#7HH   Posters: Teaching and Learning 1
Location: Hall 6

#7HH01 (1927)
Concept Mapping: Promising Tool for Integrating Adult Learning Theories into an Educational Philosophy for Teaching

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Background: Concept mapping is an effective tool to facilitate the development of cohesive knowledge frameworks through the identification of relationships among conceptual elements. As such, concept mapping may assist health professions educators to integrate adult learning theories with their values/beliefs into cohesive educational philosophies to further inform their teaching.
Summary of Work: Health professions educators wrote an educational philosophy, studied adult learning theories, and then engaged in concept mapping to integrate their understanding of the relationships of learning theories, values/beliefs, and teaching behaviors to inform revised educational philosophies. Concept maps, educational philosophies, and presentations/discussions were analyzed to identify these relationships.
Summary of Results: Concept maps provided evidence of participants' ability to identify relationships between adult learning theories and personal values/beliefs in a cohesive conceptual structure. Analysis of revised educational philosophies and online presentations/discussions indicated the extent of integration of these relationships and higher-order changes in the conceptualization of teaching/learning.
Discussion: Findings indicated that concept mapping is a promising tool to enable health professions educators to effectively analyze, synthesize, and evaluate the relationship of varied adult learning theories to personal values/beliefs. Text analysis of educational philosophies and online presentations/discussions reflected knowledge structures that transformed their conceptualization of teaching.
Conclusion: Concept mapping provided health professions educators with a tool to identify relationships between concepts that impact their conceptualization of teaching. There is need for additional study of the impact of concept mapping on the resulting teaching behaviors of health professions educators and the impact on their learners.
Take-home Message: Effective teaching requires changes in how one conceptualizes teaching and learning. Concept mapping is a promising tool to assist health professions educators to create knowledge structures that integrate personal values/beliefs with adult learning theories to influence their educational philosophies and enhance the effectiveness of their teaching.

#7HH02 (1655)
Arts-based pedagogic approach for dementia awareness and training for health care professional students

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Background: Responding to the Prime Minister's Challenge on Dementia 2020 and the 2015-16 Government Mandate to Health Education England, universities must develop the content of their curricula for health and social care programmes to ensure that graduates have the correct knowledge and skills to care for people living with dementia.
Summary of Work: An arts-based approach was adopted whereby health students attended a theatrical performance which highlighted relationships and emotions for both carers and individuals with dementia. Pre and post-performance questionnaires assessed the value of the pedagogic modality and the impact on students' attitudes towards people living and caring for people with dementia.
Summary of Results: The students valued the performance, finding it both stimulating and interesting and a valuable way to learn about dementia from both the family and the individual with dementia perspectives. Furthermore, they reported improved understanding of dementia with respective increase in empathy towards those living and caring for patients with dementia.
Discussion: Whilst this theatrical performance was performed by professional actors, the play writer and actors had first-hand experience of dementia which added authenticity to the performance whilst also ensuring support for dementia was current. Furthermore, the post-performance discussion, facilitated by academic staff, enabled students to clarify issues raised within the performance.
Conclusion: Using illness-related theatrical performances in the context of health care education offers an innovative and increasingly emergent pedagogy modality. Furthermore, it increases empathy and develops insight into the students which subsequently prepares them to understand the complexities of people living with dementia and the effect on their families and carers.
Take-home Message: Using arts-based learning is an effective way for health professional students to explore aspects of health care that are limited to scientific phenomena and objective procedures. More significantly, it facilitates an understanding of the emotional factors that impact upon human experiences and the understanding of illness and suffering.

#7HH03 (167)
Contemporary Art and Medical Education

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Background: This innovative educational intervention integrated participatory methods of contemporary art and experiential learning in medical medicine. It offers mid-stage medical students an opportunity for safe, critical and holistic reflection on how personal subjectivity and socio-cultural factors influence students' perceptions of experiences and social events they participate.

Summary of Work: Three half-day workshops were given to a group of years 2-3 medical students over a week. Each workshop included an art gallery-based participatory session led by an artist and a campus-based consolidation session led by a clinical lecturer, where art experiences were contextualised in the context of clinical learning.

Summary of Results: The intervention showed advantage of developing students' self-awareness, the ability to participate in group feedback, effective and empathic communication, active listening, and resilience. It appears to provide an invaluable safe and non-judgemental environment for mid-stage students to explore the role of students' own sensitivity and personality in professional development.

Discussion: This intervention demonstrates both the instrumental (i.e. clinical learning) and non-instrumental (i.e. personal development) roles medical humanities play in medical education. It also highlights the significance of the crossbreeding between the artist and the clinical lecturer in collaborative pedagogical design.

Conclusion: Learning to be self-awareness is essential for mid-stage medical students to develop sensitive and personalised care for patients. The participatory reflection method of contemporary art has the advantage of supporting such development, especially when it is timely and appropriately contextualised in clinical learning.

Take-home Message: 1. Self-awareness is essential for developing sensitive and personalised care for patients. 2. Contemporary art provides an effective means for such development. 3. Teaching requires close collaboration between the artist and the clinical lecturer. 4. This labour intensive method requires further consideration for its implementation with large cohort of students.

#7HH04 (2097)
Novel Approach to Recognising ECGs: Learn by Drawing

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Background: It has been identified that students find the approach of 'the more you see the more you recognise' an inefficient and dissatisfying way to learn how to interpret ECGs. ECG interpretation is the ability to identify specific features of a trace, which combine to form patterns characteristic of certain pathologies.

Summary of Work: Students were given laminated ECG paper and dry markers. The cognitive process of interpretation was reversed by asking students to draw the patterns of an ECG characteristic of certain pathologies, rather than recognise and define a pre-existing trace. Differences between student-generated ECGs and reference traces were discussed to reinforce understanding.

Summary of Results: 3 cohorts of 7 students (n=21) were exposed to this teaching method. All students improved significantly between pre- and post-session tests. Likert-scale feedback questionnaires revealed that 100% of students found the learning-style more engaging than standard didactic lectures and 95% felt they had a better understanding of the material covered.

Discussion: Students felt this method superior to didactic teaching. Test scores show marked improvement however this is expected after any sort of teaching intervention: A case-control study is necessary to elucidate this further. Teachers interviewed, reflected that the method allowed them to identify and target weaknesses in understanding more effectively.

Conclusion: Students responded encouragingly to the 'learn by drawing' method of ECG interpretation, suggesting it to be better than standard 'recognition and identification' didactic teaching.
Teachers equipped with this tool felt it useful in meeting students' individual learning needs.
More work is being done to realise this novel method's full potential.

Take-home Message: This novel method of teaching ECG interpretation is effective, engaging and useful to students and teachers alike. A Case-control trial is being conducted to assess this teaching technique compared to standard lecture-based ECG teaching. A 6-week follow-up test will be included to assess long-term behaviour change as well.

#7HH05 (245)
Evaluating observational drawing as an educational approach

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Background: The idea that observational drawing (OD) can be valuable for learning is supported by both educational theory and previous research findings. While some people claim they lack drawing ability, individuals can be taught to critically observe and make marks on paper that describe the three-dimensional form of an object.

Summary of Work: We have implemented and facilitated an OD workshop at Newcastle University for anatomy and medical educators. Participants have been trained in a specifically designed haptico-visual OD technique which involves deep multi-sensory observation including touch, manipulation, sight and simultaneous drawing of a three-dimensional object onto a two-dimensional surface.

Summary of Results: We describe an evaluation of OD though utilising experimental, survey and focus group approaches to identify the extent of the ability of workshop participants to retrieve the visuo-spatial appearance of objects from memory without actually viewing them physically, and their perceptions of the observational drawing process and its benefits.

Discussion: We aim to follow up our pilot with a wider study addressing the long-term impact of the workshop on educators in terms of their development of knowledge and skills, and by identifying the enduring effects of OD on their teaching practice and the learning of their students.

Conclusion: We have investigated the nature of specific aspects of learning with OD and identified that observational drawing can be a valuable method for developing the expertise of anatomy and medical educators and can enhance their approaches to learning and teaching.

Take-home Message: We present an evaluation of an observational drawing workshop in order to describe the extent to which our specifically designed multi-sensory observational drawing process can enhance the knowledge and skills of medical educators. We propose that these benefits can in turn be passed on to undergraduate medical students.

#7HH06 (3341)
Learning by sleeping? – Sustainability of a guided training in "Learning to Learn" including sleep regulating techniques

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Background: Sleep is essential for recovery (adaptive normalisation, Heckmann and Gutenbrunner, 2013), neuronal plasticity (Tononi et al., 2014), learning (e.g., effort-recovery-theory, Meijman and Mulder, 1998), and academic performance (Curcio et al., 2006). In educational settings, sleep education programmes were developed and tested on pupils (Blunden et al., 2012).

Summary of Work: A required elective, 8-weeks guided training in "Learning to Learn" provided i.a. a learning environment for sleep regulating techniques. Aim was to foster self-regulation of sleep. Students that participated at least 6 months ago were interviewed by using semi-structured face-to-face technique to investigate sustainability. Content analysis (Mayring, 2015) was conducted.

Summary of Results: Interviews with N=8 students (aged 18-29y; 50% female; subjects of studies: medicine, psychology, economy) were coded (intercode reliability Cohens Kappa k= 0,88) and categorized. Students remembered and used Power Nap, adapting length of sleep, steady times going to bed and waking up, and adapting sleeping time concerning chronotype (declining frequency).

Discussion: Sleep regulating technique were taught using knowledge input, reflection, planning, and individual decision making regarding implementation. As sufficient sleep, learning capacity and academic performance are closely linked to each other (Curcio et al., 2006), a training in sleep regulation using adequate didactics could be an essential tool for academic institutions.

Conclusion: Sleep regulating techniques can be taught sustainably in academic context. Besides academic performance, guidance in recovery by sleep regulation might be important for students and staff for maintaining health and especially for prevention of depression (e.g., Gangwish et al. 2010) or burnout.

Take-home Message: A guided training for students´ competencies in sleep regulation demonstrated sustainability for the sleep regualtion techniques that were taught. Effects of this training on summative academic achievement, health maintenance and burnout prevention should be studied.

#7HH07 (171)
Working with the student in multi professional care: a psychodrama experience

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Ubton Nascimento

Background: In our school, we have an annual event that involves culture and scientific subjects focused on the student development. This year we proposed a workshop based on multidisciplinary approach, trying to create early in the health-student life a new perspective on the patient care.

Summary of Work: Three teachers from medicine, physiotherapy, psychology, offered a workshop about students' feelings and perceptions emerged after 03 movie clips as trigger for a discussion. Students have to create a new scene, based on these feelings, grounded on psychodrama theory, looking for new perceptions. They evaluated the workshop at the end.

Summary of Results: 14 students from nursing, dentistry, physiotherapy, psychology; none from medicine. Feelings as confusion, distress, anger; inquietude, identification after watching the clips appeared. After groups' presentations, one scene was remade; concepts of "listening the other" and "empathy" emerged. Students evaluated the workshop as "surprising" in a positive way.

Discussion: The reality on hospitals and clinics asks for early exposition to multi professional formation. This group, without medical students, in a workshop focused on patient care opened the discussion about other means of care in health.

Conclusion: Students need more moments during their courses to work the multi professional dimension of care. They expressed the need of developing a new view in this field, having the other as mirror. Medical students should be encouraged to attend workshops like this one.

Take-home Message: This kind of approach to the health students early and in different moments of their courses can create a reflexive professional capable to work in a multi professional team with an active method.

#7HH08 (3034)
The Perceived effectiveness of Medical Textbooks Books in targeting different Subdomains of learning

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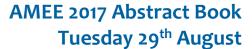*Asem Hany , Alfaisal University, Riyadh, Saudi Arabia*

Background: As medical textbooks remain an important tool used in medical education they are expected to play an important role in targeting outcomes of all the learning domains involved in medical teaching, namely the cognitive and affective domains.

Summary of Work: This study was designed to be a cross-sectional, survey-based study where the subjects(N=251) would anonymously rate effectiveness of textbooks using a 5-point Likert scale. Chi-squared tests, post-hoc tests, Spearman's correlation and Kruskall-Wallis test were all utilized in data analysis to detect correlations and significant differences between the variables.

Summary of Results: Textbooks are seen to be effective in addressing the cognitive and affective domains;. Using textbooks Furthermore, using textbooks more frequently and as a primary source was correlated with,higher perceived effectiveness in many subdomains , and with achieving a higher GPA, with P values of, $P<0.001$ and $P=0.01$ respectively.

Discussion: There is deficiency in publications evaluating the use of textbooks in medical education in terms of achieving desired learning outcomes.The "the student factor" has a huge role to play in modifying textbook effectiveness illustrated by the fact that using textbooks as a primary source was correlated with a higher GPA.

Conclusion: Textbooks are effective in addressing cognitive and affective domains with varying effectiveness among their sub domains and this effectiveness is modified by "the student factor".

Take-home Message: Medical textbooks remain effective from our students' perspective, but medical educators should know that how textbooks are used by students can modify their effectiveness in certain subdomains.

#7HH09 (924)
Mapping the Balint groups to the ACGME Family Medicine Competencies

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Background: Balint groups discussions provide a learning opportunity for many of the competencies put forward by the ACGME. The current literature is mixed concerning the effect of Balint groups on communication skills and professionalism. Aim of study is to map the Balint discussion to the competencies put forward by the ACGME.

Summary of Work: In phase 1, the research team worked to refine the methodology. In phase 2, narratives of Balint discussions were solicited from the American Balint Society leaders. Four experts reviewed the 25 narratives individually and chose the milestones that the group discussion best corresponded with a learning opportunity.

Summary of Results: There was agreement between 3 out of 4 raters on at least one core milestone in every case. The most frequent milestones were related to communication skills and professionalism (C1, C2, Prof1, Prof3). Balint groups provided a learning opportunity for subset of milestones in at least 36% of the cases.

Discussion: Teaching communication skills and professionalism is most beneficial when it occurs longitudinally and involves multiple teaching methods in multiple settings. Balint groups help programs accomplish these aims since cases can be presented from a variety of settings and training can begin in the first months of residency and run throughout.

Conclusion: This pilot research suggests that Balint groups and the discussions of complex and challenging cases provide learning opportunity for multiple family medicine sub competencies, mainly communication skills and professionalism. Further research is needed to refine the methodology and the rating system

Take-home Message: Balint group discussions provide a learning opportunity to communication skills and professionalism. It should not be used for assessment of these skills to protect the Balint process.
Mapping the Balint group to the ACGME milestones will encourage family medicine programs to implement Balint groups activities.

#7HH10 (169)
Using Different Teaching Formats During Human Physiology Course to Increase Motivation and Test Performance in Multicultural Student Population in Slovakia

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Background: Culturally responsive teaching (CRT) includes knowledge, beliefs, and values that recognize importance of cultural diversity in learning. While international students in English program in Slovakia share the same educational model as Slovak students, cultural differences among them may require different approaches reflecting their cultural backgrounds.

Summary of Work: In our study classical formats of teaching (lectures, seminars, and laboratory and computer experiments) were first time in Slovakia enhanced by novel formats. Current curriculum was enhanced by using near-peer, problem-based and personalized teaching, team-based learning, and technology including clickers, simulation-based cases, creating mind maps concepts and flipped classroom.

Summary of Results: During consecutive 4 modules, multiple formats of instructions were used in randomized pilot group of 35 students with different cultural background. Likert scale questionnaires revealed cultural preferences in instructions and strategies with simulations and near-peer teaching preference. Test performance significantly increased (137.6 vs.122.9 points, $p<0.05$) in comparison with control group.

Discussion: Identifying factors of cultural needs may influence development of future Physiology course structure in Slovakia. Increasing variability of format in the same topic teaching and academic support strategies in diverse student population can help to increase motivation to study as it serves needs of broader cultural spectrum of students.

Conclusion: Use of various formats and strategies to enhance CRT was superior to classical approach in our study. Increased motivation to learn and better test performance were observed. For the first time in our modules of Physiology, selective cultural preference for format and teaching strategy were identified.

Take-home Message: Personalized learning instruction, use of variety of educational instructional approaches and academic strategies should be employed to address the distinct learning needs of individual students with diverse cultural backgrounds.

#7HH11 (1804)
A practical skills programme in Biomedical Sciences: challenges in implementation and optimization

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Background: The acquisition of practical skills in undergraduate training in health sciences field is crucial. In this context, the acquisition of these competencies is one of the general objectives of the Faculty of Health Sciences of the University of Beira Interior (Portugal) courses.
Summary of Work: Although laboratory practices are routinely carried out in the faculties, the degree of acquisition of related skills is not usually subject to structured training and assessment. Thus, a transversal program was developed and implemented in 2014/2015 in the Biomedical Sciences BSc degree and has been optimized.
Summary of Results: The steps of the acquisition of practical skills program are: 1) explanation and demonstration of practical procedures by a tutor; 2) a period of self-learning, and 3) the individual assessment. The program consisting of different practical skills is fulfilled when all abilities, have been acquired (approved).
Discussion: The idealization and conception of the practical skills program, as well as the added changes in order to fulfill legal and institutional requirements were challenging tasks, but rewarding. Improvements had been undertaken in order to promote the best training of students and the fairest assessment in laboratory practical skills.
Conclusion: This program ensures that all graduates have acquired the practical skills defined for their course in the areas of Chemistry, Biology and Physics / Engineering, relevant in the context of Biomedical Sciences. Consequently, they will be able to execute these laboratory procedures later in a professional context with more confidence
Take-home Message: For a solid education in Biomedical Sciences, discipline-specific knowledge and understanding are not enough competencies. A crucial role is played by the practical skills. The setting of a structured program in practical skills allows students to learn a set of procedures and warranties the gaining this type of skills.

#7HH12 (1691)
Breast feeding teaching by Interactive Training Method : Medical students should know and practice well

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Background: Breast feeding(BF) teaching is essential issue for medical students. The topic consist of theory and practice for integration of knowledge and skill in BF. We study outcome of BF teaching by Interactive Training Method(ITM) in 4th year medical students who were studying at Kalasin hospital in 2016 academic year.
Summary of Work: We haved performed team teaching (Tutors were medical teachers and nurses) as the following. Theory: lecture the content which consist of component & benefit of BF, BF in newborn. Practice: role play and discussion under supervision and feedback from the tutors. Formative assessment: MCQ and OSCE.
Summary of Results: Formative assessment by pretest, posttest MCQ and OSCE had average percentage point at 59.80%, 76.20% and 64.80% respectively. Medical students evaluation by rating scale (1-5) was the following: presentation technique 4.60, content 4.56, ease of understanding 4.58, opportunity for practice & interaction 4.52, tutors support& feedback 4.80, overall rating 4.56.
Discussion: The medical students had good attitude to BF teaching by ITM. Interaction,role play, participation, feedback from tutors and formative assessment were the effective technique to help medical students to learn. They haved improved in BF knowledge and skill that may be sustained and useful for their work.
Conclusion: BF teaching by ITM is effective way for integration of new knowledge and skill practice in medical students and should be applied to other learning.
Take-home Message: Interactive Training Method is the effective way for learning.

#7HH13 (1120)
Medical students' learning outcomes of Medical Resources Integration and Optimization in Family Medicine

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Background: Medical Resources Integration and Optimization (MRIO) is a teaching method, integration and optimization the knowledge and experience of both learners and teachers to promote active learning by using the set of several learning activities, beneficial for institutions with limited instructor. This study aims to evaluate the effectiveness of this program.
Summary of Work: This is a mixed-method study design, determining medical student's learning outcomes regarding to three domains of knowledge, attitudes and skills including comments of students and teacher team staffing toward MRIO. It was operated by family medicine for fourth year medical students in January 2016 at Medical Education Center, Ratchaburi Hospital.
Summary of Results: A total of 33 medical students participated in the MRIO. All students passed the minimal passing level of knowledge and skills with the scores of 74.5±8.6% and 94.1±1.9%. Attitudes toward understanding patients and care improvement of patients were identified. The strengths of this program were interprofessional education and effective learning.
Discussion: 10-days of MRIO was established due to limited course instructor. It included course instructor and medical resources; multidisciplinary team staffing and students. All students passed the summative score with good grade. Home visit and teamwork skills of them were excellent. They understood the patient and improved attitude towards patient's caring.
Conclusion: MRIO was an effective teaching program to integrate and optimize with limited resources in undergraduate family medicine practice. The implementation of this program in different settings may need collaborative teams to maximize the effectiveness of the program.
Take-home Message: Medical resources include the course instructor, multidisciplinary team staffing and even medical students. Everyone integrates and optimizes his/her knowledge and experience by using the set of six organized activities; (i) PCU practice, (ii) community survey and home visit, (iii) topic assignment, (iv) peer teaching, (v) feedback and (vi) self-reflection.

#7HH14 (2153)
Theatrical improvisation as a method in Medical Education

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Márcia Strazzacappa
Marco Antonio de Carvalho Filho

Background: Teachers, physicians, and actors share in their professional practice the need to put themselves in another person's shoes: students, patients and characters, respectively. Not only the actor, but also the physician should respond appropriately, often in a way that cannot be planned. Thus, Improvisation may be meaningful to medical education.
Summary of Work: Improvisation has been taught to second-year medical students(n=240) by a team of physicians, actors and psychologists. Using theatrical play, role study and scene creation, students address five main themes: 1)impact of feeling ill; and how to 2)initiate a conversation, 3)make someone comfortable, 4)create a shared action plan, and 5)solve conflicts.
Summary of Results: After a warming, students divide themselves in teams to create and present a scene related to the theme of the day. A rich variety of ideas emerged, including ethical issues, doctor-patient relationship and everyday life happenings. Questions related to students' universe, such as depression, violence, and interpersonal relationships also appeared.
Discussion: Students scenes included unconscious aspects, allowing them to deal or even solve personal and interpersonal conflicts. Concepts such as empathy, improvisation, reflection in action, communication and experience were explored and used as tools to deal with medical and personal situations. Feedback from teachers and actors was crucial to guide reflection.
Conclusion: Theatrical improvisation brings meaningful experiences for second-year medical students, showing that active and multi-profissional (art, education and medicine) teaching methodologies may help to develop communication skills, technical competences and humanity. Students' testimonies during feedback corroborated those impressions, pointing to the need for protected environments for reflection and debate.
Take-home Message: Theater and Improvisation may be efficient tools for the development of self-knowledge and communication skills, particularly empathy, among medical students. The participation of physicians, actors and psychologists in the same didactic intervention seems to be enriching for everyone involved, each one contributing with their own expertise.

#7HH15 (1662)
A conversation in prison! Transformative learning for professional skill development in the first year medical students of the Joint Medical Programme

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Background: A professional development program, organized as a 4-day camp, was arranged for the first year medical students to learn about communication skills, professionalism, and Thai health care system. One of the activities is transformative learning in which the students were lead into a prison and have conversation with prisoners!
Summary of Work: Students were participated in a preparation workshop and drew an imaginary picture prior. Next day, they went inside the prison to had a 45-minute, one-on-one conversation with a prisoner. They were asked to draw another picture to reflect their feelings when over. The students filled questionnaire when the camp finished.
Summary of Results: The first pictures reflected students' nervousness and fear. Facial expression of (imaginary) prisoners was all depressing. The students reported that they were frightened to keep the conversation last for 45 minutes. Conversely, Post-conversation drawings demonstrated more positive prisoner expression. Students rated the activity 4.14/5, being the most satisfactory among others.
Discussion: The students were initially asked to collect prisoner's personal background, reason why the prisoner was arrested and how did they feel. When completed, they felt that they could possibly overcome their fear in terms of establishment of the inter-personal relation. Their perspectives have been changed, reflecting more empathy with prisoners.
Conclusion: Transformative learning allows the first year students to learn a humanistic side of prisoners and to show more empathy with them. Their confidences in engaging conversation with others are increase. These skills are essential during the joint medical program education (in both UK and Thailand) and in the future.

Take-home Message: Fear can modify one's perception and prevent understanding of others feeling, thus unable to be empathized with people. Transformative learning is proven to challenge students' mind and encourage them to overcome the fear. This is essential for medical students during their education and career in future.

#7HH16 (2505)
Application of Differentiated Instruction to Enhance Learning Effect of Neonatal Respiratory Care Course

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Background: The Respiratory Therapy Program goal is to prepare graduates with demonstrated competence in practice. Clinical preceptors provide learner-centered teaching contents and methods to respiratory therapy students by applying Differentiated Instruction. The objective of this study was to explore the effects of the Differentiated Instruction of a Neonatal Respiratory Care Course.
Summary of Work: The Neonatal Clinical Practice Course was redesigned: first, analysis learning competency; design instruction to match students' learning styles and to meet individual needs; develop and implement an issue-driven approach into practice, such as Auto didacticism、e - Learning to Training、peer learning、clinical simulation 、Game-Based Learning; finally, evaluate students' learning competences.
Summary of Results: 15 RT students participated in this study for a month. The results showed Differentiated Instruction has a positive impact on learning outcomes, including: participants' average score of 「Knowledge Preparedness」 were improved from 55 to 92.5, and average score of 「Skill Readiness 」 increased from 56 to 86 for the practice of Neonatal Respiratory Care.
Discussion: Differentiated Instruction is not only learner-centered teaching practice, but also individualized education of adaptive education. Instructors should be familiar with the differentiated Instruction ideas and actions, through adjustment three elements: content, process and products, teachers will be able to makes this a successful approach to instruction in the clinical settings.
Conclusion: Differentiated instruction is effective instruction that is responsive to students' readiness, interests and learning preferences. Preceptors gather information to tailor teaching approach to match students' learning styles and to meet individual needs.Teachers inspire the students' interest in learning to increase the learning ability of students.
Take-home Message: Although differentiated instruction corresponds with various motivation and learning theories, few studies have examined the use of differentiated instruction in medical education as OSCE contexts. Differentiated Curriculum Model can accelerate

the trainees familiar with the care, improve respiratory technology and to ensure patients Safety and quality of care.

#7HH17 (397)
Understanding the unique factors causing the phobia of neurological localization amongst medical students - how can we aim for neurophilia instead?

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Background: Neurophobia, the fear of neural sciences, is prevalent amongst junior learners. We seek to identify the yet unknown factors that cause neurophobia in the learning of neurological localization, an essential clinical skill in neurology. This would aid in the development of future instructional methods for this skill.
Summary of Work: A cross-sectional survey of 72 undergraduate medical students was performed. Students rated their level of neurophobia for neurological localization (5-point Likert scale). They ranked factors that made them fear neurological localization and ranked methods of learning that reduced their phobia of this topic. Weighted scores were obtained for ranked factors.
Summary of Results: Phobia of neurological localization was ranked as high/very high (81.9%). Scores for causal factors in order of magnitude were organisation/integration of information, inefficiency of thought process, complexity of neuroanatomy, amount of memorisation and lack of practice opportunities. For learning methods, mentoring/tutoring was best, followed by team-based learning and then textbooks.
Discussion: The main reasons for neurophobia were organization/integration of information and inefficiency of thought processes. Memorization of neuroanatomy and practice of skills which are usually important in neurology were ranked lower. Students found learning through a mentor/clinical tutor and team-based learning (TBL) were better than textbooks for reducing their neurophobia.
Conclusion: The main difficulty appears to be in the higher levels of organization and integration of information required and efficiency of this skill. These are not usually found in textbooks. Hence, the role of mentors/tutors or TBL sessions are very important in overcoming the fear of this topic.
Take-home Message: To overcome the fear of neurological localization, medical students need to develop skills of integration and organisation of information and become efficient in their thought process. Students feel mentoring/tutoring or team-based learning are the better methods to overcome this. Textbooks appear to be least helpful.

#7HH18 (945)
Visualization as a reflection technique in the learning process: A qualitative approach

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Background: There are several teaching strategies that promote clinical reasoning and the development of procedural competences, which emphasize clinical simulation, role playing and mental imagery. Imagery includes various mental training interventions such as visualization that promote students' effectiveness in motor skills training.
Summary of Work: Qualitative research, with case study approach, descriptive scope. Thirteen first-year medical students participated, after informed consent process. There were 4 visualization sessions after the demonstration of drug preparation. Students were asked to describe what they had visualized after each imagery session. The data were analyzed using the content analysis technique.
Summary of Results: A total of 12 units of meanings were created prior to visualization and 19 units of significance after visualization sessions. In relation to the above, there are 3 categories of analysis. Differences between the previous and post ideas were observed regarding the progression of learning in the preparation of medicines.
Discussion: Visualization has proved to be an effective technique for the development of clinical procedures. To use it, it is important that teachers are trained.
Conclusion: The incorporation of visualization to the learning of clinical procedures can be useful as a strategy to verify the progression of student learning, as well as a useful tool to evaluate the training process planned by the teacher.
Take-home Message: Visualization is an opportunity to initiate a new line of research, to improve student learning.

#7HH19 (1146)
Effectiveness of ethical dilemmas on rare disease - Scenario-center teaching program

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Background: While practicing nursing care in patients with rare diseases, nurses are always facing several ethical dilemmas, which may emotionally distress themselves and imbalance relationship with patients' family. This study is designed to help nursing staff to understand a given ethical conflict and root a potential ability in smoothening conflicts.

Summary of Work: We enrolled 36 nursing staff from a teaching hospital in the middle Taiwan. We set up a scenario course focusing on a case of " infantile spinal muscular atrophy". All the attendants had to respond several ethical questions and had to finish a questionnaire before and after the course.

Summary of Results: The analysis of the questionnaires demonstrated that most attendants showed several improvements after the training course, including acquiring medical knowledge, applying empathy, comforting family, and communication skills. The comforting family was the remarkable improvement after the course.

Discussion: Nursing stuff, the first line in medical care, are the most vulnerable than others in the hospital. Therefore, it is essential to train nursing staff to promptly and timely acquire knowledge, apply empathy and conduct communication skills to comfort patients and family with a rare disease.

Conclusion: Scenario-center teaching programs can enhance nursing staff in acquiring medical knowledge, caring skills, and applying empathy to comfort patients and patients' family and build up staff's self-confidence in caring patients with rare diseases.

Take-home Message: A scenario teaching program can substantially help nursing staff to properly tackle with a given ethical conflict and comfort patients and family with a rare disease.