



## 3<sup>rd</sup> INTERNATIONAL CONFERENCE ON HEALTH PROFESSIONS EDUCATION

*Conference Theme:*

Student Centered Education: Missing Piece in Preceptor's Belief



# POSTER ABSTRACT BOOK





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# ABSTRACT BOOK



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## **Theme: Teaching & Learning**

Shabana Chaudhry

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### **TITLE: A BOOST IN MEDICAL EDUCATION- KAHOOT!**

**Introduction:** Technology is being increasingly integrated into teaching environments in view of enhancing students' engagement and motivation. Studies have demonstrated the benefits of game-based learning and assessment over traditional methods.

**Methodology:** A systematic review was made including peer-reviewed journal articles which described or assessed the use of KAHOOT, a gamified apps in medical education.

**Results:** Evidence shows how KAHOOT is enriching & enhancing the quality of student learning in the classroom, with the highest influence reported on classroom dynamics, engagement, motivation and improved learning experience through formative assessment.

**Conclusion:** KAHOOT! This platform holds promise for facilitating teaching and learning activities in medical education.

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## **Theme: Teaching & Learning**

Saima Nouman Khan

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### **TITLE: A FLIPPED APPROACH IN ECG LEARNING BY UNDERGRADUATE STUDENTS**

**Introduction:** Interpreting an ECG is not only one of the most important parts of clinical diagnostics but also one of the most difficult topics to teach and learn .In order to enable medical students to master ECG interpretation skills in a limited teaching period ,the flipped teaching method has been recommended by previous research to improve teaching effect on undergraduate ECG learning .In flipped teaching model ,students view the video-on-demand according to their knowledge levels. They can selectively "listen" to the lecture and in the classroom ,time is sufficiently and appropriately used for face to face discussions between the teachers and students. These discussions are focused on improving understanding of the core and difficult parts of the course and for promoting the migration and application of knowledge.

**Methodology:** Various studies are available in which randomized controlled trial studies were performed. The students were divided into two groups .One was flipped classroom and the other was taught by using the LBL method .The two groups of students received the same textbook, the same syllabus and the same practical guidance .They also had the same instructors, teaching schedule and examination format .In the ECG chapter the respective groups were taught using flipped classroom teaching or LB. All participants took an examination one week after the intervention by analyzing 20 ECGs from actual clinical cases and submitting their reports.

**Results:** The results of the students' scores indicated that the flipped classroom is more effective for the achievement of outcomes than LBL. The flipped classroom stimulated interest in learning and guided self-study .The flipped classroom group invested more time and effort than those in the LBL group. This increased investment in learning may have been an important factor for the higher level of understanding achieved by the experimental group.

**Conclusion:** Flipped classroom is an effective teaching model .The flipped classroom enables personalized learning and allows students with different learning habits and abilities to manage their learning rhythms and focus their learning according to their own specific situation. This boosts the cognitive characteristics of each student and contributes to students achieving better results.

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## **Theme: Teaching & Learning**

Sabih Nofal

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### **TITLE: A LOW COST VIRTUAL REALITY SIMULATOR TO INCREASE SURGICAL CAPABILITY AND CAPACITY IN DEVELOPING COUNTRIES**

Introduction: 80% of all people diagnosed with cancer will need to undergo a Surgery during their disease course. Cancer surgeries are usually technically more complex than procedures done for benign disease. Because of this, only 25 % of patients have access to safe, affordable and timely surgery. Surgery, throughout the year's past, has been taught in a basic mentor-apprentice model. VR Surgical simulation has been available for some time. They reduce the time required for novices to reach surgical proficiency, but their costs may exceed 100,000 USD. The researchers of this study developed a low-cost Virtual Reality Surgical Simulator using a Software and a Personal Computer that is used for Computer Gaming (Costing 15,000 USD).

Methodology: VR Software for Surgical Simulations (VRSS) was used to create a program with a real-life replica of Operating Theater environment. High resolution images of the human female pelvic anatomy were incorporated into the software. The VR experience consisted of an Operating Theater with similar sound effects as that of an operating theater, an open surgical area of a patient, a tray containing the surgical instruments required for a particular step, and a tray to discard used instruments. Real time Operating Theater ergonomics was introduced, including limited movements due to fixtures which can be found in the OR. This was used to help train surgeons in a third world country to enable them to perform a Radical Abdominal Hysterectomy with Pelvic Lymph Node Dissection.

Results: Surgical trainees were given online lectures, readings with embedded videos that correspond to the surgical procedure. Trainees received a pre-test and post-test on the training materials and trainees continued reviewing the training over the course of 3 weeks and retaking tests until they received a passing proficiency score on the material. Five critical steps in the Radical Abdominal Hysterectomy procedure were simulated to build surgical proficiency in executing the most difficult and complex aspects of the procedure, as determined by a consensus of senior gynecologic oncology experts.

Conclusion: WHO issued a call to eliminate cervical cancer in 2015. Screening programs and Vaccination guidelines have been introduced. However, women diagnosed in the future will need access to safe, affordable and timely surgery, as well as other oncological modalities. The use of a Low-Cost VR enabled training tool can help in capacity building, train workforce, augment safer surgery and ensure higher quality standards in centers of excellence throughout the developing nations.

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## **Theme: Teaching & Learning**

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### **TITLE: ANESTHESIA AND ARTIFICIAL INTELLIGENCE: WILL ROBOTS REPLACE ANESTHETISTS AND OVERCOME SHORTAGE OF ANESTHETISTS WORLDWIDE?**

Introduction: Artificial intelligence has changed our daily life to a great extent in the last three decades. Things which had been thought unbelievable thirty years before are now being practically done with much ease with the help of instruments based on artificial intelligence. Anesthesia is a rapidly advancing medical field worldwide, but there is a shortage of trained personnel all over the world, especially in the peripheral and remote areas of even the developed countries. In recent years, advancement in artificial intelligence has led to the development of anesthesia

machines, automated drug delivery equipment; computer based monitoring equipment, quick assessment machines for respiratory and cardiac functions of patients undergoing surgeries under anesthesia, and now the use of robotics and Telemedicine techniques in the field of anesthesia in recent years.

**Methodology:** Articles from the leading medical journals were reviewed on recent developments in anesthesia and artificial intelligence. The views of well-known researchers were studied, and results were obtained. From the servo theory of anesthesia in the 1980s, and subsequent theories on Telemedicine and use of artificial intelligence in medical field including anesthesia all were reviewed in detail for obtaining results on the extent of research work done on this topic.

**Results:** Along with the use of electronic devices in anesthesia, Robotic techniques have also been tried in this very field, it seems that in the coming future, the role of anesthetists in the operation theaters will be taken up by the machines if the element of safety and security of patients is assured in terms of use of medicines and procedures carried out during the conduct of anesthesia for different surgeries all over the world. Hopes are there that the shortage of anesthesiologists can be overcome if the main obstacle of optimum safety achievement is managed.

**Conclusion:** If the safety and security of the patients is ensured, robots can replace anesthesiologists to much extent in the coming future.

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## **Theme: Teaching & Learning**

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## **TITLE: ARTIFICIAL INTELLIGENCE FOR MEDICAL EDUCATION**

**Introduction:** The term artificial intelligence (AI) was coined by John McCarthy in 1956 during a conference held in this subject. Today, AI is integrated into our lives in many forms, such as personal assistants (Siri, Google assistant) automated mass transportation and computer gaming.

**Methodology:** Literature review

**Results:** Recently AI has begun to be incorporated into medicine to improve patient care by speeding up processes and achieving greater accuracy, opening the path for providing better healthcare overall. AI is being successfully applied for image analysis in radiology, pathology, and dermatology, with diagnostic speed exceeding, and accuracy paralleling, medical experts.

**Conclusion:** . In order for medical educators to be properly prepared for AI, they will need to have at least a fundamental knowledge of AI in relation to learning and teaching, and the extent to which it will impact on medical education. How to teach medical students to practice successfully in a health care environment transformed by artificial intelligence applications should be a central focus of our curricular reforms. In other words, medical education will need to move beyond the basic and clinical sciences and updates on emerging diagnostic and therapeutic trends.

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**Theme: Teaching & Learning**

Name: Ayesha Fahim

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**TITLE: AUGMENTED REALITY MAGIC MIRROR SYSTEM FOR TEACHING ANATOMY**

**OBJECTIVE:**

To understand Human anatomy with ease

**Methodology:**

Display Device (Mirror)

Color Camera

Microsoft Kinect Depth Camera

CT & MRI Volumes

NITE Skeleton Tracking Software

Visible Korean Human Database

**FEATURES:**

Interactive

Integrated teaching

Student Centered

Utilizes mental mapping

**MODES:**

In-Situ Visualization of Human anatomy

Gesture based interaction for slices

Frosted Glass interaction metaphor

Whole body radiology

**UTILIZATION:**

Sports Medicine

Joint movement rehabilitation

Mobile C-Arm

Intra-operative AR system

Improved Doctor-Patient communication

Microsoft HoloLens for student education

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## **Theme: Teaching & Learning**

Name: Shazia Jamil

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### **TITLE: BLENDED LEARNING FOR POSTGRADUATES: AN INTERACTIVE EXPERIENCE**

**Introduction:** For postgraduate health professionals, blended learning is relatively new. In this study two blended learning modules in a master program on quality and safety in patient care were developed, implemented and evaluated. Aiming for a better preparation compared to traditional textbook homework. Additional goal was saving time for the teachers resulting in a potential cost savings.

**Methodology:** The experiences of 21 postgraduate health professionals were evaluated with two voluntary and anonymous questionnaires beginning of 2017 with a special focus on the added value of online interaction, underexposed in previous research.

**Results:** This evaluation shows that online modules are regarded as being an effective preparation for face-to-face meetings for postgraduate health professionals. Added value of social interactive online preparation was perceived from collaborating and interacting with each other. Both the interaction between the students, and the e-moderator and teachers were well received.

**Conclusion:** Based on the results of this study, we suggest that blended learning may indeed increase the level of education and stimulate effective learning for postgraduate health care professionals. The professionals experienced added value of social interactive online preparation from collaborating and interacting with each other. We consider better aligning of the online and face-to-face components as one of the highest priorities.

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## **Theme: Teaching & Learning**

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### **TITLE: CAN PBL (PROBLEM-BASED LEARNING) AND SGD (SMALL GROUP DISCUSSION) PLAY A PIVOTAL ROLE IN PROFESSIONAL DEVELOPMENT OF POSTGRADUATE STUDENTS?**

**Introduction:** Medical college and teaching hospital is a place where future doctors are trained. In the medical college and teaching hospital; teachers use different ways of teaching. Curriculum always affects the professional outcome. Formal teaching is lectures, interactive courses and different communication skills.

**Methodology:** Students were motivated, and facilitators were arranged. Observation of PBL and SGD was done, and final decisions were made in facilitators meeting

**Results:** For effectiveness of discussion the role of the facilitator is always pivotal. Small group discussions though underemphasized is a fruitful learning activity. Discussion with peer and colleagues is always valued by students. Role modeling is a great learning experience.

**Conclusion:** Proper training of all the facilitators pay a vital role. Motivation is necessary for PBL and SGD for clinical students. Always do collaborative learning and get reflections for improvement.

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## **Theme: Teaching & Learning**

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### **TITLE: CURRENT AND EMERGING APPLICATIONS OF 3D PRINTING IN MEDICINE**

**Introduction:** Three-dimensional (3D) printing enables the production of anatomically matched and patient-specific devices. In the early 1980s Charles Hull invented 3D printing which he described as stereo lithography (STL) or the 'printing' of successive layers of material on top of each other to create a 3D object. The goal of this analysis is to demonstrate by a deep research of the 3D-printing applications in the medical field the usefulness and drawbacks and how powerful technology it is.

**Methodology:** They include (1) selecting the anatomical area of interest, (2) the creation of the 3D geometry, (3) the optimization of the file for the printing and the appropriate selection of (4) the 3D printer and (5) materials. All of these steps require time, expertise and money.

**Results:** 3D printing may be helpful in medicine because the process could potentially be used to make any kind of organ. By using seed material from the patient's own tissue, the problems of tissue rejection caused by inflammatory responses including tissue graft versus host rejection could be avoided, as well as the necessity for patients to take lifelong immunosuppressants. 3D printed specific-patient models have demonstrated that they can increase performance and foster rapid learning.

**Conclusion:** The main pillars of this new technology are the ability to treat more people where it previously was not feasible. At the present time, however, the impact of 3D printing in medicine is still small, but it has the potential to grow into an enormously beneficial technology.

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## **Theme: Teaching & Learning**

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### **TITLE: DEMONSTRATING FUNCTIONAL 3-D MODELS: A STUDENT-CENTERED APPROACH**

**Introduction:** Human Physiology involves complex physiological mechanisms and constant ongoing research is improving our understanding day by day. It is challenging to determine an efficient way to enhance teaching and learning. The knowledge of core concepts can be achieved through a combination of motivation, innovation, active learning and teamwork. This study caters the learning styles of visual, auditory, kinesthetic and verbal learners. It aims to explore the impact of construction and demonstration of innovative 3D working models of physiological mechanisms on students' learning and their interpersonal skills.

**Methodology:** Undergraduate medical students who volunteered were divided into groups. They conceptualized and developed their own working 3D models under the supervision of an expert physiologist. Their work was presented and evaluated by a panel of national judges in an undergraduate symposium held at University College of Medicine & Dentistry, University of Lahore. Written feedback was obtained at the end by using a peer-reviewed questionnaire.

**Results:** Majority (89%) of the participant students reported inculcation of teamwork due to this activity. Most (67%) of the participants found these models as a useful learning resource and suggested that 3D model making should be a regular part of physiology teaching and learning. A total of 56% of the students agreed that such models are a

useful method for understanding complex physiological mechanisms. Most of the students were of the view that they received adequate help and commented that their learning outcomes were achieved.

Conclusion: Working-3D-models can facilitate teaching and learning of physiological mechanisms. It enhances interpersonal skills, teamwork and promotes active participation. These models can serve as a useful learning resource material to clarify the concepts.

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### **Theme: Teaching & Learning**

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### **TITLE: DEVELOPMENT OF A 'SURGICAL SHADOWING SCHEME' TO IMPROVE UNDERGRADUATE EXPERIENCES OF SURGERY**

Introduction: A decline in the interest of choosing surgery as a career has been observed worldwide. Developing a 'surgical shadowing scheme' using active mentorship and operative skills training during preclinical years would make surgery a preferable choice as a future career among new graduates. The aim of this review is to describe the factors responsible for attracting or deterring medical students from choosing surgery as a career and to assess the effectiveness of a 'surgical shadowing scheme' for improving undergraduate experiences of surgery.

Methodology: PubMed was searched using keywords "surgical shadowing", "preclinical exposure", and "recent advances in medical education" for articles published from January 2017 to August 2019. These articles were reviewed to extract data relevant to the objectives.

Results: Different factors influencing students' choice were impact of gender (no female role models, female gender bias), impact of surgical education (pre-clerkship exposure, clinical exposure), and the impact of lifestyle mismatch with surgery (stressful routine, effect on pregnancy and childbearing). Students who had been part of surgical mentoring program were more receptive in adopting this career.

Conclusion: Surgical shadowing scheme can provide preclinical students a direct exposure to surgical environment and mentors, thus improving their decision making to adopt surgery as a sustainable career. However, this will require additional resources in terms of time allocated to pre-clinical year students in theatre, commitment from working surgeons and co-ordination between basic and clinical departments.

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### **Theme: Teaching & Learning**

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### **TITLE: VIRTUAL REALITY TO TEACH ANATOMY**

Introduction: Using 2D images to teach the structure of 3D objects is typically implicated. It is even harder when dealing volumetric objects with internal information that also needs to be displayed e.g. The heart.

Virtual Reality (VR) and Augmented Reality (AR) have been gradually introduced in the curriculum of schools given

the benefits they bring to classical education. We present an experiment designed to expose students to a VR session where they can directly inspect 3D models of several human organs by using Virtual Reality systems. They are known as the Virtual Reality Learning Environments (VRLEs) .

**Methodology:** The experiment has involved 254 students of a Nursing Degree, enrolled in the Human anatomy and physiology course for 2 years (2 consecutive courses) at the Campus Docent

Sant Joan de Déu Barcelona Spain . The students were taking the Human anatomy and physiology subject, 123 students from the 2014-15 course and 131 students from the 2015-16 course. Both courses had a group of students in morning schedule and another in the afternoon schedule.

All the students were taking the course Human anatomy and physiology for the first time.

The experiment includes 10 3D models representing different anatomical structures in this paper we present our experience on teaching an anatomy class to nursing students in their first course of the degree. In this class students may experiment with 3D models of several anatomical organs by using two different Virtual Reality systems, a Powerwall and CAVE.

Each VR session is given to a small group of 15-20 students divided into two subgroups of 6-10, and it is directed by two assistant teachers (one per group) who explain the anatomical organs and their functions while the students are interacting with the models.

**Results:** The students were given a questionnaire at the end of the activity in which they answered about their opinion of

the experience. It had 8 items organized in two blocs or categories. Each item was assessed on an ordinal scale from 1 to 10. The first bloc assessed whether the VR tool facilitates learning and the second bloc assessed the student satisfaction. The results of the first bloc showed that the Powerwall tool facilitates the understanding of the theoretical contents more than the CAVE tool. This is caused by the fact that the models shown in the Powerwall (heart, brain,

eye, ear and thorax) are more attractive than those shown in the CAVE (digestive system, circulatory system, urinary system, lungs and aneurysm).

In the half of the questionnaire the students evaluated the satisfaction of their expectations, interest of the contents shown in the experience. The worst valued item in this

category, for all students, is the session length, and this is because the students only have 2 hours and a half hour for the whole session. We believe that this is a short amount of time to see all the structures in both VR systems (Powerwall and CAVE) and to follow the explanations of the teacher.

**Conclusion:** There are some limitations of the project that should be considered:

1. The number of sessions: Each session has twenty students. So, it has to be repeated again and again to ensure learning of the whole class. This requires more time and higher economic cost.
2. Location: the Powerwall VR system could be installed in a normal medium sized room; the CAVE system requires a specific space i.e. a 3mx3mx3m room. So, the students after watching the POWERWALL models move to the campus where CAVE models are set up. This requires time so it is scheduled after their classes at the university.
3. Cost effectiveness: Very expensive but a need of the hour.
  - Interpretation of the experience: Well satisfied (both the teachers and students)
  - Expectations: The results infer that the activity in the virtual environment is motivating for learning anatomical structures.
  - Interaction: In this regard, firstly, the VR anatomy reinforces a style of reasoning focused on objectivity, reality



and materiality, and secondly, participation in activity plays a role in the identity formation and the generation of the feeling of belonging to a potential community, the biomedical

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### **Theme: Teaching & Learning**

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## **TITLE: VIRTUAL REALITY: A NEW FRONTIER FOR LEARNING GROSS ANATOMY**

**Introduction:** In this modern era of technological advancements in medical education, traditional methods, such as cadaveric dissection (dating as far back as 300 BC Greece) for learning anatomy are being increasingly phased out in undergraduate courses for approaches incorporating computer-augmented, virtual reality simulations.

**Methodology:** This poster is based on a literature review of relevant research from PubMed Central, using the keywords "Virtual Reality", "3D Dissection", "Anatomy", and "Effectiveness" with the Boolean operators "AND". The search yielded 26 searches, out of which 2 were narrowed down and utilized for this poster.

**Results:** Virtual reality opens new frontiers for teaching and learning gross anatomy. Be it 3D dissection tables or wearable VR glasses, the enhanced ability to interact with by rotating, moving, zooming and slicing virtually augmented gross anatomical structures to their desire, as well as selecting or removing individual structures and highlighting whole systems, enhances learning. A wide range of functionalities, including integration with clinical images, pathological correlates and the infinite do-overs (much in contrast to physical cadavers), are available in by virtue of these virtual technologies.

**Conclusion:** Among the articles reviewed, Nicholson D.T, et al (2006) reported that two groups of students (tutored using standard cadavers or VR technology) when quizzed, yielded significantly different scores ( $P < 0.001$ ), with the VR group's mean score on the quiz was 83%, while that of the traditional teaching group was 65%. Deng X, et al (2018) yielded similar results with VR group achieving mean score of  $84.97(\pm 7.86)$  compared to  $78.96 (\pm 5.78)$  in the traditionally tutored group, with statistical significance between two groups ( $p < 0.01$ ).

#### **Limitations**

There are a wide range of VR technologies available and the effectiveness within different VR modalities may vary. Furthermore, all instructors and students may not necessary possess the technological expertise to effectively use these modalities and that may influence the results.

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### **Theme: Teaching & Learning**

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## **TITLE: WEB-BASED INTERACTIVE VIRTUAL PATIENTS: IMPROVING PRECLINICAL MEDICAL STUDENTS' EARLY CLINICAL EXPOSURE**

**Introduction:** Web based interactive virtual patient is emerging as a new learning tool which may offer several advantages over standardized patients. Interactive virtual patients are highly standardized, accessible, require few personnel and resources and help students to improve communication and clinical reasoning skills by practicing

clinical scenarios as many times as needed.

**Methodology:** A literature search was conducted on PubMed, ERIC and google scholar using terms including web based virtual patient, virtual patient, early clinical exposure and clinical skills in preclinical years. Boolean operators were applied to include studies from health and medical education related areas.

**Results:** A total of 12 articles were identified which met the inclusion criteria. Two articles described the advantages of virtual patients over standardized patients whereas in one article it was suggested that use of virtual patients for learning led to over confidence in students. All the studies reported that use of virtual patients enhanced the communication skills and clinical reasoning in undergraduate medical students.

**Conclusion:** Undergraduate medical students have limited exposure to real patients during preclinical years. So, when they start clinical rotations, they have poor clinical reasoning skills. Web based interactive virtual patients can improve history taking and clinical reasoning skills of medical students. This educational tool allows medical students to rehearse clinical scenarios as many times as needed, learn from mistakes, receive instant feedback and trace their learning curve. Practicing on virtual patients reduces stress in medical students for being novice while interacting with real patients. So virtual patients should be designed and implemented in medical institutions to improve early clinical exposure of undergraduate medical students.

**Key words:** Web based virtual patients, standardized patients, clinical reasoning skills, early clinical exposure, preclinical medical students.

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## **Theme: Teaching & Learning**

Name: Muhammad Mustehsan Bashir

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### **TITLE: EXPLOITING THE POWER OF GAMIFICATION IN JOURNAL CLUB**

**Introduction:** Journal club has the potential to be a productive, interactive, and even enjoyable experience. Different approaches to journal club have evolved to encourage individual engagement and participation, but they usually remain very close to the classic approach and retain its shortfalls. Gamification as a student-centered pedagogical strategy has been introduced to confront the challenge of broadening the range of instructional strategies beyond conventional pedagogies.

Studies of the effects of gamification on student engagement in higher education are scant; this reality is even more accentuated in medical education. Available studies suggest that gamification might or might not work. As such, the mixed effectiveness of gamification in supporting engagement and improving educational outcomes could be explained by the highly variable DEs found in gamification .Proposed research is aimed to explore the effect of gamification on residents' engagement in journal club learning activity in Plastic Surgery post graduate medical education.

**Methodology:** Research Design: Quantitative; Quasi Experimental counterbalanced design

**Sample size:** All the plastic surgery trainees in Mayo Burn Center and Jinnah Burn and Reconstructive Surgery Center

**Sample size:** All the plastic surgery trainees in Mayo Burn Center and Jinnah Burn and Reconstructive Surgery Center

**Sampling technique:** Purposive sampling

**Exclusion criteria:** Plastic surgery residents who have not attended traditional journal club

**Instrumentation:** Engagement in journal club learning activity will be measured by using 14 item Student Engagement Survey (SES) tool.

Selection of four articles for journal club

Development of scenarios related to the articles

Development of questions to assess the validity, results and applicability of the selected article

Development of interactive software named 'League of Legends' incorporating principles of gamification

Design 1 Leaderboard

Design 2 Batches

Group 1 Residents at Mayo Burn Center

Group 2 Residents at Jinnah Burn Center

Measurement of pre intervention student engagement score

Phase1

Two articles will be discussed

Group 1- Design 1

Group 2- Design 2

Measurement of post phase 1 student engagement score

Phase 2

Remaining two articles will be discussed

Group 1-Design 2

Group 2-Design

Measurement of post phase 2 student engagement score

Results: The trainee engagement scores for each group will be presented as mean (SD). Depending on normality of data, mean post intervention score for two groups for intervention 1 will be compared with post intervention scores for two groups by using independent sample t test or Mann-Whitney U test. P value less than 0.05 will be considered significant.

Conclusion: The findings of the study would add to the body of studies on the impact of gamification in engaging trainees in journal club learning activity. It is assumed that, if found effective, the methods studied could be adopted by other residency programs.

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## **Theme: Teaching & Learning**

Name: Saadia Shahzad

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### **TITLE: DO THE STUDENTS LEARN ABOUT MEDICAL PROFESSIONALISM FROM NARRATIVE STORYTELLING? APPRECIATIVE INQUIRY: AN INNOVATIVE APPROACH IN MEDICAL EDUCATION.**

Introduction: Narrative storytelling is a variant of appreciative inquiry; which has evolved as an innovative & very effective approach in deepening students' interest and understanding of professionalism. Lectures upon teaching professionalism is not an uncommon sight, with a room full of snoozing students after ten minutes of speaking. Recently real-life examples have been incorporated in the teaching of professionalism.

Methodology: It was an exploratory study conducted through review of past literature and personal experience at workplace; and articles on teaching medical professionalism to students, were studied. It was combined with personal experience at workplace that involved narrative storytelling (real life experiences) by teachers in Bioethics workshops and in mentor meeting; for the teaching of professionalism to students/trainees.

Results: Literature shows following results which are supported by our workplace experience too:

sparks new ideas about professionalism, reinforces/corrects previously held concepts, enhances students' commitment to professionalism, source of inspiration, strong student and teacher relation, learning with enjoyment.

Conclusion: Narrative storytelling is a variant of appreciative inquiry and situated learning; and studies have proved it to be an effective way of teaching professionalism to medical students. Personal workplace experience supports this fact and in the researcher's opinion this method of teaching professionalism should be adopted on a permanent base.

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### **Theme: Teaching & Learning**

Name: Fatima Waheed

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### **TITLE: EDUCATIONAL IMPACT OF SIMULATION-BASED LEARNING ON ASSIGNED TASKS**

Introduction: A doctor can learn and acquire the required knowledge and skills by gaining exposure to patients. Wellbeing and safety of patients pose a challenge in the medical field. The confidence and skills in the doctors are enhanced by repetitive exposure and experience. The role of simulation comes here to diagnose problems and test new techniques before they are applied to real patients.

Methodology: This study was conducted in Lady Willingdon Hospital, Lahore. We had a laparoscopic simulator in our hospital. Here we practiced on the laparoscopic simulator and improved our following skills like throwing knots, tying knots, removal of ectopic pregnancy, removal of myoma, doing cauterization, doing drilling of ovaries, clipping of fallopian tubes, bladder dissection and performing hysterectomy.

Results: We noted down the features of learning as repetitive practice, ability to provide feedback and ability to range difficulty levels. We noted the educational benefits as absence of risks to patients, opportunity for assessment of learners, reproducibility, exposure to uncommon events and deliberate practice with feedback. It was observed that stimulation reduces the task time to half with repetition.

Conclusion: It is concluded that simulated training has given a new approach in the medical field. We make protocols which afterwards can be applied and practiced through different scenarios which were fed in simulators. There is additive benefit of teamwork training which is conducted in simulated environment. It enhances performance and reduces errors.

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### **Theme: Teaching & Learning**

Name: Komal Atta

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### **TITLE: EUREKA! EXPLORING THRESHOLD CONCEPTS IN MEDICAL EDUCATION**

Introduction: Threshold concepts were introduced in 2003, however they have been very recently applied to medical education and that to not very commonly. These concepts basically refer to such problems, that once understood

lead to a transformation of perspective and understanding

Methodology: Research papers were searched via 5 known databases, using “threshold concepts” and health sciences” “medical sciences” as keywords. literature found was sifted to see how these concepts applied to medical education.

Results: Threshold concepts enhanced deeper learning and critical thinking in most cases. they encourage a transformative approach towards education.

Conclusion: Threshold concepts seem like a new uncharted territory in Medical Education, that if tapped wisely may bring many potential benefits in curriculum design, teaching and learning and identity formation.

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### **Theme: Teaching & Learning**

Name: Syed Mubashir Hussain Shah

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### **TITLE: FLIPPED CLASSROOM: THE FUTURE OF CLASSROOMS IN MEDICAL AND DENTAL COLLEGES OF MODERN ERA.**

Introduction: As the modern era is transforming, the pedagogical techniques are also revolutionized. Idea of flipping the traditional classroom style has been widely accepted as the better teaching modality.

Medical and Dental Colleges have also started using this teaching method as in combination with the traditional style classrooms.

Methodology: Results of different published articles of the last two years are collected, analyzed and combined to present in the poster.

Results: Expected

Conclusion: Flipped classrooms are much better way of teaching problem solving, reasoning and critical thinking among the medical and dental students but are not in common practice here in our medical and dental colleges. We expect this teaching method to be implemented on a wider scale at our medical and dental colleges.

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### **Theme: Teaching & Learning**

Name: Saqib Naeem

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### **TITLE: EFFECTIVENESS OF MICROTEACHING AS A METHOD OF DEVELOPING TEACHING COMPETENCE AMONG IN-SERVICE MEDICAL TEACHERS**

Introduction: In spite of the fact that micro teaching has been practiced extensively in most universities, its actual efficacy has not been studied systematically. In this study, there was an attempt to quantify the efficacy of microteaching in inducing behavioral change in teachers. We also aimed to determine the perceived utility and ease of this process in teacher training, using the feedback received from the participants. This feedback along with efficacy can collectively predict the effectiveness of microteaching

Methodology: A prospective experimental study was designed using a convenient sample of 30 faculty volunteers. After the institutional ethics committee approval, the videos of pre-microteaching and post-micro teaching

sessions from the 30 participants undergoing 5 sessions of microteaching were graded with a seven-point teaching competency scale and the participant's perceived usefulness and perceived ease of use was studied using a validated questionnaire. Paired sample t-test was used to determine the efficacy of the study.

Results: Microteaching showed a statistically significant improvement among the behavior of the participants after five sessions of microteaching. All the parameters in the scale showed a statistically significant improvement. Though the participants felt that this method was useful, the majority of them felt it is a very time-consuming process requiring resources.

Conclusion: Hence, the overall effectiveness in in-service teaching process was limited for microteaching in this current scenario; though microteaching induced positive behavior change, it was time consuming and also it was difficult to arrange a peer group to enroll.

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## **Theme: Teaching & Learning**

Name: Muhammad Faheemuddin

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### **TITLE: FLIPPED CLASSROOMS IN MEDICAL EDUCATION**

Introduction: It is an old saying "you learn by doing" which holds true for many disciplines including medicine . The learning attributes have changed through generations and in today's world the educationists are dealing with generation Y which has increased the demand for new learning dynamics. The flip classroom is an old learning methodology newly adapted for learners at all levels in medical schools. In the flipped classroom approach the main knowledge and teaching occurs outside the classroom, so that more in-class time could be spent on intellectual discussions or interactions. It enables students to develop an understanding of the course content prior to class. Having the basic knowledge enhances perceived competence of learning in class of students and motivates students to pay more attention during class .

Methodology: Literature review

Results: A flipped classroom is the future in medical education

Conclusion: A flipped classroom is the future in medical education. it can be modified according to the local needs

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## **Theme: Teaching & Learning**

Name: Ummay Ammara

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### **TITLE: FLIPPED LEARNING: TURNING MEDICAL EDUCATION UPSIDE DOWN**

Introduction: Flipped learning is an approach in which core teaching is delivered using online material viewed prior to face-to-face learning, applying knowledge gained from online material.

Methodology: Core lectures were videoed, and students were advised to watch online at home in the morning prior to a case-based interactive discussion session in the afternoon. Feedback was undertaken prior to and following change in delivery; changes in Likert scale feedback were assessed. Thematic assessment of free-text feedback was undertaken. Results of in-course assessment examinations were compared prior to and following change in delivery.

Results: Student feedback showed a significant improvement in satisfaction with flipped learning compared to standard lectures, both in scores and free-text feedback. Results of in course assessments did not change between

the two methods of delivery.

Conclusion: Flipped learning can improve student satisfaction and engagement with teaching, but our study has not demonstrated an improvement in assessment scores.

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## **Theme: Teaching & Learning**

Name: Aatir Hanif

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### **TITLE: FLIPPED STYLE CLASSROOM**

Introduction:

Flipped learning is an approach where students gain necessary knowledge before class, and instructors guide students in actively and interactively clarify and apply that knowledge during class.

Methodology: This is a comprehensive survey of prior and ongoing research of the flipped classroom. Studies are characterized on several dimensions. Among others, these include the type of in-class and out-of-class activities, the measures used to evaluate the study, and methodological characteristics for each study.

EDUCATIONAL IMPACT:

Results of this survey show that most studies conducted to date explore student perceptions and use single-group study designs. Reports of student perceptions of the flipped classroom are somewhat mixed but are generally positive overall. Students tend to prefer in-person lectures to video lectures but prefer interactive classroom activities over lectures. Anecdotal evidence suggests that student learning is improved for the flipped compared to traditional classroom. However, there is very little work investigating student learning outcomes objectively.

LIMITATION:

There have been few formal direct comparisons between normal and flipped classroom learning thus there is limited data. Furthermore, local literature is scarce.

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## **Theme: Teaching & Learning**

Name: Rabbia Qadeer

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### **TITLE: TEACHING PROFESSIONALISM USING NEAR PEER LED SMALL GROUP DISCUSSIONS**

Introduction: Professionalism has been widely acknowledged as a salient competency required in a physician. Traditionally learnt through informal role modelling, it is now expected to be explicitly incorporated in the medical

education curriculum. Dilemmas still revolve around choosing the best method to teach it.

**Methodology:** An underused but prospective approach is to use 'Near peers' led small group discussions, in conjunction with other traditional ways (role modelling, lectures and small group discussion led by faculty) to teach professionalism. The most benefiting factor of having a near peer as tutor is the social and cognitive congruence they provide.

**Results:** Although there is very limited evidence of this strategy being used, the ones reported have shown it to be highly effective. The programs reported, particularly chose discussion materials that were highly engaging and covered grey areas of everyday life dilemmas. This setting provides the learner a safe space to critically reflect and have an open debate, with peers they trust and can relate to without the fear of being judged.

**Conclusion:** Although role modelling still acts as the greatest influence on a student's professional identity and behavior, this method can be used in conjunction with others as a reinforcement for teaching professionalism.

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### **Theme: Teaching & Learning**

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## **TITLE: THE DOCTOR AND THE MACHINE: EDUCATING THE NEXT GENERATION OF MEDICAL PROFESSIONALS WITH MACHINE LEARNING**

**Introduction:** Artificial intelligence (AI) is a branch of computer science that has increasingly become popular in the modern era due to its wide range of applications in daily life. The emergence of this technology has greatly changed the way people work and interact and has thus, gained widespread acceptance in the field of medicine.

**Discussion:** The healthcare system uses the complex algorithms and software of artificial intelligence to surpass human cognition in the analysis of complex medical data. The application of Artificial Intelligence has extended to medical practices such as the process of establishing diagnosis, the development of treatment protocols for patients, formulation of drugs, and providing patients with personalized medication as well as monitoring and care. With the ability for data monitoring, information retrieval, image processing and the lab information systems, AI is destined to drastically change the clinician's role and everyday practices in the medical field. Some of the applications of AI in the medical field include CDSS (Computerized Decision Support Systems), Telemedicine, Intelligent Tutoring Systems, Virtual Patients, Robotic Surgery and Simulation Modeling.

**Methodology:** MME 8 assignment

**Results:** MME 8 assignment

**Conclusion:** Health Professionals are now incorporating Artificial Intelligence into their teaching and medical practices and this technology is driving our education to be more malleable. Artificial intelligence holds the potential to be extremely productive and enhance the quality of life for human beings. It is expected that in the near future this technology will become an integral part of human life and work.

**Keywords:** Artificial Intelligence (AI), Medical Education, Health Professionals.



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## **Theme: Teaching & Learning**

Name: Asma Saadia

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### **TITLE: THE ROLE OF GAME-BASED E-LEARNING IN MEDICAL EDUCATION**

**Introduction:** Game based e-learning (GBEL) is a relatively new modality of medical education which is gaining popularity due to the advancement in computer and game technology. Medical professionals can use desktop computers, laptops, tablets, iPad or smartphones for educational games and find them engaging, competitive, motivating and pleasurable activities.

**Methodology:** In medical education, digital games are introduced in different formats such as simulations, virtual environments, social and cooperative play and alternative reality games. Digital games for various fields of Surgery, Medicine, Radiology and Pathology have been developed to inculcate skills, knowledge or attitudes that can be applied in the real world.

**Educational impact:**

GBEL drives internal motivation as the games offer challenges, choices and consequences to the students. Games are useful for training uncommon medical scenarios and provide a safe educational environment as the students can experiment without putting real patients at risk. Digital games reinforce the analysis, synthesis and evaluation competencies by improving visual memory, processing and higher-level thinking.

**Limitations**

A specific game may not be applicable to other audience as the characteristics and requirements of students at different stages are different. Sometimes, there is more emphasis on technology rather than learning. High development cost limits the widespread use of games for learning. Targeting effective educational objectives is difficult with games.

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## **Theme: Teaching & Learning**

Name: Rabia Ashraf

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### **TITLE: UNDERGRADUATE MEDICAL STUDENT'S PERCEPTION OF THE FLIPPED CLASSROOM APPROACH: A NEW TEACHING METHODOLOGY PROMOTING ACTIVE LEARNING STRATEGIES**

**Introduction:** The flipped classroom (FC) approach is a new concept in undergraduate medical education which promotes active learning strategies. In FC, students are first exposed to content via online resources. Afterwards, face to face class time can be used to allow the students to apply their knowledge to challenging problems in collaboration with peers and feedback & directions from teachers. Generally, it has been well received by students however this review serves as an early insight into student's perception of FC.

**Methodology:** Review of the literature regarding perception of FC by undergraduate medical students published between 2012 and September 2019 was performed by searching Scopus, Web of Science and PubMed databases. Review was performed using established scoping review framework delineated by Arksey and O' Malley.

**Results:** Medical students are generally expressed strong appreciation for the pre-class preparation activities (especially when facilitated by concise, readily accessed online tools) as well as for interactive, engaging small group classroom activities. Some students have expressed concerns with FC and noted that suboptimal student preparation

and insufficient direction & structure during active learning sections may limit the student-centered benefits.

Conclusion: Medical students have generally expressed strong contentment with early application of the FC to undergraduate medical education, and generally preferred this method to conventional lecture-based instructions.

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## **Theme: Teaching & Learning**

Name: Uzair Bin Akhtar

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### **TITLE: USE OF VIRTUAL REALITY IN ORAL AND MAXILLOFACIAL SURGERY**

Introduction: Virtual reality (VR) is an immersive, three-dimensional, computer generated environment in which users can interact with the environment in a realistic manner using special electronic sensors. It is becoming a hot topic in the field of computer-assisted surgery bringing great changes to the medical training.

Methodology: Review of different research articles

Results: As Oral and maxillofacial surgery (OMFS) is operated in anatomical area of the mouth, jaws, face, and skull, as well as associated structures. The novice surgeon acquires skills by first observing experienced surgeons in action and then by progressively performing. In the field of medical training, the use of cadaveric and synthetic materials still plays an important role for their realistic characteristics, however this method may be unrepeatable and expensive to some extent.

Conclusion: Due to the shortage of resources, the traditional training based on synthetic bones or cadavers has so far been limited for its low efficiency and high price. We can use VR in the training of surgical residents and to teach undergraduate students. Preoperative examination using VR can aid better understanding and planning of the surgical site in the future.

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## **Theme: Teaching & Learning**

Name: Muhammad Mateen Amir

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### **TITLE: FUTURE MEDICAL SCHOOLS**

Introduction: We live in a world of rapid change. Prediction is difficult but major changes are occurring in various ways in medical colleges. Increasing Integration between basic and clinical sciences and a move from fixed time with variable standards to one where standards will be fixed with variable time. There will be a mapped journey where students will not be considered as a client but taken as a partner.

Methodology: Technology advancement will produce a profound effect on future medical colleges. Starting from e-learning to virtual reality and free open access medical education to educational games, there are a wide range of technology advancements. Gaming applications e.g. prognosis and clinical scenes help students. One can imagine that in the future in the presence of rich net contents such as YouTube videos, podcasts, twitter feeds and Facebook groups on medical issues, an online community will be developed more and more.

Results: Augmented reality uses the holo lens technology (VR glasses) that enables students to learn anatomy over and over again without the physical presence of cadaver. One can go from the skin layer down to the bones, and back again and see the different relationships between the muscles, nerves and organs. Microscopic level if desired

can be achieved.

Conclusion: There is a major trend towards globalization. Accreditation agencies are working on quality outcomes of medical education. Concepts of global programs and global schools are emerging. Last but not least there is a question. Who will develop the first online medical school?

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### **Theme: Teaching & Learning**

Name: Rafia Minhas

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Title: How medical students learn by MOOC: A scoping review

Introduction: MOOCs an innovative tool that follows the connectivism paradigm and the medical field is also incorporating it.

Methodology: scoping review

Results: Medical students are favoring MOOC due to its qualities and hence more attention should be given to them.

Conclusion: awareness needs to be raised about MOOCs so we can benefit more from this innovative tool

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### **Theme: Teaching & Learning**

Name: Shoaib Ahmed

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### **TITLE: MEDIA USE AMONG STUDENTS FROM DIFFERENT HEALTH CURRICULA**

Introduction: Background: Mobile devices such as smartphones, tablets, and laptop computers enable users to search for information and communicate with others at any place and any time. Such devices are increasingly being used at universities for teaching and learning. The use of mobile devices by students depends, among others, on the individual media literacy level and the curricular framework.

Methodology: N/A

Results: Discussion: Almost all students use electronic learning (e-learning) tools. At the same time, different profiles for different degree programs become apparent, which are to be attributed to not only the varying curricula and courses but also to the life circumstances of different age groups. Mobile devices in particular are very popular among the faculty of health students and used for learning purposes. Universities should, therefore, pay attention to the diverse user patterns and media literacy levels of students when planning courses to enable successful use of e-learning methods.

Key words: Social media, Medical education, Electronic learning, Computers, Media literacy

Conclusion: N/A

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## **Theme: Teaching & Learning**

Name: Saleha Cheema

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### **TITLE: SIMULATION IN MEDICAL EDUCATION: AN ILLUSION OF COMPETENCE OR A TASTE OF REALITY?**

**Introduction:** Simulation based medical education (SBME) comprises the establishment of clinical skills laboratories in medical institutions. The future promises to be an era of dynamic learning where new skills will need to be mastered as soon as possible in order to optimize patient care. In such a scenario SBME might prove to be an essential tool in the medical educationist's arsenal.

**Methodology:** A review of published articles was performed

**Results:** Skills Laboratories provides a platform for acquiring and polishing new skills of both undergraduate students and their graduate counterparts. In these settings, medical professionals are able to achieve proficiency in leadership, teamwork and a myriad of other non-technical skills. An integration of the basic and clinical sciences is a further benefit of SBME.

**Conclusion:** In a world where patients are increasingly concerned about being experimented upon by un-trained personnel, SBME has proven to be a reliable alternative to practicing skills directly on the patients. Improved comfort in procedure and an increase in medical knowledge are proven benefits of SBME. However, studies performed have yet to ascertain the amount of impact SBME has on real life patient outcomes. The effect of SBME on improving co-operation in medical education has also not been quantified to date. These unanswered questions warrant further studies in order to understand if future investments in SBME are justified.

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## **Theme: Teaching & Learning**

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### **TITLE: MEDICAL ESCAPE ROOM GAMING EXPERIENCE (MERGE): THE IMPORTANCE OF NON-TECHNICAL SKILLS IN HEALTHCARE**

**Introduction:** Non-technical skills (NTS) are essential for healthcare professionals. Earlier the students are made aware of this, the more time they have to acquire these skills. Escape rooms have been introduced in the medical literature but a detailed published manual on setting up and running such a learning modality is lacking. The purpose of this paper is to describe the use of an escape room to create learning opportunities, including detailed instructions, as well as an evaluation from two settings.

**Methodology:** A medical escape room focusing on non-technical skills was developed and run in two different settings: a university summer school and an international healthcare congress. Post-session questionnaires data and video recordings were obtained and then compared with each other to investigate entertainment value, self-evaluated use of non-technical skills and ideas for further use of the escape room concept.

**Results:** Majority of the participants found the escape room psychologically safe and enjoyable and would recommend the concept to other students and healthcare professionals. Video analyses showed the same tendencies regarding the use of non-technical skills as reported by participants.

Conclusion: This paper presents a fully applicable medical escape room manual, ready to be implemented, adopted, and modified. The use of an escape room has potential as a setting to train and use non-technical skills (i.e. situation awareness, decision making, team working, and leadership). The MERGE was attractive to the participants, in entertainment value, perceived learning, and psychologically safety.

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### **Theme: Teaching & Learning**

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### **TITLE: MEDICAL STUDENTS' OCCUPATIONAL BURNOUT AND ITS RELATIONSHIP WITH PROFESSIONALISM**

Introduction: Occupational burnout is a prevalent syndrome among medical students and other health professionals. It may be an important factor contributing to professional conduct. The aim of this study was to determine the prevalence of burnout among medical students of Shiraz University of Medical Sciences at clinical level and its relationship with professionalism.

Methodology: In this cross-sectional study, all students who had spent a minimum of six months of first year of clinical level and who were in their final year in 2015-16 were examined (using census method). Data was gathered by using demographics, educational background and dimensions of professionalism questionnaires and Maslach Job Burnout Inventory.

Results: The total mean score of burnouts was  $61.37 \pm 20.44$  (moderate). In this study, 54.3% of the students had low, 35.2% moderate and 10.4% high job burnout. There was a negative correlation between job burnout and professional ethics with Pearson correlation test ( $p < 0.000$ ,  $r = 0.23$ ). There was no significant relationship between increase in academic years and burnout.

Conclusion: Regarding the high prevalence of burnout and its adverse effects among medical students, developing a workplace assistance program and adequate facilities to help them is necessary. Due to negative correlation between professionalism and burnout, continuous training of professional ethics should be taken into consideration by educational authorities.

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### **Theme: Teaching & Learning**

Name: Bilal Habib

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### **TITLE: MICROLEARNING IN HEALTH PROFESSIONS EDUCATION**

Introduction: Background: Micro learning, the acquisition of knowledge or skills in the form of small units, is endorsed by health professions educators as a means of facilitating student learning, training, and continuing education, but it is difficult to define in terms of its features and outcomes.

Methodology: N/A

Results: N/A

Conclusion: Discussion: Micro learning as an educational strategy has demonstrated a positive effect on the

knowledge and confidence of health professions students in performing procedures, retaining knowledge, studying, and engaging in collaborative learning. However, downsides to micro learning include technology inequalities, and privacy concerns. Future research should look at higher-level outcomes, including benefits to patients or practice changes. Education researchers, faculty, and academic administrators on the application of micro learning, pinpoint gaps in the literature, and help identify opportunities for instructional designers and subject matter experts to improve course content in clinical settings.

Key words: Micro learning, health professions, education, Collaborative learning, Research

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### **Theme: Teaching & Learning**

Name: Mariam Irfan Akram

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### **TITLE: MICROSOFT HOLOLENS : WILL THIS INNOVATION TRANSFORM MEDICAL EDUCATION?**

Introduction: Microsoft HoloLens is a headset which is the first holographic computer that runs on Windows 10. It superimposes 3D images over the wearer's field of vision using the technology of augmented reality. I chose this topic because I found it very appealing and it was indeed an innovation worth discussing.

Methodology: HOW HoloLens is being used in the medical world

The HoloLens has different applications. HoloAnatomy is the one being used at Case Western Reserve University to teach anatomy. CAE Vimedix application allows training based on simulation in ultrasound and anatomic education through augmented reality. Microsoft HoloLens is also being used in the training of laparoscopic surgery, neurosurgery and echocardiography.

Educational Impact:

A study has shown lower cognitive load and higher achievements in medical students learning neuroanatomy with augmented reality. Another study at Case Western showed better student comprehension in an anatomy module using HoloLens. HoloLens will not only help the students but can also affect patient care by improving medical training.

Conclusion: Augmented reality is bound to transform the world of education. Faculty who will be familiar with this technology will all have important roles as educators in the future. However, HoloLens has a long way to go before it becomes economical and readily available, especially in our part of the world.

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### **Theme: Teaching & Learning**

Name: Sumera Nisar

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### **TITLE: PROCEDURAL SHORTCOMINGS OF PEER ASSISTED LEARNING (PAL) IN CLINICAL SKILLS TRAINING OF OPHTHALMOLOGY MODULE**

Introduction: Peer Assisted Learning (PAL) is an important known feature of medical curriculum (Malick, 2018). It effectively engages the students in their learning and leads to effective academic gains by learning from more

knowledgeable peers. More knowledgeable peer facilitates discussions and clinical skills teaching sessions to help the transition of less knowledgeable students into more knowledgeable and skilled professional.

It promotes a supportive classroom atmosphere as well, starts with small supportive groups, helps to integrate basic and clinical knowledge and includes time for independent work. By this practice of peer assisted learning, acquisition of knowledge and skills takes place through active helping and support among status equal or year specific matched companions (Alvarez et al., 2017). Receiving and learning inappropriate or wrong skills and poorly conducted PAL sessions can cause negative effects on students learning and creates a negative impact of PAL. Poorly conducted sessions can also create a sense of disinterest and lack of satisfaction among students. Disinterest and lack of satisfaction can lead to poor academic performance and clinical skills.

Therefore, the purpose of my study is to sort out the procedural shortcomings of peer assisted learning in clinical skill learning to enhance the effectiveness of this teaching technique

Methodology: Study Design:

This will be a Qualitative exploratory study

Study settings:

This study will be carried out at Batterjee Medical College, Jeddah; Saudi Arabia.

Sample Size:

- 20-30 students in focus group discussions
- 4 tutors who will be observing the sessions would be interviewed

Sampling Technique/Design:

Purposive convenience sampling technique will be used to select the subject

Instrument:

Focus group discussions from the students

Semi-structured interview from the observer tutor

Results: Thematic analysis of the data will be carried out to get the results

Conclusion: This study is aimed to identify the procedural shortcomings of PAL sessions while teaching the clinical skills in undergraduate medical students.

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## **Theme: Teaching & Learning**

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## **TITLE: USE OF FLIPPED MODEL CLASSROOM TEACHING ON SECOND PROFESSIONAL MEDICAL STUDENTS**

Objectives of the study were to compare the effectiveness of traditional method of teaching with the flipped classroom teaching

(FCT) model in Immunology

and to assess the

perception of students

towards the flipped

classroom teaching (FCT)

model using semi- 30 structured feedback.

Methodology: Single centered study 0 100 students of second year MBBS were included Pre-class material provided

to learn and understand During the class, clinical discussion of immunology topics

10 sessions on FCT, Pre-class and post-class knowledge was assessed.

Feedback from students and teachers

Results: One hundred students of second year MBBS

The MCQ marks obtained in the study were categorized into three groups; students scoring <5, 6-8 and >8 out of 10 for both pre and post class assessment. Proportion of students securing 6-8 score in pre-class assessment was significantly higher ( $P<0.001$ ) as compared to those in post class assessment. Whereas, in post class assessment significantly higher proportion of students secured score between 9-10 ( $P<0.001$ )

Conclusion: FCT was found more interesting by the students. It showed improved results in the post session MCQ test on the topic as compared to conventional method

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## **Theme: Teaching & Learning**

Name: Amna Rlaz

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### **TITLE: MEASURING THE ATTITUDE OF PAKISTANI HEALTH PROFESSIONAL STUDENTS TOWARDS INTERPROFESSIONAL EDUCATION**

Introduction: Interprofessional education (IPE) helps in promoting mutual understanding and teamwork among health professional students. It is important that health professional students recognize its value in the healthcare system. However, perspectives and readiness of health professional students towards IPE has not been evaluated in Pakistani context which we aimed to explore.

Methodology: This comparative cross-sectional study has used pre-validated Readiness for Interprofessional Learning Scale inventory to explore readiness of students enrolled in medicine, dentistry, nursing, pharmacy and physiotherapy programs. Student responses on RIPLS questionnaire was recorded on a 5- point Likert scale. ANOVA and t-test were used to perform the comparative analysis.

Results: In total, 394 students completed the questionnaire with a response rate of 68.17%. The students showed fairly positive attitudes (mean = 74.40, SD = 8.41) towards interprofessional education. Medical students showed maximum (mean = 75.96, SD = 6.71) and dental students showed least awareness of IPE (mean = 71.29, SD = 8.34). The students of integrated curriculum showed more positive response towards IPE (mean = 75.39, SD = 6.86) as compared to traditional curriculum (mean = 73.66, SD = 9.34).

Conclusion: Pakistani undergraduate health professional students' value shared learning, teamwork and collaboration. Overall, students of all professions showed a reasonable level of readiness for interprofessional learning. Our findings indicated that medical students valued interprofessional education more than other disciplines and dental students valued the least which may pose challenges to the local healthcare system. In our curricular comparison analysis, the more pronounced readiness of students in integrated curriculum reflects its effectiveness in promoting interprofessional collaboration among future healthcare providers.



## **Theme: Teaching & Learning**

Name: Ch. Nasir Ahmed

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### **TITLE: IMPACT OF MULTI-SOURCE FEEDBACK ON BEHAVIORS OF YOUNG DOCTORS**

Introduction: Multisource feedback (MSF) is a 360-degree appraisal system in which every individual surrounding you in the workplace is giving you the feedback of your performance.

- The application of MSF in assessment of doctors in a healthcare setting involving doctors, staff nurses, and patients is reliable, valid, and feasible (Donnon, Al Ansari, Al Alawi, & Violato, 2014).
- It has four basic constituents i.e. superior's appraisal, subordinate's appraisal, peer appraisal, and self-appraisal. (Meenakshi, 2012).
- Feedback is an important component of MSF which allows health care professionals to reflect their performance and improvement. (Murton, 2016)

Methodology: Study settings: KEMU and allied hospitals

Study Design: Descriptive qualitative study

Study Duration: 6 months after approval of the synopsis.

Target population: House Officers of Mayo Hospital Lahore

Accessible population: 300

Sampling Technique: Non-probability convenient sampling

Sample Size: 12 with CI 95% and margin of error 5%

Inclusion criteria: House officers of Mayo Hospital working in a ward where MSF is being conducted

Exclusion criteria:

- Foreign medical university graduates.
- Graduate with less than 3 months of rotation left in the concerned department
- Individuals having a history of disciplinary issues.

Results: None

Conclusion: Despite the widespread use of MSF for feedback as a tool for workplace-based assessment (WPBA), little is known about the receptiveness of learners to the key points presented from different sources. We need to explore the reasons and dynamics of why some physicians may feel offended by MSF and consider them in planning assessment in the workplace to improve their performance.

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## **Theme: Teaching & Learning**

Name: Mehwish Munawar

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### **TITLE: OUTCOME ASSESSMENT OF INNOVATIVE TEACHING ON PERFORMANCE OF MEDICAL UNDERGRADUATES**

**Introduction:** The decreasing interest of students in active learning and problem-solving approach by working in groups is felt as a

challenge by many teachers. Overdependence of today's medical undergraduates on readymade study material and social

media is a matter of concern for the medical fraternity. At the same time, it is an opportunity to develop innovative teaching

learning methods suitable to present scenario. We planned to evaluate the impact of innovative teaching methods on attendance

and academic performance of MBBS students.

**Methodology:** It was a longitudinal type of descriptive study conducted among MBBS students. 'Must know' content for different topics and innovative methods of teaching were decided through faculty consensus. To improve active learning social media chat groups were utilized and students were encouraged to make group presentation, small write up on spotters and to undergo open book exam as a group assignment. Their attendance records and performances were evaluated at the end of study period of 21 months.

**Results:** There was a significant increase in mean percentage of theory marks among those attending !75% classes from first to fourth terminal ( $p < 0.001$ ). Although practical exams also observed the same trend, but it was not significant ( $p: 0.89$ ).

**Conclusion:** Intervention in form of innovative techniques of teaching and learning contributed in improving the performances of the students. Introduction of innovative teaching learning methods is the need of the hour to improve interest and academic performance of undergraduate students.

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## **Theme: Teaching & Learning**

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### **TITLE: ROLE OF SMART PHONE AS AN EDUCATIONAL TOOL IN HEALTH CARE EDUCATION**

**Introduction:** We live in an era of research, innovations and technology. Every day many new inventions and discoveries are taking place in many disciplines. The learning methodologies and aids have been revolutionized over the past few years with the introduction of many new gadgets. Smartphones not only replaced a lot of day-to-day use gadgets (watches, diary, calendar, calculator etc.) but also took place of many learning tools. This is very true for medical education as well. A recent study assessed the medical faculty members' perception about use of smartphone as an educational tool.

**Methodology:** The researchers have distributed an online questionnaire - including three parts: a demographic part with five variables; a 15-item part of various applications of the smartphones; and a 14-item part measuring attitudes

towards using these smartphones - among medical faculty members at two Palestinian universities. The Cronbach alpha value for questions was more than 0.7. A five-point Likert scale was used for response. Any mean score more than 3 considered a positive response in favor of mobile phone use as a learning tool and vice versa.

Results: 30 out of 72 (41.6%) faculty members responded to the online survey.

Male to Female ratio 1:1.

Table 1: Showing Top 7 Items with positive responses regarding use of smart phone as learning tool

Item	Mean Score	Standard Deviation
I contact my students for important information.	4.37	0.72
Smartphones enhance easier access to information anywhere and anytime.	4.20	1.00
Smartphones can encourage students to store everything on their smartphones, Tablets, computers, or other devices.	4.13	1.01
Smartphone features allow users to learn grammar, spelling, pronunciation, and other essential literacy skills.	4.03	0.85
Smartphones allow students to get access to up to-date information through the Web and social media.	4.00	1.02
I read news, books and articles online directly from my smartphone in order to gather more information on topics treated in class.	3.87	1.25
I use online dictionaries on my smartphone to get definitions/meanings related to topics in my class.	3.87	1.33
Smartphones help me organize my work better.	3.77	1.01

Table 2: Showing Items with poor response as to use of smartphones as a learning tool

Item	Mean Score	Standard Deviation
I download materials onto my smartphone to store up-to-date information for my class.	2.93	1.55
Smartphones can increase in class participation and elsewhere collaboration between students.	2.90	1.16
I access and download textual materials, audio and video clips for my class directly from my smartphone.	2.90	1.47
I have course materials such as slides, lecture notes and practice quizzes available on my smartphone.	2.90	1.60
I encourage students to submit their assignments online from their smartphones.	2.87	1.46
I use my smartphone to check attendance in the classroom.	1.97	1.33
I use Bluetooth from my smartphone to share materials with my students.	1.80	0.92

Conclusion: • The faculty members used smartphones in the teaching process despite the fact that this technology has not been formally allowed by the university administrations.

- Most of the respondents perceived their smartphones as an effective teaching tools to some extent.
- This might be an opportunity for more teaching staff in other faculties and universities to use smartphones to enhance students' learning needs without the constraints of time and location.
- In light of the results of this study, it appears feasible to develop learning activities involving smartphones.
- It might be advisable to design learning material that not only allows access through LCDs or computers but also through smartphones.

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### **Theme: Teaching & Learning**

Name: Hammad-Ur-Rehman Bhatti

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#### **TITLE: FLIPPED CLASS ROOM: AN INNOVATIVE METHOD OF TEACHING AT ISLAM MEDICAL COLLEGE SIALKOT**

**Introduction:** Flipped class room is an innovative method of teaching. students study topics via internet or other sources before class, then teacher arrange face to face interaction in the classroom. in this study we implemented flipped class room model to enhance active learning of final year mbbs students of islam medical college sialkot.

**Methodology:** 80 final-year students participated .the study was conducted from july 1 to september 30, 2019. study material was provided in the form of reading material or video lectures. then in class face to face interaction for group discussions, problem solving and quaries under supervision of faculty of medicine was done.

**Results:** 84 % students responded positively towards utility of flipped classroom in terms of being interactive and activity lead learning. 75 % students completed the pre-session preparation. students reported that their queries and misconceptions were cleared in a better way in the face-to-face session as compared to the traditional setting.

**Conclusion:** Flipped classroom (fcr) teaching and learning strategy is an effective way of deeper active learning, student's engagement with their interests of topics. this strategy of teaching is an effective tool of medical education in medical colleges.

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### **Theme: Teaching & Learning**

Name: Aasma Hanif

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#### **TITLE: GAMIFICATION AND MULTIMEDIA FOR MEDICAL EDUCATION**

**Introduction:** Medical education is rapidly evolving. Students enter medical school with a high level of technological literacy and an expectation for instructional variety in the curriculum. In response, many medical schools now incorporate technology-enhanced active learning and multimedia education applications. Education games, medical mobile applications, and virtual patient simulations are together termed gamified training platforms.

**Methodology:** Peer-reviewed literature, commercially published media, and grey literature were searched to compile an archive of recently published scientific evaluations of gamified training platforms for medical education. Specific educational games, mobile applications, and virtual simulations useful for preclinical and clinical training were identified and categorized. Available evidence was summarized as it related to potential educational advantages of the identified platforms for medical education.

**Results:** Overall, improved learning outcomes have been demonstrated with virtual patient simulations. They can provide opportunities for risk-free clinical decision making, distance training, learning analytics, and swift feedback. A total of 5 electronic games and 4 mobile applications were identified for preclinical training, and 5 electronic games, 10 mobile applications, and 12 virtual patient simulation tools were identified for clinical training. Nine additional gamified, virtual environment training tools not commercially available were also identified.

## **Theme: Teaching & Learning**

Name: Attyia Rashid

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### **TITLE: IMPACT ON STUDENT ENGAGEMENT IF FACILITATOR BEHAVES AS SIMULATED PATIENT IN PBL**

Introduction: Problem-based learning (PBL) is a well-established teaching strategy in medical education and continues to be developed and explored (Mansur, Kayastha, Makaju, & Dongol, 2012). The students learn about the subject by solving the relevant real-life problems through higher order critical thinking and brainstorming of prior knowledge. PBL has become a prominent pedagogical identity in the current modern research era. Different aspects related to the process of PBL, tutor's role and unpredictable learning outcomes due to some grey areas in PBL are major interests for the researchers (Jin & Bridges, 2014). To engage the students is the major goal of all the educators in student centered and small group learning strategies (Rotgans & Schmidt, 2011). But literature shows that PBL session conduction and facilitation sometimes becomes difficult due to disengagement of students, information overload and undirected learning as it is a long process (Salam et al., 2009).

Current trends in research have proved that introduction of different educational strategies can improve the learning of students due to enhanced engagement in PBL. These educational technologies have been trialed in medicine and dentistry. Most of them, improves the engagement level of the students, but cannot prove to improve the understanding and learning outcome effectively in clinical setting.

It is a big challenge to connect the somewhat abstract nature of classroom-based PBL with clinical practice and to maintain learner engagement in the process of PBL over time (Chuan et al., 2011). One of the strongest argument which was expressed from faculty groups was that PBL should not be used as the sole method of instruction and that students need a solid foundation in the subject prior to engaging in PBL as this deficiency also lead to disengagement (Abdelkarim, Schween, & Ford, 2018).

The reason behind can be that tutors/facilitators are not actively involved in the process of PBL. Their role modelling is missing (Chng, Yew, & Schmidt, 2015) (Chng et al., 2015). As students have come from traditional system that was teacher centered and tutor used to behave as a hero and role model. Students are tuned to see the teacher in that active role to keep them involved. The aim of my study is to observe the impact on student engagement if facilitator /tutor changes his role and behaves as a simulated patient in PBL. No authentic literature is available regarding change of role of facilitator in PBL as simulated patient according to the scenario to improve the engagement level of students.

No doubt, simulated patient-based education is widely accepted as a valuable and effective means of teaching (Wimmer et al., 2014). I will observe the impact in my study that how effectively facilitator can engage the students to improve the learning outcomes of students if he or she behaves as patient according to scenario of PBL. It seems to be cost effective and more feasible. It is expected that this will increase not just enhance student engagement but also facilitators engagement, who will be able to assess and give feedback to the students better.

Methodology: Search Engines: The literature Search was conducted by the following search engines:

- PUBMED
- Google Scholar
- ERIC

As it is impossible to review all the resources so these search engines are used

Selection of Articles:

Articles Selected:

- Qualitative and Quantitative Studies both included
- Meta-analysis
- Systemic reviews
- Papers

Full text articles on simulation in PBL and role of facilitator in PBL to improve the engagement of students.

Filter used:

- Customize range since 2015
- Full text articles

Results: SELECTION THROUGH PRISMA

Conclusion: Concluding from the above discussions, neither role of facilitator nor importance of simulation can be overlooked. As it is the era of PBL, whole world is working on problem-based teaching strategy to achieve the best learning outcome from the students. Although, systematic reviews highlighted certain limitations of PBL like long process which lead to loss of student engagement especially in the second half of the cycle. There are many studies which help us to face these challenges, solution is also described in different studies like use of simulations, scaffolding, role changes, videos, flipped class and role plays. Nowadays use of virtual patients or web patients also replaces the linear cases (Poulton et al., 2014).

Teacher, s role modelling is also very important in boosting of attention and engagement. That can be as a teacher or as a patient to enhance the motivation. It is the art of teacher how to motivate students intrinsically or extrinsically. Motivated students can perform better.

The intentions of my research are to look for a way to involve the students of MBBS basics sciences during PBL in abstract nature of problem scenarios by incorporating both roles of teacher and student in a simulated facilitator. Studies highlighted the role of simulated patients and facilitators. However, my literature search could not identify any study in which facilitator behaves as simulated patient. Tutor's involvement and dedication in helping the students of PBL by behaving like a simulated patient in specific cases can prove to achieve improved outcomes on learning and in turn patient care. I intend to expect that students which are deprived of inspirational role of teacher in PBL, will maintain their interest and motivation with the help of simulated facilitator.

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## **Theme: Curriculum**

Name: Lubna Ahmed

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### **TITLE: COMPETENCY-BASED MEDICAL EDUCATION IN UNDERGRADUATE CURRICULUM: BLESSING OR BURDEN?**

Introduction: Competency-based Education is a learner-centered approach that focuses more on the outcome abilities of graduates. We call the attention of the Curriculum leaders towards the building of Instructional strategies on one another; linked through a comprehensive framework that leads to the achievement of desired competencies. Such competencies should be assessed individually at regular intervals.

Methodology: An extensive review of literature provided direction about the graduate competencies that are being adopted by the medical schools worldwide along with some major difficulties that are being faced by the schools during this curricular reform.

Results: The faculty involved in Competency-based education needs to be oriented and trained about the underlying

principles of this education. Existing teaching-learning methods can be revitalized and made more interactive. The intrinsic load can be reduced if more guidance is provided from the educators in the initial years of the curriculum.

Conclusion: We may provide our students the best of integrated teaching by the modification of the current or the addition of new teaching/learning methods but integrated learning of the delivered information in the mind of our students is more important.

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Theme: Curriculum

Name: Afshan Sumera

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## **TITLE: FROM LITERACY TO ELECTRACY, EVALUATION OF UNDERGRADUATE PATHOLOGY TEACHING BASED ON TECHNOLOGY ENHANCED LEARNING: A SYSTEMATIC REVIEW**

Introduction: The need to teach extensive morphology-based pathology is modified, the need is to focus more on the causes and pathogenesis of the disease, which enables the doctors to diagnose and treat patients more effectively. The e-learner generation of "Homo-Zapien" students think and learn differently. Pathology teaching has adopted technology-enhanced innovations to help undergraduates to learn effectively.

Methodology: The major electronic databases were searched for literature from 2009 to 2019. The peer-reviewed papers were screened and reviewed using precise inclusion criteria. A thorough evaluation of all resultant studies was done for the scope and quality of studies. Studies identified as using controlled designs were further synthesized to assess the uses of technology-enhanced learning (TEL) in pathology.

Results: A total of 30 full-text articles were obtained and reviewed based on inclusion criteria. Total of 14 studies applied virtual medical technology. Five studies blended learning using mixed mode, both face to face and online learning. Three studies used mobile-based, and three applied digital gaming for pathology learning. Four studies evaluated the use of web-based technology for teaching. However, one study used the social media application for teaching. One study applied an experiential approach by developing and implementing the patient simulation software (vpSim) for virtual pathology instruction.

Conclusion: The use of TEL to teach pathology is a promising approach to increase learners' motivation and engagement. These findings suggest that educators should consider incorporating effective evidence-based TEL interventions in teaching pathology to medical students.

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## **Theme: Curriculum**

Name: Aroosa Ashraf

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## **TITLE: REBOOT OF MEDICAL EDUCATION FOR THE 21ST CENTURY**

Introduction: Artificial intelligence is an active research area of computer science to build such systems that have the ability to think and act rationally. Its objective is to mimic human intelligence. Its applicative ventures have a high growth rate in the field of medicine with the potential to give promising results in various aspects of healthcare.

Methodology: Knowing the fact that the medical practice is evolving from the age of information to the age of

artificial intelligence, so this emerges a die-hard need for medical educators to have a reasonable awareness of AI concerning learning and teaching along with its impact on medical education.

Results: Thus, we need to advocate changes in the undergraduate curriculum that respond to the challenges of AI. The new curriculum should incorporate the content of intelligence tools developed using machine learning algorithms with the intent to increase the performance and patient-centered outcomes. It should also assure to embrace the professional attributes such as strong convincing and communication skills with patients and guardians.

Conclusion: With the curriculum reform, medical education would be reimaged for the 21st century. Moreover, health practitioners would have a solid understanding and command of the latest medical practice conducted by AI.

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### **Theme: Curriculum**

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### **TITLE: PATIENT SAFETY: A FORGOTTEN BASIC SCIENCE?**

Introduction: Patient safety: A Forgotten Basic Science

Patient safety is largely concerned with the reduction of avoidable/ preventable harm to the minimum possible<sup>1</sup>. Since patient safety is a fundamental part of professional practice and also an important common goal for all health care providers, many clinicians might argue that patient safety is an integral part of "Hidden curriculum.<sup>3</sup> This concept however results in minimal inclusion of patient safety education in formal curricula and hence little understanding on the part of young graduates of preventable risk and importance of formulating strong healthcare delivery models with resilient teams, based on mutual trust.

Methodology: German version of APSQ-IV, (Attitude to Patient safety Questionnaire) will be used to determine whether or not our medical students being equipped with the science of patient safety.

Results: Results will be analyzed

Conclusion: Considering the limitations of our healthcare system, especially the scarcity of resources originating from the country's lower socioeconomic status, it is essential that we uptake and integrate patient safety explicitly and formally into existing curricula, since: "Prevention is better than cure."

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### **Theme: Curriculum**

Name: Asma Rasheed

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### **TITLE: EFFECTS OF HIDDEN CURRICULUM ON STUDENTS LEARNING**

Introduction: 1-

1.1 Background: Education is not the piling on the learning, information, data, facts, skills, or abilities that train or instruct but is rather making visible what is hidden as a seed like something can be hidden in a sense of a cure of cancer is hidden by someone or in a sense in which a penny in the game hide the penny is hidden. In our educational system, Is the curriculum yet to be discovered or has it been hidden by some one? (Gaufberg, Batalden, & Sands, 2010)The curriculum remains hidden until faculty and students get aware of it. Hidden curriculum refers to the ad



hoc, unarticulated learning that occurs outside the formal and taught curriculum. It is not documented but inferred by learners rather than delivered intentionally by faculty. It is the sum of the values, cultures, safety practices, and organizational structures within a school that causes it to function and react in particular ways(Verdonk, 2015).

1.2 Problem: Students and faculty members are often not aware of the existence of the hidden curriculum, which affects the student's personal and professional development, learning and behavior.(Rajput, Mookerjee, & Cagande, 2017) There are many controversial issues abound within educational circles and students receive conflicting messages in the process of everyday school life(Neve & Collett, 2018). Hidden curriculum issues are core to professional practice but hard to teach yet(Kerr, Reilly, Mj, Simulation-based, & Wilkinson, 2016).

1.3 Gap: In literature review, limited studies were evaluating the effects of hidden curriculum on student's learning, their personal and professional behavior. So, there is a need to search and ponder the effects of hidden curriculum on student learning(Sciences & Publications, 2013).

1.4 Purpose: The main importance of this study is to call for thoughtfulness in students what is happening in classrooms and medical schools. How educational environment and values affects students learning and behavior through hidden curriculum and special measures should be taken to minimize them. I started with no predetermined thesis about hidden curriculum but wish to end with an emerged synthesis of strategies which can help institutes to minimize the negative effects of hidden curriculum on their students(Blasco, 2012)

2-OBJECTIVE: To evaluate the effects of hidden curriculum on student learning and behavior.

Methodology: 3-METHODOLOGY:

3a- Study settings: UCM, UOL

3b- Study approvals: ERB and IRB of UCM/UOL

3c- Study Design: Qualitative study

3d- Study Type: Phenomenology

4-SAMPLING ISSUES:

4a- Target population: All MBBS students in UCM/UOL

4b-Accessible population: Key informants of 1, 2, 3 4, 5 th year MBBS students in UCM (2 students from each class 1st to final year MBBS)

4c-Sample Size: 10-14 students (small sample size till point of saturation)sample of 10 students and 4 for further saturation point

4d-Sampling Technique/Design: Nonprobability sampling (Purposive sampling technique). I planned to conduct one Focus group discussion of students and Formal interviews from 10-12 faculty members

5a-Inclusion Criteria:

- Faculty members Assistant professors and above of UCM/UOL
- Faculty having working experience of at least 3 year in UCM,UOL
- Students age more than 18 years.
- Two Students of MBBS from each year.

5b-Exclusion Criteria:

- Students with attendance less than 75% during the current academic year.
- Demonstrators
- Faculty having working experience of less than 3 years.

6a- DATA COLLECTION PROCEDURE:

- 1 Focus group discussion of students and interviews from 10-12 faculty members.

6b- Data analysis:

Modified Van Kaam approach that was popularized by Moustakas has 7 steps.

1- Horizontalization 2- Thematize the Invariant Constituents 3- Checking the Themes Against the Data 4- Create Individual Textural Descriptions 5- Create Composite Textural Descriptions 6- Create Composite Structural Descriptions 7- Create a Composite Structural-Textural Description:

Results: ----

Conclusion: ----

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## **Theme: Assessment**

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### **TITLE: SITUATIONAL AWARENESS: A NEGLECTED COMPETENCY**

Introduction: The competences which are considered mandatory for a physician for patient's safety include communication, leadership, adherence to protocol, situational awareness, stress resistance and teamwork. Psychological tests and assessments methods are now used in many disciplines worldwide to hire right professionals with high yield. In Undergraduate medical education attainment of different competences are mandatory. But for the development of their professional behavior, social interactive skills like inter professional communication is integration essential. Mastery in professional medical activities are attained by beautiful integration of different competences. Physician from five specialties identified that above mentioned competences must be present in a medical graduate.

Methodology: I reviewed few studies regarding this topic

Results: As in recent years medical education is changing from learning to attainment of competences. These interprofessional competencies are needed for better patient care and should be achieved in undergraduate level. Mostly students are only assessed by supervisors only and more emphasis on cognitive and psycho-motor domains whereas actual hospital-based assessment of all core competences are lacking. In these articles, Important competences of physicians regarding patient safety include communication, leadership, stress resistance, adherence to procedures, awareness, and teamwork. In the clinical setting these undergraduates were assessed, and their scores were compared with scoring of flight school applicants. In other studies, the same competencies were assessed as situational awareness. Both studies showed that competences required in inter-professional collaboration was deficient in undergraduate students.

Conclusion: More stress should be on students' performance in wards and not only theoretical knowledge. More emphasis should be on the inter-professional skills and situational awareness as it is most important in critical patient management.

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**Theme: Assessment**

Name: Muhammad Bilal Mirza

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**TITLE: VERY SHORT ANSWER QUESTIONS: AN EMERGING ASSESSMENT TOOL**

Introduction: Multiple choice questions (MCQs) have gained a great deal of confidence by the medical educationists and have shown significant reliability and validity. MCQs are in use for more than a couple of decades and scenarios have been used to test higher cognitive levels. Despite that, there is always a 20% chance of guess work; presence of a right answer in the answer-options can cue the learner and thus may not be able to test exact cognitive knowledge status. Very short answer questions (VSAQs), on the other hand, have comparable reliability and validity with MCQs with additional benefit of avoiding cueing/guess work.

Methodology: Recent literature searched with keyword assessment, MCQs, short answer questions, VSAQs, reliability; to compare the reliability of VSAQs with MCQs.

Results: Few studies available on the subject showed more or comparable reliability of VSAQs with MCQs and VSAQs have additional benefit of avoiding cueing of the answers.

Conclusion: VSAQs can be used as single assessment tool for the assessment of various levels of cognition domain. Lack of guesswork and cueing makes it even more valid tool.

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**Theme: Assessment**

Name: Muhammad Afzal

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**TITLE: VIRTUAL PATIENT SIMULATIONS: IMPACT ON MEDICAL EDUCATION**

Introduction: Catering with the challenges of short hospital stay, patient safety, ethical issues, shortage of clinical teachers and diminished opportunities of direct patient contact, digital education focusing on virtual patients, has long been introduced as a tool for training. Some concerns, however, have been raised about educational use of virtual patients. It is right time to review past experiences in this regard.

Methodology: Randomized controlled trials (RCTs) and cluster RCTs (cRCTs) published in the last two decades were reviewed to evaluate the following aspects.

- 1- Virtual patient versus traditional education
- 2- Virtual patient blended learning versus traditional education
- 3- Virtual patient versus other types of digital education
- 4- Virtual patient design comparison

Results: The pooled effect for knowledge outcomes suggests that virtual patient interventions are as efficient as traditional education.

Improvement in clinical reasoning, procedural skills, and a mix of procedural and team skills was noted.

Attitude and satisfaction levels were comparable in virtual patients as well as traditional learning environment.

Conclusion: Virtual patients should not replace but complement contact with real patients. There is low quality evidence that virtual patients are at least as effective as traditional education for knowledge outcome and more

effective for skills outcomes. On the basis of the comparative analysis, we may hypothesize that replacing passive forms of traditional education with virtual patients brings more benefit than replacing active learning methods. There is positive evidence of effectiveness from high, middle and low-income countries demonstrating the global applicability of virtual patients.

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### **Theme: Assessment**

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### **TITLE: APPLICATION AND CHALLENGES OF IMPLICATIONS OF ARTIFICIAL INTELLIGENCE IN MEDICAL EDUCATION**

**Introduction:** Since the advent of artificial intelligence (AI) in 1955, the applications of AI have increased over the years within a rapidly changing digital landscape where public expectations are on the rise, fed by social media, industry leaders, and medical practitioners. However, there has been little interest in AI in medical education until the last two decades, with only a recent increase in the number of publications and citations in the field. To our knowledge, thus far, a limited number of articles have discussed or reviewed the current use of AI in medical education.

**Methodology:** Medline (Ovid), EBSCOhost Education Resources Information Center (ERIC) and Education Source, and Web of Science were searched with explicit inclusion and exclusion criteria. Full text of the selected articles was analyzed using the Extension of the Technology Acceptance Model and the Diffusions of Innovations theory. Data were subsequently pooled together and analyzed quantitatively.

**Results:** A total of 37 articles were identified. Three primary uses of AI in medical education were identified: learning support (n=32), assessment of students' learning (n=4), and curriculum review (n=1). The main reasons for use of AI are its ability to provide feedback and a guided learning pathway and to decrease costs. Subgroup analysis revealed that medical undergraduates are the primary target audience for AI use. In addition, 34 articles described the challenges of AI implementation in medical education; two main reasons were identified: difficulty in assessing the effectiveness of AI in medical education and technical challenges while developing AI applications.

**Conclusion:** The primary use of AI in medical education was for learning support mainly due to its ability to provide individualized feedback. Little emphasis was placed on curriculum review and assessment of students' learning due to the lack of digitalization and sensitive nature of examinations, respectively.

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### **Theme: Assessment**

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### **TITLE: INTRODUCTION TO ENTRUSTABLE PROFESSIONAL ACTIVITIES. TO TRUST OR NOT TO TRUST?**

**Introduction:** An Entrustable Professional Activity is a key task of a discipline (i.e. specialty or subspecialty) that an individual can be trusted to perform in a given health care context, once sufficient competence has been demonstrated. Entrustable professional activities (EPAs) provide a framework for describing what medical students and resident are

expected to be able to do before graduation from medical school and finishing residence in specialty. They break down the work of a doctor into tasks, such as taking a history, forming a differential diagnosis, or recognizing a sick patient and initiating treatment. The word “entrustable” is part of this framework because most physicians, when working with a learner, have asked themselves, consciously or unconsciously, “Do I trust this learner to do that?” And, only if the answer is “yes” do they allow the learner to do the task. So, although EPAs sound new (and potentially confusing), they are built on a foundation that physicians have intuitively used. EPAs, first introduced by ten Cate in the Netherlands, are receiving increasing attention internationally as a framework for meaningful assessment of physician competence at both the UME and GME levels. It is measurable units of observable work and describe important routine activities of a given specialist or subspecialist that require integration of competencies for safe and effective performances, this is time that physician should understand the basis of EPA and specialty should develop their own EPA for undergraduate and post graduate level.

Methodology: WHAT ARE ENTRUSTABLE PROFESSIONAL ACTIVITIES

EPAs – for teaching, coaching and assessment

How to use them

With example of

Results: not applicable

Conclusion: EPAs provide a framework for describing the work that doctors do and the skills that medical students must acquire before graduation from medical school.

This framework assists medical students because it clearly outlines what is expected, it allows students to focus on specific skills, and it demonstrates that one can be doing well in one area and still have room to grow in another.

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## **Theme: Assessment**

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## **TITLE: CONSTRUCTIONISM LEARNING THEORY**

Introduction:

There are many learning theories which gives us conceptual road map that explains us how students absorb, process and retain knowledge during learning. Many factors like Cognitive, emotional, and environmental influences determine how understanding is acquired or changed and knowledge and skills retained. Prior experience has a similar significance.

Major Learning Theories:

Constructivism

According to this theory people construct their understanding and knowledge about the world through personal experiences and reflecting on those experiences.

Cognitivism

Cognitive load” relates to the amount of information that working memory can hold at one time. Cognitive Load Theory is an instructional design that reflects our “cognitive architecture,” or the way that we process information.

Behaviorism The basic concept of this theory is that all behaviors are acquired through conditioning. New behaviors are acquired through association between stimuli and response.

These learning theories provide us basis for the selection of specific teaching/learning methods/strategies, developing learning objectives, and selection of evaluation strategies. Different people have different interests, different learning preferences and different backgrounds. Better learning could be achieved by Integration of various positive aspects of these learning theories in the classroom.

#### Description of Constructivism

It is student centered approach. Teacher act as facilitator. Students assimilate, accommodate and adapt knowledge to develop new understandings. Constructivism promotes social & communication skills. This learning strategy promotes problem solving and understanding things in depth. Constructivism is more appropriate for integrated model of teaching.

#### Application in Classroom

Problem Based Learning

Project Based Learning

Task Based Learning

Inquiry Based Learning

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### **Theme: Assessment**

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### **TITLE: CURRENT TECHNOLOGY IN ADVANCING MEDICAL EDUCATION: PERSPECTIVES FOR LEARNING AND PROVIDING CARE**

Introduction: In medical education, advances like simulations, virtual patients, and e-learning have evolved as pedagogical strategies to facilitate an active, learner-centered teaching approach. According to Chhetri et al, contemporary generations of trainees have grown up in various technologies. They are equally adept and comfortable with technology to improve patient care.

Methodology: Systemic reviews were organized into the following topics;

E-learning

Multimedia

Technology assisted audience participation

Virtual reality and simulators

Mobile devices

Social media

Results: 19 reviews were relevant to the technology associated educational modalities.:

4 reviews on e-learning, 1 review on multimedia, 6 reviews on virtual patients and simulators, 3 reviews on audience response systems, 2 reviews on mobile devices, and 3 reviews on social media.

No systematic reviews were found specific to multimedia usage in medical education lectures

Conclusion: Learning material that is interactive, reputable, simple, pragmatic and coupled with relevant feedback knowledge, performance skills and team communication through realistic clinical cases. Educators utilize social media to promote student reflection and to address difficulties that trainees experience.

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### **Theme: Assessment**

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## **TITLE: EDUCATIONAL IMPACT OF WORKPLACE-BASED ASSESSMENT: A LITERATURE REVIEW**

Introduction: Educational impact of workplace-based assessment (WPBA) is the provision of feedback from assessor to deanery, enabling the deanery to steer his or her learning behavior towards desired learning outcomes. WPBA directs learning toward desired direction thus ensuring a desirable consequential validity and therefore positive educational impact of assessment.

Methodology: Literature review of studies of any design that attempted to evaluate either educational impact of WPBA or effect of WPBA on doctors' performance was performed at PubMed, Google Scholar and Web of Science . 50 original studies on the basis of matching keywords and title, after which 10 articles were found eligible which met my inclusion criteria were identified.

Results: WPBA brought changes in their learning behavior and strategies owing to educational impact of such assessment. Feedback provided by the assessors produced insights among learners regarding their strengths and weaknesses. Learners started mastering those skills which were relevant and essential. WPBA promoted deep learning, motivation to learn new skills and satisfaction from assessment method among learners.

Conclusion: Formative feedback through WPBA concludes that observing an event, critical appraisal of the event according to the standards set, and suggestions for improvement has strong positive educational impact on learners. Feedback from a credible source can change the learner's behavior and ultimately improves performance. WPBA is an assessment for learning rather than solely assessment of learning.

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## **Theme: Assessment**

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### **TITLE: COACHING BY DESIGN: A NOVEL APPROACH TO LEARNING AND ASSESSMENT AT WORKPLACE**

Introduction: Competence based medical education is sweeping the globe. There are concerns about workplace training of the doctors with lack of opportunity for assessment and feedback to approve

performance. There is emerging evidence suggesting training methods can be improved. CBD is Canadian Royal college initiative. In competence by design formative assessment is used as a learning tool. CBME focused on outcome rather than time.

This model observe resident during daily work rather than in an exam setting. Coaching occur in clinical environment and it is a key component of workplace-based learning.

CBD coaching model includes 2 components

- 1) Coaching in the movements, follows the RX-OCR step by step  
.rapport-expectation –observe-coaching-record
- 2) Coaching over time is a longitudinal education partnership and guidance overtime

Goal of competence by design is to improve resident training through implementation of coaching model and evidence-based rating scales.

Methodology: A scoping review of published articles was performed. A systematic search of 3 databases, PubMed, Google scholar and Cochrane along with Royal College of Canada website on competency by design were done. Using key words coaching and CBME with the Boolean operator.

Results: The research literature on formative assessment and feedback suggests that it is a powerful means for changing the behavior of trainee. Literature review from 10 studies on coaching efficacy for medical learners found positive outcome in decision making, teamwork and technical skill acquisition.

There is weak- to medium-strength evidence to support coaching in enhancing non-technical skills.

Early evidence suggests that CMBE will enable us to produce more competent doctors, but this has yet to be proven. CBD Coaching model is in its infancy, faculty plays a critical role and successful implementation requires motivation and training of the trainer as well.

Conclusion: Concept of coaching is recently introduced in medical education. Medical teacher role change from supervisor to clinical coach. Coaching is a form of teaching or competency focused instruction.



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**Theme: Assessment**

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**TITLE: NON-TECHNICAL SKILLS IN SURGERY (NOTSS) : A SYSTEMATIC REVIEW OF CURRENT TRAINING MODALITIES.**

Introduction: Non-technical skills are the cognitive and interpersonal skills that complement practical and technical competencies. Deficiencies in nontechnical skills have been identified as the main cause of errors in OR. Simulation-based teaching for NoTSS has been popularized.

Study tries to identify the current training methods used to teach nontechnical surgical skills and how are these assessed to determine the level of evidence , LoR , and role in training.

Methodology: • MEDLINE and Embase databases were searched for terms in English articles between 2000 and 2017 for NoTSS training.

- Search terms included nontechnical surgical skills, (NoTSS), surgical training, non-technical surgical skills training modalities and their assessment. Results were assessed for the level of evidence and each modality was awarded a level of recommendation, using a modified educational Oxford Centre for Evidence-Based Medicine classification

Results: HFORS: High Fidelity Operating Room Simulation

Fifteen studies were identified. It was awarded a LoR of 2.

LFORS: Low Fidelity Operating Room Simulation

Six studies described through the use of full immersion/distributed simulation (FIDS). This was awarded a LoR of 2.

CRM: Crew/Crisis Resource Management.

Six studies described its use.

Didactic and Simulation-based teaching:

Two studies described the use of a combination of methods, didactic teaching, and simulation-based teaching.

Conclusion: • It is essential for surgeons to be trained in nontechnical skills; therefore, the most valuable teaching modalities need to be identified and implemented within curricula.

- We recommend the use of high fidelity and low fidelity simulation for nontechnical skills training. Future studies should focus on developing a validated training method for nontechnical skills that can be implemented into surgical training across all surgical specialties.

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**Theme: Assessment**

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**TITLE: IS SMDC SEND-UP EXAM USEFUL? A CORRELATION BETWEEN SEND-UP AND PROFESSIONAL EXAM SCORES.**

Introduction: To prepare the students for annual exams conducted by UHS, SMDC conducts send up exams for at least one month prior to the annual exam. According to the criteria set by UHS, students scoring 50% or more in the send up exams are eligible to appear in the annual exam.

This study will be carried out to see whether the send-up exams conducted at SMDC in pre-clinical year are a good predictor of the individual's score in the annual exam.

Methodology: After taking permission from the Principal, the results of send up and 1st professional theoretical exam of 1st year MBBS students will be obtained from students' affairs. The students' affairs will be asked to send the results by replacing the names of students with serial numbers to maintain confidentiality. The results will be compiled and correlation between the scores will be determined.

Results: The results showed that the difference in scores of students in sendup exams and professional exams was insignificant. The girls in general scored more than the boys.

Conclusion: It was concluded that the sendup exams conducted at Shalamar Medical Dental College are a good predictor of an individual's scores in Professional exam conducted by UHS.

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### **Theme: Assessment**

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## **TITLE: DO EDUCATIONAL ENVIRONMENT, MOTIVATION AND LIFE QUALITY AFFECT TO MEDICAL STUDENTS IN A NEWLY ESTABLISHED MEDICAL SCHOOL FOR MULTICULTURAL SOCIETY?**

Introduction: Faculty of Medicine, Princess of Naradhiwas University (MedPNU) is a newly established medical school in special circumstances to increase the number of physicians working in remote areas and decrease inequality and violence situations. This study aimed, therefore, to explore the different factors that affected to medical students in a newly established medical school for multicultural society.

Methodology: A total of 81 first-to-third-year medical students of MedPNU responded to Thai version of Dundee Ready Education Environment Measure (DREEM), The World Health Organization quality of life-BREF (WHOQOL-BREF) and the Strength of Motivation for Medical School-Revised (SMMS-R) questionnaires. Mean total scores of all questionnaires were calculated and compared across groups using t-test and one-way ANOVA as well as association analysis using linear regression analysis.

Results: The mean total DREEM score showed educational environments of MedPNU was more positive than negative ( $=123.60 \pm 17.44$ ) with majority (43 out of 50) subscales indicated those items could be enhanced for improvement as well as seven problematic areas that must be closely focused on. The preclinical students displayed moderate quality of life by scoring WHOQOL-BREF ( $=3.52 \pm 0.69$ ) and demonstrated moderate motivation to study medicine by SMMS-R score ( $=53.55 \pm 8.20$ ). Although Muslim were less than Buddhists in this study (39.5% and 59.3%), it was much higher percentage when compared to overall of the country. Third-year medical students were lower quality of life on general health aspect than first year and second year. A year of study showed significantly ( $p < 0.05$ ) related to DREEM subscales on students' academic self-perception, perception of atmosphere, and social self-perception. Educational environment was moderately correlated with quality of life ( $r = 0.438$ ,  $p < 0.001$ ) and weakly correlated with motivation to study medicine ( $r = 0.246$ ,  $p = 0.027$ ).

Conclusion: Educational environment, motivation and quality of life do affect to medical students in a newly established medical school for multicultural society.

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**Theme: Research**

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**TITLE: MEASUREMENT AND COMPARISON OF PROFESSIONALISM AT UNDERGRADUATE LEVEL OF DENTISTRY IN DIFFERENT INSTITUTES OF LAHORE USING ARABIAN LAMPS SCALE**

Introduction: Professionalism holds vital position in the field of dentistry. Professionalism is a relationship between a professional and society. This relationship comes with the obligations from the profession and expectations from the society and vice versa. Dental professionals are expected to have certain characteristics which comprises of sets of attitudes and behaviors. There is need of incorporating professionalism at undergraduate curriculum. Along with its incorporation in curricula, it is equally important to assess the professionalism at undergraduate level. It has been observed that assessment of professionalism is specific to culture. A tested tool, named Arabian learner's Attitude on Medical Professionalism Scale (LAMPS) has been developed according in Arabic perspective. Pakistan being a Muslim country holds numerous similarities regarding culture and religion. Therefore, LAMPS was used as a tool to assess professionalism in our study at the undergraduate level.

Methodology: Cross sectional study was conducted in Lahore. Three institutes were involved in this study that were University College of Dentistry (University of Lahore), Fatima Memorial College of Medicine and Dentistry and DE 'Montmorency College of Dentistry. Data was collected by convenience sampling. Descriptive mean results were analyzed using IBM SPSS version 23

Results: The result shows dental students exhibit professionalism in range of neutral to agree according to 5-point Likert scale.

Conclusion: Dental students exhibit professionalism, but it is required to teach professionalism at undergraduate level to improve their perceptions

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**Theme: Research**

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**TITLE: GRASP THE ROOTS: REASONS TO THE LACK OF MOTIVATION AMONG DENTAL PRACTITIONERS TOWARDS CONTINUING PROFESSIONAL DEVELOPMENT (CPD)**

Introduction: Continuing Professional Development is given importance because once the doctor is qualified, he/ she is given the license to practice for the lifetime. This in turn leads to the growing problem of maintaining appropriate competencies. Researches done in 2002, 2004, 2010 and 2015 by researchers didn't discuss about what motivates a dentist to undertake CPD

Methodology: The study design of my study would be qualitative study. It will be based on Phenomenology with 6 months of time duration with the approval from the Ethical Review Board. the target population are the Dental Professionals of Pakistan. 10 -12 privately practicing Dental Professionals will be interviewed.

Results: awaiting

Conclusion: awaiting

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### **Theme: Research**

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### **TITLE: DIGITAL PROFESSIONAL IDENTITY**

**Introduction:** Identity is “ what it means to be who one is including the qualities and beliefs, distinguishing a person or a group from others” .Interactions by utilizing online platforms and tools of social media communication develops a Professional identity that is known as Digital Professional Identity.

**Methodology:** Articles containing information about professional identity formation and use of social media were searched on PubMed.

**Results:** It was found out that previous studies have also highlighted the impact of social media on education and personality.

**Conclusion:** Digital Professional Identity is significant to be part of Virtual Communities of Practice (VCops).It has immense educational impacts. In the current era of globalization, it is necessary to convey information for positive use of social media.

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### **Theme: Research**

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### **TITLE: LITERATURE SEARCH: EFFECT OF POSTGRADUATE MEDICAL EDUCATION QUALIFICATION ON THE MEDICAL EDUCATIONAL PRACTICES**

**Introduction:** PMDC has now made it compulsory to have a department of medical education in every medical college with faculty having Level IIa, IIb and Level III qualifications. Moreover, it has become mandatory to have medical education qualification for promotion of medical educationists. Because of increasing demand of medical educationist many universities have started master's Programs. Effectiveness of these postgraduate programs has not been evaluated extensively. So, it needs evaluation.

**Methodology:** A questionnaire will be adapted used by Sethi et al in his research for which permission will be taken from the author. However expert validation from the local medical educationists will be done and piloted in my own institution. I will discuss with three colleagues having at least postgraduate master's in medical education. These questions will also be discussed with the supervisor to ensure the content validity. Cronbach's Alpha will be performed to ensure internal consistency. I will try to get as many emails as possible from all the institutes running master's Program in Pakistan after liaison with medical education departments of concerned institutions. I will call all the universities who are running master's Program in Medical Education and will try to get list of their graduates with their contact details. Moreover, I will personally call medical education departments of all medical colleges by getting their numbers from their websites. Questionnaire will be emailed to all available graduates who attained their qualifications at least one year ago. The study will be done through a questionnaire sent through email to all available Medical Education Qualified Educationists having master's degree all across Pakistan. Questionnaire will have both closed ended questions and open-ended questions. Few individuals who will have significant information in the open-ended questions will be interviewed either on the telephone or physically according to convenience.

**Results:** Self-evaluation will be done in the following aspects

1. Interactive teaching strategies
2. Needs assessment and curriculum planning
3. Valid and reliable assessment methods
4. Plan, adopt and lead an educational change
5. Effective feedback
6. Rigorous medical education research
7. Engage in education related dialogue
8. Contribute to journals or books on education
9. Attend seminars and conferences on education
10. Present in education seminars and conferences
11. Conduct professional development workshops

Conclusion: Conclusion will be drawn after evaluation with the hypothesis that master's degree Program will improve the educational practices.

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### **Theme: Research**

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## **TITLE: HOW DOES THE PROFESSIONAL ATTIRE OF DOCTOR'S EFFECT PATIENT'S PREFERENCE FOR THEIR PRIMARY CARE PHYSICIAN?**

Introduction: Patient satisfaction is the main aim of health care department. Better understanding of the patient doctor relationship results in better organization of healthcare and better training of doctors. (Ridd, Shaw, Lewis, & Salisbury, 2009)

The style of the physicians dressing has an important role to play in the doctor patient relationship. ("First Impressions.pdf," n.d.) Patients have a certain preference for a doctor when coming to them for the first time based on how they dress. (Petrilli, Saint, Jennings, & Caruso, 2018) The first thing that a patient sees their doctor is their attire which helps build a good doctor-patient relationship. (Gherardi, Cameron, West, & Crossley, 2009). An important component of the first impression on the patient is the doctor's attire which then helps build a level of trust and confidence (S. U. Rehman, Nietert, Cope, & Kilpatrick, 2005). As quoted by Andrew Grant "You never get a second chance to make a first impression."

Previous studies revealed that patients prefer white coats since it helps them in easy identification of the doctors, and it makes the doctor look more professional. A properly dressed physician gives an image that patient contact is important, and they should be well prepared for it, whereas a poorly dressed physician gives an uncaring image. (Fareed, 2013)

When it comes to how much importance do doctors give to their attire, a survey done in 2015 revealed that only two out of 30 medical students actually thought about how they should be dressed when caring for their patient whereas majority of them believed that how they dressed influenced patients opinions. (Chopra & Saint, 2015)

In Pakistan there is no documented formal dress code for the doctors.

Methodology: Data will be collected from outdoor patients and doctors of Sheikh Zayed Hospital, that meet the inclusion criteria. Informed consent will be taken before enrolling them in the data collection procedure. Demographic

data will be noted, and patients will be asked to fill a questionnaire

The questionnaire consists of 11 questions which were divided into two sections. In the first section, the subjects were asked to answer 5 close ended questions on a 5-point Likert scale. These questions were about the importance of doctor's attire on patient care and satisfaction. In the second section of the questionnaire 6 close ended questions were asked in which the subjects would respond to a picture of doctor dressed in different attires. The duration of study will be 6 months.

Results: To be determined.

Conclusion: With culture playing a huge role in how doctors dress when coming to their workplace no study has explored this aspect in the Asian culture.

The results of the study could help the doctor community understand how patients perceive them in different attires and how it affects their level of confidence in them. This could further help upgrade the overall healthcare system and hence provide better patient care.

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### **Theme: Research**

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## **TITLE: CATCH THE CHEAT: IDENTIFYING THE MOST PREVALENT QUESTIONABLE RESEARCH PRACTICES (QRPS) IN BIOMEDICAL AND CLINICAL RESEARCH OF PAKISTAN**

Introduction: QRPs are more damaging to science and its public reputation than obvious fraud. Nature and prevalence of QRPs differ across different countries and professions. No attempt has yet been made to find the prevalence of QRPs in Pakistan. This study can serve as an empirical basis for policy makers to revise their regulations regarding scientific integrity.

Methodology: A mixed method study is planned to involve 377 biomedical and clinical researchers of Pakistan and 10-12 Editors of PMDC approved journals.

The researchers will fill a self-reporting survey which will be adapted from Artino et al questionnaire.

Editors will be interviewed.

Results: AWAITING

Conclusion: AWAITING

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### **Theme: Research**

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## **TITLE: EFFECTS OF CULTURAL ORGANIZATIONS ON BURNOUT OF MEDICAL FACULTY**

Introduction: A study based on the recognition of the relationship between the burnout symptoms and the organizational culture.

Burnout is chiefly illustrated by depersonalization emotional exhaustion and reduced feelings of personal execution. The causes of work stress are intimidation, feeling of insecurity, disappointment, frustration, increased pressure and, bitterness, etc. which leads to burnout syndrome .(1)

It is the reaction of employee continual interpersonal pressure of work which is distinct by three factors: ineffectiveness, exhaustion and, cynicism.(2)

Methodology: Study Setting: The study will be conducted at Shahida Islam Medical & Dental College Lodhran Pakistan.

Study Type: The study would be a correlational study.

Sampling Issues: The study would be performed in order to test the hypothesis.

Data Collection Procedure:1. A quantitative study based on a survey among the members of medical faculty.2. Informed consent will be done by the participants.3. Evaluate burnout and then estimate mean scores.

Study Design: (Observational cross sectional).The study will be conducted on the basis of Quantitative method.

Sample Population: A sample size 370 has been calculated using the formula. So, the adjusted sample size would be 444.

Data Analysis Procedure: IBM SPSS Statistics for windows will be used to perform statistical analysis. Chi-square, or t-test is the estimation tools for the personality traits with or without burnout. Multivariable logistic regression model also can be used to assess the relationship between personality traits and burnout. ANOVA (Analysis of variance) to determine the difference among multiple specialties. Bonferroni correction model can be used to estimate a significant p-value; with the range of  $p < 0.01$  and  $p < 0.0015$ .

Results: none

Conclusion: none

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## **Theme: Research**

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### **TITLE: EXPLORING THE FACTORS AFFECTING QUALITY OF POSTGRADUATE MEDICAL EDUCATION IN PAKISTAN: RESIDENT PERSPECTIVE**

Introduction: 2. Problem: Postgraduate medical education in Pakistan dates back to 1962 when only one program of master in different specialties run by the non-medical university. Later on, College of physician and surgeon came in and become another institution for training of postgraduate resident in specialties. The college was initially a degree awarding body. It evolved to present situation of structured training (Akhtar & Chaudhry, 2013). There is need for evaluation of the training of residents with help of resident's opinion about the training in medical and surgical specialties. In this era of learner centered education, the perception of residents about the quality of training is an area which has to investigate the current situation (Badsar, Taramsari, Hoseinpour, & Jahromi, 2012). The quality of training has an impact on the patient care. The health care to increasing number of communities in better way is the challenge for training of doctors. O the contrary, there is gradually decline in the postgraduate doctors all over the globe (Harden & Crosby, 2000). The factors involved in this scenario should be probed and prioritized according to the expectation of trainee residents. Residents satisfaction with the postgraduate medical education will have a great impact in improving the quality of health care to the population (Yeo, Viola, Sosa, Krumholz, & Curry, 2009).

Gap: The previous studies showed a gap in the resident's expectation and experiences in postgraduate training that leads to dissatisfaction in all specialties and addressing multiple factors. There are very scarce studies in literature

that showed either contextual or limited to one specialty training and one of the factors (Saaq, 2013).

Hook: Residents perception of what should be done to improve the quality of postgraduate medical education in training is the main important aspect of postgraduate medical education. This will set an initiative to improve the training and in return better care to the patient (Taha et al., 2019).

### 3. RESEARCH QUESTION/S, HYPOTHESIS AND OBJECTIVE(S):

Research Question/s: What are the factors that affect the quality of postgraduate medical education in Pakistan? How residents think about these factors?

Hypothesis: Identification and valuing the strengthens and challenges of training will improve the quality of postgraduate residency training in Pakistan.

Objectives: 1. To assess the satisfaction of the residents about the quality of their training.

2. To identify the areas of strengthens and challenges.

Methodology: Study settings: All the training institutes of Punjab which have accredited training program,

Study approvals Ethical review board, the University of Lahore

Study Design: quantitative

Study Type: cross-sectional study

Sampling Issues:

Target population: Residents of different medical and surgical specialties in training programs in Punjab

Accessible population: Residents in fellowship and master programs in 5 major teaching hospital of Lahore.

Sample Size: 200

Sampling Technique/Design: Simple random sampling technique.

Inclusion Criteria:

Resident doctors of both genders working in medical and surgical specialties in Punjab.

Residents in fellowship and master degree programs.

Exclusion Criteria:

Resident from first, 2nd and 3rd year will be excluded as they are not working in the specialty.

Residents who have spent more than required time in postgraduate medical education.

The doctors who started postgraduate training after the age of 40 years.

METHODOLOGY/DATA COLLECTION PROCEDURE:

INSTRUMENTATION: A validated Questionnaire

Pilot Testing: I will pilot the questionnaire in our setting to make it according to our context.

DATA COLLECTION PROCEDURE: The questionnaire is already validated and internal consistency measure using Cronbach Alpha coefficient. The SPSS version 22.0 was used for quantitative data analysis. Descriptive statistics were used to calculate frequencies, means, and SD.

DATA ANALYSIS PROCEDURE:

I will conduct a cross-sectional study during Aug 2019–October 2019 (n=200) using an anonymous, self-administered questionnaire. The questions included socio-demographic data and residents' views on the curriculum, learning resources, trainers, training methods, and assessment tools. The questionnaire ill administered to 35 residents from residency programs to assess the clarity of the questions. The questions will be then rephrased accordingly. Quantitative data will be analyzed in the form of frequencies, mean and standard deviation. Cronbach alpha for internal consistency of the questionnaire and t-test is used for comparison of means.



Results: Result will show the factors affecting postgraduate medical education in Pakistan. The result will help in improving the training of postgraduate medical education and health care to patients.

Conclusion: Result will show the factors affecting postgraduate medical education in Pakistan. The result will help in improving the training of postgraduate medical education and health care to patients.

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## **Theme: Research**

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### **TITLE: THE UNPROFESSIONAL BEHAVIORS OF PHYSICIANS AS PERCEIVED BY PATIENTS**

Introduction: The American Medical Association has identified four distinct forms of unprofessional conduct by physician's inappropriate behavior, disruptive behavior, harassment, and sexual harassment. The common unprofessional conduct in the workplace are intimidation or bullying, sexual harassment, rude and loud comments, offensive and abusive language, persistent lateness in joining activities, attending meetings without valid and reasonable cause, vexatious litigation, retribution and violent threats, passive aggression like refusal of performing assigned task, demands for special attention, uncooperative behavior during regular activities, unwillingness to talk about the issue and concern with colleagues in respectful and cordial manner and excessive criticism

It has been seen that unprofessional behavior of physicians is associated with unprofessional behavior in medical school. Unprofessional behavior has negative effects both on the clinical care environment and on the learning environment. Physicians may experience ethical distress when they are caught in difficult clinical situations that demand ethical decision making, particularly when their preferred action may contravene the expectations of patients and established authorities.

A study done in Korean doctors regarding unethical and unprofessional behaviors during residency training disclose diverse variety of unethical and unprofessional behaviors during their training and divulges the ethical stress they suffered in clinical situations

Physicians have unique responsibilities based on the "fiduciary" nature of the patient-physician relationship and specified laws regarding health care. Physicians must protect the best interests of patients, with clinical decisions free of undue influence.

Methodology: Materials and Methods:

Study Design: Qualitative

Study Type: Qualitative narrative study

Study Duration: Six months

Sampling Technique/Design: Convenient sampling

Inclusion Criteria: All patients who consented to participate

Exclusion Criteria: Very sick and moribund patients will be excluded from study

Instrumentation :( what instruments you will use to collect data?):

A semi structured questionnaire will be prepared for questioning from patients including following questions.

- Who are the doctors that you feel uncomfortable with (or unprofessional)?
- Why? What happened with him/her?

- What did you expect from him/her?

Results: Data collection procedure:

I will interview 40-50 patients individually regarding their perceptions on unprofessional behaviors they experienced from physicians ever in their life. Interviewees will recall and the personal experiences or observations of misbehaviors that had occurred during their consultation time with doctor during treatment or hospital stay (who said what). I will record the demographic data of patients

DATA ANALYSIS PROCEDURE:

The recorded interviews will be transcribed; thematic analysis of quantitative data will be made by generating codes and themes. Of interviews, field notes and other relevant documents available (e.g., medical records). Data collection and analyses were done concurrently to guide the sampling process.

Conclusion: Problem: There are growing complaints from patients about the unprofessional behaviors of doctors

Gap: There is limited data available on unprofessional behaviors of physicians, as perceived by patients in the literature

Hook: Doctors and residency program directors need to be oriented on the common unprofessional behaviors of physicians in clinical practice to be addressed in postgraduate training.

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### **Theme: Miscellaneous**

Name: Rafia Minhas

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## **TITLE: CLINICAL ENTREPRENEURSHIP: HOW IT FACILITATES THE MEDICAL GRADUATE OF TODAY?**

Introduction: Entrepreneurship is the competency and the inclination to initiate, manage and successfully flourish a business venture. The clinical entrepreneurship is a new solution to an old problem; fewer job opportunities, need of innovation and lateral thinking, and the demand for leadership roles in our graduating medical undergraduates

Methodology: a Delphi study

Results: Ongoing study; results will be available by end November

Conclusion: An innovative idea that provides solution to a critical problem; how the medical sector can amalgamate entrepreneurship in itself.

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### **Theme: Miscellaneous**

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## **TITLE: INTRODUCTION OF EMOTIONAL INTELLIGENCE IN MEDICAL EDUCATION**

Introduction: Emotional intelligence (EI) is defined as 'the capacity to perceive, comprehend, and oversee feelings in yourself and in others. EI has for quite some time been perceived as a basic part for individual and authoritative accomplishment inside the business domain, and there is rising proof that improving EI is similarly significant in the

therapeutic setting. In light of the current writing and the writers' encounters, there have been stated 12 tips that give useful proposals on the most proficient method to bring EI into a medicinal educational program.

Methodology: Not applicable

Results: Not applicable

Conclusion: Conveyance of social insurance in community-oriented, facilitated groups is vital to accomplishing sheltered and proficient consideration. Upgrading EI capacities, including comprehension and managing one's own feelings, and perceiving others' states of mind and differing points of view, empower future doctors to work viably in multidisciplinary groups. For a fruitful presentation of EI ideas into medical educational plan, we accentuate the significance of intelligent, contextualized, and relatable exercises that stick to a theoretical platform. Likewise, few tips have been described that started member commitment, for example, guaranteeing an atmosphere of mental wellbeing, breaking the educational talks into shorter sections, and fusing practices in perception, mindfulness, reflection, and de-instructions.

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### **Theme: Miscellaneous**

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### **TITLE: MEDICAL DEVICES INNOVATION AND TRAINING OF DOCTORS**

Introduction: In majority of the parts of the world, biomedical engineering department of industry and healthcare workers including doctors work in isolation. Doctors are not aware that with little understanding of working of industry, they can propose gadgets that will make their life easy. A training of doctor shall also be conducted in collaboration with industry and biomedical engineers should also be given exposure of hospital and this shall be part of their training curriculum.

Methodology: Google scholar search and PubMed search were done to find those articles which are showing collaboration of industry as part of their curriculum and timetable.

Results: One of the centers, where training of doctors is done in collaboration with industry, has developed 12 patents in one year. Another center has developed 91 medical devices in four years after the start of the program.

Conclusion: Collaboration and training of the doctors must be an integral part of the curriculum. In this way gap between clinicians and industry can be narrowed down. Novel medical devices can be developed that will not only be beneficial to the patient but will also make life of doctors easy.

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### **Theme: Miscellaneous**

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### **TITLE: CORRELATION BETWEEN EMOTIONAL INTELLIGENCE (EI) AND EMPATHY IN MEDICAL AND DENTAL UNDERGRADUATE STUDENTS**

Introduction: Biomedical knowledge, though pre-requisite, needs to be supported by other important skills, in order to transform medical education and healthcare delivery. This study was thus planned to analyze the correlation

between emotional intelligence (EI) and empathy in medical and dental undergraduate students.

**Methodology:** This cross-sectional correlational study was conducted at public and private sector medical and dental institutions of Peshawar, Pakistan from February 2015 to June 2017. Schutte Emotional Intelligence Scale (SEiS) & Davis' Interpersonal Reactivity Index (IRI) were used to assess emotional intelligence and empathy. The data was analyzed using SPSS-20. The p-value of  $<0.05$  was considered significant when tests of significance were applied

**Results:** The mean age of the sample (n=2170) was  $21.02 \pm 1.62$  years. High level of EI ( $118.60 \pm 15.78$ ) was reported in 1191 (54.9%) while higher empathy ( $63.24 \pm 14.24$ ) was reported in 1115 (51.4%) students. Female medical students had significantly higher empathic behavior and emotional intelligence than male students ( $p < 0.05$ ), while no significant difference was found between male and female dental students. Medical students of private sector showed higher level of empathy as compared to public sector ( $p < 0.05$ ), whereas dental students of private sector showed higher level of emotional intelligence as compared to public sector ( $p < 0.05$ ). EI and Empathy had significant correlation ( $r = .370$ ,  $p = 0.000$ ).

**Conclusion:** The study showed that EI and empathy have strong correlation. Since higher levels of both have been reported in only half of the students, therefore, there is a need to work on EI of students to improve in their empathetic behavior.

**Keywords:** Emotional Intelligence; Empathy; Medical Students; Dental Students

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## **Theme: Miscellaneous**

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## **TITLE: DIGITAL ORTHODONTICS**

**Introduction:** Huge improvements in dental diagnosis, teaching tools, treatment modalities and surgical techniques were introduced during the last two decades. After the introduction of computerized scheduling in 1974, digital technology started to make its way into orthodontic offices. It has touched every aspect of orthodontic treatment.

**Methodology:** Literature review

**Results:** Most of the orthodontic clinics have now become paperless and digital photography and radiography have replaced their analogue counterparts. We can perform virtual treatment planning as well as translate the plans into treatment execution with digitally driven appliance manufacture and placement using various CAD/CAM techniques from printed models, custom made brackets to robotically bent wires.

**Conclusion:** As the new era is of digitalization, it is the need of the hour to introduce digitalization in our curriculum so that our undergraduate and postgraduate students can learn new avenues of technology in orthodontics. This will help them not only to remotely monitor treatment but also control it. We should also be thinking at this point of time to invest in a robust IT and dental education department in order to incorporate the future advances in technology in our curriculum.

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**Theme: Miscellaneous**

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**TITLE: STAKEHOLDERS' VIEWS OF PERSONALITY ASSESSMENT AS PART OF ADMISSION POLICY OF MEDICAL COLLEGES**

Introduction: The importance of personality assessment at the time of admission to medical colleges is well proven by research.

Problem: All the medical colleges in Pakistan except Agha Khan University, rely only on the academic performance of applicants for medical colleges' admission.

Gap: There is no literature available exploring stake holders' views of personality assessment as a part of admission policy of medical students (Kelly, Patterson, O'Flynn, Mulligan, & Murphy, 2018).

Hook: To increase the possibility that admission policy can be modified and broadened.

Methodology: • Study settings: This study will be a multi-centered study conducted in four provinces and capital city of Pakistan: including University of Health Sciences, Lahore (Punjab), Jinnah Sindh Medical University, Karachi (Sind), Khyber Medical University, Peshawar (KPK), Bolan University of Medical and Health Sciences, Quetta (Baluchistan) And National University of Medical Sciences, Islamabad.

• Study approvals: Ethical approval will be sought from the Ethical Review Board of University of Lahore, prior to the start of the study.

• Study Design: Qualitative, exploratory study

Results: N/A

Conclusion: N/A

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**Theme: Miscellaneous**

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**TITLE: INFLUENCE OF NEGATIVE ROLE MODELING ON MEDICAL STUDENTS' PROFESSIONAL DEVELOPMENT**

Introduction: Starting at the undergraduate level, medical students are given different learning opportunities and are in contact with a variety of potential role models, some of whom are inclined towards negative behaviors more than positive, professional behaviors (Hendelman & Byszewski, 2014). Mainstay of teaching professionalism has been through role models (Birden et al., 2013), and it is of utmost importance that these role models provide positive learning environments for students (Franco et al., 2016).

Problem: Many studies have reported a large number of resident misconduct, which is of concern for educators, as unprofessional behavior in early educational periods can last for entire medical careers (Rees & Knight, 2007; Zulkifli, Noel, Bennett, Flynn, & Tuathaigh, 2017).

Gap: Research specifically on negative role models (NRM) remains limited and little is known of what contributes to an individual being seen as an NRM and ways to reduce its negative effects (Bahman-bijari et al., 2016; Passi et al., 2013)

Hook: Students' point of view about unprofessional behavior could reflect the way in which students internalize their concepts of (un)professional behavior and its contribution to identity formation.

Methodology: Study settings: Avicenna Medical college, Services institute of Medical sciences, Lahore

Study Design: Qualitative

Study Type: Exploratory

Study Duration: 6 months

Sampling Issues:

Accessible population: 5th year MBBS students of Avicenna medical college & Services institute of medical sciences

Sample Size: 10-15 interviews or till saturation is achieved

Sampling Technique/Design: Purposive convenience will be used to select the subjects

Results: None

Conclusion: None

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### **Theme: Miscellaneous**

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### **TITLE: EXPLORING THE MENTEES' PERSPECTIVE ABOUT THEIR DISENGAGEMENT IN THE MENTOR SHIP PROGRAM**

Introduction: Mentees don't participate in the mentorship program. Even in a few sessions, they don't come to attend it. There is a dearth of literature on causes for disengagement of mentees in the mentorship program. There is a deficiency of literature about the causes of disengagement of mentees in the mentorship program. Future investigations have been recommended for perceptions of mentees about mentorship. The mentorship program has its well-proven and documented advantages so exploring the causes of mentees' disengagement and rectifying them will help in maximizing the utility of the mentorship program which is basic need for professional and personal growth of medical students.

Methodology: It will be an exploratory qualitative study which will be conducted in University College of Medicine & Dentistry, University of Lahore.

Accessible population: mentees in the mentorship program of BDS & MBBS in UCMD, UOL

Sample Size: 6 groups of 8 mentees in each per discipline

Sampling Technique/Design: I shall use the cluster sampling technique and the way I shall do clustering is as follows:

I shall get the attendance record of the mentorship program from the attendance office to identify the students with less than 75% attendance. I shall pick the 3 patterns of attendance.

- 1) The mentees who were throughout absent in mentorship program
- 2) The mentees who were regular initially and absent later
- 3) The mentees who were absent initially and were present later

Results: will be assessed after conduction of study

Conclusion: will be assessed after conduction of study

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**Theme: Miscellaneous**

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**TITLE: ERA OF ARTIFICIAL INTELLIGENCE IN MEDICINE. IS OUR MEDICAL FACULTY READY?**

Introduction: Artificial intelligence (AI) emerged as the latest technological advancement claiming to transform healthcare

Research Problem:

Working on AI based applications requires certain level of computer literacy and proficiency. Majority of medical professionals in Pakistan are well versed with the day to day use of computers, but less than half of them are unable to effectively use data sheets and programs like excel which is the core of any intelligent computer system (Masood, Khan, & Waheed, 2010)

Gap

It was reported in a study that although the number of machine learning publications has increased many folds since 2010, a combined search for “machine learning” and “medical education” only brought up sixteen results. None of those sixteen publications were focused on education around machine learning for medical professionals (Kolachalama & Garg, 2018).

Hook

Without having the insight about the problem mentioned above it is impossible to design a curriculum which could prepare our future medical graduates

Methodology: Methodology

Study Design: Qualitative exploratory type

Study Duration: 6 months. Jan 2020-June 2020

Sample Size: 10 professorial rank clinicians actively involved in undergraduate teaching

Sampling Technique: Purposive convenient sampling

Results: none

Conclusion: None



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