

**10HH POSTERS: e-learning**

Location: South Hall, Level 0, MiCo

**10HH1 (19015)****Online Teaching, Unique technique for assessment and feedback**

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**Presenter:** *Nibha Hegde\**, NHS England, West Midlands Deanery, Birmingham, United Kingdom

**Background:** Medical education is advancing from face to face to online interactive teaching. Google forms may be used for developing collaborative learning. Since the development of online examinations, new ways are being explored to adopt computerized technology. We present a unique system to conduct online practice teaching.

**Summary of Work:** Ten sessions of online practice exams were conducted amongst two groups of GP registrars over Nov 2013 and Jan 2014. 'Single Best Answer' and 'Key Feature Problem' formats were used. Group one consisted of 10 registrars who had failed their FRACGP exams previously and group 2 consisted of 20 GP registrars who are taking their exam in March 2014. Data was used for individual assessment and to provide real time de-identified group feedback through web conference. This was done using their answers and those of the experts by means of mail merge.

**Summary of Results:** More than 97% candidates in both groups were satisfied with the new technology when compared to traditional paper based practice exams. Individual performance also showed significant improvement.

**Discussion and Conclusions:** Within the limits of technological difficulties, online teaching using a practice exam format in Google form, combined with immediate feedback with collated data using 'Mail Merge', can improve understanding and performance and is a potent learning instrument where distance is a limiting factor.

**Take-home messages:** Online practice exams using Google form with real time immediate audio-visual peer-to-peer and educator's feedback is an easy, cheap, effective, and well accepted method for online teaching and provides a popular initiative for future teaching.

**10HH2 (19389)****Using an e-portfolio in a Health Professions Undergraduate clinical practicum: Is there a point?**

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**Background:** Many health professionals use paper-based and electronic portfolios for a diversity of reasons that include development of metacognitive skills, reflective practice and to demonstrate continuing competence, whether due to employer demand or regulatory college requirement.

**Summary of Work:** Traditionally, journal entries were used to identify reflective learning as an achieved outcome of the radiation therapy clinical practicum. This undergraduate program implemented an electronic learning portfolio in the final year of students' clinical practicum. The goal was that during the process of compilation, students' would develop a sense of responsibility for their own learning and develop reflective behaviour. The e-portfolio focused on self-awareness as demonstrated through reflective writing, documentation of their competency achievement and professional growth while performing in the clinical environment.

**Summary of Results:** An evaluation of the process was done (N=16), in order to understand students' perception of the e-portfolio, identify barriers and the impact this tool had on their reflective writing skills. 88%(14/16) noted that the e-portfolio identified where their skills were weak, conversely, only 68% (11/16) identified where their skills were strong/good. 55% (9/16) said that it developed independent learning.

**Discussion and Conclusions:** Comments and reflections from students were both positive and negative. They found e-portfolios helped in organizing and identifying their accomplishments, showcasing their skills and reflecting on gaps in their own knowledge and assessment. The e-portfolio was found to be useful to skill development and gaps within learning to both staff and students. Although some students did not "buy-in" to this curriculum requirement, there was experience gained on pulling important resources together and identifying one's own learning needs.

**Take-home messages:** E-portfolios are an asset in student curriculum. Introduction into student learning helps develop the skills needed to create a professional portfolio, identifies gaps in knowledge and assesses learners' needs.

**10HH3 (21233)****Facilitating students' autonomous e-learning in order to establish the clinical relevance of basic science concepts through exemplary internet searches**

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**Background:** The growing interest in e-learning led medical teachers to develop many excellent materials such as animations, videos, virtual patient cases etc, some of which are freely available online. However, these materials are usually used by students only when introduced as components of regular lectures or when specifically directed by their teachers, for example in flipped-classroom settings. Therefore these e-learning materials are selected by the teachers for the students (very much in the same way that reading lists are given) rather than chosen by the students on the basis of their individual learning needs and preferences. We aimed to refresh our lecturing (re: Brown & Manogue 2001, *Medical Teacher* 23, 231-244) and stimulate students' self-directed learning (Kusurkar, Croiset and Ten Cate 2011, *Medical Teacher* 33, 978-982) by carrying out model internet searches during our basic science lectures.

**Summary of Work:** Searches for e-learning materials were carried out on Google Images/Google Video Advanced Search during lectures to show how to look for answers related to a specific point or in response to students' questions. The aim of the search was clearly stated and the rationale of the steps undertaken was presented as a running commentary so that students could understand the search strategy and try similar searches on their own.

**Summary of Results:** Students discovered for themselves the relevance of basic science concepts for clinical practice. Consequently, their academic results were improved as their average course marks increased from 65.85+/-10.35 to 72.27+/-4.31 (p=0.02).

**Discussion and Conclusions:** Self-directed learning increased students' academic performance and their intrinsic rather than controlled motivation.

**Take-home messages:** Autonomy-supportive teaching by demonstrating exemplary internet searches during the lectures, encouraged students to seek online e-learning materials that address their learning needs.

**10HH4 (22045)****10 years of Virtual University for Occupational Health Care in Finland**

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**Background:** The Virtual University for Occupational Health Care in Finland (VUOHC) has offered over ten years high-quality training and support for about 800 physicians specializing in occupational health (OH) and their 350 tutor physicians. VUOHC is a nationwide collaborative effort of five medical faculties within the universities of Helsinki, Eastern Finland, Oulu, Tampere and Turku and the Finnish Institute of Occupational Health (FIOH).

**Summary of Work:** VUOHC maintains a web portal (tthvyo.fi) including all information needed for specialization in OH. VUOHC offers about 55 courses in Moodle learning environment. They vary from guided e-learning and blended learning courses to self-study and case based courses. There is also pedagogical training for tutor OH physicians. VUOHC is under constant development by course feedback, user statistics and user surveys.

**Summary of Results:** In ten years the use of VUOHC has become well established. In 2013 about 200 participated in guided courses and each self-study course was visited on average 200 times.

Course feedback demonstrates that online assignments support learning. After survey in 2012 VUOHC was regarded as useful service and attitudes for e-learning were positive. The possibility to study regardless of time and place was much appreciated.

**Discussion and Conclusions:** During a decade the cooperation between universities, FIOH and occupational health centres has made VUOHC a successful and active environment. Web-based learning is especially suitable in Finland which is a scarcely populated country with long distances.

**Take-home messages:** VUOHC has systematically developed the training of OH physicians in Finland. The open learning environment has proven to be useful also for other public health professionals.

## 10HH5 (20706)

**How reliable is students' estimate of the time elapsed in e-learning?**

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**Background:** In e-learning teacher needs to assess the time resources required for completing a course. One retrospective method is to ask students how much time was needed. How reliable is this estimate by students?

**Summary of Work:** The need for time in e-learning was investigated on a three week Moodle course of Medical Informatics consisting of 10 compulsory interactive lessons (estimated duration 1 hr each) containing several short (1-4 min) how-to-videos and practical exercises. Our material consists of 3rd year medical students (68 females and 42 males) who were asked to estimate the time in minutes that they needed to complete the entire course. The objective data of time elapsed was collected from the Moodle log for each student.

**Summary of Results:** The mean of elapsed time in minutes was 454 mins (SD 204) and the mean of estimated time was 429 mins (SD 212) ( $p=ns$ ). The correlation between the subjective estimate and the objective measurement was reasonable high ( $r = .66$ ), no sex differences were observed (females .58 vs. males .73,  $p = ns$ ). 19% of students overestimated the time elapsed at least 20%, 36% of students underestimated it at least 20%, and 45% were accurate within limits of 80% to 120%.

**Discussion and Conclusions:** Larger proportion of students (36%) underestimated the time elapsed compared to those who overestimated (19%) the time that was needed to complete the course.

**Take-home messages:** In our data the students were reasonably reliable source of information regarding the time resource needed to complete an e-learning course.

## 10HH6 (20469)

**Internet use for academic and non-academic purposes in 4th-6th medical students**

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**Background:** Internet is increasingly used by Thai people. Thai medical students, as well, are increasingly using the internet for both academic and non-academic purposes. Textbook plus medical online knowledge is the present situation in our medical education. This research studied internet use for academic and non-academic purposes of 4th-6th medical students.

**Summary of Work:** A cross-sectional study, the data were collected from 118 of 166 of 4th to 6th year in the academic year 2013/2014 by using a checklist questionnaire.

**Summary of Results:** All of them accessed the internet by using smart phones, tablets or notebooks. 67.8% spent 2 to 5 hours per day on the internet. Major internet activities were social media (95.8%), academic purposes (82.2%) and entertainment (45.4%). 52.5% used the internet everyday for academic purposes. 78.8% used a general online search engine for searching medical information. They considered the internet very important (64.4%) and extremely important (27.2%) for medical education. Problems of internet use were low speed of internet (78.8%), accessibility for international medical journals (48.8%) and reliability of information (48.3%).

**Discussion and Conclusions:** Internet is very important for medical education. Main problems of internet use are low internet speed and accessibility for medical journals, which are extrinsic factors. The reliability of information is an intrinsic problem that resolving by using credible medical websites.

**Take-home messages:** Let's motivate students to use a credible medical online search engine.

## 10HH7 (19245)

**Understanding the needs of students undertaking a distance learning research methods module**

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**Background:** The focus of the research is a Research Methods Module which is a postgraduate module that sits in a College of Medical and Dental Sciences. It is included as a compulsory module on a large range of postgraduate programmes across the college and the aim of the module is to equip students with the required skills to carry out their dissertation. The researcher wanted to establish if the Research Methods Module provided the knowledge and skills needs for students to complete their dissertation research and write this up after completion of the module.

**Summary of Work:** To collect the data, a mixed method triangulation approach was taken. Three different methods of data collection were used.

**Summary of Results:** The research found that the majority of students chose a mixed method approach to collect their data. Students felt they would have difficulty in a range of tasks related to quantitative research methodology and a number of students felt they would have some difficulty in analysing qualitative data.

**Discussion and Conclusions:** It is clear that teaching both qualitative and quantitative research method skills has given students the range of skills to mix both of these methods to collect data. Students envisage finding a number of areas related to quantitative research methodology difficult when actually doing their research and writing their dissertations.

**Take-home messages:** It is important to teach both quantitative and qualitative research methods to postgraduate students. There is a need for further support at the dissertation stage in helping students with areas of quantitative research methodology that students find difficult.

## 10HH8 (20653)

**Should I do it online? Medical student perceptions of online social network policy and inappropriate online behaviors**

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**Background:** Inappropriate online behavior incidents have occurred in several medical schools. Though the incidents were not serious in our medical center, proactive act could prevent detrimental ones. Many of the students, a "pro" online user, may fail to apply professional ethical codes to online practice.

**Summary of Work:** Based on results from our previous study, we start educating clinical year students on online professionalism and online social network (OSN) policy through online and offline communication channels. Perception of the policy and inappropriate OSN behaviors are then examined.

**Summary of Results:** Students have higher than intermediate level of knowledge on almost all policy items except awareness of Computer Crime Act and regulations governing the conduct of student. Eleven of twelve behavior items are considered inappropriate OSN behaviors. Though considered inappropriate, to befriend a patient online and use of social media during teaching or medical practice are most acceptable. Disparaging comments on medical faculty or colleagues and on medical profession is least acceptable.

**Discussion and Conclusions:** Students have adequate knowledge on each item policy except on Computer Crime Act and student regulation. Student perceptions on inappropriate OSN behaviors are quite similar to other studies. However, some behaviors are more tolerable and some are less tolerable. The medical education center can provide guidance on appropriate online behaviors based on students consensus obtained from this study. However, with awareness of generation differences, faculty opinion and further discussion on certain incongruous issues are required prior to launching the guidance.

**Take-home messages:** Education of online professionalism and OSN policy are crucial for proper OSN uses.

## 10HH9 (22665)

**The use of Facebook as peer mentoring platform in undergraduate medical education**

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**Background:** Facebook is one of the largest social media networks and widely used by health care professionals at all stages of medical education(1). A central affordance of Facebook allows for extensive exchange between large groups of users(2). We conducted a mixed-methods study to investigate the peer-mentoring elements of undergraduate medical students using Facebook.

**Summary of Work:** First we agreed on a peer mentoring definition based on relevant literature. Furthermore we extracted and examined all posts in two different Facebook groups formed by first and second year medical students at LMU. On that account we used descriptive statistics to identify relevant posting periods and used a framework approach to analyze these themes. We consequently developed a peer-mentoring coding scheme, which was applied to the extracted posts and comments.

**Summary of Results:** We extracted and analyzed a total of 2,041 posts and 8,052 comments from two large-scale, closed Facebook-Groups (n=1,378) that were started and used by undergraduate medical students in the first and second preclinical year. Descriptive statistics revealed posting peaks at the beginning of semesters and before exam periods. Thematic analysis of the content revealed that all major categories of peer-mentoring as defined were present in both Facebook groups.

**Discussion and Conclusions:** Undergraduate medical students at LMU make extensive use of Facebook to organize study related issues including exam preparation as well as social events.

**Take-home messages:** Social media platforms like Facebook seem to be effective to provide fast and large-scale peer-mentoring activities. Furthermore we submit that virtual social networks have a large potential to be integrated in formal undergraduate medical curricula.

References:

1. Cheston et al. *Academic Medicine*. 2013;88(6):893-901

## 10HH10 (22091)

**The use of Facebook: Prevalence and effects of Facebook addiction disorder to medical students in PSU**

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**Background:** Facebook is the most popular social network with over 1 billion active users in the world. Despite of the advantages of Facebook, it also full of hazards. Previous study show 4% of students are Facebook addiction disorder (FAD). There were only a few studies about Facebook usage of medical students. Aim of the study was to know the usage of Facebook and the prevalence of FAD, to evaluate the educational effects of FAD in medical students in PSU.

**Summary of Work:** Cross-sectional descriptive study, the data were collected by self-reported web-based questionnaire from 1,144 medical students of PSU. The prevalence of FAD was measured using the scoring system by Bergen Facebook addiction scale (BFAS). Discrete and continuous variables were described as percentage, mean. Chi-squared was used to evaluated categorical variables differ between group.

**Summary of Results:** Response rate was 27.45% (314 medical students). Most subjects were Female (56%), GPAs 3.51-4.00. Most medical students used Facebook daily (88.2%) for 1-2 hours/day (N=277, 38.9%), the reasons of using Facebook were boredom (77.38%), contact people (73.85%) and followed by just fun in using (71.33%). From BFAS we showed 4.14% were FAD. The effects on education in FAD group were their GPAs, spending time on study and they think that they could improve their GPAs if they had more time (P-value <0.05).

**Discussion and Conclusions:** Medical students use Facebook frequently. Using Facebook to counteract boredom is the greatest reason. The prevalence of medical students who are FAD does not differ with the other study and FAD has effect on education.

**10HH11 (19006)****E-learning in traumatology: From students for students**

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**Background:** The treatment of trauma patients is challenging for young physicians. The faculty of medicine at the University of Bern offers media-dissertations, and this attractive way of creating a work from which other students can profit was the start of an educational video about the so-called trauma-ABC shaped to the needs of 4th to 6th year medical students.

**Summary of Work:** A medical student with prior experience in audio-visual projects, supported by the team of the Education and Media Unit and an emergency physician with a Master of Medical Education, developed an educational video for medical students focusing on one safe way to address the needs of a trauma patient. It follows the well-known ABCDE-structure in trauma, showing in four short videos that the same structure is applicable not only to multiple trauma patients but also to patients with minor trauma.

**Summary of Results:** The instruction videos are launched on the website of the medical faculty of the University of Bern and are also available for the interested public at <http://e-learning.studmed.unibe.ch/chirosurf/>. Moreover they are used for the introduction of medical students attending a traineeship at the University Hospital in Bern in surgery or emergency medicine.

**Discussion and Conclusions:** The educational video on traumatology for medical students is a useful e-learning tool and a good example for peer teaching.

**10HH12 (19148)****Reducing reporting error by means of a structured online e-learning module in treadmill stress testing**

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**Background:** Internal Medicine trainee doctors in our institution participate in the running and provisional reporting of treadmill stress tests. These provisional reports are reviewed by a senior supervising Cardiologist, occasionally several days later. Erroneous provisional reporting could therefore lead to delay in treatment. The training of our trainees was previously based on on-the-job observation and informal teaching. We aimed to standardise this training and to evaluate the clinical impact of our efforts.

**Summary of Work:** A comprehensive online e-learning module was developed by four Cardiologists. This comprised 3 slide presentations covering theoretical and practical aspects of stress testing, and 2 formative quizzes. All trainees involved in the reporting of stress tests completed the e-learning module. We used the percentage of provisional reports requiring modification as a marker of clinical impact. We compared this percentage over the immediate 3-month period following the implementation of the module, with the corresponding 3-month period in the previous calendar year.

**Summary of Results:** In the immediate 3-month period following the implementation of the e-learning module, 333 of a total of 2564 (12.99%) provisional reports required modification. In comparison, 257 of 1628 (15.79%) provisional reports required modification in the corresponding 3-month period the previous year. This absolute reduction of 2.8% was statistically significant by chi-squared testing ( $p=0.011$ ).

**Discussion and Conclusions:** The standardisation of training of trainee doctors in treadmill stress testing by means of a structured e-learning module led to a significant reduction in the percentage of erroneous provisional reports.

**Take-home messages:** Well-designed e-learning modules can have significant clinical impact and may improve patient safety.

**10HH13 (22867)****MOOC as an Educational Tool for Medical Education Departments**

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**Presenter:** Manuel Aleje Esteban\*

**Background:** We have been working on empowering our teachers in order to improve their clinical setting teaching. The Medical Education Department wanted to implement several techniques that facilitate teaching in the run with heavy patient care workload and located along several medical centers and hospitals in our community. In order to achieve this objective we designed a MOOC (Massive Online Open Course) entitled "Teaching in clinical setting".

**Summary of Work:** From February 2013 to May 2013 we designed and recorded an online course explaining the basic features of 5 well known teaching techniques (One minute preceptor, Aunt Minnie, SNAPPS, Activated Demonstrations and Bedside Teaching). A practical simulated-video and auto evaluation test of each technique was also provided. A feedback form at the end of the course was also requested.

**Summary of Results:** The course was opened in December 2013. One hundred and sixty teachers have done the MOOC in the two first months, with a good level of satisfaction (5 points on a six-grade scale). All people registered performed self-evaluation and completed at least the 90% of minutes required.

**Discussion and Conclusions:** The MOOC is a perfect strategy to reach a high number of physicians and medical teachers interested on implementation their teaching capabilities that otherwise would be difficult to reach.

**Take-home messages:** MOOC could be a valuable faculty development educational tool for Medical Education Departments.