochester, MI, USA

PURPOSE

Our goal is to present integrated clinical cases to provide a realistic context and motivation for students to learn and master basic science material.

METHODS

Presented here is one such integrated longitudinal case involving a 64-year-old patient with a history of acute myeloid leukemia who developed cerebral toxoplasmosis. The case is followed from the initial diagnosis based on bone marrow biopsy through peripheral blood stem cell transplantation, followed by the development of mental status changes and diagnosis of cerebral toxoplasmosis. The case is presented over the first three years of the medical curriculum. Components presented during year 1 include initial diagnosis of acute myelogenous leukemia with bone marrow biopsy, flow cytometry and molecular phenotyping, and peripheral stem cell transplantation with therapeutic immunosuppression. Components presented during year 2 include the development of mental status changes, brain imaging and analysis of cerebrospinal fluid. Components presented during year 3 include post-transplantation issues, including the effects of chronic immunosuppression, medical management and counseling of patient and family. Materials include de-identified case history, radiographic imaging, histopathological slides and gross photographs.

RESULTS

Presentation of the pathological features of disease provides a platform by which students have the opportunity to contrast normal with abnormal signs, symptoms and diagnostic test results. The presentation of short and long-term complications allows an appreciation of the complex management issues involved in cases of transplantation.

CONCLUSIONS

These integrated longitudinal clinical cases will be touchstones for providing continuity and building of depth within medical education.

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INTEGRATING DISABILITY DISCUSSIONS INTO A PRE-CLINICAL CURRICULUM

Julie Rogers, Ph.D., Christopher Hook, M.D., Rachel Havyer, M.D., Mayo Clinic, Rochester, MN, USA

PURPOSE

More than one billion people live with a disability and experience significant health care disparities compared to non-disabled peers, according to the UN "World Report on Disability". The gap persists in high-income countries, and documents like the US Surgeon General's "Call to Action to Improve the Health and Wellness of Persons with Disabilities" reflect this. Despite clear problems that affect a large population, medical schools do not traditionally discuss disability issues. We developed a unique curriculum that integrates into the first year of pre-clinical training, designed to facilitate discussions about barriers that patients with disabilities face attempting to receive health care.

METHODS

The curriculum begins with five weekly seminars integrated into the Genetics course. Seminars feature a medical geneticist, who gives a lecture about a genetic condition, and speakers that have the genetic condition. Community members affected by the condition also join small-group discussions with the students. The curriculum continues with a panel of individuals with non-genetic disabilities and discussions about medical and social models of disability as well as disability policy and history. A bioethics discussion concludes the curriculum.

RESULTS

A survey was constructed based on recently published disability core competencies for health care students, and was distributed before and after the second half of the curriculum. A qualitative survey was distributed after the first half. Students showed improved awareness of disability topics and positive perceptions of the curriculum. 95% agreed they should learn about disability in medical school.

CONCLUSIONS

Disability issues can be integrated into existing curricula, and inviting community members to speak about their experiences is an effective way to initiate discussions.

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INTEGRATIVE CASES: WEAVING CLINICAL MEDICINE AND PUBLIC HEALTH INTO THE PRECLINICAL CURRICULUM

Amy E. Stickford-Becker, MA, University of Wisconsin School of Medicine and Public Health; Renie Schapiro, MPH, University of Wisconsin School of Medicine and Public Health; Patrick L. Remington, MD, MPH, University of Wisconsin School of Medicine and Public Health; Christine S. Seibert, MD, University of Wisconsin School of Medicine and Public Health, WI, USA

PURPOSE

National leaders have advocated for the integration of public health into medical education. The University of Wisconsin School of Medicine and Public Health has created a series of Integrative Cases intended to engage first and second year students in examining issues that connect basic science, clinical and public health perspectives.

METHODS

We have piloted a series of Integrative Cases since 2008 on a range of topics that highlight Wisconsin health priorities as well as relate to the curriculum for first and second year medical students. The Med1 cases include Healthy Birth Outcomes and Drunk Driving, two important and relevant public health issues. These cases connect clinical and public health topics with the basic science coursework, including genetics, epidemiology, biochemistry, anatomy, physiology and neuroscience. These are 2-day, learner-centered cases that include patient/family presentations, a brief plenary speaker, small group inquiry-based research activities, community-based sessions, expert panels and individual assignments. Students evaluate the cases through an online survey, rating each session’s effectiveness and overall attainment of goals.

RESULTS

The Integrative Cases are largely successful at attaining their specific goals. As a whole, over 80% of students agree or strongly agree that the Med1 cases helped them to “make connections across basic science, clinical medicine and public health” and “participate in experiences and examine themes that expand the view of medicine and public health.”

CONCLUSIONS

Integrative Cases provide a mechanism to weave together basic science, clinical medicine and public health in the preclinical curriculum. Longitudinal evaluation and assessment measures are being developed to determine long-term outcomes.

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DEVELOPING A FOUNDATION FOR EVIDENCE BASED LEARNING

Pamela P. Thomas, Ph.D., Frank A. Fitzpatrick, Ph.D., W. Joshua Cox, D.O., Barth W. Wright, Ph.D., Kristin A. Wright, Ph.D., Robert A. White, Ph.D, Linda R. Adkison Ph.D., Kansas City University of Medicine and Biosciences, Kansas City, MO, USA

PURPOSE

This poster describes curricular innovation that allows different disciplines to answer the question, 'how do students acquire and reinforce new information for improved patient care?'

METHODS

Kansas City University of Medicine and Biosciences has a unique educational program that provides time to engage in self-directed, independent learning. Through a Professional Enrichment Program students may engage in electives, self directed learning or service. Five electives offered for students involve "Journal Clubs". With differing formats, the common goal is to become familiar with evidence based medicine in the areas of Anatomy, Genetics, Osteopathic Medicine, Pharmacology, and Biochemistry. Literature varies from patient presentations to basic science, to translational medicine to epidemiological meta-analysis of data, to clinical trials. 'Lessons learned' from these encounters include the pitfalls of reading scientific papers, critically thinking while reading scientific literature, recognition of statistical errors, and recognition of assumption errors. The goal of all of these is for medical students to learn to translate the information gained from reading medical journals into the practice of medicine.

RESULTS

Specific goals and methods differ for each of the 5 disciplines with the journal club elective. Each approaches material in one of 3 ways: 1. to teach how science (and ultimately medicine) is conducted; 2. to develop specific information about a topic leading to a student research project; and 3. to develop and define an informed basis for clinical reasoning. Journal clubs met daily during the elective period or on a once-a-month schedule. Outcomes are measured by qualitative methods and groups averaged 5 students.

CONCLUSIONS

Journal club formats can be used to teach the fundamentals of evidence based medicine to preclinical medical students.

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LEARNING AND TEACHING CULTURAL SENSITIVITY: 10 YEAR LESSONS FROM AN ANNUAL CROSS-CULTURAL WORKSHOP

Annie Tubman, Agnetta Golan, Minsoo Kim, Jamie Bleyer Medical School for International Health, Ben Gurion University, Beer Sheva Israel; Soroka University Medical Center, Be'er Sheva, Israel

PURPOSE

The need to train cultural sensitive physicians has spurred various strategies to teach and assess cultural competence in medical students. The challenge remains on how to effectively evaluate and integrate cultural sensitivity training across medical school curriculum. The longitudinal experience from the Cross-Cultural Workshop (CCW) showcases an implementation of culturally competency training within a larger global health curriculum.

METHODS

Since 2002, third year students at the Medical School for International Health have participated in a 1.5 day Cross Cultural Workshop, which is a part of a comprehensive global health curriculum incorporated into all 4 years of medical study. The CCW utilizes the Culture and Health-belief Assessment Tool (CHAT) and combines didactic, tOSCE, and small-group discussion learning modalities. Tools to evaluate cultural competency have included subjective data on knowledge, skill, and perceptions, case based simulations of a clinical encounter, and comparison of self-perception versus clinical performance.

RESULTS

310 third year medical students over the course of 10 years have participated in the annual Cross-Cultural Workshop. In past years a cultural competency questionnaire in 7 core content areas has shown statistically significant improvement comparing pre- and post-workshop surveys. More recently, a case-based evaluation tool of 32 participants showed that 68.8% of students identified more cultural problems after the workshop, 43.8% of students anticipated having more difficulty addressing these problems, and 71.9% of students asked more culturally relevant questions.

CONCLUSIONS

The utilization and assessment of cross-cultural workshops remain an effective and engaging teaching strategy for the development of cultural sensitivity in medical students.

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EQUIPPING FUTURE HEALTHCARE TEAM LEADERS WITH SKILLS TO IMPROVE POST DISCHARGE OUTCOMES; IMPLEMENTING A CARE TRANSITIONS CURRICULUM AMONG MEDICAL RESIDENTS

Ohuabunwa U, Eskildsen M, Payne C, Rimler E, Ilksoy N, Miller A, Bonsall J, Galvez A, Stein J, Flacker J, Emory University, Atlanta, GA, USA

PURPOSE

The Joint Commission, American Geriatric Society, ACGME, and LCME have all identified care transitions as a core element of patient care and a critical component of health professional education. Only 16% of internal medicine residency programs have formal discharge curricula. Innovative methods of teaching are needed to equip future leaders of the healthcare team with skills to address this critical aspect of patient care. We therefore sought to develop a care transitions curriculum for internal medicine primary care and categorical residents.

METHODS

The curriculum was delivered in the format of an interactive case based ½ day workshop with an initial slide presentation followed by a small group session that entailed a review of case scenarios that highlight various aspects of best practices in transitions of care. This was followed by a case based board game designed to highlight discharge to appropriate settings of care. We assessed the impact of this curriculum on residents’ confidence, knowledge, attitude and satisfaction.

RESULTS

Fifty three interns and 90 pgy 2 and 3 residents at the Emory University School of Medicine received the care transitions curriculum during their required 4-week ambulatory rotation in the 2011-2012 academic year. Prior to the course, 50% of participants responded positively (“agree” or “strongly agree”) to their ability to identify factors that may impede a patient’s successful transition to the outpatient setting. Following the course however, 90% responded positively to being able to identify these factors. With regards to the question on ability to identify appropriate settings of care, 58% responded positively to being able to do this prior to the course. Following the course, 75% of the participants responded positively to this question. With regards to overall satisfaction with the curriculum, 95% of the participants rated it as excellent.

CONCLUSIONS

Medical residents’ confidence and knowledge related to care transitions improved after participating in this Care Transitions curriculum with a high satisfaction rate with the innovative method of teaching implemented.

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FACILITATE THE MEDICAL STUDENTS CLINICAL SKILLS TRAINING IN CHINA BY THE NATIONAL CLINICAL COMPETENCE COMPETITION OF MEDICAL STUDENTS

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PURPOSE

Teaching and assuring medical students' competence in fundamental clinical skills has been the key element of medical education. In recent years, the Ministry of Education of P. R. China has issued several regulations to improve the qualification of the clinical skills training in medical school. The National Clinical Competence Competition of Medical Students is one of such regulations, which was launched by the Ministry of Education of P. R. China in 2010. All the medical schools in China are encouraged to participate this competition. Here, we summarize the experiences of the past two competitions.

METHODS

The competition was hosted by the Ministry of Education of China annually since 2010. All the medical students who are in the clerkship are the eligible candidates of the competition. Each medical school will be represented by one team which has 4 students selected by the school. All the teams will participate the qualifying contest in different divisions. The winner team will go to the semi final and finals. The referees were chose from all over the countries, and trained shortly before the competition. The contest topics and answer were proposed by a group of senior specialist.

RESULTS

The 2010 competition was hosted by Ministry of Education of P. R. China, and undertook by Peking University, People's Hospital. There were 19 universities participated it. The 2011 competition was hosted by the Center for Clinical Education and Research of Ministry of Education of China. There were 112 universities or medical school participated the qualifying contest in 6 divisions separately. According to the score, the first quarter teams, or we called "top 32", were eligible to participate the Finals, which was held in Peking University People's Hospital in May, 2011. The 25 contest topics of the Finals covered the contents of the medicine, surgery, obstetrics and gynecology, pediatrics, Ophthalmology, Stomatology and Otorhinolaryngology. The fundamental procedures were tested (such as Venous puncture, Suture removal and Dressing change, Skin Suture, Defibrillation and CPR, STD examination, Plaster Fixation of fracture, Subclavian vein catheter, Pelvic Examination, Lumbar Puncture, Organic phosphorus poisoning rescue). The clinical reasoning, teamwork, decision making, communication, professionalism, laws and regulations were also accessed. These two competitions have played a significant role in the clinical skills training in medical students. First of all, it has played a guiding role, making the various medical colleges and students pay more attention to clinical skills training; Secondly, due to the clinical skills training were strengthened widely, not only the candidates who join the competition, but also the almost all the medical students were benefit from the competition. From the feedback of the domestic counterparts, skills competition indeed promotes the development of the standard clinical skills simulation training of medical students. Third, it has improved many commonly used simulation model, making it more realistic. However, there are still some problems, such as, how to promote all students' training through the competition.

CONCLUSIONS

The National Clinical Competence Competition of Medical Students can facilitate the clinical skills training in medical schools in China. It can improve the medical students' clinical competence and the quality of the simulation models.

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AN ACTIVE LEARNING APPROACH TO INTEGRATE ANATOMY INTO A RADIOLOGY CLERKSHIP

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PURPOSE

Radiology students must learn to recognize anatomical structures in a variety of imaging modalities (e.g., radiographs, MRI, US). This challenge is amplified when there is a chronological gap between their anatomy course and their radiology clerkship. To address these challenges we created a series of active learning sessions during the radiology clerkship in which students review particularly complex anatomical regions in the context of their radiological significance.

METHODS

Each session is designed to review a particular concept from multiple perspectives. Topics are chosen by weighting factors such as clinical importance (peripheral vascular anatomy, rotator cuff) and anatomical 3D complexity (pelvic floor, cerebral vasculature). Each session has a series of 4 stations, each guided by an anatomist or radiologist. These typically involve (1) building a model of the relevant anatomy, (2) identifying anatomical structures on radiologic images, (3) navigating radiologic cases at a computer workstation, and (4) identifying anatomical structures using a portable ultrasound. We have offered 1 session per radiology clerkship for the last 2 years.

RESULTS

Strengths of the program include the active nature of the exercises and the opportunity for students to thoroughly explore one topic from many relevant perspectives. An unforeseen positive outcome is that the Radiology residents report that they often learn during the sessions, which augments their enthusiasm for participating.

CONCLUSIONS

Our experience revealed few barriers to implementing these sessions, as the financial and time costs are minimal and the faculty and residents enthusiastically participate. This design may serve as a model for other approaches for integrating basic science into clinical clerkships.

Notes: _____

BACTERIA DETECTED ON SURFACES OF FORMALIN FIXED ANATOMY CADAVERS

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The purpose of this study is to determine if anatomy cadavers fixed in a formalin solution are a possible source of introduction of microorganisms into the anatomy laboratory. Routinely preserved cadavers were sampled for microbiological contaminants prior to examination and dissection by anatomy students. Regions sampled include the axilla, oral/nasal cavity, and inguinal/perineal region. Using conventional bacteriologic culture and identification methods our research group was able to successfully recover and identify a variety of organisms from all cadavers and in all regions tested. The results indicate that cadavers processed with 10% buffered formalin have viable organisms on their surfaces that can be a source of contamination of laboratory equipment and clothing. Given the diversity of bacterial species cultured, preserved cadavers used for anatomy education as well as research must be considered a possible source for dissemination of bacterial organisms. This study underscores the importance of standard infection and control protocols.

Notes: _____

CARDIOVASCULAR PHARMACOLOGY TEACHING IN A COMPUTERIZED DOG LAB.

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PURPOSE

To teach student how to obtain pharmacological data from live animals.

METHODS

The use of live animal labs was the mainstay of medical education for years. For many reasons these are no longer possible. Therefore, as part of the NIH-funded Omaha IOSP short course, dogs were chronically instrumented in order to demonstrate the effects of classic pharmacologic interventions in the conscious dog. All data were recorded for later analysis. Those drugs used were veratradine, isoproterenol, nitroglycerine, norepinephrine and epinephrine. After demonstrating the effects of each of these agents alone, an isoproterenol dose response curve was generated in doses from 0.0125 to 0.5 µg/kg. The dogs were then given 0.1 mg/kg propranolol . After 10 minutes isoproterenol was again given at doses from 0.5 µg to 2.0 µg/kg. The students were asked to determine the dose response curves for isoproterenol before and after beta blockade. Worksheets to be used in the collection and preparation of the dose response curves are provided on the DVD. This exercise allows the students to analyze data from a live animal and to see the instrumentation used in generating such data. The lab includes the same study done on 5 different animals. This allows students to analyze mean data from 5 animals or just do an analysis of a single experiment.

RESULTS

We have used this computerized dog lab for several years with the IOSP short course. The students involved come from a wide variety of backgrounds. Nevertheless, it has been an effective tool in helping them understand the basic principles of pharmacology. This year it was also used with the 1st year medical students with good results.

CONCLUSIONS

This lab is an effective tool in helping students learn how pharmacologic data can be obtained and analyzed. This lab is possible because ADInstruments made available a free program that accesses the original data files. (/downloads/updates/softupdates/LabChartReader-Windows/corporate/).

Supported by NIH: 1 R25 GM 074089-06, Short Course: Integrative and Organ Systems Pharmacology

Notes: _____

THE IMPACT OF A PRECEPTOR TRAINING MODULE ON STUDENT CLINICAL PARTICIPATION LEVEL

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Does increased confidence through medical simulation experience impact measurable educational outcomes for medical students? Our current data demonstrates that providing instructor-guided obstetrical simulation during year 2 of undergraduate medical education increases student confidence.

PURPOSE

This information was not surprising; however, we were interested in asking ‘If students are more confident, does that impact the level of student participation on their OB/GYN rotation?’ Thus the study aimed at capturing the correlation between student confidence levels and its impact on participation in obstetric skills during the 3rd year clinical clerkship. The results clearly yielded that although confidence was increased, there was no impact on the level of participation by students during a normal vaginal delivery and it was the preceptors that limited student participation. Based on these results, we are interested in asking the question: ‘Does training preceptors on what students know prior to their OB/GYN clerkship impact the level of student participation during obstetric procedures?’

METHODS

In order to address this question a 15 min training module for preceptors that demonstrates the skills taught and level of competency a preceptor can expect from a student entering their OB/GYN clerkship was developed and deployed to preceptors.

RESULTS

After module viewing, preceptors indicate that they were unaware of the level of student training and students will be allowed to participate at a higher level during obstetric skills.

CONCLUSIONS

As the study continues, the goal is to increase preceptor understanding of the training received by a student and determine if the increased understanding allows for engagement at a higher participation level during their clerkship experience.

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A WEB BASED AUDIO-VISUAL RESOURCE FOR USE IN CARDIAC AUSCULTATION TRAINING

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PURPOSE

Audiovisual aids can be extremely useful for learners attempting to correlate cardiac physiology with clinical findings on auscultation. The Department of Integrated Medical Education at Ross University School of Medicine (RUSM) needed to provide students with such an aid for use in the simulation lab during cardiac assessment with Harvey® The Cardiopulmonary Patient Simulator.

METHOD

This electronic demonstration will show how preexisting media elements can be repurposed within the framework of multimedia webpages to meet specific curricular needs. A web application was created to improve accessibility to audio-video clips of heart sounds, wave forms, and “filling animations” that are included in the Harvey® curriculum. Slides from a physiology lecture (delivered to first year medical students) featuring stethoscope placement, pressure/volume loops, and anatomical references were then added to the application. The application is integrated into a simulation-based cardiac examination to reinforce desired behaviors from a clinical and basic science perspective.

RESULTS

The RUSM Cardiac Auscultation Lab - Application has been successfully integrated into simulation sessions using Harvey®, and is used to instruct first year medical students on the clinical correlations of cardiac physiology. The application is being accessed hundreds of times per year by faculty, and thousands of times per year by students in both facilitated and self-study sessions.

CONCLUSIONS

The Cardiac Auscultation Web Application has been a useful method of providing faculty and students with audiovisual aids. Additionally, students have been able to use the application as a guideline for self-study to integrate basic science knowledge and clinical findings.

Notes: _____

PRIOR INDEPENDENT STUDY INCREASES EXAM SCORES IN AN INTEGRATED RENAL COURSE: PILOT STUDY

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PURPOSE

Prior research suggests that combining independent study with active learning activities improves exam scores, but little is known about the interactions between these approaches. We hypothesized that students who viewed basic content prior to interactive sessions would learn more than students who were not prepared for class. In order to test this hypothesis, we compared the exam performance of students who downloaded podcasts of basic content prior to in-class sessions with those who did not.

METHODS

The renal curriculum for second year medical students consists of independent study using audio and slide podcasts which provide the necessary content for subsequent in-class, team-based learning, small group study, simulations, and other learning activities. The schedule is designed so podcasts-audiovisual clips of instructors delivering content- are to be viewed prior to the active learning sessions. NBME style questions exhibiting predominantly 2nd through 4th order of Bloom's taxonomy were used to assess student performance. We compared end-of-module exam scores of students who: downloaded podcasts in advance of in-class activities (prior-downloaders); downloaded podcasts after in-class activities (post-downloaders); and did not download podcasts at all (non-downloaders).

RESULTS

Prior-downloaders had higher mean exam scores ($77.2\% \pm 1.03$ SEM; $n = 47$) than post- and non-downloaders combined ($70.1\% \pm 1.58$ SEM; $n = 15$; $p = 0.0009$). Prior downloaders performed better than post-downloaders ($70.2\% \pm 2.09$ SEM; $n = 10$; $p = 0.006$) and better than non-downloaders ($69.8\% \pm 2.58$ SEM; $n = 5$; $p = 0.028$). There was no statistically significant difference between post-downloaders and non-downloaders ($p = 0.91$). These results suggest that the observed effect was due to timing of content and not merely exposure to content.

CONCLUSIONS

Study of podcasts by second year medical students prior to in-class active learning activities appears to be associated with increased mean exam scores.

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BRIDGING THE GAP: AN EVALUATION OF A STANDARDIZED TRAINING PROGRAM FOR RADIATION THERAPY STUDENTS, A PILOT PROJECT

Brian Liszewski, Lisa Di Prosopero, Laura D'Alimonte, Odette Cancer Centre, Toronto, Canada

PURPOSE

The use of 3D volumetric anatomy imaging is an essential component of radiation therapy clinical practice. Through the aid of computer based programs, daily volumetric images are used to guide radiotherapy treatments to the target and to ensure the accuracy of treatment within the limited treatment margins. The undergraduate radiation therapy program is a 3 year second entry professional program - of which the first two years are didactic followed by a 30 week clinical practicum. The transition period from didactic learning to clinical training requires students to integrate their foundational knowledge from siloed learning to applying it clinically from a holistic perspective. An interactive case based computer training program was developed to support students through this transition period. The program was designed as five small knowledge labs (modules) that built on each other and incorporated interactive teaching and learning. The aim of our pilot was to understand the usefulness and benefit of computer aided learning and to measure practical impact to their knowledge and skill.

METHODS

All Radiation Therapy (RT) students were invited to participate in this case based computer practical training program. The training program consisted of five 30 minute modules. Each module was designed to build on each other and was run as a small group interactive learning sessions. A mixed method approach was utilized. Participants completed a four question survey using a four point Likert scale and one open-ended comment box both pre- and post- training. The survey was designed to capture self-assessment of confidence in cross sectional anatomy knowledge; user perception with volumetric imaging software manipulation with a norm and out of norm clinical case study; and current volumetric imaging training satisfaction.

RESULTS

Ten RT students participated in this training program. Overall, all students rated the training modules as excellent. Prior to the sessions, 20% of participants did not feel that they had enough volumetric image training. After completing the modules, this dropped to zero with all participants acknowledging receiving ample (self-identified) training. Confidence in cross sectional anatomy knowledge remained unchanged post training. All students strongly agreed/ agreed that they had adequate cross sectional anatomy knowledge (from their didactic studies) to perform volumetric image registrations. Ability in performing an "easy" versus "challenging" volumetric image registration improved (70%) after the training program.

CONCLUSIONS

Embedding case based computer training programs throughout clinical placement is critical to successfully bridge the knowledge gap between didactic learning and practical training. Our initial assessment of an interactive on-line training pilot program was positive. The success of this program is important for the improved integration of pre-licensure students into future clinical practice.

E-LECTURES: A COMPLEMENTARY TOOL FOR CONDUCTING PEDIATRIC BOARD REVIEW CONFERENCES

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PURPOSE

The “small group” is a weekly faculty led board review conference for pediatric residents at TTUHSC, based on the American Board of Pediatrics (ABP) content specification. Historically, this approach has had inconsistent resident engagement. We have piloted an online lecture series as a complementary tool for conducting these review conferences. Our objective was to examine the feasibility and acceptability of this online learning approach and to determine if it will promote engaged learning among pediatric residents.

METHODS

The software Captivate® was used to create lectures which were made available online for residents to review prior to the conferences. This approach features guided independent study and a group discussion with expert clinicians. This decreases the amount of conference time spent covering didactic information and facilitated a more dynamic discussion. At the end of each conference, residents are asked to complete anonymous questionnaires that evaluate the acceptability and feasibility of this approach and their satisfaction with the new method.

RESULTS

Our preliminary results demonstrated acceptability and feasibility of this new approach among pediatric residents. The residents feel having the lectures available online provides them easy access and background knowledge of conference topics, better preparing them for the discussion. They also reported improved group participation and enhanced learning. Attendance in conferences has also improved substantially.

CONCLUSIONS

We have learned that an online lecture series is an effective complementary tool in conducting board review conferences. In the future, we will measure its impact on residents’ academic success based on in-training exam scores and pediatric boards pass rate.

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CONVERSION OF CLINICAL PRESENTATION SCHEMES FROM A TEACHING TOOL INTO A LEARNING TOOL

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PURPOSE

Our school is a new medical school with a clinical presentation (CP)-based curriculum. This curriculum uses a scheme inductive reasoning approach to develop problem-solving skills. Currently, schemes are used by a faculty as teaching tools during contact sessions. The purpose of this study is to create extended versions of the schemes and evaluate their usefulness as learning tools.

METHODS

Schemes were modified to include key predictors (critical parameters needed for decision making at the branch points). Scheme file format was changed to Microsoft OneNote to allow linking of differentials (disease or disease groups) and key predictors to notebook pages containing their descriptions. Definitions and normal values for laboratory parameters were also added. As a first step, schemes were distributed to students for informal evaluation.

RESULTS

Inclusion of key predictors was expected to help students understand the logic behind the scheme flow, learn without further assistance, and enable students to make correct decisions at scheme branch points when solving clinical vignettes. Addition of disease descriptions was also expected to make the schemes a valuable tool for quick review of the material. Initial students' perception of the usefulness of the extended schemes was good as evidenced by positive evaluations. In particular, students appreciate the time-saving feature of the new schemes.

CONCLUSIONS

Preliminary results provide justification for a more extensive study aimed at evaluation of the effectiveness of the extended CP schemes as a reference tool for solving clinical vignettes and as review material for exam preparation.

Notes: _____

E-LEARNING SPECIALIZATION TO SCALE UP PROFESSIONAL EDUCATION IN PRIMARY CARE DENTISTRY IN BRAZIL

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PURPOSE

The Brazilian Ministry of Health has implemented a Policy on Permanent Education in Health in 2004. One of its main goals is to develop strategies that include the qualification of professionals. One of the actions tackling the issue of low qualification of primary health care workers is the Open University of the Public Health System (UNASUS). It offers specialization degrees in Primary Care to Physicians, Nurses and Dentists through E-learning. This initiative is developed in partnership with 16 Universities, one of which is the Health Sciences University of Porto Alegre (UFCSPA). The objective is to describe the E-learning Specialization in Primary Care for Dentists offered by UFCSPA.

METHODS

The course enrolled 200 Dentists working in Primary Care in the State of Rio Grande do Sul, Brazil. The specialization consists of 3 sections: 1) 10 hours for E-learning skills, 2) 180 hours of Public health where Dentists, Nurses and Physicians study in electronic classes together, and 3) 200 hours of Primary Care Dentistry. This section is developed using an evolving methodology that consists of complex cases that address dentistry contents under the context of a simulated city. Dentists are expected to develop portfolios that include cases of their daily experiences and contents of the course.

RESULTS

UNASUS represents an important effort to scale up the formation of specialists in Primary Care in Brazil. The initiative is currently under development at UFCSPA and the 200 Dentists are already enrolled. The first group is attending Primary Care Dentistry content, with a small abandonment, meaning that the course may reach its goal.

CONCLUSIONS

Currently, an evaluation of the impact of the E-learning course on Dentist's quality of care provision is being developed.

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DETERMINING FACULTY AND STUDENT READINESS FOR AN ONLINE MEDICAL CURRICULUM

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PURPOSE

The dynamic nature of the Internet offers new opportunities for medical learners by presenting several key advantages for the dissemination of medical curricula online. The purpose of this study was to determine technical and pedagogical readiness of faculty and students for the feasibility of offering online medical courses.

METHODS

This case study was conducted on the main campus of the Universidad San Francisco de Quito using both quantitative and qualitative methods of inquiry. Data were gathered using online readiness surveys of faculty (10) and students (25), semi-structured interviews with each faculty, and a focus group interview with eight students.

RESULTS

Based on the descriptive statistics and thematic content analysis, the findings showed that faculty and students had positive attitudes towards online courses and overall their technological readiness was evident, but the faculty’s knowledge about online teaching pedagogy and instructional design was insufficient. The results also showed several positive aspects of assessing readiness for online education and provided key information for developing solutions, focused on the needs of the faculty and students, for initiating online medical curriculum. Time and budget were reported as the two biggest barriers to develop and implement online courses.

CONCLUSIONS

Assessing the readiness of faculty and students to participate in online instruction can be challenging, but it is an essential step to get each individual’s input to address common needs and concerns. This process is very helpful in identifying critical success factors, choosing the right approach and applying timely strategies to ensure smooth transitions to new teaching and learning modalities.

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A POSTGRADUATE COURSE OF FAMILY HEALTH BASED ON COMPLEX CLINICAL CASES

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PURPOSE

The Specialization Course in Family Health UFCSPA is part of the UNA-SUS Project which aims to meet the needs of training and continuing education for professionals in the Brazilian Health System by using distance learning. This course is divided into two main areas: Public Health and Clinics. A highlight of the course is the implementation of a new methodology to address the clinical activities using complex cases. These cases included matters of dentistry, nursing and family medicine.

METHODS

The UFCSPA initiated in 2011 a specialization in Family Health that currently has 700 students and will reach 1000 in 2012. The students are doctors, nurses and dentists working in the public health care system in Brazil. The intended use of problem-situations was to simulate the daily clinical practice of student-worker. Each case was built by focusing on the three professions and was set in a fictional town, created especially for the course. The second half of the course consists of 30 clinical cases, addressing the essential content to practice in primary health care. The clinical material is presented in different formats such as video, podcasts, text, lectures, comic strips, all this to maintain interest and attention of students at the distance learning.

RESULTS

This methodology has resulted in increased student motivation, and consequently in a lower dropout rate for distance learning courses. Students have positively evaluated the course and approved the use of clinical cases and the setting of these cases in the fictional town.

CONCLUSIONS

The use of complex clinical cases on a multidisciplinary team approach can bring the content covered in a distance learning course closer to the daily practice of health professionals and improve their learning.

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EVALUATION OF LEARNING IMPACT AND STUDENT PREFERENCE FOR ACTIVE AND PASSIVE INDEPENDENT LEARNING MODULES

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PURPOSE

There are pressures from administration and learners to integrate online learning materials into curricula. The optimal format for online delivery is unknown. We sought to identify whether learners preferentially selected active, passive or both learning options when given a choice, whether either option was differentially associated with short-term performance gains or longer-term retention of material, and whether student performance on online modules correlated with performance on course examinations.

METHODS

We developed seven online modules for a 1st-year medical student neurological sciences course ending in March 2012. Each module included two options: 1) an online PowerPoint lecture with audio commentary and 2) an assignment designed to help students organize information on a given topic and apply this material to clinical scenarios. The modules were presented to students using Blackbag, a web-based curriculum management system. Students completed a pretest for each module prior to choosing a learning option. They then completed one or both of the learning options and a posttest following the module. Student short-term performance gains were calculated from pre and posttest scores. Student longer-term retention of the material was assessed by performance on selected items of a comprehensive final examination. We assessed correlation of student performance on the online modules with performance on the course examinations.

RESULTS

We will describe student choices and comments on the curriculum, pre and posttest performance, and correlation between performance on the online modules and the course examinations.

CONCLUSIONS

This project provides insight into how educators can effectively integrate online learning into course curricula.

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EVALUATION OF A RESPIRATORY PHYSIOLOGY IBOOK DEVELOPED USING IAUTHOR APPLICATION

David W. Rodenbaugh and Minhee Seo. Oakland University William Beaumont School of Medicine, Rochester, MI, USA

PURPOSE

Many medical education courses have been increasingly relying upon digital materials such as web-based textbooks or learning management systems to disseminate content. Even though major publishers provide various types of digital education resources, limitations of this format still remain. For example, they can only be read and require continual internet access. There is no interactive feature such as adding and saving notes. In addition, the materials are not customizable by the instructor to best fit a specific course. A free app, iAuthor, allows faculty to create engaging customized iBooks. This abstract describes development and evaluation of the effectiveness of using the iBook.

METHODS

An iBook on Respiratory Physiology was created and made available to year one medical students for Respiratory Integrative Foundations of Clinical Practice. A survey will be administered upon completion of the course to evaluate the effectiveness of this tool.

RESULTS

Using iAuthor, an iBook can be easily created that integrates text, graphics, presentations, videos, assessments and/or navigation links relevant to a course. Importantly, the student can use the iBook on iOS devices independent of the internet. Students can also perform functions such as add notes, or generate flash cards. Student comments and survey results on the utility of the iBook will be also presented.

CONCLUSIONS

Using this technology as a teaching material has advantage in that instructors can provide focused, centralized, interactive course packets for medical students. Rather than posting text or PDF documents on-line or linking to ebooks, this resource can be utilized to offer students mobile, multimedia instructional materials that extend beyond the simple textbook.

Notes: _____

USING A WEBAPP TO MEASURE AND DETERMINE THE RATIONAL DRUG-CHOICE PROCESS OF STUDENTS AND EXPERTS

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PURPOSE

Pscribe (<http://www.pscribe.eu/>) is a new interactive multicentre pharmacotherapy e-learning webapp based on the WHO-6Step patient-treatment-model (step by step approach to practice the principles of rational prescribing). The aim of this study is to test Pscribe as an instrument to automatically register data during the drug-choice process in order to assess knowledge and skills in drug prescribing.

METHODS

Using Pscribe three groups of undergraduate students and one expert group solved the same patient-case problem under specified experimental conditions. The drug-choice process was registered using 23 variables for drug-choice behaviour and 2 variables for drug-therapy choice. Data were collected, analysed and visualised using Excel, SPSS, MATLAB.

RESULTS

The 3 student groups differed significantly ($p < 0.01$) from the expert group in the duration of the drug treatment step (3.2) of the WHO model and in the number of drugs considered. The drug-choice scores correlated with the education level of each group. Visualization of information of the 6 step trajectory by a matrix method in the four groups showed different step-patterns.

CONCLUSIONS

Pscribe can be used as an efficient measuring instrument to register the drug-choice process. Consulted drug information and drug-choice scores reflect knowledge and cognitive skills in drug prescribing. Analysis of step patterns may provide insight in the way drug choices are made.

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DEVELOPMENT OF INTERACTIVE SIMULATION VIDEO CASES FOR MEDICAL STUDENTS IN THE LARGE GROUP SETTING

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PURPOSE

Patient simulation using high fidelity simulators has become an increasingly integrated and important part of medical education. However, the cost and availability of such an experience can be prohibitive and is usually limited to small groups. The aim of this project is to develop interactive video case simulations that provide a similar experience to a larger group setting while maintaining educational and decision making benefits.

METHODS

This project focuses on the first year medical school curriculum. Clinical scenarios for each of seven modules (Patient Doctor and Society, Fundamentals I and II, Cardiology, Pulmonary, Gastrointestinal and Renal) were developed with a team of student actors and the use of the simulators and staff at the Children's Hospital Pediatric Simulation Center. These scenarios were then acted out and recorded. The intent was to have serial vignettes in a "choose your own adventure format". This allows the class to make decisions using the audience response system or visual majority that will then change the course of the video and will in effect allow the class to care for the patient. In the future these video case presentations will be edited into websites that can be used universally.

RESULTS

Programming interactivity into video cases provided a unique set of software compatibility problems. The goal of this project is to make these cases as portable as possible. The decision was made to edit the video cases to be accessible online, providing almost universal availability to anyone with internet access.

CONCLUSION/FUTURE DIRECTIONS

Cases will be linked to evaluations and pre- and post-tests via survey technology evaluate effects on the learning experience and knowledge retention.

Notes: _____

AN E-LEARNING INTERVENTION TO ENHANCE MEDICAL STUDENT'S COMPETENCE IN OXYGEN DELIVERY METHODS

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PURPOSE

Student performance in a comprehensive clinical simulation exercise at the end of the 3rd year had demonstrated some deficiencies in oxygen delivery methods. A tutorial exercise was developed to remedy this issue. This study assessed if an e-learning intervention improved the student's competence in oxygen delivery methods during the comprehensive clinical simulation lab.

METHODS

An independent study tutorial describing proper oxygen delivery methods was developed and made available to all 3rd year students through our course management system. The tutorial program consisted of a Pre-test, video illustrating the proper use of oxygen delivery equipment and a Post-test. The Pre-test was required to be completed before the video was made available and the Post-test was only available after the video was viewed. The Post-test and the course evaluation included questions regarding student satisfaction. Video recording of the group simulation exercises were made of the classes before the tutorial was introduced and after for comparison.

RESULTS

Of the 217 students in the course, 136 (63%) completed the Pre-test and 119 of those completed the Post-test. There was a significant improvement in performance on the Post-test compared to the Pre-test (87 ± 14 vs 61 ± 13 ; paired t-test, $p < 0.001$). There was an overwhelming perception of value with 92% responding favorably that the program increased their knowledge of oxygen delivery methods. A large majority (88%) were satisfied with the ease of use of the tutorial video. Evaluation of the video records did not reveal any appreciable differences, though a number of the recordings were not useable and could not be assessed with our scoring rubric.

CONCLUSIONS

The results of the study demonstrate that students who utilized the tutorial program improved their knowledge of oxygen delivery methods. A limitation of this study is that we were unable to ascertain if the knowledge translated into an improved performance in the simulation exercise. This study does show that an independent learning module can enhance medical students' education.

Notes: _____

VIDEO REVIEW IMPROVES COMPETENCY PERFORMANCE SKILLS ON OBJECTIVE STRUCTURED CLINICAL EXAMINATION (OSCE)

John C. Pearson, Gary L. Nieder and S. Bruce Binder, Wright State University Boonshoft School of Medicine, Dayton, OH, USA

PURPOSE

Although instructional video plays a major role in medical curricula, its educational effectiveness continues to be measured primarily through subjective evaluation by the students who use it rather than through empirical investigation. The present study used experimental design to determine whether digital video recordings help medical students learn to perform clinical skills more effectively.

METHODS

Over a 5-year period (2006-2010), we compared OSCE performance scores of Year 1 medical students who reviewed videos of musculoskeletal exam instruction prior to skills testing versus those who did not. All students received the same classroom instruction in performing all physical exam procedures. Students in the classes of 2008-2010 had the additional opportunity to view video recordings of a physician performing the same physical exam competencies posted on an Internet server for voluntary use. We tracked video usage for each student through analysis of server log entries. We compared OSCE scores using One Way Analysis of Variance (ANOVA) with Bonferroni's Multiple Comparisons test.

RESULTS

Students who viewed videos prior to OSCE testing ('users'; N=194) performed significantly higher in competency skills ratings than those who did not ('non-users'; N=108) (mean=19.30 v.18.93; $p<0.05$). Video 'users' also had significantly improved scores compared to students in the classes of 2006-2007 who had no opportunity for video review before testing (N=201; mean=18.92; $p<0.05$). The performances of 2008-2010 'non-users' showed no improvements over those of students in the 2006-2007 classes. Among the 2008-2010 video 'users', there was no correlation between the number of video files viewed and OSCE performance scores (linear regression $R=0.950$; $p>0.05$). Most video use occurred in the week immediately preceding the OSCE.

CONCLUSIONS

Online video review prior to OSCE testing is effective in helping first-year medical students learn clinical physical examination skills. The data further suggest that this benefit is not due to the number of videos reviewed by the student.

Notes: _____

TRADITION VERSUS VIRTUAL ANATOMY INSTRUCTION: PREFERENCES, PERCEPTIONS AND PERFORMANCE AT A PRIVATE MEDICAL SCHOOL IN ECUADOR

Marco Fornasini¹, Iván Sisa¹, Eduardo Herrera¹ ¹Universidad San Francisco de Quito, Quito-Ecuador

PURPOSE

During the last ten years there has been a major advance in the use of multimedia software for medical education, including anatomy. Cadaver use involves availability, logistical and biological problems. The aim of the study was to assess preferences, perceptions and performance of traditional anatomy teaching (TAI) versus virtual anatomy instruction (VAI)

METHODS

All second year medical students (n=47) whose first year of study was based exclusively on TAI, while their second year used VAI were given a self-administered survey. The TAI involved structured cadaver lab work to recognize anatomical structures and perform dissections. The VAI involved the use of interactive software, anatomical models and video. The students' first and second year anatomy grades were compared.

RESULTS

The mean age was 19.2 ± 0.8 and 53.2 % were female. TAI was perceived as superior learning method by 68.1% of the students, with 70.2% reporting increased satisfaction with the method in comparison to VAI. A 55.3% students believed that they performed better using VIA, which is in agreement with the results of actual performance; $79.8\% \pm 9.9$ for TAI and $81.7\% \pm 8.9$ ($p=0.316$) for VAI. When using VAI, anatomical models and videos were the preferred learning tools; 66% and 63.8%, respectively. Only 40% of students selected software as one of their preferred learning tools.

CONCLUSIONS

The TAI was preferred by most students; however performance was a little better with VAI. Among the VAI teaching tools, students preferred videos and the anatomical models. The limitations of this study are the VAI software was not fully implemented during the course of the study and student's scores in anatomy are not directly comparable from year to year.

Notes: _____

TEACHING THE CLINICAL RELEVANCE OF BASIC SCIENCE CONCEPTS BY USING SHORT STUDENT PEER PRESENTATIONS ON VIDEO: WORK IN PROGRESS

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PURPOSE

For many medical students it is difficult to understand the clinical relevance of basic science concepts they encounter during courses like Anatomy, Physiology and Biochemistry. Even when patient problems and clinical cases are included in the basic science curriculum, it appears to be hard to foresee when and why they will need that basic information later on in their studies. At Leiden University Medical Center we tried to create this awareness by offering the students short digital instruction videos during the basic science modules.

METHODS

The clinical third year courses Respiration, Psychopathology and Nervous System were included in the project. From these three courses, five clinical syndromes with a lot of basic science background were identified: Diplopia, Delusions & Hallucinations, Lower Facial Paresis, Acid Base Balance and Alveolar Hypoventilation. For presenting these syndromes, six third year medical students were recruited. These students prepared a short presentation on the topic with guidance of a senior clinical medical educator. The presentations were recorded at the Center for Innovation in Medical Education at LUMC.

RESULTS

The project resulted in 5 short video presentations all under 5 minutes in length. As a pilot study the recorded presentations on Alveolar Hypoventilation and Acid Base Balance were incorporated in the Respiration course. Using third year peers to present the clinical relevance of a basic science concept turned out to be effective. Third year students do remember very well what they felt to be difficult to understand in their first and second year basic science modules. As a result they feel very motivated and responsible to teach their younger peers. They also managed to explain the clinical relevance of basic science concepts explicitly. Expert teachers often do this more implicitly based on pattern recognition skills. Developing the video presentation turned out to be time and cost efficient. The digital materials can be repeated by the students over and over, independent from time and place.

CONCLUSIONS

Presenting difficult basic science concepts in relation to clinical syndromes by third year medical students turns out to be effective. This summer the recorded materials will be implemented as blended learning materials in the three clinical courses and will be made available to the students through the Blackboard Learning Environment. At the end of each course the presentations will be evaluated using a survey among the students.

Notes: _____

STUDENT DOCTOR NETWORK: SOCIAL NETWORK SEMANTIC ANALYSIS

Ryan Kirk and Amanda Fales-Williams, Iowa State University, Ames, Iowa, USA

PURPOSE

Websites such as Student Doctor Network (SDN) provide professional and pre-professional students in medical fields an online community for information exchange and support. Awareness of student discussions on medical-specific social media sites may help administrators recognize themes relating to academic stress, external pressures, debt awareness, and self-imposed professional expectations of their peers.

METHODS

We accessed data from thousands of Pre-Veterinary forum posts on SDN, representing roughly 1000 users' comments during 2011. We examined how users were interconnected via forum conversations using first-order logic to propagate connections. The data was parsed, cleaned and organized using natural language processing techniques. Through faceting the data and using probabilistic latent semantic analysis, we statistically examined temporal and semantic patterns within these data. Finally, we used tools from artificial intelligence to graph the five statistically-derived most important concepts connecting each user and forum into a single network diagram.

RESULTS

The various data distillation techniques employed reduced the data from tens of thousands of data points into a few hundred interconnected ideas representing how socially constructed concepts are semantically and temporally interconnected.

CONCLUSIONS

This technique allows a single graph to display the type, importance, and number of connections, and the amount of data for each node. This allows subjective interpretations of student discussions to be visualized semi-quantitatively. For instance, SDN Pre-Veterinary conversations are overall focused on veterinary school application (process-centered) rather than on specific veterinary concepts (content-centered).

Notes: _____

SOCIAL MEDIA AS A SUPPORT FOR REFLECTIVE PRACTICE AMONG FIRST-YEAR MEDICAL STUDENTS

Mary T. Johnson, Ph.D. Des Moines University College of Osteopathic Medicine; Maggie Blackburn, M.D., Terri Johnson, M.S., Debralee Laseur, B.M. Florida State University College of Medicine, FL, USA

PURPOSE

This study examined the use of the Yammer social networking platform for first year medical students to share experiences, reflections and assignments in a clinical and experiential learning course. Social networking can enable persistent communication that enhances learning. We used qualitative research methods to analyze student messages for evidence that medical students construct meaning through brief communications mediated by social networking.

METHODS

120 first year medical students spent 3 weeks in an emersion experience with community-based primary care preceptors, supplemented by a distance learning component. Preceptors were spread across a wide geographical area. Students were asked to share their experiences using microblog reflections posted on Yammer. Reflections were evaluated by coding and thematic analysis using NVivo software.

RESULTS

Yammer provided privacy, ease of access and flexibility that allowed posting of discussions, documents and video assignments. There was a spirited exchange of ideas, reflecting the power of social networking to enhance engagement. The course director was able to encourage professionalism and facilitate social presence. Student reflections revealed knowledge building through discussions integrating clinical experiences with didactic coursework in the basic sciences.

CONCLUSIONS

To our knowledge, there are no descriptions in the medical education literature of pre-clerkship courses that incorporate social networking. Many faculty members are scarcely aware of social media. Institutions struggle with the complexities of ensuring professionalism within this communication context. Using Yammer in a low-stakes clinical learning environment has helped bridge some of these gaps.

Notes: _____

ACTIVE-LEARNING MODEL-BASED EXERCISES THAT REINFORCE KNOWLEDGE IN ANATOMY

Mary Bee¹, James Montante², William C. Forbes¹, and Judith M. Venuti¹ ¹*Oakland University William Beaumont School of Medicine, Rochester, MI 48309 U.S.A.* ²*University of Detroit Mercy, Detroit, MI, USA*

INTRODUCTION

The goal of every good educator is to teach students in an engaging manner that stimulates learning and critical thinking while promoting retention of the material.

METHODS

With this goal in mind, we incorporated a number of active learning exercises to engage students during anatomy sessions that use common household items to illustrate anatomical concepts and relationships. Exercises included the use of Playdoh to represent the different parts of the colon, and felt, cut into the shape of muscles, to facilitate student’s visualization of muscle attachments to bones. Students also used pipecleaners and yarn to simulate blood vessels and nerves and demonstrate neurovasculature relationships.

RESULTS

Students who engaged in these activities exhibited significantly higher grades on both the lecture and laboratory examinations, supporting the notion that these activities enhanced their learning compared to that of a control group that did not participate in the same activities (p<0.05).

CONCLUSIONS

We advocate the use of hands-on activities to engage students in learning anatomy.

Notes: _____

SERVICE LEARNING IN ANATOMICAL SCIENCES

Mary Bee¹, James Montante², and Rami Nazar². ¹Oakland University William Beaumont School of Medicine Rochester, MI, 48309, ²University of Detroit Mercy Detroit, MI, USA

INTRODUCTION

Service learning is a form of project based experiential learning that enhances the student’s assimilation and integration of the course material in a way that is not possible in the traditional classroom. In service learning, the motivation for taking ownership of the project is the act of helping other people. This is particularly relevant to students in health care fields.

METHODS

University students presented anatomy material from their lecture course to at-risk high and middle school students in the urban environment. Effectiveness of the program for the client institutions was assessed by pre and post tests and feedback from the instructors and students at those institutions. Effectiveness of the program for presenters was assessed by comparing exam scores within the class, as well as pre and post reflections.

RESULTS

Preliminary results indicate that this was a positive experience for everyone involved. Students presenting their course material gained experience in presentation skills, an appreciation for the difficulties of those living and teaching in the urban environment, and the depth of knowledge that can only come from teaching a subject. Students in the client institutions were able to see that the material taught in their course was relevant and valued outside of their classroom, that people from different ethnic and social economic groups could work together to accomplish something worthwhile, and that many of the presenters were similar to themselves in age and ethnicity. Together, these lessons make the idea of attending an institution of higher learning a very real and concrete option.

DISCUSSION

We were pleased to find that the incorporation of this service-learning project was a beneficial experience for everyone involved.

Notes: _____

IMPLEMENTING A LAPAROSCOPIC SURGICAL SKILLS CURRICULUM INTO A SURGICAL RESIDENCY PROGRAM

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PURPOSE

Simulation exercises are increasingly being used for teaching and assessing surgical skills, yet little has been reported on how these experiences translate into operative laparoscopic skill in osteopathic surgery residents. We hypothesize that use of the Fundamentals of Laparoscopic Surgery (FLS) tutorial with a simulated skill experience for surgical residency training will result in an increase in resident skill level, intra-operative proficiency, and improved resident confidence when assessed during serial porcine cholecystectomy procedures.

METHODS

Three first year osteopathic surgery residents participated in the study. Three serial laboratory sessions took place over a 4 month period with participants completing the FLS between the second and third session. Each session consisted of the residents individually performing laparoscopic cholecystectomies on live anesthetized pigs with controlled assistance from upper level residents. Resident skill was assessed by attending surgeons using the previously validated Global Assessment of Laparoscopic Skill (GOALS) at each session. Proficiency was measured by operative time. Resident confidence was assessed by surveys filled out immediately after session. This study was approved by the appropriate institutional oversight committees.

RESULTS

GOALS scores, intra-operative proficiency, and resident confidence all increased with each session. Improvements in the five areas assessed by GOALS: depth perception, bimanual dexterity, efficiency, tissue handling and autonomy occurred with each laboratory. Proficiency, (mean time to completion) also improved with each session (62.5 to 36.5 min). Resident surveys showed an appreciable increase in skills and confidence. All residents rated their experience as highly beneficial and useful in their careers as surgeons.

CONCLUSIONS

Results of this small study correlating simulated learning with improved operative performance during porcine cholecystectomy suggests a value for implementation of FLS into osteopathic surgery residency programs.

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ASSIGNMENTS FACILITATE STUDENTS' ACTIVE EXPLORATION OF VIRTUAL SLIDES AND ENHANCE HISTOLOGY TEACHING

Susan Gilmer, University of Saskatchewan, Saskatoon, SK S7N5E5 Canada

PURPOSE

We have recently introduced virtual slides into the laboratory portion of histology instruction for first year medical/dental students. To facilitate the students' interaction with the slides we require them to submit assignments using these slides. We surveyed students at the end of each of two years to determine if the students found these assignments useful in learning histology and worth the 2 to 7 hours they may spend completing them.

METHODS

The virtual slides are high resolution scans of our histology slides using our Aperio system; links to the virtual slides are delivered through bblearn with other course materials. In the assignments we ask students to identify and label structures or cells on images they capture from the virtual slides. To help them complete their assignments, students are provided with laboratory write-ups and have access to a study room housing microscopes with glass slides and accompanying labeled images. Instructors are available to answer questions on an informal basis. Students often work cooperatively, but submit their own assignments individually. In order to assess students' response to this approach, students were surveyed.

RESULTS

Both informal and formal surveys assessing the use of these assignments have been positive. In a scale of 1 (strongly disagree) to 10 (strongly agree), students reported they found the assignments useful at a rating average of 9.04 and were worth the time spent at a rating average of 8.16. Positive written feedback reinforced these ratings.

CONCLUSIONS

Requiring students to actively interact with the virtual slides is an effective use of virtual slides.

Notes: _____

UTILIZATION OF A MULTI-DIMENSIONAL MODEL TO TEACH MICROBIOLOGY IN AN ORGAN SYSTEMS COURSE

M.M. Harriott, Oakland University William Beaumont School of Medicine, USA

PURPOSE

Microbiology is often difficult for medical students to master. Students often memorize rather than analyze, impairing retention of knowledge. Didactic lectures may not be the most effective method of teaching microbiology. This study was designed to develop an organ system based microbiology unit to promote meaningful learning by integrating: 1) independent study 2) didactic lecture 3) active learning.

METHODS

A microbiology unit for a 1st year neuroscience course was developed incorporating the above components. For the independent study, a guide was distributed 2-weeks prior to the lecture, consisting of tables, pictures and short cases covering major CNS pathogens. The didactic lecture emphasized pathogenesis, epidemiology and microbiologic diagnosis of CNS infections. The active learning consisted of a "Who Wants to Be a Millionaire" type game. Students were divided into groups, and each received identical sets of case studies. After intra-group discussions, teams responded to test questions of varying value using an audience response system. Higher performing teams were awarded prizes.

RESULTS

Instructor preparation was more intensive than for a traditional lecture. Preliminary data show most students completed the independent study, and both the study guide and interactive session were useful for exam preparation. Future studies will examine student feedback and performance on exams and boards to assess the utility of this multi-dimensional unit.

CONCLUSIONS

Incorporating independent study, didactic lecture and active learning accommodates multiple learning styles. Group activities promote critical thinking skills and collaboration in medicine. Lastly, incorporating microbiology into an organ systems course allows students to contextualize microbiology.

Notes: _____

DEMISE OF THE MEDICAL MICROBIOLOGY TEACHING LABORATORY?

Janet Hearing and Wei-Hsin Lu, Stony Brook University, Stony Brook, NY, USA

PURPOSE

The “wet” microbiology lab has long been an important element of undergraduate medical microbiology courses. Despite overwhelming support for active learning strategies among medical educators, there is concern that many medical schools have eliminated their wet microbiology lab. This study was conducted to determine the way in which medical students are taught laboratory medicine in microbiology and to document curricular content and trends in instructional methods.

METHODS

Preclinical course directors responsible for teaching microbiology at 131 medical and osteopathic medical schools in the U.S. and Canada were invited to participate in this study. Seventy course directors (53% response rate) completed an online survey.

RESULTS

Since 2002, the number of “wet” microbiology lab hours decreased at 43% of responding schools. Thirty six percent of the respondents’ courses do not include a “wet” microbiology lab and over half of these schools eliminated their lab in the past ten years. Reasons for a reduction or elimination of the teaching lab were limited resources (money, instructional staff, facilities; n=15), reduced teaching hours (n=10), curricular changes (n=9), and irrelevance of having students learn to perform diagnostic work (n=4). There was a negative correlation between class size and the number of hours of lab instruction although not significant. Computer-assisted instruction is used to teach laboratory medicine in microbiology at 39% of the schools and is more likely to be used with a teaching lab than without. Additional descriptive data will be presented that includes the types of diagnostic tests performed in the teaching laboratories.

CONCLUSIONS

The way in which laboratory medicine in microbiology is being taught to preclinical medical students has undergone significant change in the past decade. The forces driving this change are frequently unrelated to a desire to improve the ability of students to learn this subject matter. There is a need to evaluate the impact of these changes on students’ learning experiences and outcomes.

Notes: _____

**POTENTIAL PATHOGEN TRANSMISSION ON MEDICAL STUDENT ANATOMY
LABORATORY CLOTHING**

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PURPOSE

Despite great advances in the field of medicine and sanitation, nosocomial infections remain a very common and serious issue. Many of these problems can be avoided by simple hand washing; however, other modes of spreading pathogenic microbes are possible. We set forth to determine if the setting of an open cadaver laboratory was conducive to transmission of pathogens such as *S. aureus*, *S. pyogenes*, and *E. faecalis*.

METHODS

Participating students were asked to wear their laboratory coats at all times in the anatomy laboratory and launder according to their normal schedule. Culture samples from the sleeves and front of the laboratory coats were obtained using sterile swabs concentrating on the participant's dominant side. Sample were collected before any engagement between the students and cadavers, and after the gastrointestinal tract was explored. The samples were then inoculated and cultured, and microorganisms were isolated on specific growth agars.

RESULTS

In the initial sampling, which was done before students had cadaver contact, *S. aureus* was found on the garments of 13 of the 67 students, 5 students had *S. pyogenes*, and none had *E. faecalis* on their laboratory coats. In the lab coat sampling done after the gastrointestinal tract was exposed, 19 students of the 67 students were found to have *S. aureus*, 8 had *S. pyogenes*, and 4 had *E. faecalis* on their laboratory coats.

CONCLUSIONS

While it hard to attribute a specific source of transmission of *S. aureus*, *S. pyogenes* and *E. faecalis* to laboratory clothing from this study, the results do support the need for further investigation. In addition, the findings indicate that laboratory garments worn in the anatomy laboratory setting are not sterile and harbor potentially pathogenic microorganisms.

Notes: _____

DEFENSE AGAINST INTRACELLULAR MICROBES-ASSEMBLING THE BIG PICTURE TOWARDS COMPETENCY IN IMMUNOLOGY

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PURPOSE

The 2009 Scientific Foundations for Future Physicians Report of the AAMC-HHMI Committee recommends competencies that all medical students should demonstrate. An associated learning objective for competency M4, most related to immunology, states that students should be able to “Apply knowledge of the mechanisms utilized to defend against intracellular or extracellular microbes to the development of immunological prevention or treatment”. Yet medical students express frustration that they cannot assemble a comprehensive big picture for how the immune system builds an immune response against a microbe.

METHODS

A “big picture” diagram of an immune response against an intracellular microbe was prepared. As relevant parts were covered, students were given relevant sections of the diagram. Upon completion, students were provided with the entire diagram including numbered steps and explanations for each step.

RESULTS

While we feared the complete diagram might initially overwhelm the students, their responses indicated that they would prefer having the entire diagram upfront so that they might have it as an advance organizer for their study. They regarded the diagram as a valuable learning tool.

CONCLUSIONS

To fulfill the objectives recommended by the 2009 AAMC-HHMI Committee Report, students must first understand the big picture of how the immune system provides defense against microbes. Providing a “big picture” diagram facilitated student’s ability to understand defense mechanisms against intracellular and extracellular microbes. A diagram for extracellular microbes was presented at the 2011 IAMSE Meeting and published this year in MedEdPORTAL. This approach could be further extended to facilitate student’s knowledge of immune defense mechanisms against specific microbes (e.g., helminths/Type I Hypersensitivity).

Notes: _____

HANDS-ON CALCULATION AND ADMINISTRATION OF YOUR 1ST DOSE OF INSULIN

Quest, Dale W. Texas Tech University Health Sciences Center Paul L. Foster School of Medicine, El Paso, TX, USA

SITUATION

Transition could be more intuitive from the pre-clinical phase when foundational sciences are learned, to the clinical phase of undergraduate medical education where trainees translate scientific foundations as a basis for clinical competencies that anticipate a progression through USMLE Step 2 CK & CS.

PURPOSE

create educational experiences where trainees put foundational concepts into practice. Methods: In the conceptual context of a patient with newly-diagnosed type-1 diabetes mellitus (DM-1) in the 'honeymoon' phase, each trainee in the Family Medicine clerkship is cast in 'physician heal thy self' with an approach and tools to calculate and self-administer their 1st basal-bolus injection (placebo). The exercise draws on prior concepts: the pathophysiology and distinguishing clinical manifestations of hyperglycemia, hypoglycemia, biochemical basis for beta oxidation and ketosis during progression to beta cell failure, and bringing nutrition, lab medicine and insulin pharmacokinetics to bear on their patient's requirement for exogenous carbohydrate and insulin to achieve effective safe glycemic control.

RESULTS

A step-wise competency-based exercise engenders a mix of fun, stress and ultimate success individualizing a 1st basal-bolus insulin dose for a hyperglycemic DM-1 patient at the time of diagnosis.

CONCLUSIONS

For this and other common clinical presentations (fatigue, irritable bowel syndrome, severe atopic reaction, falls in the elderly, nausea & vomiting in pregnancy)given foundational concepts, a rational approach, the basic tools and a clinical scenario, students can quickly experience sufficient competence and competence to proceed to supervised patient care. Poster-side experience will include the option to do-it-all yourself -- all except the bloodshed.

Notes: _____

BIRTH OF A MEDICAL SCHOOL - THE SALINA EXPERIENCE

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PURPOSE

Many rural areas of the US have communities underserved by physicians. A widely accepted explanation for this deficiency is that medical schools are frequently situated in the more populated cities in a state, resulting in newly qualified physicians opting to practice in similar urban areas.

METHODS

To counteract this trend, Kansas University School of Medicine (KUSM) postulated that opening a medical school in Salina, KS, a community of 50,000, would attract students eager to train and subsequently work in rural parts of the state. These students would receive basic science lectures from the main campus in Kansas City, via live interactive television. However, all labs, small group sessions, and clinical training would be taught in Salina by a minimal faculty supplemented by local physicians. Admission requirements, curriculum and performance standards for these students would be identical to those at the main campus.

RESULTS

In August 2011, KUSM-Salina accepted eight first year medical students, becoming the smallest medical school campus in the US. Lectures from the main campus have been well received by the students and all local classes have excellent student satisfaction ratings. Currently, all students are successful academically, have integrated well in Salina, and continue to express a desire to practice medicine in small communities in Kansas

CONCLUSIONS

Results to date would indicate that medical schools may be sited successfully in smaller rural communities in the US when working in conjunction with a larger urban campus. Evidence would also suggest that training medical students in rural areas will result in graduating physicians who will be fully assimilated into rural communities and thus be more likely to stay and practice where they trained. Additionally, this innovative model for a medical school campus has proven to be very cost efficient in a time of limited resources.

Notes: _____

TO ASSESS THE KNOWLEDGE OF ANATOMY AND PERCEPTION OF ANATOMY TEACHING USING HUMAN PLASTINATE MODELS FOR FINAL YEAR UNDERGRADUATE MEDICAL STUDENTS AT WARWICK MEDICAL SCHOOL.

Mr Rajiv Subbu MbChb MRCS BSci(Hons) Mr Rajpal Nandra Ms Hannah Smith Ms Hannah Dixon Professor Abrahams MBBS FRCS(ED) FRCR DO(Hon) FHEA. Prof. of Clinical Anatomy Brian Burnett, UK

PURPOSE

Final year students report a lack of basic anatomy knowledge and feel under prepared for final year examinations. Anatomy teaching has evolved from the traditional cadaveric dissecting curriculum at many undergraduate institutions. A greater reliance is placed on self-directed learning using a range of learning tools from conventional books, e- modules and prosection specimens. We designed a study using human plastinate models to teach medical students and assess changes in undergraduate's knowledge and approach to learning and understanding anatomy.

METHODS

The eight-week anatomy course was designed for Final year medical students at Warwick Medical School and hosted by the West Midlands Surgical Training Centre who have a vast array of human plastinate anatomy models. (Images available for conference on poster) The course objectives outlined parallel the Medical School's Curriculum. The broad topics included anatomy of the abdomen, thorax, groin and pelvis, head and neck, upper limb, lower limb and procedural anatomy. Each week a broad topic was taught, with small group sessions led by two instructors. Of the five stations one was designated to clinical scenarios to promote functional anatomy utilised frequently as a qualified doctor. Final year candidates were allocated to a teaching programme held three times a year, the first twenty email responses were designated to each course for small group interactive teaching sessions. Candidates completed a pre and post course test assessing any change in their knowledge. On a weekly basis course feedback forms were completed for each station and instructor. In the final session small focus group discussions were set-up and questionnaires completed which allowed us to compare any significant change in their understanding of learning anatomy and perceptions of the course.

RESULTS

This is a work in progress and results will be available for the conference

CONCLUSIONS

Available for the conference

Notes: _____

IMPLEMENTING A LEARNER CENTERED CURRICULUM USING A NOVEL EDUCATIONAL STRATEGY IN THE HOSPITAL

Dr. Irene Nirmala Thomas, MD Clerkship Coordinator, Associate Professor of Dermatology, Gulf Medical University and Prof. Gita Ashok Raj, MD, MNAMS Provost, Professor of Pathology, Gulf Medical University, P.O. Box . 4184, Ajman, UAE

PURPOSE

Implementing an Integrated organ system curriculum based on active learning in a teaching hospital with multiple stake holders and not many educationally trained faculty was a formidable task. We faced the challenge by introducing a novel case based learning strategy. This abstract describes the strategy and its outcomes.

METHODS

Classroom teaching which was predominantly didactic had to be replaced by a learner centered organ system based program for the undergraduate medical students. A modified case based learning (CBL) approach was adopted. Students in four small groups, receive clinical information in the form of history, examination and investigations in a sequential process released by clinical tutors, for a patient problem. Narrowing down the differential diagnosis at every stage, by a process of probability based reasoning , each group arrives at a final diagnosis. This done, the four groups with their four different diagnosis for the common patient problem , assemble together in a large group where the faculty expert interactively wraps up the session and concludes with management guidelines.

RESULTS

Ten organ system courses comprising such CBL sessions have been partially concluded in the first clerkship year. Students find learning meaningful because of the high clinical relevance which parallels the decision making process of the clinician. Trained tutors specifically appointed for the purpose facilitated the small group sessions . This resulted in more hours available for the clinical faculty towards patient care .

CONCLUSION

This innovative strategy that fulfilled the educational objectives without compromising on patient management and clinician work hours helped us to meet the challenge of curricular transition in a clinical setting.

Notes: _____

TRAINING ON RESEARCH METHODOLOGY , BIOSTATISTICS AND EVIDENCE BASED MEDICINE FOR FACULTIES AND STUDENTS - THE TN DR.MGR MEDICAL UNIVERSITY, CHENNAI, INDIA

Parameswari Srijayanth, Joseph Maria Adaikalam , Jasmine S Sundar, Kalpana S, Valarmathi S , Mayilvahanan Natarajan ¹Department of Epidemiology ²Vice Chancellor, The Tamilnadu Dr. MGR Medical University, India

INTRODUCTION

Research is an important thrust area of the Department of Epidemiology of The TN Dr.MGR Medical University. In order to promote Research within Medicine / Dental / Indian Medicine / Allied Health Sciences colleges, it is necessary that the faculty members and students should undergo necessary training on the basics of Research Methodology. Hence, short term courses such as 'Research Methodology and Biostatistics' and 'Evidence Based Medicine' are being conducted by the department once in every quarter of the year.

METHODS

The Department of Epidemiology has conducted Non-Residential Short term courses. 26 Research Methodology and Bio-Statistics (RMBS) and 16 Evidence Based Medicine workshop were conducted since 1998 till 2011. This workshop were conducted for 5 days This workshop covered sessions on Introduction to Epidemiology & Bio-Statistics, Study-Designs, Bias, Medical Ethics, Data collecting and Handling, sampling technique, critical appraisal and publication. The teaching faculties were from International- Clinical-Epidemiological Programmes, Non Governmental organisation and university faculties. Pre test and Post test questionnaire was administered for evaluation of the programme.

RESULTS

In this workshop 900 various medical and paramedical faculties and students participated .They were from all over TamilNadu representing dental, medical, post doctoral students, paediatrics, gynaecologist, surgeons, dermatologist, transfusion medicine,, microbiology, anaesthetist, Indian traditional medicine, nursing and physiotherapy.

CONCLUSION

To achieve excellence in medical education, clinical practice and medical research by the rationale use of clinical epidemiological methods and critical appraisal skills and thereby equip medical and paramedical graduates with skills necessary for high quality research and rational clinical practice.

Notes: _____

THE ROLE OF ALLIED HEALTH SCIENCES COURSES TO MEET THE CHANGING NEEDS OF HEALTH CARE IN THE COMMUNITY

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PURPOSE

Allied Health Sciences is a new concept in health care in India. The current system has failed in providing skilled employable workforce. There is also a need to meet the additional requirement of approximately 264,500 paramedics in India in order to match the backlog of current global average. Therefore it was proposed to establish allied health care courses in the Tamilnadu Dr MGR Medical University, Chennai, India.

METHOD

Awareness program on these courses were initiated through print media, participation in educational fairs and programmes on television. Specialized curriculum was developed and community based partnerships and collaborations were sought.

RESULTS

27 Allied Health Science courses in medical and dental were established and offered to the school leaving students. They consist of Bachelor degrees, Diploma courses, Post Graduate Diploma courses, Masters in Public Health, MSc degrees, 2 years Diploma courses, Para dental courses, 3 years B.Sc. degree courses, 4 years B.Sc. degree courses and 2 years Post Graduate degree courses.

CONCLUSIONS

Allied Health Science course are an integral part of the medical curriculum contributing their expertise to the preventive, curative and rehabilitative care of the patients by supporting, facilitating and complementing the roles of physicians and other health care specialists. The institutions and student's community views this new branch of study as a source of their immediate employment and to meet out the demand of skilled hands to support the health care system in India.

Notes: _____

INSTRUCTIONAL TECHNOLOGY SELECTION DRIVEN BY USE PATTERNS IN THE MEDICAL CLASSROOM

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PURPOSE

Medical schools are currently in a period of tremendous change against a backdrop of new medical innovations, the exponential growth of new technology, and new demands dictated by patient care. With that in mind, many schools have begun adopting new types of curricula, and in that process, have also begun adopting innovative instructional technologies and new ways to utilize learning spaces. This project examines technology use patterns to provide a rational basis for selecting which new technologies to implement in classrooms.

METHODS

Observers were trained to record classroom activities including information about teaching, and instructional technology used. Qualitative data were collected from discussions with faculty and course directors.

RESULTS

Over 3000 classroom observations were conducted over the course of 16 months. Results found that some technologies were used daily, and others were not used at all. Some of the low-use technologies were expensive, while some of the frequently used ones were inexpensive. Some very new technology was highly used, and some was not.

CONCLUSIONS

Discussions with faculty members reveal barriers to technology implementation. Lack of training and incentives are identified as obstacles. Taken together, our data can guide cost-effective selection and application of specific instructional technologies for effective medical education.

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INSTRUCTIONAL TECHNOLOGY SELECTION DRIVEN BY USE PATTERNS IN THE MEDICAL CLASSROOM

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INTRODUCTION

Health care professional institutions, including medical, dental and physician assistant schools, are incorporating vertical curriculum (VC). Theoretically, VC allows for seamless integration between basic and clinical sciences, making the curriculum more specific and efficient during accelerated courses (ACs). If one believes that dissection of donor-cadaver-patients (DCPs) has multiple benefits and provides the richest anatomy-learning environment, then simultaneously teaching radiology from imaging of the same DCPs seems a logical sequence while reinforcing the first patient phenomenon. The objective of this study was to conduct multiple image mediums on DCPs dissected by students to enable simultaneous integration between anatomy and radiology; therefore, clinical anatomy.

METHODS

Literature search was conducted on imaging of embalmed DCPs dissected by first year medical, dental and PA students. Roentgenograms, full body CT, 3D-CT reconstruction, MRI and ultrasonography were conducted on 15 DCPs (8M,7F,ages 54-89). Imaging from DCPs was part of daily dissection and radiology lab tutorials. Questionnaire was administered about the value of integrating dissection and radiology from DCPs.

RESULTS

No studies were found integrating multiple image mediums from DCPs during their dissection by first year medical, dental or PA students. Questionnaire revealed students benefitted from integrating DCP dissection and radiology.

DISCUSSION

Medical students are often exposed to redundant information during individual basic science courses (BSCs) with little correlation to the clinical arena. Anatomy is taught as a block, while radiology is often piecemealed. Decreased hours allocated to anatomy have forced educators to teach creatively while addressing fundamentals and their application. Accelerated BSCs in VC encourages teaching core concepts while integrating the clinical sciences to maximize a knowledge base and skill sets relevant to healthcare providers. This study demonstrated that medical students could learn anatomy and radiology simultaneously by dissecting DCPs while viewing the multiple image mediums of the same DCPs.

CONCLUSIONS

This study suggests that healthcare institutions conduct multiple image mediums on DCPs prior to their dissection for a fertile learning environment between basic and clinical sciences.

USING ANATOMY TO CREATE A BI-DIRECTIONAL PEER-TO-PEER INTER-PROFESSIONAL STUDENT TEACHING PEDAGOGY BETWEEN MEDICAL AND RADIOLOGY TECHNICIAN STUDENTS

BENNINGER Brion¹⁻⁸ and Meghan AABO¹ Departments of Medical Anatomical Sciences¹, Family Medicine², COMP-Northwest, College of dental Medicine³. Western University of Health Sciences Lebanon, OR. Orthopaedics⁴, General Surgery⁵ Samaritan Health Services, Lebanon & Corvallis OR. Departments of Orthopaedic Surgery & Rehabilitation⁶, Surgery⁷, Oral Maxillofacial Surgery⁸, Oregon Health & Science University, Portland, OR, USA

INTRODUCTION

Inter-professional teaching (IPT) has been informal and sporadic as a consistent component of a medical school curriculum. Recently, some medical schools have formally introduced a formal IPT course. The anatomy course at COMP-Northwest incorporated a bidirectional peer-to-peer (BD-PTP) IPT pedagogy between first year medical students (OMS1) and radiology technician students (RTS). The purpose of this study was to evaluate if the anatomy lab would be a useful area of the curriculum to conduct BD-PTP IPT.

METHODS

Literature search was conducted regarding BD-PTP IPT in the anatomy lab integrating first year medical students (OMS1) with regular formal BD-PTP sessions. Coordinate with a radiology technician department and integrate a student BD-PTP IPT experience. Tutorials were organized and a questionnaire was conducted at the completion of the course.

RESULTS

Literature search revealed no known BD-PTP IPT experiences within an anatomy lab. RTS provided structured tutorials 4 times a week for 11 weeks. They included patient positioning during x-rays, angle options, ordering, and imaging anatomy. OMS1 taught cadaver dissected anatomy emphasizing structure orientation to RTS. Questionnaire revealed OMS1/RTS felt this to be a useful and fundamental part of their anatomy/radiology training. This aided them while learning radiology during the anatomy course and vice versa.

DISCUSSION

IPT is a relatively new teaching pedagogy that medical schools are incorporating into their curriculum. Most IPT courses are stand-alone and reach out to expose students to their healthcare colleagues (including student and facilitator interaction of visiting curriculum). This project integrated a novel BD-PTP IPT experience for OMS1 and RTS during the anatomy lab. Patients are often in pain as they enter the radiology department. All OMS1 will order x-rays during their training. OMS1 are normally exposed to some radiology anatomy, but no courses to our knowledge actually teach the OMS1 the positions required for frequently ordered x-rays.

CONCLUSIONS

This study revealed that BD-PTP IPT pedagogy could be successfully integrated between OMS1 and RTS and was well received by both populations.

STUDENT PEER REVIEW IN GROSS ANATOMY: WHAT DO STUDENTS SEE AS STRENGTHS AND AREAS FOR IMPROVEMENT?

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PURPOSE

Giving constructive feedback is a life-long professional skill that all physicians need. However, it is often uncomfortable. The gross anatomy lab provides an ideal environment to address this in relation to competency-based objectives in professionalism, practice-based learning, & communication. Our goal was to develop students' skills in giving professional feedback to peers and in reflecting on how peers perceive them.

METHODS

During Phase 1, medical students provide feedback to their anatomy lab group by completing a feedback form twice during the year. Students also complete the same form on themselves to reflect on their own strengths/weaknesses. Evaluative ratings and comments are based on self-reflection and group interactions in the gross anatomy laboratory. Credit is received if it is completed in a timely, professional manner & constructive comments are provided. Peer feedback is returned to each student with ratings/comments shown in aggregate. Areas for evaluation are based on MCG Competency-Based Objectives.

RESULTS

Numeric scores for Likert scale evaluation questions were not significantly different between exercises completed during fall & spring semesters. Comments provided by students were short, with a much greater emphasis on positive than critical comments. Positive themes included effective communication skills, dissection contributions, & ability to be a team player. Constructively critical themes included the need to be punctual, prepared, & focused on lab tasks.

CONCLUSIONS

Students find giving peer feedback & reflecting on their own strengths & weaknesses difficult. Feedback given to others is often brief & not specific enough to be acted upon. Students need more opportunities built into the curriculum to practice this professional skill.

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TAKING THE FEAR FACTOR FROM FACULTY PEER REVIEW, A FELLOWSHIP PROJECT

Amina Sadik, Ph.D. Touro University, College of Osteopathic Medicine, Henderson, NV, USA

PURPOSE

There is a consensus amongst faculty and administrators that peer review of teaching is a controversial and yet a necessary investment of time and effort. When peer review of teaching was suggested as a requirement for accreditation, it was confronted by a vehement opposition due to the lack of a clear process that will comply with the requirements and yet protect the participating faculty from retaliation. The goal of this study is to a) establish a non-threatening process for excellence in teaching by educating faculty and administration about the peer reviewing of teaching, and b) prepare a peer review teaching evaluation form that will assist faculty members in evaluating teaching in a medical school regardless of the discipline they teach.

METHODS

An evaluation form was developed from a published template and was modified by participating faculty members. A procedure for peer evaluation was established in a form of a concept map that was sent to participants. Each of the nine participants peer reviewed three other faculty members' teaching. The reviewers were coded for anonymity. At the end of the semester, a collegial discussion of the process by which faculty will work together to improve the quality of teaching was scheduled.

RESULTS

Although all participants were asked to be behavioral and very specific in their comments and suggestions, two limited their evaluation to circling a number. All participants indicated that the process was amicable and non-threatening since it was defined by faculty and the comments were not shared with the administration.

CONCLUSIONS

Although there was an undisputed success of this review process, it must be refined. The priority is given to the development of a scoring rubric. The peer reviewer will select from the given comments in the rubric very quickly thereby allowing for a better focus on the task at hand, observation of teaching. The peer review must be faculty driven in order to be a non-threatening process. It must be part of the summative evaluation of teaching effectiveness essential to decision making for faculty promotion.

Notes: _____

RELATIONSHIP CENTERED-CARE AND THE HIDDEN CURRICULUM AT ROSS UNIVERSITY SCHOOL OF MEDICINE.

Diana Callender¹, Manjinder Pannu¹, Stacy D Emile¹, Donald Leveille¹ and Richard Frankel² ¹Department of Integrated Medicine, Ross University School of Medicine, Dominica ²Indiana University School of Medicine, USA

PURPOSE

Ross University School of Medicine (RUSM) is comprised of a diverse mix of North American students, an international faculty and a primarily native Dominican staff. There are tensions between the slower-paced Dominican life-style and culture and a results-oriented American institution, and defensiveness among the different groups.

METHODS

In 2008, five RUSM representatives, including faculty, staff and students, attended a Conference at Indiana University School of Medicine to learn techniques for promoting a relationship-centered environment at RUSM. A “Discovery Team” was formed and conducted more than 40 interviews using appreciative inquiry (AI), a strengths-based organizational change approach.

RESULTS

AI stories from upperclassmen are now presented to incoming students at the white coat ceremony. Barazas (Town Hall Meetings) are held approximately each semester and new stories are told and circulated. Members of the Student Government Association have been introduced to AI and, at their recommendation, a student club to promote AI is being formed. Thematic analysis of the stories shows that there is a well-spring of faculty and staff commitment to student success, and that students support one another.

CONCLUSIONS

Positive strides to close the gap between the different cultures at RUSM have been taken with the introduction of AI, the use of Barazas, and the presentation of AI booklets to incoming students. Continued success could impact the hidden curriculum and increase its congruence with teaching about professionalism and relationship-centered care in the formal curriculum and student, faculty and staff interactions. Administrative support has been invaluable, but increased success will depend require more student, faculty, and staff champions.

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A HEALTHCARE INTERACTIVE MATRIX TO IMPROVE PATIENT OUTCOMES AND INTERPROFESSIONAL TEAMWORK

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PURPOSE

Interprofessional teamwork is defined as a collaborative interaction among intraprofessional team members to provide quality, individualized care for patients. However, previous approaches to teamwork have been criticized as overly simplifying a complex interactional process. This work investigates these interactions using a formalized matrix that can nonetheless account for the complexity in the relationships between the patient, their family, and the healthcare team.

METHOD

The matrix was developed de novo using a multi-criteria decision-making (MCDM) approach, incorporating the knowledge and attitudes of the patient and the various healthcare providers. It combines traditional team member roles and explores ways these could be altered to improve patient outcome and interprofessional interactions.

RESULTS

The proposed matrix considers the patient's illness and emotional needs on a continuum. Professional abilities are matched with the emotional need of the patient and their support group. The dynamic nature of the matrix allows it to consider the knowledge, skills, and expectations of the stakeholders as they change with each patient.

CONCLUSIONS

Use of the healthcare interactive matrix provides a new approach to maximize the quality of healthcare delivery by delineating roles and their interactions in a way that promotes comprehensive care. For example, it promotes physician concern for the patient's emotional needs while maintaining the required objectivity. It also recognizes the nurse's ability to support the patient and other caregivers, including family, while also providing medical care. Similarly, it accounts for the family member's social supportive role, while at the same time recognizing their need for health and medical information about their loved one. The interaction of other healthcare providers can be inserted into the matrix as team member's change with the patient's needs. The matrix also considers the emotional needs of the patient and their support group balanced with their medical knowledge and need for autonomy and self-determination. We will present approaches that use this matrix to better understand the interrelationships that develop as healthcare teams work to serve patients and their caregivers.

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MENTORING AND TEACHING BY MEDICAL EDUCATION AND HEALTH DISPARITIES SCHOLARLY CONCENTRATION STUDENTS

Shirley Smith, William E. Johnson, Stephanie Peters, Justin Abbatemarco, John Briggs, Nayiesha Curtis, Steve N. Kovacs, Sahab Mustafa, Daniel Restrepo, Jason Ricciuti, and Amy Wu. Morsani College of Medicine, University of South Florida Health, Tampa, FL, USA

PURPOSE

Medical students at USF Health Morsani College of Medicine participate in scholarly concentrations (SC), designed to enhance their professional development and provide opportunities for scholarly endeavors. In two SC areas, Medical Education and Health Disparities, medical students have taught in community settings and intramural programs. This program is being expanded using a more comprehensive approach, including development of a collaborative mentoring program, to encourage high school and undergraduate students toward pursuit of careers in the health disciplines.

METHODS

Students will continue outreach activities in various community settings, including after school programs, clubs, classroom visits, and summer programs. This year’s mentors conducted collaborative student-led training in order to develop mentoring relationships with selected student mentees. Mentors will provide resources and information about health careers and related coursework, extracurricular volunteering and community service, and career development through various methods, including social media. Mentees will be assessed at the beginning of the intervention and upon completion.

RESULTS

Medical students have reflected positively on their experiences in their outreach activities in teaching and mentoring. Relationships have begun to be built with schools and clubs that we intend to enhance with our expanded program through the coming year in order to further develop our pipeline program.

CONCLUSIONS

The program utilizes a number of different exchange mechanisms to deliver accurate and timely information about health professions to community youth. In turn, medical students gain experience as mentors and serve as positive role models for impressionable youth.

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A FRAMEWORK FOR DEFINING PROFESSIONALISM AT DIFFERENT LEVELS OF MEDICAL EDUCATION

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PURPOSE

Professionalism is an essential component in assessing medical student performance as well as clinical training. Although many researchers have attempted to define and measure medical professionalism, there are few studies conducted to see how differently professionalism is applied according level of medical education (ex. undergraduate (preclinical/clinical years) and graduate levels). In order to further the discussion on defining professionalism and advance medical education curricula, this study asks: (1) Is professionalism applied differently at varying levels of medical education? (2) What individual attributes are commonly used to define and assess professionalism at each level of medical education?

METHODS

A comprehensive search using major biomedical information databases including CINAHL, MEDLINE, and PsycINFO was performed to identify a collection of studies for a literature review. An initial review of titles and abstracts revealed those studies to be included in the final full-text review. Based on full-text review and discussions of our findings, a conceptual framework is constructed to provide a concrete definition of professionalism and its respective elements at each level of medical education.

RESULTS

A collection of 200 studies was retrieved from the search. After the initial review, a summary table and notes were developed to document the most common elements of professionalism according to medical education level. The final full review explores our research questions and highlights the distinctions between definitions of professionalism at each level of medical education.

CONCLUSIONS

The study enhances understanding of professionalism in medical education by providing a comprehensive framework of concrete elements to define professionalism and how interpretations of professionalism vary for different educational levels. This will provide a foundation for developing curricula that effectively educate health care professionals that uphold the professional standards of medical education.

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PEER MENTORING IN MEDICAL EDUCATION RESEARCH

Judith M. Venuti, Mary Bee, Jennifer Eastwood, Melphine Harriott, David Rodenbaugh, David Thomas, Linda Gillum and Nehad El-Sawi. Oakland University William Beaumont School of Medicine, Rochester, MI, USA

PURPOSE

The Oakland University William Beaumont School of Medicine has assembled a multidisciplinary faculty, whose primary role is to develop and deliver an innovative and integrated curriculum. Faculty must also develop scholarly work in teaching innovations and/or medical education research. To promote faculty development and increase productivity in these areas, we developed a “Community of Learning Champions”, a team of faculty that serve as peer mentors.

METHODS

The team meets to discuss, advise and critique research projects developed by its members. To stimulate discussion and feedback the team uses the “step-back technique”. Briefly, individuals present a proposal and the remaining members listen and ask questions. The presenter then “steps-back” and listens as the team takes on the project as if it was their own and reviews the objectives, methods and assessment tools proposed. The presenter listens to colleagues and is then invited to reflect on the group consultation. The team has regular follow up consultation meetings.

RESULTS

Peer mentoring had a positive impact on faculty productivity. The team provided guidance in the development of new research ideas and increased interest in medical education research. Future goals include further review of proposals, development of a certification program, and broadening faculty participation. Outcome measures will be defined and monitored to further determine the model’s effectiveness in creating a mentorship culture.

CONCLUSIONS

Peer mentoring promoted faculty development in medical education research. The team was successful in reaching this goal as most team members now have individual or small group research projects. We encourage the use of this model to promote, develop and advance scholarship in medical education research.

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CAREER SUCCESS AMONG GRADUATES FROM A PRIVATE UNIVERSITY IN ECUADOR, 1999-2009

Natalia Castillo, Iván Sisa, Marco Fornasini, Universidad San Francisco de Quito, Quito-Ecuador

PURPOSE

Career success is a measure of professional competence that involves real or perceived goals achieved by individuals. The aim of this study was to assess career success among physicians graduated from a private medical school in Ecuador.

METHODS

A retrospective cohort study was conducted among eighty-four medical school graduates from 1999 to 2009. They were asked by email to complete an on-line Career Success Scale (CSS) developed by Buddeberg-Fischer, et al., involving 7 items on a scale from 0 to 11. Higher scores reflect better performance. It was validated in 406 Swiss medical graduates with a mean age of 33.2 (achieved score 1.8+2.3).

RESULTS

Overall response was 73.8% and 54.8% were female. The mean score of success was 3.4+2.4. Demographic factors (gender, age and marital status), family and academic background were not statistically significant factors. Men were significantly more likely than females to strive for an academic or a hospital career as compared to private practice, research or public health ($p < 0.05$). Among academic factors, the only significant factor that graduates associated with their career success was the availability of high quality mentorship during medical school ($p = 0.05$).

CONCLUSIONS

Demographic, family and academic factors were not significantly associated to career success; however, graduates recognized the availability of high quality mentorship as an important factor for career success. A limitation of the CSS is that there is scarce data on populations using this scale; therefore, the interpretation and cut-off points of the score are yet not well defined. Mentoring programs could be an important instrument to promote academic and hospital careers among female medical students and physicians.

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MINDFULNESS-BASED STRESS REDUCTION (MBSR): IDEAL LIFE-LONG LEARNING FOR TOMORROW'S DOCTORS? MINDFULNESS-BASED STRESS REDUCTION (MBSR): IDEAL LIFE-LONG LEARNING FOR TOMORROW'S DOCTORS?

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PURPOSE

Stress, anxiety and depression are common in healthcare professionals and medical students. However, few medical curricula help students to develop techniques which could help them to cope with the stressful situations they will encounter during their careers. Introducing such learning opportunities through targeted support could hold the key to creating the genuinely innovative medical curricula which Tomorrow's Doctors deserve. Mindfulness-based Stress Reduction (MBSR) is a technique in which mindfulness - a process of focused moment-to-moment attention - is developed to reduce the emotional stress evoked by challenging environmental events. The purpose of this work-in-progress is to systematically review the literature surrounding the role of MBSR in improving educational outcomes.

METHODS

Our question is whether there is evidence that MBSR significantly reduces stress in medical students. To answer this question we will conduct a systematic review of the Medical Education literature. We will also look for evidence of MBSR enhancing learning in other educational settings. This will widen the impact of our findings.

RESULTS

There are compelling anecdotal and behavioural reports of benefits associated with MBSR, but the physiological and neurobiological bases of these effects remains unclear. This lack of mechanistic understanding may explain why few medical curricula have introduced MBSR: most decision-makers strongly believe in evidence-based practice and empirical research. We are particularly keen to see computer-based neuroinformatics used to build the quantitative models that can robustly compare foci identified across imaging studies.

CONCLUSIONS

We suggest that evidence for positive effects of MBSR is starting to emerge, yet MBSR has only rarely been formally introduced into curricula to improve student experiences. Further targeted research into MBSR could substantially strengthen the evidence base for its wider introduction.

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THE ePORTFOLIO IN MEDICAL EDUCATION: A TOOL FOR ASSESSMENT AND SELF-REFLECTION

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PURPOSE

The West Virginia University School of Medicine (WVU SoM) is expanding its web-based evaluation system to include an electronic portfolio. The ePortfolio will scaffold students' personal and professional development by giving them a space to reflect on their basic science learning as it relates to the six core ACGME competencies. It will also allow students to document learning and achievements, and assist faculty and administration in identifying students in need of services and interventions.

METHODS

The eDemo will show how the SoM's ePortfolio will collect information from medical students and faculty, including student reflections, grades and narratives, high stakes text scores, and peer professionalism evaluations. It will also include a demonstration on how the ePortfolio can serve as a vehicle for fast and effective assessment of student performance.

RESULTS

A benefit of the ePortfolio is its role in helping faculty and administration evaluate student performance and identify students who may benefit from academic services and interventions. Another advantage is the self-reflective practice students will gain because of continuous reflection on individual strengths and weaknesses in the curriculum. The self-reflective component will also provide students with a practical skill needed for life as a physician. The challenges will be maintaining the ePortfolio system and ensuring compliance with ePortfolio requirements among students, faculty, and administration.

CONCLUSIONS

Following implementation with first year medical students, the WVU SoM will expand the ePortfolio so that all students graduating will have an individualized and portable portfolio as a means to evaluate career preferences and for application to resident programs.

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A PBL CURRICULUM PROVIDES STRUCTURED FRAMEWORK FOR TEACHING/LEARNING OF PROFESSIONALISM AND ETHICS

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PURPOSE

The teaching/delivery of professionalism and ethics (P&E) in a medical curriculum poses huge challenges, yet these curricular outcomes underpin professional excellence which every medical school likes to claim. Identifying where, when, and how these critical outcomes are delivered in a medical curriculum is often a nightmare. We therefore explored the opportunities presented in a PBL curriculum for the delivery of these outcomes.

METHODS

A focused group discussion with 2nd year medical students (n = 12) in a PBL curriculum was undertaken. Issues explored included identifying the opportunities for learning P&E in the curriculum and the nature/substance of the learning. A questionnaire was subsequently administered to the whole class.

RESULTS

The data indicated the PBL tutorial process was a very potent tool for inculcating punctuality, team spirit, communication skills, respect for colleagues, leadership and proper dressing. The early clinical exposure component of the PBL curriculum offered further opportunity for improving communication skills, respect for patients, and graded development of confidence in clinical skills and procedures. In addition, the formal PBL curriculum can develop tutorial triggers around purely ethical issues, with student-championed discussion and not teacher-taught (pontification) as in a traditional curriculum (TC).

CONCLUSIONS

The teaching/learning of P&E in a TC occurs largely outside the formal curriculum, thriving within the hidden curriculum. The PBL curriculum, however, offers opportunities for growing P&E within the informal and formal curricula. The often-quoted weakness of PBL curricula (high faculty:student ratio) and the concomitant high faculty-student contact through small-group tutorials create regular and predictable opportunities for promoting P&E learning through role-modeling in ways not practiced in TCs. With adequately designed PBL triggers, students can champion a P&E curriculum that promotes ownership, internalization and higher order affective learning. Ref: 1. Where work was done.

Notes: _____

GROUP DYNAMICS OF GROUP TESTING

Gregg J. Sinner, John J. Briggs, J. Charles Burns, John C. Briggs, Frazier T. Stevenson, and Stanley J. Nazian, University of South Florida, Tampa, FL, USA

PURPOSE

Group testing provides an opportunity to review and retake exam questions in randomized groups after the individual test. Considerable student angst is associated with this, negating many of the benefits. We hypothesized that greater familiarity with the group would reduce the angst.

METHODS

Students initially took an individual exam. They then were placed in either pre-formed groups (from a concurrently running class) or random groups. Students alternated settings for each test. At the end of the year students were asked to complete an anonymous survey to gauge differences in learning, group dynamics, and overall opinion.

RESULTS

While in pre-formed groups, personal stress was decreased in 44% of respondents and remained unchanged between groups in 44% of students. There was less conflict in 60% of respondents in pre-formed groups while 26% reported no difference between groups. Hostility was three times more likely in a random group when compared to a pre-formed group (37% vs. 12%). Both teaching (36% vs. 5%) and seeking clarification occurred more often in pre-formed groups (45% vs. 7%) in contrast to random groups. Fifty six percent of students felt that the exam was worthwhile in pre-formed groups compared to 8% in random groups. Group testing should not continue according to 39% of respondents while 40% felt it should continue in some manner.

CONCLUSIONS

Pre-formed groups decreased stress and conflict during the group exam. Students were split evenly on the value of the group exam. These data suggest that revision to testing within a pre-formed group may provide students with an opportunity to teach each other with decreased stress and anxiety.

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NEW APPROACH TO ASSESSING STUDENTS' DEVELOPMENTAL PROGRESSION IN A PROBLEM-BASED LEARNING CURRICULUM

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PURPOSE

Problem-Based Learning (PBL) provides opportunities for skills development and stimulates life-long learning. Feedback to students, however, often focuses on knowledge rather than skills. While faculty invest a lot of energy on assessment, the process tends to be impressionistic, inconsistent, and limited in scope, making it difficult to track student progress over time. To address this, we implemented a behaviorally anchored rubric to assess progressive development of skills across the curriculum in PBL.

METHODS

It is important that the rubric address mastery of skills in PBL independent of specific subject matter of individual courses. Developed through an iterative analytic induction process, the rubric includes a global rating scale that assesses two areas of proficiency: Communication & Teamwork, Clinical Reasoning & Application of Knowledge. Three levels of proficiency reflect developmental progression: emerging, acquiring, mastery. Global ratings for each block are summed at the end of a year. Students pass if they meet a pre-established minimum standard, which increases across time in a developmental progression.

RESULTS

The rubric is currently being piloted in the medical school curriculum. Data are not yet sufficient for quantitative evaluation. Initial feedback from tutors and students has been overwhelmingly positive. Tutor training poses a major challenge.

CONCLUSIONS

This rubric will provide a means of assessing progressive mastery of skills needed by excellent clinicians. Benefits include behavioral anchors for more consistent, objective assessments; more efficient use of faculty time; and assignment of a grade based on multiple ratings across time and disciplines, with more opportunities for feedback and intervention in student performance.

Notes: _____

PROBLEM-BASED DISSECTION IN AN INTEGRATED 100 WEEK COURSE IN HUMAN STRUCTURE

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PURPOSE

To optimize dissection in an integrated, longitudinal course in human structure.

METHODS

In developing a “Structure” course for our School of Medicine we combined the disciplines of gross anatomy, embryology, histology, gross and histopathology and clinical imaging into one longitudinal 100 week course including all aspects in a continuous fashion. Although concern has been raised regarding the expense and time allotted for laboratory dissection, we were committed to continuing this unique form of active learning. To address this challenge we focused on the contribution structure makes to the identification, explication and solution of clinical problems. “Problem-based” projects are assigned to teams of 5 students who work over several weeks to research, explore systems connections and devise dissection approaches that help to explain multiple aspects of the problem. All components of the structural sciences as well as the history and physical examination are likewise included in these projects. Upon completion, all are presented in a lab-based “poster session” format, such that all students both present and learn from presenters during the session. Faculty mentors are responsible for guiding student investigations and for evaluation of team and individual performance. Peer evaluation is also included regarding team skills.

RESULTS

Student projects have been creative, clinically focused and structurally based. Faculty have been very satisfied with the level of structural knowledge acquired in these projects.

CONCLUSIONS

The addition of this approach to dissection preserves an important tradition and encourages students to use clinical reasoning to gain tangible, useful skills in the application of structural science to clinical medicine.

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THE DRUG DRILL: A NEW TOOL TO PROMOTE THE INTEGRATED, LONGITUDINAL LEARNING OF THERAPEUTIC AGENTS

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PURPOSE

Students encounter therapeutic agents throughout their medical education curriculum, but all too often they save learning about individual drugs and drug classes until they are cramming for the USMLE Step 1 Exam. The goal of the "Drug Drill" intervention is to provide first year students with encouragement and an accessible framework to study key features of drugs starting in their problem-based learning (PBL) cases and extending into their clinical preceptorships and beyond.

METHODS

A special PBL case focusing exclusively on the study of fundamental principles of pharmacology was introduced into the core academic program of the Western Reserve² (WR2) Curriculum. As part of this case, the Drug Drill was introduced to guide study of therapeutic agents. Students were encouraged to "run the Drug Drill" every time they encounter a therapeutic agent in their study. The Drill focuses students on key aspects of drugs: Class, Availability, Side-effects, Elimination and Drug-drug interactions (CASED); and it is presented to the students in the form of a 3x5" card.

RESULTS

Students have embraced the use of the Drug Drill and after only minimal reinforcement, are studying and reporting back to their PBL groups the key features of each drug encountered in their paper cases. Additionally, clinical faculty preceptors working with first and second year students in clinical settings have been introduced to the Drill and have been instructed to ask their students to use the Drill to study drugs encountered during their patient interactions.

CONCLUSIONS

This study is a work in progress but early results suggest that the introduction of the Drug Drill has focused much needed attention to the study of specific drugs and drug classes throughout the WR2 curriculum. Additionally, requiring students to concentrate on understanding distinctive features of drugs appears to be an effective reinforcement of fundamental principles of pharmacokinetics and pharmacodynamics. Student perceptions of the role the Drug Drill plays in their learning will be available for presentation at the time of the conference.

Notes: _____

SUCCESSFUL TRANSITION TO A HYBRID NEUROSCIENCE CURRICULUM

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PURPOSE

The challenges of teaching an integrated medical neuroscience course include helping students master an increasingly substantial and clinically oriented core curriculum in a limited time frame, while providing a flexible curriculum that accommodates diverse student learning styles. This report describes our transition from a “traditional” lecture-based neuroscience course to a “hybrid” course with greater emphasis on independent study and small-group learning modules.

METHODS

Neuroscience is a six week block with all classes ending before noon. The course consists of 29 optional Powerpoint presentations (annotated with SMART Symposium and recorded using Camtasia Studio), four wet-labs, six PBL sessions and five TBL sessions. Ten additional pre-recorded lectures and laboratory previews are posted on the course website for student study at a time of their choosing. Laboratory study of CNS internal organization is almost entirely student self-directed, using digitized collections of stained sections, illustrated “lesion-localization” case studies, interactive MRI atlases, and neurology patient video clips posted on the class website.

RESULTS

Class performances on the NBME Neuroscience shelf exam have been well above the national mean. Formal course evaluations and student-generated Continuous Quality Improvement (CQI) surveys reveal high levels of student satisfaction with course organization, balance between faculty-directed and student-directed learning activities, and flexibility that allows/encourages students to select learning resources and strategies that most closely match their learning styles.

CONCLUSIONS

The transition to a hybrid neuroscience curriculum required finding an optimal balance between faculty-directed and student-directed learning activities. Faculty continue to provide students with high quality resources (including PBL and TBL cases) that help them master the voluminous, clinically-relevant core curriculum, while respecting and encouraging the student’s strong desire to personalize the learning process.

Notes: _____

COMBINING TBL AND A COOKING DEMO TO TEACH LIPID METABOLISM, NUTRITION AND CARDIOVASCULAR DISEASE

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PURPOSE

Tulane University formed a collaboration with Johnson & Wales University using the active learning TBL format for metabolic biochemistry concepts, and how they apply to the prevention and/or treatment of Cardiovascular Disease (CVD). A cooking demonstration and its associated teaching kitchen serve to reinforce these basic science principles with an innovative application of nutrition, and provide practical opportunity for student-patient interactions as part of the student's community-based education.

METHODS

The TBL focuses on biochemical concepts of lipid metabolism and nutrition in context to the development and treatment of CVD. Such concepts include characterizing fatty acid (FAs) in our diet, digestion and absorption, lipid malabsorption, major lipoprotein complexes, and approaches to Therapeutic Lifestyle Changes to reduce the risk of CVD. The cooking demonstration involves discussion of common dietary lipids, and how they are applied in various recipes. Two chefs from Johnson and Wales cook simple recipes, from which students can learn how these ingredients are used. Students are encouraged to volunteer in local teaching kitchens in an innovative patient-applied setting.

RESULTS

The TBL results, examination scores, and student evaluations of the active-learning session and demonstration are discussed.

CONCLUSIONS

These exercises tie basic science and nutrition to a clinical picture in the context of a patient's day to day diet. By helping students understand nutrition and cooking of common foods, they better understand the challenges their patients face to maintain a healthy lifestyle. Our long term goal is to reinforce biochemistry, metabolism and nutrition through innovative active learning, demonstrations, and practical community-based application.

Notes: _____

USE OF PROBLEM BASED LEARNING (PBL) TO TEACH THE ACGME CORE COMPETENCIES OF SYSTEMS AND IMPROVEMENT AT ROSS UNIVERSITY SCHOOL OF MEDICINE

Valarie Thomas¹, Diana Callender¹, Sean Gnecco¹ Tina Foster² Nancy Selfridge¹ and Greg Ogrinc²

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PURPOSE

Ross University School of Medicine has incorporated the ACGME competencies into its modular curriculum so that students can integrate them with the basic sciences.

METHODS

In their PBL course, first year students learn the importance of using evidence-based medicine (EBM); a model to apply EBM in practice; and how to select search terms and access and appraise the resources found. In semester one, students work through a cardiovascular case which includes a delay in treatment resulting in residual heart damage. As a group, students develop a cause and effect diagram to identify system level problems that contributed to the patient outcome. In semester two, students focus on the differences between measurement for research, judgment, and improvement using a case which includes a central line infection. Using run charts, students identify special and common cause variation to assess the impact of the interventions used to reduce central line infections. Knowledge and skills for these PBL sessions are gained from core curriculum lectures, reading assignments from the assigned text and learning objectives developed during PBL sessions and core curriculum lectures.

RESULTS

Students aptly apply the techniques of cause and effect diagrams and measurement for variation effectively in PBL. Overall performance on MCQ exam questions related to these topics is 55%.

CONCLUSIONS

PBL, in conjunction with lectures and readings, is an effective way of teaching early medical students about systems and quality improvement, although students still find it challenging to apply the concepts in MCQs.

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M1 STUDENT PERCEIVED FEATURES ASSOCIATED WITH HIGH QUALITY TBL PREPARATORY MATERIALS

Pamela Holt MET, Beth Krippendorf PhD, Diane Brown MS, Joan Bedinghaus MD, Michael Oliver PhD, James Sebastian MD, Karen Marcdante MD, USA

PURPOSE

A core team-based learning (TBL) component is the preparatory material (PM) provided to students in advance of session attendance. While TBL literature emphasizes PM's importance, limited information is available regarding student perceived features associated with high quality. The project sought to identify student perceived attributes associated with high quality PMs.

METHODS

Four teams, 7 preclinical students/team, provided daily evaluations of TBL sessions and materials over a 1-year period using a combination of Likert scales and narrative (e.g., What worked well/didn't work well?). Narrative data was analyzed using standard qualitative analysis methods to identify common themes associated with high quality PMs. Results were then vetted with experienced TBL instructors who confirmed findings.

RESULTS

Four major themes emerged from the analysis: PMs aligned to objectives; importance associated with quantity/volume; strategic redundancy (multiple PMs on same topic); structure/format. Specifically PMs must explicitly align to session objectives as students' actively use objectives to guide their study and infer importance by quantity of materials. PMs (readings, study guides) must be clear, concise and at appropriate level for comprehensive level learning within available study time.

CONCLUSIONS

TBL success hinges on PMs but limited evidence-based guidance regarding essential elements is available. This project identifies four themes to guide faculty in PM selection/creation. These results can save faculty time and enhance TBL success through critically review of PM selection prior to use in instruction.

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FACTORS FOR SUCCESSFUL IMPLEMENTATION OF TEAM-BASED LEARNING AT A MULTI-SITE MEDICAL SCHOOL

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PURPOSE

The University of Illinois College of Medicine (UICOM) is a multi-site medical school with campuses in Chicago, Peoria, Rockford, and Urbana. To address LCME mandated curricular changes to increase active learning in the preclinical curriculum, UICOM decided to implement Team-Based Learning (TBL).

METHODS

A four-campus TBL work group was formed to provide support and encouragement to move forward with implementation. Members of the work group included interested course directors and faculty, deans, and medical educators. Members of the group were surveyed about when they became interested in using TBL, experiences that convinced them to try and reinforced their interest in TBL, and reflections on using TBL in their teaching. Those who had not yet implemented TBL were asked about experiences that would make them more likely to try TBL in the future.

RESULTS

Our implementation of TBL is successfully proceeding due to an intercampus work group of change agents, many of whom had positive experiences with TBL at a variety of professional society meetings. Observation of "real" TBL sessions, either on a site visit to a school experienced with TBL or at UICOM, heightened interest and confidence in implementing TBL. Having peer support was also essential for implementation. Above all, we were motivated by student engagement with course content and peer interactions during TBL sessions. Time to develop TBL modules and faculty development were identified as ongoing needs.

CONCLUSIONS

The four-campus TBL work group has been crucial for successful implementation of TBL at UICOM. Progressive experiences of TBL - at professional society meetings and through observation of sessions - as well as peer support have been key factors contributing to our initial success. Having dedicated time to develop TBL modules is a challenge that our change agents identify.

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DOES PARTICIPATION IN TEAM-BASED LEARNING AFFECT MEDICAL STUDENTS' LONGER-TERM LEARNING?

Paul Koles, MD; Adrian Corbett, PhD; Khalid Elased, PhD; Adrienne Stolfi, MSPH; Nicole Borges, PhD; Dean Parmelee, MD; Boonshoft School of Medicine, Wright State University, USA

PURPOSE

Several studies have evaluated learning outcomes of students who participate in team-based learning (TBL) in health professions curricula, focusing primarily on short-term effects on academic performance in single disciplines (anatomy, pathology, pharmacology, psychiatry). 1-4 Evidence of longer-term learning outcomes associated with TBL in integrated curricula is needed.

METHODS

The performance of 22 second-year medical students (11 males, 11 females) on two examinations was evaluated. The pre-test consisted of 100 questions in 9 domains: physiology, pathology, and pharmacology of cardiovascular (n=34), respiratory (n=34) and renal (n=32) systems. Students took the pre-test before a 10-week block of integrated courses in these 3 systems. Seven interdisciplinary TBL modules were included in this block. A post-test, consisting of the same 100 questions, was administered 8 weeks after the end of the 10-week block. Pre-test vs. post-test performance was compared for subsets of 50 questions related to TBL module content (TR) vs. 50 questions unrelated to TBL module content (TU).

RESULTS

There was no significant difference in pre-test mean scores for TR vs. TU questions (32.9% vs. 34.7%, $p=0.319$). Comparison of post-test vs. pre-test mean scores showed significant improvement for both TR and TU questions (TR: 32.9% vs. 59.9%, $p<0.001$; TU: 34.7% vs. 52.1%, $p<0.001$). Improvement between pre-test and post-test mean scores for TR questions was significantly greater than for TU questions (TR: +27.0% vs. TU: +17.4%; $p<0.001$).

CONCLUSIONS

1. Pre-test difficulty of TR vs. TU questions was similar (no inherent differences in item difficulty). 2. Students' improvement in performance on both TR and TU questions at 8 weeks after the cardiovascular-respiratory-renal course block suggests both gain and retention of knowledge. 3. The larger improvement in post-test scores for TR vs. TU questions suggests a learning benefit associated with TBL that persists at least 8 weeks after courses in which TBL was used.

REFERENCES

1. Nieder GL, Parmelee DX, Stolfi A, Hudes PD. Team-based learning in a medical gross anatomy and embryology course. *Clin Anat.* 2005;18(1):56-63.
2. Koles PG, Stolfi A, Borges NJ, Nelson S, Parmelee DX. The impact of team-based learning on medical students' academic performance. *Acad Med* 2010; 85(11):1739-1745.
3. Letassy NA, Fugate SE, Medina MS, Stroup JS, Britton ML. Using team-based learning in an endocrine module taught across two campuses. *Am J Pharm Educ.* 2008;72(5):1-6.
4. Levine RE, O'Boyle M, Haidet P, et al. Transforming a clinical clerkship with team learning. *Teaching and Learning in Medicine* 2004;16(3):270-275.

LESSONS LEARNED FROM IMPLEMENTATION OF TEAM-BASED LEARNING AT A MULTI-SITE MEDICAL SCHOOL

Amy Y. Lin, MD; Abbas Hyderi, MD, MPH; Catherine Best-Popescu, PhD; Stephanie Ceman, PhD; Mark Gelula, PhD; Janet Riddle, MD; Carien Williams, JD, IL, USA

PURPOSE

The University of Illinois College of Medicine (UICOM) is a multi-site medical school with campuses in Chicago, Peoria, Rockford, and Urbana. To address LCME mandated curricular changes to increase active learning in the preclinical curriculum, UICOM decided to implement Team-Based Learning (TBL). We describe how we implemented TBL at UICOM and lessons learned.

METHODS

To address the required curricular changes, a four-campus task force was formed, which met regularly via teleconference to discuss various active learning instructional methods, including TBL. A subgroup of the task force went on a site visit to Wright State University. The group at Wright State shared TBL materials and their expertise in implementing TBL. Additionally, faculty development was initiated through a webinar series and an ad hoc team of educators, who went to each campus. For early adopters of TBL at UICOM, a four-campus TBL work group was formed. In Fall 2011, five courses, two each at Urbana and Chicago and one in Peoria, piloted TBL/modified TBL.

RESULTS

TBL was successfully implemented in the Genetics and Physiology courses at Urbana, and the Pathology course at Chicago. Students liked the experience and felt their learning was enhanced by being prepared and having the opportunity to discuss concepts both amongst themselves and with content experts. TBL did not have negative impact on student exam performance. Structurally, the lecture hall caused challenges for students to hear each other during team discussion. Faculty indicated they liked the TBLs because students seemed more prepared and engaged compared with traditional lectures. Two different modifications of TBL did not achieve their intended objectives.

CONCLUSIONS

The challenges of implementing TBL are amplified in a multi-campus medical school. Ongoing dean support, faculty development, and formation of a working group composed of one or two champions at each campus can help move the process forward and ease implementation.

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**PREDICTIVE VALUE OF TBL INDIVIDUAL READINESS ASSURANCE TESTS ON
SUBSEQUENT EXAM PERFORMANCE**

Gary L. Nieder and Nicole J. Borges, Wright State University Boonshoft School of Medicine, Dayton, OH, USA

PURPOSE

The Individual Readiness Assurance Test (IRAT) is a critical component of TBL, encouraging individual preparation and accountability. IRATs may also be an early warning mechanism for students at academic risk. We analyzed IRAT and exam data from our gross anatomy course to assess the effectiveness of IRATs as a predictor of exam performance.

METHODS

Averages from four IRATs, which preceded any of the course exams, along with subsequent exam scores were subject to Fisher's exact test (N=910 students from 9 years). Groups were defined as passing or failing IRATs and passing or failing one or more course exams (70% pass/fail cutoff).

RESULTS

Overall, 30.0% of students failed at least one exam. Students who failed the initial IRATs had a significantly higher exam failure rate. As a diagnostic test, the IRATs had a positive predictive value of 0.754, a negative predictive value of 0.770, a likelihood ratio (LR) of 7.16 for failing at least one exam (i.e., students failing IRATs are 7 times more likely to fail an exam) and a LR of 6.04 for failing the course. Scores from only the first one or two IRATs had a much lower predictive value. Female students had lower performance on both IRATs and exams. Their IRAT performance was also less predictive of exam performance (LR=5.19 for females v. 11.82 for males). This may be due to a significant trend of females to perform more poorly in the first two IRATs than in subsequent IRATs and exams. The predictive value of IRATs was much higher than that of entry credentials such as MCAT scores.

CONCLUSIONS

In addition to its role in TBL per se, IRATs may be useful in identifying at risk students prior to high stakes exams. Formal intervention, or at least informing students of their risk, may help them remedy early academic problems.

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BASIC, CLINICAL & SOCIAL SCIENCES COME ALIVE THROUGH A “LIVING THE DIABETIC LIFE” MODIFIED TBL

Sally Twining, PhD, Nancy Havas, MD, Kelly Hagedorn, BA, Erin Preloger, BA, Carina Jackman, BA, Shannon Baumer, BS, Kimberly Ginsbach, BA, Medical College of Wisconsin, Milwaukee, WI, USA

PURPOSE

Chronic disease care requires understanding of basic science principles and social science principles along with empathy and compassion. Team-based Learning (TBL) involves application of scientific knowledge in a clinical context but traditionally does not actively target student’s affective learning. To address this gap, we designed and implemented a “living the diabetic life” modified TBL.

METHODS

Twenty-eight M1 students completed a basic science principle pre-test. Consistent with TB, 4 days in advance, students received preparatory materials: readings, 1 of 5 “live the diabetic life” scenarios (e.g. diabetic with low economic status), diabetic glucose monitoring equipment and required activities. In class activities began with a pre-meal glucose measurement and one of three assigned meals. Students measured glucose levels 4x following lunch. Teams were formed based on diabetic scenario. The application exercise was to prepare and deliver a presentation outlining the diabetic scenario, patient compliance issues, challenges associated with “living the life”, implications for care and impact of diet on glucose levels using scientific principles. Students completed a post-test and a qualitative survey.

RESULTS

Students scored an average of 4.1 points out of 17 higher on the post-test relative to the pre-test. Student presentations demonstrated achieved science and affective objectives. Overall, students highly rated the session (Mean =3.5 Scale 1 poor, 4 excellent). Typical comments emphasized the struggle to comply with a diabetic regimen and importance of the gained “living” profile of diabetes.

CONCLUSIONS

When a student assumes the role of a chronic disease patient, the sciences become lived experiences which translate to patient care and compassion.

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ADAPTIVE EXPERTISE IN PBL: CREATING THE NEXT CHALLENGE

*Adam Miller¹, Lamia Ibrahim MD^{2,3}, Katherine Kelly MD², Dan Wolpaw MD^{1,3}*¹Case Western Reserve University, Cleveland, OH; ²University Hospitals Case Medical Center, Cleveland, OH; ³Veterans Affairs Medical Center, Louis Stokes, Cleveland, OH, USA

PURPOSE

Literature suggests adaptive expertise can be cultivated through progressive problem solving challenges. We sought to determine whether we could identify and cultivate adaptive expertise by challenging students to apply new pieces of clinical data to established PBL cases.

METHODS

Our institution uses a small group case-based PBL preclinical curriculum. At the conclusion of one of these cases, we introduced new clinical data to create a novel challenge. We piloted this approach with two groups of volunteer first year medical students, audio-recording their discussions (n=13). Groups were facilitated by faculty discussion focused on patient presentation, differential diagnosis, treatment, and application of previous knowledge. Students were encouraged to voice their thoughts and questions, and facilitators were instructed not to provide direct answers. The recordings were analyzed for overall themes and evidence of adaptive expertise behaviors.

RESULTS

In preliminary analysis students failed to ask questions at times of uncertainty, had difficulty expressing themselves with confidence, lacked an organized method for approaching the problem, and participated in groupthink. Additionally, we noted a gap in learned and applied knowledge as demonstrated by students' guessing during questioning.

CONCLUSIONS

It appears that some basic behaviors associated with adaptive expertise can be identified in small group discussions. A standard PBL curriculum may not provide students with adequate opportunities to apply basic science knowledge to clinical situations. Clinical challenge presentations could be used to elicit gaps in information processing and present a unique learning opportunity for knowledge application and the cultivation of adaptive expertise behaviors.

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FACILITATOR CONNOISSEURSHIP

Stephen Davis, PhD Director, Faculty Development Ohio Univesity Heritage College of Osteopathic Medicine, OH, USA

PURPOSE

Problem-Based Learning (PBL) and Team-Based Learning (TBL) and Case-Based Learning (CBL) are increasing in popularity because research consistently shows learning in context is a powerful pedagogy. the methods mentioned, however, require teachers to become facilitators...a role quite different and unfamiliar to most new and many experience medical educators. My proposed poster will help fill that teacher skill gap.

METHODS

I've drawn from my dissertation in PBL at Ohio State University and my experience orienting, mentoring and leading 34 small group facilitators per quarter for 8 years (24 quarters) in small group facilitation. More significantly, I've provided leadership for weekly facilitator meetings that always included weekly facilitator tips. In addition, I'm drawing from our "Facilitator's Manual" and resources on our faculty development website.

RESULTS

A poster outlining the key principles and practices of our best facilitators and the main challenges of the difficult transition from lecture teaching to facilitator.

CONCLUSIONS

A little bit of education goes a long way but we have the dubious distinction of setting an expectation (be a small group facilitator) and NOT providing the requisite knowledge, skills, attitudes and tools. The feedback and consequences are often less than desirable. This poster will serve as a primer in the transition from classroom teacher to small group facilitator and as a reminder to current facilitators about the rationale; skills and resources specifically designed this teaching assignment.

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MOVING FROM GOOD TO GREAT: THE PLANNING AND EVALUATION OF THE EDUCATION WORKSHOP IN IZMIR, TURKIYE ENTITLED "TRENDS IN UNDERGRADUATE BIOMOLECULAR SCIENCE EDUCATION AND TIPS FOR POSTGRADUATE STUDENTS AND BEYOND"

¹Ferhan Girgin Sagin and ²Gul Guner Akdogan, ¹Department of Medical Biochemistry, Ege University Medical Faculty, Izmir, Turkiye and Chair, Educational Activities Committee of Turkish Biochemistry Society, ²Dept. of Molecular Medicine, Dokuz Eylul University Medical Faculty, Izmir, Turkiye and Chair, FEBS Education Committee

Education workshops are used widely to deliver novel concepts and techniques, to address special challenges in current practice and to enhance professional growth. However, determining the beneficial impact of these workshops is a challenge for the organizers. Planning is the phase in which one aims to develop an effective workshop by adhering to principles as determined in the literature. Collison (2000) describes 2 of these principles: clarity of aim and target population, and a systematically designed program to meet the contextual needs of the participants, with the focus on enhancement of personal and professional growth by broadening knowledge, skills and positive attitudes. Evaluation is the phase where one assesses how successfully these principles were applied. For the FEBS (Federation of European Biochemical Societies) education workshop to be held in Izmir, Turkiye on March 29 – 30, 2012, an empirical investigation will be conducted and a survey research method employed. A closed-answer questionnaire will be administered to the participants to collect biographical data, to measure the relevance and personal value of the workshop (if it met the specific needs, what their views were on the time they had spent and the sacrifices they had made), to assess the measurable outcomes, and to determine the influence (impact) of the workshop on the participants' teaching or professional development approach. The questionnaire will be applied a week after the workshop to measure the short term (1 week) impact and this data will be evaluated in a deeper approach with the long term results (same questionnaire will be applied again in September to determine the long term-6 months impact). An additional aim of the questionnaire is to determine if factors such as teaching position, age, gender, or qualifications have an influence on these views.

Notes: _____

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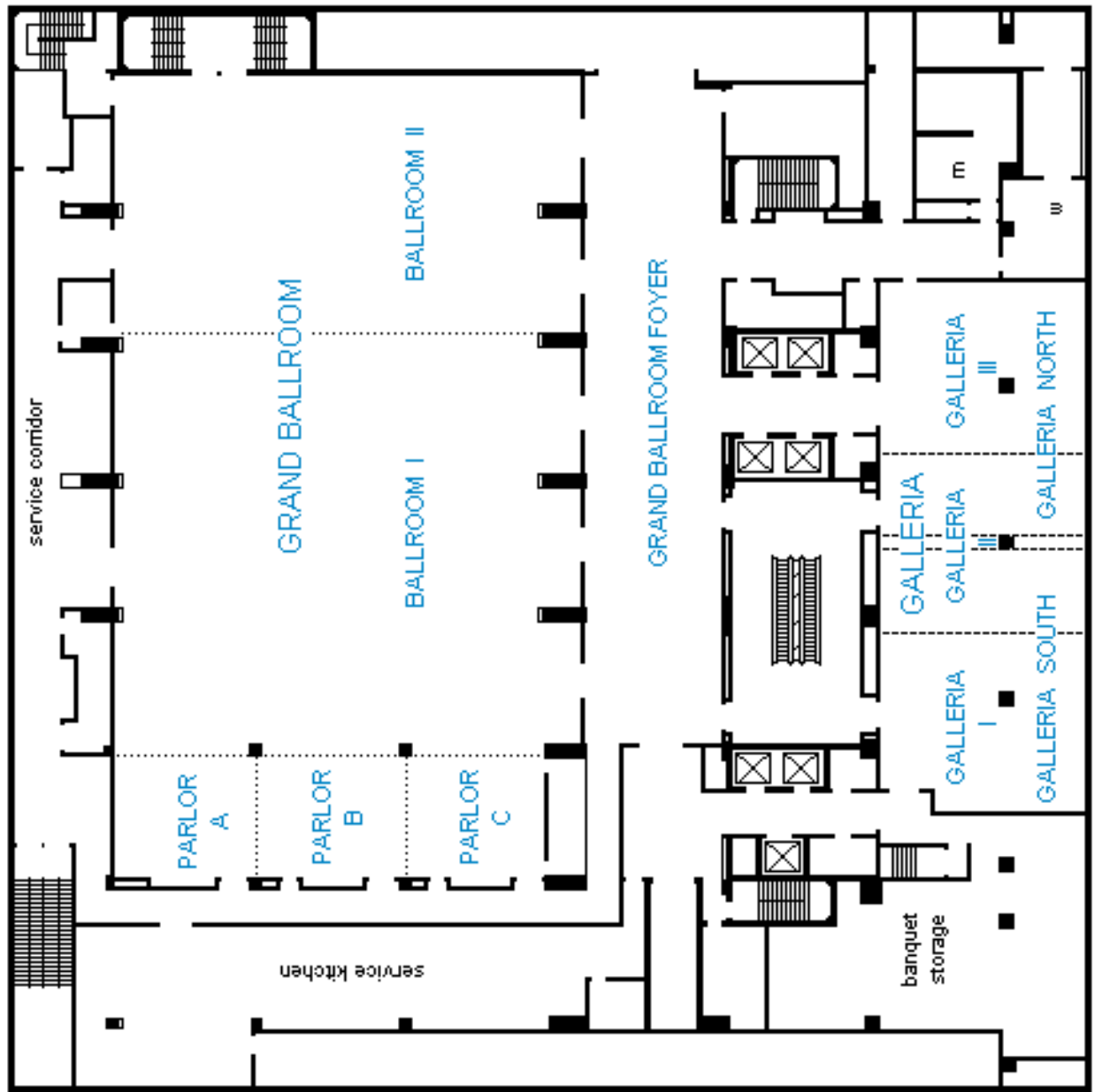
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