Simulation Gaming: A Change Technique in Nursing Students' Immunology Lectures

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Absence can be perceived as an individual decision based on both the ability to attend and the motivation to attend. Students' non-attendance at lectures has been a phenomenon and an area of concern in the colleges of health sciences (medicine, dentistry, pharmacy and nursing) at King Abdulaziz University (KAU). This was based on the teaching staff members' experiences in the department of medical microbiology and parasitology. On average, the estimated percentage of students attending lectures is between 10- 35% of the total number of students in the different colleges. This inevitably triggered the question: what are the main factors behind students' non-attendance?

Traditional lecturing was the most elevated issue behind their absence. Therefore, introducing a teaching and learning strategy which could create a more active learning environment is immensely and urgently required. Simulation gaming has shown to be an innovative and effective strategy to promote stimulating and interactive learning, motivate students' engagement and to enhance their retention of knowledge.

The objectivity in teaching second year female nursing studentsonly six lectures in comparison to 11 or 12 lectures in other colleges of health sciences, as well as their number which ranges between (70-106), provide the opportunity to try simulation gaming in their teaching. Based on that, the aim of this proposalis to introduce the application of simulation gaming in nursing immunology lectures by providing the learning objectives in each lecture and the suggested games for each of them.

The Validity and Reliability of the Sixth-Year Internal Medical Examination Administered at the King Abdul Aziz University Medical College

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Background: Exams are an essential component of medical student knowledge and skills assessment during students' clinical years of study.

Methods: The paper provides a retrospective analysis of the validity and reliability of the internal medicine component of written and clinical exams administered in 2012 and 2013 by King Abdul Aziz University's Faculty of Medicine. All of the students' scores for the clinical and written exams were obtained. For evidence of validity, four faculty members (two senior members and two junior members) were asked to rate the exam questions for evidence of construct and internal validity using a rating scale of 1-5 for each item.

Results: 824 students completed the internal medicine course and took the exam. The number of rated questions used was 320 and 46 for the MCQ and OSCE, respectively. Significant correlations were found between the MCQ section, the OSCE section and the continuous assessment marks. In addition, though the OSCE exam was reliable for the two groups that had taken the final clinical OSCE, the clinical long- and short-case exam were not reliable across the two groups that had taken the oral clinical exam. The correlation analysis showed a positive strong correlation between the raters with respect to evidence of content validity for both the MCQ and OSCE, $r.219$ $P<.001$ and $r.678$ $P <.001$ respectively and $r.241$ $P<.001$ and $r.368$ $P =.023$ for the internal structure validity respectively.

Conclusion: Both the MCQ and OSCE exams are valid and reliable methods of internal medicine clinical examination. Compared to oral clinical exams, the OSCE exam is more reliable than clinical short and long cases exams and requires less effort on the part of examiners and patients.

Gathering Validity Evidence in the Use of Multiple Mini-Interviews as an Admission Tool For Dental Students: Preliminary Evidence from Saudi Arabia

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Aims: This study examined the validity evidence of non-cognitive skills of incoming students in the Faculty of Dentistry at King Abdulaziz University using multiple mini-interviews (MMI). Validity evidence in response process, internal structure, and relationship to other variables were investigated.

Methods: A total of 146 students were interviewed by faculty members over a two-day period. The interviews took the form of an MMI, which consisted of six objective structure clinical examination (OSCE) stations with two faculty interviewers per station. Each student rotated through the six stations and were asked 4-5 structured questions per station. Each student was rated on a three-point scale.

Results: The majority of dental students were rated to be acceptable. The inter-rater reliability was 0.91 which was significantly high (range=0.87-0.94). The total MMI score for all stations was 73.47 (SD=8.49) with female students scoring significantly higher than males did (p<0.001). Generalizability study results indicated good reliability (Φ-coefficient=0.73; G-coefficient=0.75) A moderate association was found between total MMI score and foundation year GPA (r=0.30, p=<.001).

Conclusions: Preliminary validity evidence supports the use of MMI scores as an admission tool for dental students, with respect to its response process, internal structure, and relationship to other variables.

Effectiveness of Computer Based Technology Versus Cadaver Dissection in Teaching Anatomy:
A Review of the Literature

Nesreen A. Rajeh

Background: Anatomy as a basic science is important for medical students and for the future doctors, especially surgeons. It is the cornerstone of medical education. Anatomical information is needed in patient examination, diagnosis of diseases and communication with other medical personnel. Many investigators around the world believed that anatomy as a basic medical science can be replaced by computerized resources, which will potentially affect the outcome of the future doctors.

Hypothesis: Our hypothesis was that medical students learn anatomy better by introducing some computer based technology (*e.g* 3D, multiple views models) beside cadaver dissection in a correct association without replacing cadaver dissection.

Aim of the study: the purpose of the present review was to investigate the effectiveness of using Computer based technology in learning anatomy beside cadaver dissection.

Methodology: Two data bases were searched to make this literature review, Pub med and science direct, searching for published review articles or papers on this issue. My key words were medical anatomy, gross anatomy education- computer technology and anatomy.

Conclusion: It is difficult to interpret and generalize from the results of the reviewed studies, However although many researchers focused on the importance of computer based technology in teaching anatomy, cadaver dissection is mandatory.

Effect of Birth Simulator-Based Teaching of Vaginal Delivery on Undergraduate Learning and Satisfaction

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Short running title:
Birth simulator for teaching vaginal delivery.

Background: Although the traditional method of teaching vaginal delivery at the Obstetrics and Gynecology (Obs/Gyn) Department of King Abdulaziz University (KAU) through lecture and observation in the labor room seems to be helpful for students' learning, it was insufficient to elicit student satisfaction.

Objectives: This study aims to evaluate the effect of using a birth simulator during teaching vaginal delivery versus observation of normal labor at the labor room on students' satisfaction and learning.

Materials and Methods: Utilizing birth simulator was included in the curriculum of Obstetrics and Gynecology's undergraduate clerkship taught to the fifth-year medical students during 2013 in addition to the routine lectures and observation of real vaginal delivery in the labor room. A cross sectional study using a questionnaire was conducted to explore students' satisfaction and learning with this method.

Results: The majority of the respondents showed significant satisfaction as well as self-reported learning of normal labor using a birth simulator (NOELLE) compared with the simple observation at labor room.

Conclusion: Teaching vaginal delivery using the NOELLE birth simulator improved student learning and satisfaction compared to the simple observation of real labor at the labor room.

Keywords: Obstetrics; simulation; labor and delivery; skills.

Using Patients' Charts to Assess Medical Trainees in the Workplace: A Systematic Review

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Objectives: The objective of this review is to summarize and critically appraise existing evidence on the use of chart stimulated recall (CSR) and case-based discussion (CBD) as an assessment tool for medical trainees

Methods: Medline, Embase, CINAHL, PsycINFO, Educational Resources Information Centre (ERIC), Web of Science and the Cochrane Central Register of Controlled Trials were searched for original articles on the use of CSR or CBD as an assessment method for trainees in all medical specialties.

Results: Four qualitative and three observational non-comparative studies were eligible for this review . The number of patient-chart encounters needed to achieve sufficient reliability varied across studies. None of the included studies evaluated the content validity of the tool. Both trainees and assessors expressed high level of satisfaction with the tool; however inadequate training, different interpretation of the scoring scales and skills needed to give feedback were addressed as limitations for conducting the assessment.

Conclusion: There is still no compelling evidence for the use of patient's chart to evaluate medical trainees in the workplace. A body of evidence that is valid, reliable and documents the educational effect in support of the use of patients' charts to assess medical trainees is needed.

Self-assessment as a Means for Formative Assessment and Constructive Feedback

Dr. Huda Al kreithy

The study aimed at studying the value of students' self-assessment in reflecting on their work, understand what was expected from them, and develop their skills in giving and receiving feedback.

Methods: Students enrolled in the Pharmacology course in the third year of the medical curriculum were divided into small groups. Each group contains (25) students. The study was conducted on one of these groups. Students were required to submit an essay on drug interactions. They were asked to complete a self-assessment sheet identifying: the strengths and the areas which require improvement in the essay, the areas which they would do differently in a better way next time' what they wish tutor to comment on, a mark which they think they deserve based on the criteria given to them and any additional criteria that they found useful. The tutor received the self-assessed essay read all the comments and accepted them positively responded to all comments in writing explained any discrepancy between the tutor's mark and the one the student thought she deserves. An open question was written at the end of the essay sheet asking the students to write their opinion on this method of double feedback from the student and tutor.

Results: Out of the 25 students, 18 (72%) assigned marks to themselves which equaled those given by the tutor. Most of the students' comments revolved around the dialogue between the student and tutor, the feed forward content, and the skills gained as an evaluator

Conclusion: Self-assessment combined with tutor's feedback initiates interaction between students and tutors; builds trust and increases self esteem; promotes the importance of feedback and encourages students to take feedback seriously to plug the gaps between the current and desired expectations.

Framework of Innovation in Endorsing Assessment for Learning

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Background/ Purpose: Though summative assessment forms the top of the pyramid in all educational institutions, formative assessment (FA) still remains as an option to utilize during the educational process. This study investigates challenges that students and faculty face to implement assessment for learning; and the activities, capabilities, enablers, and indicators which could impact performance.

Method: A needs assessment was conducted using an online survey and three focus group discussions (FGD). Twenty four faculty and (142) students from the 4th and 5th clinical years participated voluntarily. The were oriented to the concept of FA; their perception of FA and the general and cultural challenges that hinder its adoption were evaluated through a FGD and a five-point Likert scale questionnaire.

Results: The mean score of understanding FA concept was equal in faculty and students (p= 0.08). The general challenge that scored highest was the need to balance work and academic load in faculty and the need to balance study load and training and mental anxiety in students. There was no difference between faculty and students in perceiving "Learning is teacher-centered" (P=0.481); and "past learning and assessment experience" (p=0.322). There was significant difference between them regarding interaction with opposite gender (p<0.001). Students showed higher value as regards the "gap between learning theories & assessment practice", "grade as a priority", and "discrimination by same faculty gender".

Conclusion: The authors suggested a "Framework of Innovation in Endorsing Assessment for Learning". It emphasizes a holistic approach through the System, Institution and Classroom levels.

Title: Impact of High Fidelity Transvaginal Ultrasound Simulation for Radiology on Residents' Performance and Satisfaction

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Background: Because of the intimate and uncomfortable nature of transvaginal ultrasound, training residents to perform this type of examination is a difficult task. As a consequence, residents may receive inadequate training that leads to a lack of the skills and confidence needed to perform this exam. The aim of the study was to assess the effectiveness of using simulation sessions to teach residents how to perform transvaginal ultrasound, enabling them to diagnose obstetric and gynecological emergencies and helping them survive on-calls alone while keeping their patients safe.
Methods: We employed an experimental study design to compare the confidence levels of 20 senior residents who received clinical training only with those of 25 junior residents who were enrolled in a simulation-based teaching session. We also compared the junior residents' levels of performance and confidence using transvaginal ultrasound before and after the sessions.
Results: The performance of transvaginal ultrasound by the junior residents and their confidence levels significantly improved after they attended the simulation sessions. They had higher levels of confidence than the senior residents who did not attend the session. It was also observed that the number of nondiagnostic transvaginal ultrasounds performed by the on-call resident that needed to be repeated the next day has significantly dropped.
Conclusion: Simulation-based teaching sessions are an effective method of education that improve trainees' skills and confidence levels and improve patient safety.

Can Test Blueprinting Act as an Evaluation Tool for Summative Examinations?

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Background: Health professions programs in the Arab region do not generally design summative examinations using a blueprint, potentially impacting the validity of the assessment. This study investigates the value of test blueprinting in evaluating a Pharmacology summative examination by examining student performance. **Method**: Students' success rate, distribution of grades and trend analysis were compared between 2011-2012 exam that was not based on a blueprint and 2012-2013 exam that was based on a blueprint. Department faculty revisited the learning objectives and defined the objectives. Faculty had consensus on the content, relevance weights for each content domain, and percentage of test items to be selected in each cognitive domain using Bloom's taxonomy classification. **Results**: There was variability between student performance in the exam with and without blueprinting. Students' success rate in exams from both retrospective and prospective blueprinting were not altered; however, the change in grade distribution was significant ($z=-3.18$, $p<0.001$). Results of pre-blueprinting summative examination lacked content validity evidence, and the exam did not measure a representative sample of the educational objectives of the course. **Conclusion**: The implementation of test blueprinting reflects the actual performance of students and is an essential step to ensure content-related validity evidence in summative examinations.

Impact of Adopting a Newly Developed Blueprinting Method and Relating it to Item Analysis on Students' Performance

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Background: In order to achieve validity of assessment results in the basic imaging module, an integrated assessment practice was introduced. The purpose of this article is to evaluate the impact of utilizing the created exam blueprint and relating its results to item analysis on students' achievement of the learning objectives as reflected in their overall performance scores and satisfaction.
Methods: A simple blueprint method was created by the authors. Cross-sectional study was performed on two groups of students: one did not utilize blueprinting while the other did. Data were retrieved from the results of two questionnaires evaluating the students' satisfaction of the course and of their perception of ILO; students' scores; and from item analysis results. The adopted assessment practice was evaluated using the modified and expanded version of Kirkpatrick's model.
Results: Group B results outperformed group A reflected as statistically higher students' scores, satisfaction, perceived and actual achievement of the assessed learning outcomes, and higher psychometric indices of the exams.
Conclusion: The method adopted by using the newly developed blueprinting method and relating it to item analysis results has positive impact on the validity and reliability of students' performance results and their satisfaction in relation to intended learning outcomes.

Cut-off Scores Evaluation of Two Undergraduate Endodontic Courses at the Faculty of Dentistry, King Abdulaziz University (KAU-FD)

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The traditional and the most accepted cut-off scores by most institutions are 50% to 70%. At King Abdulaziz University (KAU), Jeddah, Saudi Arabia, the cut-off score for the under graduate courses is 60%. Exams at the Faculty of Dentistry (KAU-FD) are usually constructed to match KAU regulations though they have never been evaluated. The purpose of this study was to evaluate the cut-off scores of two final fifth year written exams from the undergraduate Endodontic course to check if they met KAU regulations. Two final fifth year undergraduate Endodontic written exams were evaluated by four senior faculty members. Using the Angoff rating method, the cut-off scores for exam 1 and 2 were 57.4 % and 62.9 % respectively. Adjusting the exams' cut off scores caused changes of some students' results. In Exam 1, out of 97 students, one student's result was changed from B to A, four were changed from C to B and four from D to C. Regarding Exam 2, out of 101 students, one student's result was changed from A to B, three were changed from B to C and three from C to D. Although the cut-off scores for both exams were close to 60%, slight deviation from the accepted cut-off score could definitely affect the students' results. Therefore, all exams should be evaluated before being given to students to certify that the cut-off score is credible and defensible.

Self and Peer Assessment at Problem-Based Learning (PBL) Sessions at the Faculty of Medicine, King Abdul Aziz University (FOM-KAU), KSA: Students Perception

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Introduction: In 2007, the Faculty of Medicine, King Abdulaziz University (FOM-KAU) has introduced PBL into its integrated, systems-based curriculum to encourage the development of important skills. Among such skills are problem-solving skills, verbal and written communication skills, leadership skills, teamwork skills, and self- and peer- assessment skills.
Purpose: The purpose of this research work was to investigate whether self- and peer-assessment are done or neglected in PBL sessions at FOM-KAU, and how students perceive them in terms of their benefit.
Material and Methods: This is a descriptive study that has been performed at the FOM-KAU on a random sample of students in Year 3 (n=60). A self-administered questionnaire (survey) was developed and administered to the students at the end of the debriefing session of a PBL case to investigate their perception of self- and peer- assessment and whether they are done or not. Descriptive statistics were used, as frequency distribution and comparisons.

Results: Nearly all of the students in our sample positively perceive the importance and merits of self- and peer assessment. Also, most of the students (83%) said they do self-assessment after PBL sessions, while only 55% of them said they do peer-assessment after PBL sessions.
Conclusion: Self- and peer-assessment are done in FOM-KAU with different percentages, where self- assessment is done more frequently. Based on their importance, they are positively perceived by the majority of the students in our sample, which provides a good ground for implementing and monitoring a sound strategy for self- and peer-assessment based on pre-determined criteria.
Keywords: Self-assessment, Peer-assessment, PBL, Curriculum

Laparoscopy Training Through Nintendo Wii™

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Academic Dishonesty Among Medical Students: Perception and Relationship with Gender, Year of Study and Religiosity

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Background: Novice surgical trainees have faced a lot of difficulties in acquiring the most basic laparoscopic skills, especially since they do not get enough time to learn and practice in the operation room (Giannotti, et al., 2013). Thus, training programs of surgical specialties have been using special (virtual reality) simulators and box trainers along with the intra-operative training in their training programs to better train their surgeons to become competent laparoscopic surgeons (Ju, et al., 2012). Several research studies over the past few years were conducted to introduce, test, and validate the use of more interesting and less expensive simulation methods, such as video-game consoles; especially the ones that depend on three-dimensional games that mimic laparoscopic skills like the Nintendo Wii™ (Ju, et al., 2012). This training program is the first to implement it in its curriculum as far as we know. **Aim:** The suggested training program aims at improving the speed and accuracy of residents' basic psychomotor laparoscopic skills through training via the Nintendo Wii™ video-game console. **Methods: (1) Implementation Plan** which includes four major aspects; i. Resources: Physical, financial, and human. ii.Activities: Orientation, pre-training test (baseline setting), Wii™ training, post-training test, and debriefing. iii.Outcomes. ix.Impact. **(2) Performance data utilization** through; i.Students' evaluation. ii.Program outcome evaluation. **Results & Conclusion:** The results and conclusions of this study are still in progress.

Background: High prevalence of academic dishonesty has been reported among medical students from different parts of the world. However, data representing its prevalence and perception among Arab countries are limited.
Aim: This study examines the prevalence of academic dishonesty and associated perceptions through a survey taken from 464 students at King Abdul Aziz University in Jeddah, Saudi Arabia.
Methods: Patterns of academic dishonesty were analyzed by student characteristics, such as gender, year of study, religiosity and grade point average (GPA).
Results: A total of 200 students (43.1%) admitted conducting at least one dishonest behavior during their study in medical school. The prevalence of academic dishonesty was higher among males, students in their final year and students with lower GPA. The prevalence was relatively lower among students who prayed regularly. Different forms of academic pressures and competition were reported as key factors contributing to academic dishonesty.
Conclusion: Findings from this study emphasize the need to reinforce a medical ethics and professionalism curriculum, mandate punitive actions against academic dishonesty, and improve admission criteria and procedures.