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Advances in Teaching & Learning Day Abstracts 2005

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"It's Your Game...Keep It Real": Feasibility of An Innovative Multimedia "Virtual World" to Prevent HIV/STI and Pregnancy In Middle School Youth, Theresa Dancel MPH, Charlie Coton BA, Ross Shegog PhD, Christine Markham PhD, Melissa Fleschler PhD, Rachael Ledet BA, Raymond Pena BA.

Background: Interactive multimedia can offer confidential, tailored, and motivational education. The learner is immersed within an individualized educational experience. "Virtual world" game interfaces offer the potential to relay health information that can affect health behaviors among youth. Purpose: This abstract describes feasibility testing of such a program, "It's Your Game...Keep It Real," an innovative "virtual world" multimedia education program designed to prevent HIV/STIs and pregnancy in middle school youth. Methods: The program was implemented with a largely minority sample (50% AA) of 7th grade students (n=14) in Houston, Texas. Questionnaire, computer-based, and observational data was collected on usability parameters including ease of use, credibility, understandability, and acceptability. Attitude change to computer assisted instruction was also assessed. Results: Most students reported they liked all lessons in their entirety (78.6-92.9%) and would recommend other classmates to try the lessons (85.7-92.9%). Virtual world and educational activities were rated as easy to use by 78-100% of students. A minimum of 92.9% of students perceived the content as correct and trustworthy across all lessons. There was 100% agreement that most words in the program were understandable. Most students (71-100%) rated interface strategies and specific program activities within each lesson as fun and 92.9-100% rated it as helping them make healthy choices regarding sexuality. There was 64.3 – 92.9% agreement that each of the program lessons were as much or more fun than other lessons and favorite video games and 85.7-100% of students rated the lessons as "just right." "It's Your Game...Keep It Real" positively affected students attitudes toward using computers in their education (p<0.05). Results of computer-based process data and open-ended questions will also be described. Conclusion: A "virtual world" interface for health education is feasible, and an efficacy trial of "It's Your Game...Keep It Real" is indicated.

A Mental Health Teaching Curriculum, Dawnelle Schatte M.D.,

Introduction The Psychiatry Resident's Outreach to Public Sector (PROPS) Committee at Baylor College of Medicine began writing a curriculum in the Fall of 2002. The purpose was to help medical care providers, case workers, and the lay public better understand mental illness. PROPS partnered with the Mental Health Association (MHA) of Greater Houston to develop and market this curriculum. Audience The original four-part curriculum was developed for a target audience of case workers with only a peripheral exposure to mental health care. Thus it was written in non-medical language, explained and defined mental illness, and explained how and when to seek treatment. Presenters The curriculum was developed so that any of the resident volunteers could teach it without special training or preparation. It includes PowerPoint slides to convey information to the audience, as well as notes for the presenter. The presenter's notes include topics to discuss, to keep the audience involved, and to remind the presenter about time remaining. There are slides to direct the presenter to start the video, and these include points to ponder as the audience watches the video. Application The MHA markets and organizes presentations of the curriculum. They also do a pre- and post-test to quantify how well the audience has learned the information. They collect feedback evaluations to assess the usefulness and helpfulness of the presentation. Future Programming The curriculum is being revised for medical and layperson audiences. The language is modified, as well as the time spent explaining and defining background information. The medical audience component includes medication dosage, side effects, and appropriate management.

A Multidisciplinary Approach in Education for Health Care Professionals: Utilization of High Fidelity Simulators, Erica Yu PhDc, RN, ARNP

Health care in the 21st century is a patient-centered health care system that will call on all health professionals – doctors, dentists, nurses, pharmacists, allied professionals, and public health and social worker (Frist, 2005). One of the most significant transformation in health care has been the emphasis on multidisciplinary approaches to delivering care. Solo practitioners have joined groups, and groups have joined networks. As a result, greater collaboration among professionals to care for patients needs to be implemented from health care education to practice. A report by the Institute of Medicine's Committee on the Quality of Health Care in America (2001) emphasized strongly on the need for fundamental change and improvement in our health car system. A major theme through out the report is the importance of teams in delivering care to patients and populations (IOM, 2001). Team practice is common, but the training of health care professionals is still typically isolated by discipline. As more care is provided by teams, more opportunities for multidisciplinary training should be offered. People should be trained in the kinds of teams in which they will provide care. Although specific training of individuals within heath care teams is well established, there is rarely any opportunity for the teams to train together. This can manifest itself as difficulty coordinating the activity and responsibility of each team, problems with identification of overall leadership, organization of resources, and interpersonal conflict. Multidisciplinary training is difficult to implement because of professional boundaries, the traditional hierarchical structure of health care, clinical specialization, faculty experience, and educational isolation. Utilization of high fidelity simulators offers an opportunity to call on all health professions to work together in a focused way for management of acute illness. This presentation will define high-fidelity simulator and demonstrate how to utilize high-fidelity simulators to promote multidisciplinary training.

Erica Yu PhDc, RN, ARNP

A Short Term Training Model for the Public Health Workforce: Face-to-face Presentation with a Distance Learning Application, Hardy Loe, Jr. Assoc Prof., Anthony Rene PhD, Barbara Quiram PhD,

Judith Banat Instr Devel.II, Joseph Smith Instr Devel II, Henry Fung Dir. Graphic Svcs., Gail Treece Resrch Assoc., Lee Lane Exec Director, Tomlinson Ron Consultant, Kelly Meta Training Spec

This training intervention addresses knowledge and skills needed by the public health workforce to understand the history, nature and legal basis of public health; to conduct traditional public health practice and to improve awareness of new health threats to communities and new interventions in response. Only 7% of the workforce has graduate education in public health, and at any point in time a high proportion of employees are new due to rapid turnover. Course Content includes community responses to bioterrorism and other emergencies. Featured are: [1] a 1 1/2 day short course for audiences of 15 to 25, and [2] an on-line version for individuals via the Texas Department of State Health Services (TDSHS) learning management system, TRAIN, which is operated by the Texas Association of Local Health Officials (TALHO). TRAIN connects to all local health departments. The course includes learning objectives, instructional materials (powerpoint slides, written case studies problems whose solution illustrates course principles),and evaluation and accreditation procedures. Included are a Participants' Manual with all instructional and evaluation materials and additional resources as well as library and web references, an Instructors' Manual for training other presenters, and the on-line version, available on the internet and Cd. The internet version duplicates the "live course", utilizing voice-overs, videoclips and examples of "school solutions" to assist students in completing the case studies. The evaluation and accreditation processes also work on-line. Live presentations have been made in the 9 TDSHS regions and one train-the-trainers session in Austin. The internet version awaits field-testing. Collaborators include the three schools of public health in Texas, constituting the Texas Public Health Training Center (TPHTC), TDSHS, and TALHO. TPHTC is funded by the Health Resources and Services Administration of the US Department of Health and Human Services.

Advance Organizers Assist Academic Poster Development, Dodie Hall MS, Loan Nguyen MLS,

Marsha Liu BS., Shahrzad Vafa EdD., Cathy Montoya MLS, Lynn Yeoman PhD

An advance organizer is a cognitive instructional strategy used to promote the learning of new information. The concept of advance organizers was first proposed by David Ausubel in the late 1960s. Ausubel's major principle — that the most important determinant of learning is what the learner already knows — summons forth a two-part strategy. Initially it calls for an image or example that directs the learner to relevant prior experience or learning and then it points to new material. Advance organizers are designed to bridge the gap between what the learner already knows and what she needs to know. There are several different types: ? Expository - describes the new content ? Narrative - presents new information in a story format ? Skimming - skimming material before reading can be a powerful organizer ? Graphical organizers - effective with all types of organizers: pictographs, descriptive patterns, concept patterns, etc. In the development of academic posters, the gap that required bridging was the actual creation of the poster. The content of the poster was known. Getting that content into a format that is easy to understand and aesthetically pleasing was the unknown. The Education Resource Center developed a plan and used advance organizers to assist clients with academic poster design and development. The plan addressed four areas: ? Development of advance organizers ? Instruction ? Marketing ? Measuring customer satisfaction This poster describes the ERC's approach to assisting students by simplifying the process of creating a scholarly poster. The ERC staff pooled talents to • Create advance organizers to facilitate the development of posters • Inform clients about our tools • Develop avenues for teaching and demonstrating the process • Measure success using a client survey instrument Survey results showed users, especially those with limited computing knowledge, found using the advance organizers increased the speed and ease of poster development and enhanced the attractiveness of the posters.

An Application of Technology to Teaching Statistical Software at the Graduate Level,
Mary Watson PhD

The instructional philosophy driving this application of technology to teaching is that exposure to statistical software must be integrated into all graduate statistics courses. However, the logistics of scheduling labs and finding qualified lab instructors are challenging. To address this, SPSS (SPSS, Chicago, IL) statistical software lab material was recorded on compact disks (CD's), and a coordinated packet of handouts and homework was developed. Examples were chosen so the same example is used in the class lecture and in the recorded material, to facilitate making the connection between theory and the SPSS results. Instructional Technology set up the equipment so that three kinds of information were recorded: the instructor's "talking head," the computer screen with the SPSS demonstration and the handouts (a document camera). SPSS packets of handouts and homework assignments are distributed to each student on the first day of class and they check out the CD's in the Center for Education and Information Resources (CEIR). Students watch the CD's on any lab computer, simultaneously obtaining "hands on" practice using the SPSS software on that computer, maximizing and minimizing the instructor's recorded lecture as appropriate, and matching their computer work to the recorded demonstration. Students learn the material as well as with "live" labs, as evidenced by their ability to successfully complete homework and through feedback from the instructors of the following courses. Student feedback has been positive, despite rudimentary CD production values, citing the flexibility to learn at their own pace and on their own schedule. This application of technology to teaching was mentioned favorably during a recent accreditation site visit. Thorough knowledge by the instructor of the material and the order in which it will be presented is recommended, as the mechanics of switching from one camera to another while lecturing requires concentration.

An innovative and effective content delivery program for multimedia-oriented online courses,
Yuh-Fong Hong PhDc.

With over 90% public higher education institutes offering online courses, professional development for online courses is becoming an import issue for faculty, technology support groups, and administrators. Research reveals that multimedia provides an effective pedagogy to enhance teaching and learning. However, text-based web designs are popular formats in traditional online courses. Two major factors limit the usage and development of multimedia-oriented contents for online courses: the bandwidth of Internet connection and the cost/time of multimedia content development. With the rapid growth of high-speed Internet usage, and powerful computer technologies, several programs are available to overcome those limitations and help faculty developing multimedia-oriented contents with little training. Among those programs, Microsoft Producer 2003 provides the advantages of easy use, low cost, integration of different media, multiple instructional modes, and multiple distribution formats (i.e., Web or CD). Producer presentations can integrate multiple types of media- video, audio, slides, pictures, html in any combination. You can also produce multiple instructional modes (i.e., slides/pictures with video, slides with audio, audio only..., etc.) from a single content at the same time. Furthermore, unlike stream video presentations, Producer presentations provide a list of content titles, which allow students to control their learning paces. Thus, those individualized learning environments can accommodate a variety of learning styles (i.e., auditory style) and learners' needs (i.e., download audio into MP3 players). In addition, you can capture your action in the computer desktop and narrate with your voice. Thus, you can criticize paper, show how to use SPSS program, or explain X-ray film with the highlighter. School of Nursing at UTH has been using Microsoft Producer 2003 in undergraduate and graduate courses as well as the online BSN program since 2004. The feedbacks and surveys from faculty and students showed positive results. Demonstrations and applications will be provided and discussed.

An innovative software based three-dimensional teaching module, Alok Kalia MD.

Students in the health professions are relying increasingly on review material and examination guides rather than on formal textbooks. This is not surprising. The amount of medical knowledge continues to increase, and more and more of this information is permeating down even to books aimed at students. As a result, in currently available textbooks the "essential to know" is mixed in with a large amount of information that is merely "available for the knowing". Textbooks present data in a linear fashion, and even the less interested student feels obligated to scan all the intervening information, even if it is of marginal significance. Using recently developed software, we have devised teaching modules that present information in an innovative manner that divides each chapter into a foreground of essential concepts and a background containing supplementary information. This presentation has both breadth and depth; it is three- dimensional, in contrast to the two-dimensional format of a standard textbook. For each subject area, the essential concepts are extracted and presented on a series of computer screens, or "panels". The student moves from left to right, from panel to panel, from concept to concept. However, most concept panels are linked to multiple subsidiary panels containing additional detail. Using "hot buttons" on the front panels, the student who wants to explore further is able to bring up these secondary panels that contain background information, physiological concepts, or options for investigation and treatment of a disease. Some buttons also lead to selected web-sites, to a handbook that accompanies the module, or to a built-in dictionary containing definitions of terms and formulae. The goal of 3-D teaching is to ensure that students are exposed to the essential concepts in each subject area and then given the opportunity to acquire more knowledge about the concepts of their choosing.

An Interactive, Theory-Based Educational Computer Program designed for Project PCCaSO (Promoting Colon Cancer Screening in people 50 and Over) <u>Judy Bettencourt MPH</u>**,** <u>Sally Vernon PhD</u>, <u>L. Bartholomew EdD</u>., <u>Anthony Greisinger PhD</u>., <u>Rachel Vojvodic MPH.</u>

Project PCCaSO is a prospective, randomized trial to increase colorectal cancer screening (CRCS) in men and women, ages 50 to 64 years old at Kelsey-Seybold Clinic, a large multi-specialty practice in Houston, Texas. We are testing the effect of a tailored, interactive, theory-based educational computer program compared with generic CRCS information from a CDC website and a non- treatment control group. This presentation focuses on the educational computer program. We developed the PCCaSO computer program using Intervention Mapping (IM), which is a framework for systematic health promotion program planning, implementation, and evaluation. IM incorporates theory and empiric evidence to identify determinants of a behavior, develop intervention objectives, and select methods and strategies for an intervention. Through IM, we ensured that the Transtheoretical (stages of change) Model (TTM) was incorporated throughout the program. The program delivers tailored messages and engages users in interactive exercises that are appropriate for their current TTM stage regarding CRCS. The program ascertains user's stage of change by asking about current intentions to be screened for colorectal cancer. Users are staged several times throughout the program to make certain they are receiving stage-matched messages. The program runs 20-35 minutes, depending on the user's stage and paths taken. Examples of the program elements include: general information about colorectal cancer and CRCS presented through graphics and audio narration; video vignettes delivering a role model story about two friends discussing CRCS; and an interactive decisional balance exercise allowing the user to determine what is important to them about CRCS. Users are asked to watch this program immediately before a wellness visit. At the end of the program, a letter is printed listing their current stage and remaining questions, which serves as a prompt to discuss CRCS with their physician. Initial reaction from users of the computer program has been very positive.

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Building Relationships that Support Teaching Effectiveness, Lillian Poats Ed.D,   Claudette Ligons Ed.D.
Carol Parker Ed.D.

This presentation will focus on the anatomy of a Critical Friends Group (CFG) which has been used by faculty colleagues to enhance their effectiveness as teachers. The concept of a Critical Friends Group emerged from the literature associated with the school reform movement and has been primarily used in the K-12 setting. The presenters have been involved in the adaptation of this concept to higher education for the past three years and have documented improvement in their teaching as well as research and service activities in the academy. Presenters will discuss issues related to developing appropriate relationships which can be used to improve performance in the classroom as well as in faculty roles of research and service. They will also discuss behaviors and dispositions which aid in the development of this type of faculty collaboration. Participants will have the opportunity to discuss the implementation of protocols and strategies which impact classroom learning. This interactive session will also provide an opportunity for participants to become familiar with the use of this model by faculty in higher education. Presenters will share their experiences and discuss some critical issues which might arise when working collaboratively. The demand for accountability in higher education has become a national issue. The quality of teaching in colleges and universities is of paramount concern in light of rising tuitions and demands from the American public. It has become even more important that faculty in higher education develop strategies to assure that they are effective in the classroom. This presentation represents an innovative strategy which faculty members in higher education can use to enhance their performance.

Comparing Multiple Media Representation for Understanding & Performance of Pulpotomy Treatment

Jung-Wei Chen DDS, MS., Craig Johnson PhD., Yanko Michea MD, PhD, MS, Cynthia Phelps PhD

Pulpotomy, a pediatric dentistry pulp treatment, is difficult for students to learn for several reasons: 1) the treatment is three dimensional and dynamic; 2) it is difficult and inconvenient to demonstrate because it needs to be preformed on the real patient, and 3) students at this level lack clinical experience. Purpose: To compare different computer-assisted multimedia learning environments to teach pulpotomy to undergraduate dental students. Method: Four different types of multimedia methods (animation, video, PowerPoint presentation and static text) are tested and compared in this project. All multimedia contents were uploaded to a website and available to sixty four second year dental students. The Pulpotomy treatment content is divided into sections to help the students understand the procedure and control the learning pace by themselves. Achievements of both cognitive and clinical skills objectives are assessed. Cognitive measures are assessed with written equivalent-forms, pre- and posttests. The project evaluates and compares, between and within groups, not only the total pre- and posttest scores, but scores assessing achievement of the four objectives at both high and low cognitive skill levels. These comparisons evaluate which methods more effectively teach dental students the pulpotomy treatment; both overall, and for each cognitive skill level. An online survey is used to evaluate student's self efficacy, website usability and students' satisfaction with the website. To measure clinical skills, all students together perform the pulpotomy treatment on typodont teeth with pulp chamber in the dental undergraduate lab. All data are analyzed using SPSS. Conclusion: Designing an effective dental education program requires implementation of empirically well-grounded educational theory and instructional design principles. Preliminary project findings reveal highly positive results concerning students' self-efficacy, satisfaction and website usability.

Continuing Medical Education Using Peer-reviewed Physician Specific Guidelines and Patient Centric Outcomes, Kim Dunn MD, PhD, Wendy Laborie MD., Adol Esquivol MD., Gordon MacKay, Rachel MacKay, Janet Donath RN, MBA

Patient trust in the healthcare system relies, in part, on the perception of a self-regulating profession. Key components within this self-regulating process include credentialing practitioners, the peer review process, and continuing education. When closely scrutinized, these processes are found to be little more than exercises with little validity for actual physician performance. The Your Doctor Program is a software program that defines an individual physician's practice standards, collects outcomes data (satisfaction, clinical and functional endpoints), uses the data to compare individual physician performance to their peers, and targets continuing education to improve a physician's practice. An overview of the program, the technology, and physician, administrative, and patient acceptance will be given.

Designing and Implementing an Online Clinical Instructor Certification Course
Carolyn Utsey PT, MEd

The purpose of this presentation is to describe the use of an online course to prepare clinicians for educating student physical therapists (SPT). Effective clinical instructors (CIs) are key members of the SPT's educational process. To ensure that CIs have access to courses that prepare them for clinical teaching, the Texas Consortium of Physical Therapy Clinical Education, Inc, (Consortium) hosts onsite CI certification courses throughout the state. Recognizing that distant education accommodates for differences in learning as well as convenience in disseminating information, the Consortium developed an online Basic CI's Certification Course. Using modules from onsite courses, three members of Consortium designed an interactive online course including content areas in 1) Planning and Administration of a Clinical Education Program, 2) Evaluating Student Performance using the Physical Therapist Manual of Assessment of Clinical Skills (PT MACS), 3) Teaching and Learning, and 4) Communication. Prior to releasing the online course, Consortium members and numerous clinicians, who had participated in onsite courses, completed and provided feedback for revisions. Modules of the course contain questions that are answered and submitted by the participant. As a final assessment, three case scenarios, encompassing all of the didactic material, are used to assess the participant's ability to apply the newly acquired knowledge. Responses to the scenarios are submitted to a database and evaluated by one member of Consortium. Participants complete an online evaluation form for the course to provide feedback to the Consortium concerning the course. In addition to a certificate in clinical instruction from the Consortium, participants receive four hours credit in continuing education. The course is in its infancy with nine participants and has been well received thus far. In the future qualitative analysis may be used to assess trends in participant responses to the case scenarios comparing the online and onsite settings.

Carolyn Utsey PT, MEd

Digital Commons @ the Texas Medical Center: A Proof of Concept Library/School Collaboration,

Leah Krevit MLIS, Janet Johnson MA, Linda Crays MA

Institutional Repositories (IR) are "digital collections that preserve and provide access to the intellectual output of an institution." They may contain pre-prints (pre-refereed papers) or post-prints (post-refereed papers), student theses and dissertations, media files (sound and video), conference papers, book chapters, presentations, learning objects, and other resources. IRs benefit the academic institution by managing and showcasing the institutions intellectual assets, making them searchable and available in one central location. IRs benefit the faculty/researcher/author by allowing a wide and rapid dissemination of content. Finally, IRs benefit the research community by speeding innovation due to the free flow of information they provide. The Houston Academy of Medicine-Texas Medical Center Library and The University of Texas School of Nursing at Houston are collaborating on the implementation of a Texas Medical Center-wide institutional repository. This pilot project serves as a "proof of concept" which will establish an electronic system—ProQuest's Digital Commons—to capture, preserve, and make widely accessible the scholarly work of the faculty, researchers and clinicians within the Texas Medical Center. The School of Nursing serves as the HAM-TMC Library's first Medical Center client, providing digital materials via its extensive collection of scholarly publications, learning objects, and research data. The HAM/TMC Library provides archiving expertise, administration, guidance in establishing new communities, and support for faculty and other users of the system. The pilot project will result in a clearer understanding of the nature of the workflow, the issues involved in providing open access collections in the TMC, and the usability experience of faculty and others as they interact with the system and self-archive their work. * Raym Crow The case for institutional repositories: a SPARC position paper. 2002.

eDebate: Fostering a Spirit of eNquiry in an Online Course,   Jeanette McNeill DrPH, RN, AOCN, ANP Kimberly Torres MPH

As nursing education moves increasingly online, various teaching strategies to encourage a spirit of inquiry are even more important in the faculty member's repertoire. Debate can be a valuable approach to encourage critical thinking, especially for topics having controversial aspects. Using discussion board tools, and modifying existing, rules of debate, this strategy can provide an engaging elearning experience. The objectives for the activity conducted in a graduate level nursing course included to explore an issue, review the literature for evidence, evaluate evidence for support of the Pro or Con position, and articulate a team position on the topic chosen. The procedure included dividing the class into Pro and Con teams. Each side presented an opening statement of 500 – 800 words with references by the initial posting deadline. Rebuttal responses were posted by a second deadline and were required to be at least 300 words and specifically address points made in the opposing team's opening statement, and also required to be referenced by evidence based sources. There was provision for a second rebuttal response posted by a third deadline, a team statement of at least 300 words which could reiterate and further support original assertions made. As in face to face debate, while use of appropriate sources is critical, an effective team assertion of its position using available evidence is the desired outcome. Due to the particular nature of online communication, debaters were reminded to be conscious of communication pitfalls in the online environment. Such "Rules of nEtiquette" included such aspects as care to avoid inappropriate comments, blatant or aggressive attacks as these could be misinterpreted online. eDebate provided a student centered, interactive strategy that encouraged communication and exploration of a topic as a team from various perspectives. The faculty role is important as planner, facilitator, moderator, and evaluator of the achievement of objectives.

Evaluation of 2005 Expanding Your Horizons Conference:Computers/Technology Gap
Irmgard Willcockson PhD

Many different organizations and events are geared toward interesting girls and young women in careers in the Science, Technology, Engineering and Mathematics (STEM) fields. The annual, one day Expanding Your Horizons in Science and Mathematics Conference is aimed at middle school girls from Houston and surrounding areas. It attracts between 500-600 girls. All girls were invited to attend a morning bonus session, an opening assembly, a lunch bonus session and the closing session. In the morning and afternoon they selected a total of four hour long hands-on sessions led by women in a variety of fields using science and mathematics. Each session had a maximum of 25 girls. The health related professions were popular and well represented, from laboratory technicians to physicians to a professor in microbiology. This year's conference evaluation was crafted after considering the stated goals and outcomes of the conference. Preliminary analysis of 181 responses on the post test revealed that almost all girls would recommend the conference to other girls (92% yes or maybe). Three separate questions addressed their plans for taking classes in science, math and computers/technology. Most answered that they either always planned to take as many classes as they could or now plan to take more science (66%), math (70%) and computer/technology (52%) classes than before the conference. The percentage is lowest for computers/technology. When looking at just those girls that changed their plans after the conference, computer/technology is still the lowest. Possible reasons for this result will be discussed along with ideas for changes in the 2006 conference.

Evaluation of Web-Based Lesson Use and Student Performance in Dental Biochemistry
Alan Levine PhD

Web-based lessons are increasingly used in most educational settings, including dental schools. Studies indicate that these methods are well received by the students but few studies show a direct relationship between use of web-based lessons and student performance. The purpose of this study was to describe the strength and direction of the relationship between how students used web- based lessons in a dental biochemistry class and the student's performance in that section of the course. Web-lessons were written for the metabolism section of Dental Biochemistry for first year students at UT-Houston, Dental Branch and accessed through Blackboard course management software. Students self-selected (n=61) to be in the study and completed a log recording their web lesson use. Data was also obtained from the Blackboard server. This use data was compared to student performance on two multiple choice exams covering those sections of the course and the data analyzed using the Pearson product-moment correlation technique. A statistically significant negative correlation (r= -0.288, p= 0.020) between student performance on the first exam and the self-reported lesson use time was obtained indicating that the poorer performers on the exam used the lessons more. No statistically significant correlation was found between student performance on the second exam and their self-reported lesson use time or student performance on either exam and the web lesson access reported by Blackboard. No statistically significant correlation was found between student performance and printing of the lessons (<15% printed any lessons) or interactive use of the lessons (>80% used lessons in an interactive manner). A highly positive response to the web-based lessons was obtained on a questionnaire completed by the students. While the web lessons are a very useful study aid for at least some of the dental students, no statistically significant positive correlation between lesson use and performance was found.

Examples of Uses of PDA as Mobile Learning Environments in Medical Education

Aaron Grigg, Sherry Vafa EdD, Cathy Montoya MLS, Lynn Yeoman PhD, Dodie Hall MS

Medical education is an environment of ever-increasing expectations and expanding knowledge base where students can become overwhelmed by the shear volume of information. One of the challenges medical students face is finding the appropriate method conducive to their learning style that allows them to master this vast body of knowledge. Students have traditionally used charts, notes, flowcharts, and flashcards. However, the current generation of students has the opportunity to incorporate new technology into their educational process. This poster demonstrates how mobile learning environments were used to assist medical students to master difficult and demanding concepts. Mobile learning environments involve the use of a personal digital assistant (PDA) to produce anytime, anywhere learning experience. Perhaps the most amendable application to the PDA is the flashcard style of learning. Many different programs exist that allow the user or professor to take quizzes based on databases which can be designed by both students and teachers. These programs keep statistics based on user input to decide how well the student masters the information and gives feedback in the form of statistics. The second method for learning involves PowerPoint presentations and allows the student to review pictures or lecture material in almost any location. These files can again be created by the teacher or student and easily uploaded to the PDA.

Goal Directed Group "Mini-tasks" within PBL for Instruction of Epidemiologic Concepts; a Team-learning Approach, Donald Molony MD, Virginia Moyer MD, MPH

Medical student skills in applying epidemiologic concepts to clinical questions and their general knowledge of applied biostatistics are declining. Traditional lecture based approaches have been unsuccessful since they are poorly accepted by students and generally fail to teach important skills of application. Problem-based learning which requires students to tackle clinical questions and to access and evaluate the primary source medical literature seems an ideal venue to teach these concepts and applications to clinical problems. Unlike other PBL learning issues, however, optimal acquisition of these skills and content requires that students struggle with and successfully complete certain types of computational tasks. We reasoned, therefore, that building specific small group tasks within the PBL cases would engage every student within the group in addressing the problem, would demonstrate that these concepts were applicable to real clinical problems and not merely abstract topics discussed in lecture, and would distract minimally from the overall PBL process. Seven exercises were completed during the last academic year as part of the PBL process. Overall student satisfaction with these exercises was high; students were able to demonstrate acquisition of concept within the group and on subsequent course subject examinations. We will report on our experience with these 7 mini-tasks; both our successes and the limitations we encountered. Our experience has shown us that goal directed mini-tasks within PBL, hence the PBL process and foster learning as a team. Our experience suggests that this approach is ideal for teaching concepts that are taught optimally when they require computation and application.

GuideView: Structured, multi-modal,interactive delivery of clinical guidelines,
Sriram Iyengar PhD Sarkar Subhajit MD, Bacal Kira MD, PhD, DeFouw Gregory MSCS

Clinical protocols, also known as clinical guidelines, can be thought of as sequences of instructions for performing clinical diagnosis or treatment. In a simplified form, they consist of flow charts in which the user is presented with a series of questions and or instructions which enable the user to handle a medical situation. At NASA and SHIS we are interested in developing clinical guideline technology that provides multi-modal interfaces incorporating voice output, voice navigation, pictures, text, and video. Through voice navigation users can view the information provided by the protocol, including pictures, text, spoken questions/instructions, and full-motion video, while simultaneously having both hands free to assist the patient. We have created versions of this technology, named GuideView, for use on laptop/desktop computers, over the internet, and for mobile PocketPC computers . Speech input for PocketPCs is being developed GuideView can be used for training as well as operational situations. The design of the system cleanly separates clinical content from presentation. Clinical content can be designed for experienced physicians and nurses as well as those with little or no medical training. In the case of space exploration GuideView is designed to assist astronauts provide medical assistance to injured crew members, potentially avoiding the need for mission-endangering evacuation. GuideView can also be used in less developed countries to assist care-givers who have only minimal training to provide routine as well as emergency clinical care.

Impact of Interactive Simulation in Learning Complex Systems, Yanko Michea MD, PhD
Cynthia Phelps PhD

Meaningful understanding of the dynamic processes involved in any physiologic function is always challenging. Multimedia and interactive simulations are powerful technologies with great potential to face this challenge. Unfortunately, there is insufficient evidence to guide its effective design, use and evaluation. The purpose of this project was to assess the cognitive impact of this technology in the comprehension of a physiological system. METHOD: Three information-equivalent multimedia styles (static, animation and simulation) were used as educational interventions to teach about physiological response to exercise. The evaluation followed a pretest-posttest design, with assessment groups. Two evaluation groups were defined: The first was assigned to traditional multiple choice evaluation instrument (24 question items). The second group answered a KNOT questionnaire (likert-scale questionnaire to define structure of conceptual models). The assignment to the experimental groups was randomized. Subjects were voluntarily recruited among undergraduate biomedical students with basic physiology knowledge. All the activities are available at http://utlearn.shis.uth.tmc.edu/edudb/ . RESULTS: 98 students completed the experiment. From them, 62 were randomly assigned to the multiple choice evaluation group, and 36 to KNOT. 35 students participated of the Animated and Static interventions while 28 participated of the interactive Simulation. The results showed consistently students' improvement of their test scores, and that interactive simulation was the most effective strategy to learn this topic. Statistical analysis of these differences did not reach significance levels. DISCUSSION: The results of the experiment suggest that interactive multimedia could be effective to learn complex systems' physiology. The lack of statistical significance suggest that the future evaluation must consider the perfecting the evaluation method to improve its sensitivity. Further research, implementing wider curriculum interventions and mid term evaluations should be required to improve our understanding of the impact of this educational strategy.

Informatics for Doctors: Design and Implementation of a Primary Care Faculty Development Curriculum, Sarah Edmonson MD,

The Baylor College of Medicine Department of Family and Community Medicine offers a year-long, part- time fellowship to develop clinical faculty skills in academic teaching and research. One year ago, the clinical informatics curriculum associated with the fellowship was out of date and received mediocre evaluations. Our goal was to develop a pedagogically sound, up-to-date, and relevant introductory curriculum in clinical informatics. Challenges inherent in this goal included the professional and personal diversity of our learners, the breadth of the subject, and the necessity of motivating learners in a subject outside of their usual domain of expertise. We began by reviewing informatics texts and published curricula to determine a list of potential topics. Evaluations from past years suggested topics that may be well-received, and a faculty-wide email survey helped to clarify which topics are of interest to our learners. From the resulting list of topics, learning goals and concrete learning objectives were developed. Teaching plans are grounded in the learning objectives and based on adult learning theory; sessions are participatory, hands-on, use multiple presentation media and teaching approaches, are integrated with other fellowship curricula, and are designed to relate closely to learners' daily activities. Qualitative and quantitative evaluation of learner satisfaction and self-rated achievement is collected at each session, quarterly, and at the end of the year. The curriculum is now approaching the end of its first year of implementation, and preliminary qualitative data about efficacy and tolerability will be presented. Based on this positive feedback, we conclude that our method-based development process has resulted in an improved learning experience.

Instant retrival of linked text, clinical 2D images and 3D images, L. Anne Hayman MD, John Pagani, E Brian MD, Vershalee Shukla MD

Background: Virtually all of the medical specialties currently rely on detailed anatomic information which they obtain from state of the art high resolution clinical images. Much of the information contained in these cutting edge images is "new knowledge" for the radiologist and the clinician since medical school exposure has been truncated and many of the structures could not be seen previously. Rapid access to anatomic information is essential to improving decision making in the clinical setting. Purpose: This presentation demonstrates a novel computer program and data base designed to instantly provide clinically relevant color coded anatomic information. Methods: Volume data is presented in a one to one relationship with corresponding 2D clinical scans. The 3D data can be accessed by: 1) alphabetical word search, 2) selecting terms from outlines (by tissue type or clinical classifications), or 3)"clicking" a structure(s) on the serial axial CT scans. Navigation of the 2D images is facilitated by selecting regions of interest on a "holographic" image which merges surface and skeletal anatomy. A dictionary/ thesaurus of over 10,000 anatomic terms is currently available. Conclusion: Increased physician knowledge in the clinical setting will improve patient care and lower health care costs.

It takes a multidisciplinary team informed by K-12 teachers to develop K-12 curriculum: the HEADS UP process, Nancy Murray DrPH, Gilbert Castro Ph.D, Mary Hobbs Ed.D, Ross Shegog PhD, Belinda Reininger Dr.P.H, Deborah Franklin D.D.S., M.A

Health Education and Discovering Science while Unlocking Potential (HEADS UP) is a set of middle school science multimedia curriculum modules. Modules are developed through a partnership involving the Spring Branch Independent School District (SBISD), the School of Public Health and Medical School of The University of Texas Health Science Center at Houston, the John P. McGovern Museum of Health & Medical Science in Houston, and the Institute for Molecular Medicine. Health science careers are highlighted in the curriculum with career stories of experts from The University of Texas Health Science Center at Houston. Key elements of curriculum development include: teacher-driven objectives, content, and format; alignment with state and national standards; and student appeal. In order to address these key elements, the development process has evolved into a system involving recruitment of teachers as consultants, teacher workshops incorporating standards alignment, pilot-testing, and involvement of content and format experts from the health science center. The topics for HEADS UP include genetics, cardiovascular disease, diabetes, nutrition, and physical activity, and the nervous system. An additional module on advanced genetics is currently in development.

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Learning and Online Game Analysis, Teaching Neuroscience to Kids, Cynthia Phelps Ph.D, Irmgard Willcockson PhD, Andrea Zardetto-Smith PhD

The BrainsRule website aims to educate youth about their brain and nervous system. One way youth can learn on the site is through games. Here we describe our experience of teaching neurotransmission using the online interactive game Neuron Laboratory. The story line of the game casts the player as a scientist, who has to figure out what is wrong with Frankenbrain, the main character. In the game, Frankenbrain does not respond correctly to commands. By using a microscope and fMRI, the player finds out that Frankenbrain has a neuron circuitry problem. By using interactivities such as completing a circuit and shooting neurotransmission blockers off the dendrites, children learn the basic function of a neuron and a neural circuit, in the process of fixing Frankenbrain's problems. Initial testing of Neuron Laboratory using an immediate pre-post test design with a total of 23 youths appeared to demonstrate that the identity of neurotransmitters remained unclear. Youth were slightly more likely to answer True to the question "Neurons communicate with each other using electrons" after the game than before. Using a more detailed questionnaire with three additional questions about communication between neurons and three questions about flow of information within a neuron using a different group of youths again showed that youths did not understand the nature of neuron communication (n=10). In contrast, the knowledge gains for other learning questions were strong in both groups. Screen by screen analysis of the game revealed several potential sources for the confusion. Although neurotransmission is presented in several different screens, it is presented inconsistently and may in fact be introducing a misconception about the nature of neurotransmitters. The game analysis method, testing and suggested changes to the game as a result of the analysis and testing will be discussed.

Learning the hard way. Barriers to consumer health education on the Internet, <u>Muhammad Walji M.S Elmer Bernstam M.D</u>

With over 70 million Americans searching online for answers to health questions[1], the internet has become an important medium for self-directed teaching and learning. However, due to its unregulated nature, the Internet is amenable to inaccuracies and misleading information about diseases and medications. In fact we recently found that 25% of a sample of complementary and alternative medicine web sites contained statements that could lead to direct physical harm if acted upon.[2] Ninety seven percent of the web sites also omitted important health information. In this presentation we review how patients make decisions based on what they read online. We also discuss barriers to consumer learning on the internet including how patients assess credibility of health websites, and dangers of sponsored search results in search engines. Finally we provide recommendations for designers to improve the consumer health learning experience, and for teachers to guide patients to high quality health resources on the internet. References [1] Fox S, Rainie L. Vital decisions: how Internet users decide what information to trust when they or their loved ones are sick. Pew Internet & American Life Project 2002 May 22. [2] Walji M, Sagaram S, Sagaram D, Meric-Bernstam F, Johnson C, Mirza NQ, Bernstam EV. Efficacy of Quality Criteria to Identify Potentially Harmful Information: A Cross-sectional Survey of Complementary and Alternative Medicine Web Sites. J Med Internet Res 2004;6(2):e21 Acknowledgement Supported by a training fellowship from the Keck Center for Computational and Structural Biology of the Gulf Coast Consortia (NLM Grant No. 5T15LM07093)

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Matching Student Personality Types and Learning Preferences to Teaching Methodologies

Stephen Jessee DDS, Paula O'Neill DDS, Ed.D

Matching Student Personality Types and Learning Preferences to Teaching Methodologies Stephen A. Jessee, University of Texas Dental Branch at Houston; Paula N. O'Neill, University of Texas Dental Branch at Houston. Purpose: To identify teaching styles that would complement the learning preferences of undergraduate dental students, while enhancing the quality of patient care. Rationale: The 1995 IOM report recommended a modernization of teaching and learning methods in dental education. A subsequent ADA survey of predoctoral dental education institutions found that "the dental education community has responded to the winds of change with some growth and little change." A formidable challenge to any curricular or methodology reform in dental education has been overcoming the resistance to recommended changes by faculty and administration. As in medical education, the organizational structure of dental institutions, with their independent departments, makes obtaining consensus on educational issues difficult. For beneficial change to occur, leading to increased learning, clear evidence of the benefits to all with the organization must be presented. Objectives: Study objectives were to 1) identify the most common personality types among first and second-year undergraduate dental students at the University of Texas Dental Branch at Houston using the Myers-Briggs Type Indicator (MBTI®), 2) identify the learning preferences of these personality types, and 3) determine the most effective approach to teaching clinical dentistry based upon student personality types and learning preferences. Methods: After obtaining approval from CPHS, the Myers-Briggs Type Indicator was administered electronically to first and second year dental students (N = 120). The data were analyzed using descriptive statistics. Results: Four common personality types were identified among respondents: ISTJ, ESFJ, ESTJ, and ISFJ, with a predisposition for sensing (desire for facts; use of senses) and judging (prefers decisiveness, closure). Specific clinical curricular techniques appealing to these common personality types were identified. These techniques and an explanation of their benefits for student learning were presented to the UT Health Science Center at Houston Executive Council with plans to present to departmental faculty in the future. Recommendations: Results of this study demonstrate the importance of faculty acknowledging the differenced of student personality types and related learning preferences as a way to initiate change to and improvement of undergraduate dental education. Faculty must utilize teaching methods that effectively match student learning preferences to promote student motivation that enhances learning.

MedMyst II - Disseminating Web Adventures to Middle School Classrooms, <u>Irmgard Willcockson PhD</u> <u>Donna Odle Smith</u>, <u>Janette Moreno PhD</u>

Medical Mysteries (MedMyst) is a series of web-based adventures designed to teach middle school students about infectious diseases. The Center for Technology in Teaching and Learning has recently been awarded a Phase II Science Education Partnership Award grant to disseminate MedMyst more widely. The theoretical model guiding implementation and evaluation of the success of dissemination is diffusion theory, which attempts to explain how new ideas and practices spread throughout a community over time. Three important components characterize diffusion: (1) it occurs over time; (2) people do not adopt innovations instantly, but rather pass through stages in the adoption process; and (3) characteristics of the innovation, the organization, and the individuals affect the rate of adoption. The five stages of adoption are often compressed to knowledge, attitudes and practices. The dissemination model includes partnering with three institutions with track records in teacher training, the John P. MCGovern Museum of Health and Medical Science in Houston, the Science Museum of Minnesota and the University of Washington Educational Outreach. Each partner will train 50 teachers for 30 hours during a weeklong summer institute. From each group of teachers, lead teachers will be selected who will then be responsible for training 20 additional teachers using a two hour workshop format. The goal is to train a minimum of 1200 teachers over 2 years who will teach approximately 150,000 students. Evaluation of the success of the dissemination effort will include teacher feedback on the training institutes as well as data on the use of MedMyst in the classroom through follow up by an independent evaluation firm.

Preparing for growth in the older adult healthcare market, Amy Gonzalez MS,
Cassandra Harris MS, CHES

This presentation will address how the growth in the older adult healthcare market impacts patient and public health communications and what educators can do to ensure they are developing programs and products that are effective and user-friendly for this growing population. Participants will learn about the challenges many older adults face when receiving health information and will get to experience some of the challenges first-hand. Based on a review of the literature, the presenters will offer tips on how to develop programs that will be appealing to older adults, how to develop written materials that are informative and easy to read, how to speak in person and over-the-phone to ensure effective communication with older adults, and lastly, how to communicate effectively through technology to the growing number of older adults who are using computer services for health information.

Problem-based learning approach to Mathematical Modeling and Numerical Simulation: Courses taught in SHIS to students with varied backgrounds, Ananth Annapragada PhD,

Mathematical Modeling and Numerical Simualtion are key tools in the areas of Systems Biology, Computational Biology and Bioinformatics. Courses in these 2 areas have been developed over the last 2 years in the School of Health Information Sciences (SHIS). A particular challenge has been the varied background of students in SHIS (ranging from hard core engineering to computer science to nursing). It is difficult to present complex concepts in calculus at a level that is understandable to students whose last exposure to calculus was several years ago, while at the same time engaging those students to whom advanced mathematics is second nature. To overcome this obstacle, we have resorted to Problem-based learning methods, dividing the class into heterogenous groups, and encouraging real-world style communication among individuals with varied backgrounds to solve leading problems. The results have been remarkable, with students easily able to perform outside their normal spheres, and develop models that they would not have otherwise. SHIS evaluates all students via a poster presentation; excerpts from these posters will be presented along with summaries of the teaching methods.

Promotion and Management of a Formative Peer Mentoring and Review Resource for Medical Educators, <u>Stephen Pierrel Ph.D</u>. <u>Anne Gill M.S., R.N</u>.

This presentation will outline the formation, promotion and management of an internal, formative, peer mentoring and review resource for faculty in a medical school setting. This on-line resource offers information for faculty on issues related to the peer mentoring and review of teaching and education efforts, articles on the topic, and web links to other sources. The resource also includes self-help formats that enable faculty to partner with one another to improve teaching. The rationale for these resources will be outlined as will organizational placement considerations. Secondly, an innovative component of this resource entitled the Educator Consultation Program (ECP) will be described. The ECP offers faculty access to private, personal coaching on any aspect of their educational efforts using a formative, reflective model of peer collaboration. Issues of ownership of the results of the consultation and calibration of reviewers will be presented. An example of a written summary of this type of review will be provided. The promotion and management of the ECP will be outlined along with the institutional support requirements. Finally, a brief discussion of issues related to summative or administrative reviews of teaching and their relationship to this formative resource will be presented.

Randomized trial of Team-Based Learning to teach epidemiology to first-year medical students,

Virginia Moyer MD, MPH, Janet Groff MD, PhD

Background: Despite its importance to medical practice and USMLE exams, epidemiology has been a "hard sell" to medical students. Seeking a fresh approach, we considered Team Based Learning (TBL), an educational method that emphasizes student preparation, application of concepts, and cooperative learning. Purpose: To evaluate the acceptability and effectiveness of using TBL to teach concepts of clinical epidemiology to first-year medical students. Subjects and Methods: Six lecture hours in Clinical Epidemiology were included in the required Introduction to Clinical Medicine (ICM) course, and all students took a 30-item pretest covering epidemiologic principles. To pilot test TBL, a six-hour elective course on the same concepts was offered. Because more students volunteered to take the course than could be accommodated, volunteers were randomly assigned to two groups: participants (N=40) and non-included volunteers (controls, N=28); non-volunteers (refusers, N=132) constituted a third group. All TBL materials were available to all three groups. Outcome evaluation included a participant questionnaire and performance on the 12 epidemiology questions included in the ICM final examination, which were based strictly on the lectures. Results: Scores on the pretest were not significantly different among the three groups. Participants felt that the TBL course was valuable and they expressed high self-efficacy for skills taught in the course. Ninety-five percent felt that TBL should be used to teach epidemiology. Forty-five of 53 written comments were positive and/or offered constructive suggestions. Mean number correct on the 12-item final examination was 9.4 (SD, 1.4) for participants, 8.6 (2.6) for controls, and 8.4 (1.8) for refusers, p=0.07 comparing participants to controls. The study was limited by small sample size and the limited number of epidemiology items on the final examination. Conclusions: The results of this pilot study support the acceptability and potential effectiveness of using TBL to teach clinical epidemiology to first-year students.

Software for color training in dentistry, Rade Paravina D.D.S., Ph.D

Although it has been experimentally proven that one's color matching results can be improved through practice, color training has not yet become a part of dental students' or dental professionals' educations. Different beta versions of current color training exercises were developed, evaluated and presented in the past. The color training exercises on CD-ROM are designed to help users to understand the color dimensions, practice color matching, and build their own color matching strategies. Instructions on installing the program, its description, color training method with the description of commands, and tips for solving the exercises are provided. This custom color training program can be used by dentists, dental educators, dental students, and dental technicians (i.e., by all those who practice or will practice shade matching and reproduction). Along with getting familiar with color dimensions, the program offers seven groups of color matching exercises—three introductory, three training, and one advanced—as well as checking of the results. Exercises are designed within the extended color range of natural teeth. In each set, they range progressively from the simplest to the most difficult ones.

Teaching evidence based medicine in Oral and Maxillofacial Surgery residency: A pilot study of a new approach in the UTHSC-Houston program, <u>Kamal Busaidy DDS,</u>

Traditional methods of teaching evidence based clinical practice do not adequately address the needs of the graduate student in Oral and Maxillofacial Surgery. These techniques utilize mainly traditional journal clubs to examine current trends and evidence, with some appraisal of the studies being examined. A new technique of teaching evidence based clinical practice was sought that would have the following aims 1 Patient centered. 2 Promotes critical thinking, active learning and interaction. 3 Facilitates life-long learning. 4 Can be used in a busy clinical environment. 5 Improves the care of patients. The new technique we have adopted has been previously documented by Sacket et al (1). Using this technique students learn the following: 1 How to ask a clinical question in a structured format. 2 How to search on their own for the most appropriate evidence to answer the question posed, using online search tools. 3 How to critically appraise articles. 4 Which evidence is applicable to the clinical care of their patients. 5 How to compile and access a database of evidence for future reference. Research Question: A pilot study was conducted to identify students' attitudes to the new teaching format, using a survey questionnaire to determine: • Comfort with new approach to learning EBM. • Whether the new method had greater potential impact on patient care. • Whether the new method promoted greater critical thinking. • Whether skills taught facilitated life long learning. • Suggestions for improvement. Future Research: A brief discussion of future research in this field will be presented. Future research will aim to more objectively evaluate the new method with specific regard to the following outcomes: 1 Efficacy of search techniques used to find appropriate literature 2 Performance in critical appraisal of literature 2 Impact on patient care 3 Impact on life long learning

Team Learning in Dental Education Utilizing an Audience Response System, Roberta Pileggi D.D.S.,M.S

A major task in any predoctoral curriculum is to graduate students who are not only comfortable in performing clinical dentistry but are competent in diagnosis. A precise diagnosis can only result from the synthesis of scientific knowledge, clinical experience and the ability of correlating science with the patient's chief complaint. Dental pain is the most commonly reported form of oral facial pain, thus an effective and accurate diagnosis is the most critical step of our profession. Team learning is based upon the division of a class into small groups of students followed by an interactive approach with instructors (Haidet P et al., 2002 and 2003). This methodology has been successfully utilized in Medicine in 40 courses from preclinical to residency programs (Haidet P et al., 2002, 2003 ;Hunt DP et al., 2003), but to date there is no report of its application in dental education. Purpose: The primary purpose of this project was to improve the students' ability on diagnosis utilizing a Team Base Learning approach using an Audience Response System. This system allowed the six small groups composed of 10 dental students from the second year class to solve the same problem simultaneously and present their solutions for immediate discussion and comparison to the larger group. Methodology: The students were tested with a readiness assurance pretest at the beginning of the course followed by a parallel posttest at the conclusion of the class utilizing the Audience Response System. Outcomes: Evaluation outcomes were 1) Pre and Posttest scores during Team base approach, 2) Diagnostic Skills assessment with final examination, 3) Students' attitudinal survey. The data were analyzed and the results will be presented.

The "ICED" Curriculum: Integrated Cultural Education in Dentistry, <u>Deborah Franklin DDS, MA, Paula O'Neill DDS, Ed.D</u>

The culture in which a person is raised influences the way he/she thinks about health and the body and the way he/she responds to the health care provider. Culturally competent health care may be defined as the ability to provide care to patients with diverse values, beliefs and behaviors, including modifying health care delivery to meet patients' social, cultural and communication needs. Culturally competent health care is necessary because diverse belief systems exist related to health, help-seeking behaviors, and attitudes toward health care providers, and because it increases access to care for all patient populations. To become culturally competent, the health care provider must be aware of the impact of social and cultural factors on health beliefs and behaviors. These factors may include, but are not limited to, race, ethnicity, language, age, gender, and socioeconomic status. To promote culturally competent health care in dentistry, a new curriculum was developed: the ICED, or Integrated Cultural Education in Dentistry, curriculum. The focus of this curriculum is to integrate the concept of culturally appropriate care throughout all four years of the dental curriculum. Incorporated throughout the four years are core competency issues in oral health care and public health dentistry and cultural models of oral health. ICED involves the use of didactic teaching, small group learning experiences such as problem-based learning, case rounds, and community outreach experiences. Evaluation strategies include student pre/post tests using the "Inventory for Assessing the Process of Cultural Competence Among Healthcare Professionals" developed by Campinha-Bacote, standardized patient experiences, case rounds and course evaluations. Faculty also participate in learning more about foundational concepts as well as practical skills regarding cultural competency through faculty development workshops and presentations by experts in the field.

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THE NEW COMPREHENSIVE CLINICAL COMPETENCIES EXAM (CCCE): THIRD YEAR MEDICAL STUDENTS PERFORMANCE IN TWO LARGE ACADEMIC CENTERS,
Fabrizia Faustinella M.D., Ph.D Linda Perkowski Ph.D

The CCCE is a standardized patient exam aimed at assessing a student's clinical skills, including history taking skills, physical examination skills, and interpersonal skills. This new exam has been developed as a collaborative effort by UT Medical School at Houston and Baylor College of Medicine - Houston, Texas. The CCCE was administered for the first time in June 2004 and is a requirement for graduation at UT. The purpose of this exam is to: * provide students with a comprehensive and valid assessment of their clinical skills following the completion of all the required third year clerkships and to target areas of deficiency; * to provide students with practice for the USMLE step II clinical performance exam required by the National Board of medical Examiners; and * to gather class data on overall students' clinical skills. This information will be used to implement curricular and training changes to address students' needs. The exam is comprised of ten student/patient encounters plus post encounter exercises. The encounters focus on typical problems encountered during the third year rotations (pediatrics, internal medicine, family practice, psychiatry, surgery, OB/Gyn, and neurology). Total testing time is approximately five hours with a 30 minute break. A summary report of students' CCCE performance at UT will be presented, as well as a comparative analysis of UT and Baylor students' performance.

Use of Medical School Educational Resources Including Streaming Video & Correlation with Basic Science Performance, Elizabeth Nelson MD, Britta Thompson PhD, Boyd Richards PhD

Many studies have provided data indicating that selection of learning approaches is correlated with course performance. One emerging resource available to many students in medical education is streaming video. The use and impact of streaming video relative to other options is unknown. The purpose of our study was to assess the utilization of learning resources by students and to determine the correlation of use and educational performance. To determine the relative use and impact of learning resources utilized by medical students throughout their basic science coursework, the Study Resource and Habit Survey (SRHS) was developed. Students estimated the frequency they used particular learning resources in a typical week on a 5-point scale. The survey was administered at the end of the first and second semester to all medical students (n=170) at Baylor College of Medicine during the 2003-2004 academic year, for a response rate of 96% and 93%, respectively. Statistical differences between the first and second semester learning strategies were determined using dependent t-tests; correlations with grades were determined using Pearson correlation coefficient. Significance level was set at $p<0.05$. No resource was significantly correlated with the first semester grades. However, in the second semester, Lecture Attendance and Supplemental resources (in which streaming video was part) were each significantly correlated with grades. It is of particular interest that students who attended more lectures and were less likely to substitute streaming video for attending class (Lecture Attendance) tended to perform better, particularly during the second semester. Additional studies are needed to clarify these issues and to reproduce these results.

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USE OF TEAM LEARNING TO PROMOTE INTEGRATION OF BASIC SCIENCE CONCEPTS DURING THE FIRST YEAR OF MEDICAL SCHOOL, William Seifert Ph.D, Jeffrey Actor Ph.D. Leonard Cleary Ph.D., Rebecca Cox Ph.D., Nachum Dafny Ph.D., Daniel Felleman Ph.D., Elizabeth Hartwell M.D, Edie Shulman M.D., Norman Weisbrodt Ph.D., Allison Ownby Ph.D.

Team learning is an educational strategy in which a large class can experience some benefits of small groups under the supervision of a minimum number of faculty. At our institution, team learning has been used for first year students in the Biochemistry, Physiology and Epidemiology courses with encouraging results. This year, we applied this strategy in a different context. In the first year, our curriculum is composed primarily of traditional discipline-based courses. The faculty wanted to help students cross the boundaries of concurrent courses, as well as connect courses running in successive semesters. Perhaps more important, they wanted to associate basic science content with the Introduction to Clinical Medicine course, in which students learn basic skills of the patient interview and physical exam. This past year, three team-learning sessions (called Integrative Exercises) were introduced into each semester of the first-year curriculum. The clinical scenarios included premature birth, diabetes mellitus, hyperthyroidism, botulism, parasitic infection, and Marfan's syndrome. Because of time constraints, we used just the classroom components of team learning. The 200+ students were divided into teams of 4-5. Each session ranged in time from 1 – 1.5 hours. Students were presented with a series of problems, given a fixed amount of time to discuss an answer, and all teams revealed their answers simultaneously. Students submitted a written answer to one designated problem for grading. In one exercise, student preparation was assessed by an online readiness assurance test. Overall student response to these exercises was highly positive. Initially, there were some difficulties with scheduling and time allocation that have since been resolved. Students believed that these exercises helped them to integrate material among basic science courses and the clinical skill course. Some recommended that these exercises be presented more frequently and that a peer evaluation component be introduced.

Using Service-Learning to Teach Cultural Competency Concepts, Simmons Douglas DDS, MPH, Deborah Franklin DDS MA

Introduction: Texas has undergone an amazing demographic change; racial and ethnic minorities now comprise over half of the total population this state. Because of these changes, future dental practitioners will frequently find themselves practicing in multicultural environments where their patient's languages, cultures, and traditions differ from their own. These patients will require a provider who is sensitive to their social and cultural issues. Description: For the fall of 2004, we added a cultural competency section to our first-year public health course, Introduction to the Prevention of Oral Diseases in Individuals and Population. Our course combined core lectures with a series of service learning activities designed to reinforce cultural competency concepts. First, the students received a lecture about the Health Belief Model, and they did a reflection exercise about racial stereotypes. We divided the class into groups of six or seven students each; each group then planned and prepared an oral prevention talk. We collaborated with the Greater Houston Area Health Education Center (AHEC) who prearranged community sites for student talks that reflected the diverse cultures of this state. Later, each group gave its prepared talk at one of these sites. Finally, each group did an in-class reflection exercise, and group members wrote a reflection paper about their project. Discussion: Service learning provided our students an opportunity to explore their values and to gain an appreciation for the cultural tradition of diverse community. The comments from both the AHEC and the community sites were positive; all were satisfied with the students' performance. Most of the students reported, in their final reflection paper, that this community project changed their beliefs about diverse people and underserved communities. Last, service learning gave us a perfect chance to collaborate with communities to show students how cultural beliefs influence oral disease prevention practices...

WHISSL: A Learning Object for Clinical Problem Solving, Rodger Marion Ph.D., Bruce Niebuhr Ph.D.

Learning objects are reusable web resources that I develop and let you modify and use in your teaching. We have created a web site for the development of simulated patients used in teaching interdisciplinary clinical problem solving. The Worldwide Health Information System Simulation Linkage (WHISSL) is an on-going project at the University of Texas Medical Branch (UTMB). Since 1991, 25 simulated patients have been developed. Recently, allied health faculty at five institutions have worked with UTMB to develop eight new patients. Each university identified a team of faculty to develop a case. Three additional teams were from UTMB. Each patient case was developed to be used as a problem-based activity dealing with case management that included cultural and religious themes. The cultural backgrounds of the patients are Hispanic-American (2), Puerto Rican (2), Pakistani, African-American, Russian- American, and Jamaican. Each case was developed by the team using a web-based authoring system, which allowed them to create the case and its supporting resources without having web programming skills. WHISSL cases can be used by anyone. Directions for use are on the web site - http://whissl.utmb.edu. The web-based software incorporates an electronic patient record and streaming video. We have incorporated access to the medical literature and cultural resources for each patient. The patient interviews, and video emails from providers are in the person's language - Spanish, Arabic, Bangla, Urdu, Vietnamese - and English as appropriate to the case. The goal of this presentation will be to demonstrate the new cases that were developed and to discuss the process of adapting and using WHISSL patient cases in your courses. The WHISSL web site is a resource that is available to anyone and we will discuss its use and application as a very large learning object (VLLO).