1-1

ASSESSING LEARNERS IN A VIRTUAL LEARNING ENVIRONMENT: EXPLORING THE VIEW OF MEDICAL EDUCATORS

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Introduction:

Virtual learning represents a vital facet of blended learning, allowing sharing of content for learners and educators separated in time and/or space. However, assessing learners this way presents its own challenges. Examples of which include assessing deeper learning; technology failure; computer literacy and equipment costs. We aimed to explore the views of clinical educators using established workplace-based assessment (WBA) tools in assessing learners virtually, to highlight problems and suggest modifications to improve their utility.

Method:

As part of a Postgraduate Diploma in Medical Education session on virtual learning, we asked attendees (MSc/Diploma students/alumni) to use existing WBA tools to assess video recordings of trainees during clinical encounters. We used a Direct Observation of Procedural Skills form for intravenous cannulation; a Teaching Observation form for a teaching on airway management skills; and a Resuscitation Case Based Discussion form to assess human factors during a simulated cardiac arrest.

Written and verbal feedback was gathered from attendees through small-group discussion about their experiences of using WBA forms to assess learners on video. Feedback was analysed to identify common themes of problems, after which suggestions are made to overcome hurdles.

Results:

Feedback from 24 attendees identified the following themes of problems:

- *Authenticity:* Did the recording reflect true-practice, or was the encounter pre-rehearsed or prompted?

- *Visual coverage:* Does the video capture enough of the encounter to assess human factors, professionalism, or clinical competence?
- *Distraction:* Does camera presence distract assessees from their task, or other people in the scenario?
- *Feedback timing and quality:* Can delayed feedback detract its efficacy, or pose patient safety risks when assessing practical competencies?
- *Assessing without discussion:* Assessors found it difficult rating competence without discussion with the trainee to explore rationale and understanding.

Suggestions for practice:

Using previously unseen material and providing a moderator at the time of assessment could promote authenticity. Carefully placed 360-degree camera technology may improve assessor experience by capturing the entire clinical encounter, without imposing upon the assessee. Feedback quality could be enhanced by repeat review of videos before feeding back, or increasing the number of online assessors for an individual assignment. This may provide the freedom to annotate the video 'real-time' with specific comments. Online reflective discussion could further enhance the concept of assessment *for* learning, and should occur before the assessment outcome is finalised.

1-2

CONFIDENTIALITY AND SOCIAL MEDIA - 'BORDER CONTROL?'

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Introduction

Advances in technology have been accompanied by the expanding use of social media in medical education. The use of social media in medical education may lead to conflict between personal and professional life. We explore the benefits of using social media as a learning tool and focus on the issue of confidentiality. Therefore, we need to consider how we 'border control' its use.

Methods

A group session was conducted to discuss the use of social media as an educational tool. The group consisted of 12 postgraduate medical education students with varying levels of clinical experience. The participants designed and reflected on a learning activity using a social media tool of their choice.

Results

During the discussion, confidentiality was the predominant issue raised. Students highlighted numerous cases where patient photos were displayed on social media, with no evidence of patient consent. Learners recognised the benefits of social media. This included it being effective for arranging teaching sessions and encouraging communication amongst peers. Social media allows for case discussions cases and sharing clinical knowledge. A large majority of the learners were not aware of the issue with confidentiality arising from the wide accessibility of social media.

Conclusion

Confidentiality and social media have been addressed as important issues in various national documents produced by the GMC, NMC, MDU and BMA. There are other countries that have no guidance on social media use. The very global nature of the use of social media as an educational tool raises the key issue of 'border control' to maintain the principles of professionalism.

1-3

**APPS: THE FUTURE OF CONSOLIDATED INFORMATION FOR MEDICAL STAFF AND THOSE IN MEDICAL TRAINING?**

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Introduction

Medical Education is an ever evolving, multi-faceted area for both clinicians and administrators. The Christie NHS FT has trainees from FY2-ST8 and is in a relatively unique position within the North West due to the fact that none of the trainees who rotate through the Trust are employees of the Trust. This brings a challenge: how do you induct a new group of junior doctors to the Trust every 4 months and be sure that they have all the crucial information they will need to be confident and competent in their new training post?
Between August 15 and August 16 trainees were asked if they received all of the information that they needed to start, on average 31% said no. The Medical Education team made the decision that having 1/3 of the new junior doctor workforce not feeling fully prepared was unacceptable According to PUL.com, 29th Sept 14, the average open rate of notifications is 90% vs 23% of email messages; with this in mind it was decided to develop a medical education app.

Methods

A comprehensive map of all information needed for medical staff was established and split into key areas:
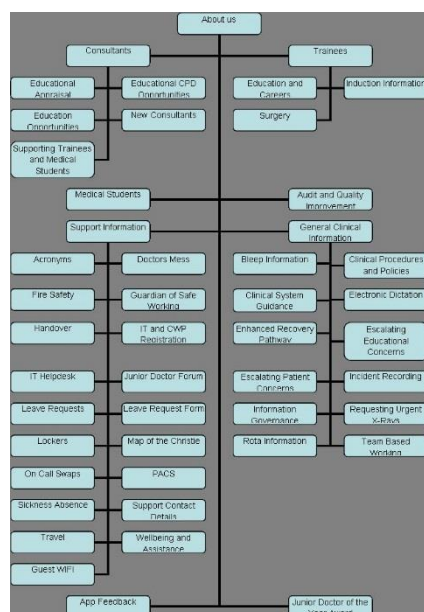
Using an online app development tool called AppInstitute, a fully functional, free app has been developed encompassing all of this information - The Christie EduKit. EduKit is available for all Android and Apple devices. It is an offline app, meaning that once it has been downloaded the user does not need to be connected to WIFI or data, all information will be accessible at all times. This is crucial for accessing information in the clinical environment. It also has a messaging function which pushes notifications to users.

Results/Conclusions:

EduKit went live in April 2017 for testing with trainees, full roll out will be in August 2017 in conjunction with the junior doctor changeover. Of the current cohort of junior doctors 39% are active users (10th June 2017). From August the medical education team will not circulate any paperwork prior to changeover and at the start of student placements, instead a link will be sent to download EduKit alongside signposting to the essential sections.
EduKit currently contains 57 additional pieces of documentation; this is in addition to the written content on the app. This information is delivered in a clear and concise way and is available at the touch of a button. The resources associated with the high volume of inductions for trainees and medical students are vastly reduced using the app in terms of both time and cost to the medical education team. Following in-depth feedback and

review in August 2017 the app is planned to be rolled out to all medical staff and the possibility of using it with other staff and trainee groups within the Trust will be considered.

1-4

DEVELOPING AND DISTRIBUTING A CLINICAL EXAM SMARTPHONE APP

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A smartphone app was designed, built and launched to teach the clinical exams in medicine and surgery to medical students using embedded video, images and text. The completed app was launched across all app stores. The goal was the provision of a pocket reference for medical students.

The app was released in January 2016. It serves as a reference tool for student and doctor users.

The app was designed for medical students in Ireland but has found users all over the world and on every continent. Basic analytics demonstrate that 34% of users spend >5 mins on the app per log on and 18% between 2 and 5 minutes.

The main barrier to proliferation of this app has been marketing of the final product. Where medical students have discovered it, over one third use it for >5 minutes, indicating that it is being used for active study as well as a reference.

1-5

INTEGRATION OF OPEN ONLINE COURSES AND LEARNING ANALYTICS FOR DELIVERY AND ASSESSMENT OF CLINICAL SKILLS ENHANCEMENT PROGRAM

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Introduction:

Clinical skills training program that is well organized and executed is one of the most important challenges of a modern medical curriculum. There is a great interest in integration of clinical skills training programs as early as possible to help undergraduate medical students develop the knowledge and skills that are relevant and meaningful to clinical practice. Massive Open Online Courses (MOOCs), Small Private Online Courses (SPOCs) and flipped classroom are examples of current trends in technology-enhanced learning which have received significant interest in higher education. The growing focus on measuring learning and tracking learning analytics emphasizes an evolving interest in assessment of online and blended courses where learners' data can reveal how students' actions contribute to their progress.

Aim of work:

To enhance clinical skills training that is supported by technology-enhanced learning and promoting self-regulated learning.

Methods:

A quasi-experimental, pretest-posttest study was conducted to compare alterations in students' knowledge and skills after enrollment in MOOC or SPOC. Two matched groups of medical students were systematically enrolled in a "First Aid" online course that was delivered as a MOOC (group I) or as a SPOC (group II). For both groups, tracking of students' learning analytics was recorded individually and as a group. Each course was implemented for 4 weeks during which students had access to the faculty clinical skills lab guided by facilitators to realize a flipped classroom. In addition, students were provided with online resources about the topic through the faculty learning management system (LMS). Assessment of the theoretical knowledge and practical skills was done by joining online quizzes and exams provided at the MOOC/SPOC, assignments at LMS and final on-campus OSCE.

Results:

Significant improvement in first aid knowledge and skills was detected with no significant difference between MOOC and SPOC groups. Positive correlation was recorded between the number of online video hits and course completion rate. However, students' interaction in online forum discussions was significantly higher in the SPOC compared to the MOOC fostering more personal engagement between faculty and students as well as peer interaction and coherence. Tracking of learning analytics helped teachers design appropriate tasks and assignments based on learners' progress in each online course and relevant intervention methods were incorporated accordingly.

Conclusions

Combining different learning methodologies together with recording of learning analytics revealed substantial improvement in a basic clinical skill training that can be further implemented in other specialized clinical fields.

1-6

FACULTY DEVELOPMENT WORKSHOP FOR PROJECT BASED E-LEARNING: DESIGN AND EVALUATION IN AN INDIAN MEDICAL SCHOOL

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Introduction

E learning can enhance educational reform for the computer literate learners by the ease of access to learning material any time and helping them pace their learning curve. It also offers educators a new paradigm based on adult learning principles. Hence, we hypothesised to develop and implement an E learning Project in our Institution for introduction of E learning for educational reforms, for which Faculty development was found imperative. Hence, we proposed to develop, implement and evaluate a capacity building Workshop for faculties of our Institution.

Methods

During a one day Faculty development Workshop on "Teaching, learning & assessment using online Resources" conducted by a faculty expert from Christian Medical College (CMC), Vellore, 17 participants who are members of Medical Education Unit of Sri Muthukumaran Medical College Hospital & RI, Chennai, India, were trained on various aspects of E learning and they developed an E - learning Project for implementation of E learning in our Institution. Pre and post tests were conducted. Evaluation of the Workshop was through written feedback obtained from the participants at the end of the Workshop. The results of the Workshops are tabulated and statistically analysed to evaluate the effectiveness of the Workshop.

Results

Using Wilcoxon singed rank test, we found statistical significant difference between pre and post test score at $p < 0.001$. Pre-test mean is 2.35 ±1.36 and post test mean is 5.0 ±0.86. Nearly 112.6 % improvement of scores was observed, which is statistically significant. An analysis of the feedback questionnaire showed that 76% of participants felt that the presentation of session on developing E learning Project was outstanding & 24% felt that it was above average and all of them (100%) are encouraged to apply what they have learnt through this session. On the aspects of the Workshop that was most beneficial, the participants responded that the steps in development of an E learning Project, step wise designing of E resources, hands on training given, personal experiences shared by the Expert, interactive discussions were most useful .

Conclusions/Implications

The authors conclude that Faculty development Workshops are effective in enabling faculties to develop feasible E learning projects for introduction of E learning for educational reforms and this will enhance the effectiveness of subsequent implementation of the Project.

1-7

CONVERSION OF VOICE OVER LECTURES INTO E-LEARNING MATERIALS

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Background:

Universities spend a large amount of time and resource on creating materials for medical education. There is evidence to suggest that revisiting previously attended lectures is beneficial to student learning and their experience.[1] This can be achieved in the form of narrated e-learning modules, which allows students the opportunity to learn without time and space limitations. Incorporating self-assessment exercises can further enhance the learning process. It has been shown that academic performance is significantly improved by student self-assessment as it encompasses information gathering and reflection[2]. Many institutions already have pre-recorded lectures as well as question banks which can be used to create self-assessment tests. The concept of re-utilizing pre-existing material and incorporating e-learning and self-assessment, can be beneficial for both educators and students. Students can particularly benefit from this as it includes knowledge recall and comprehension of scientific facts and concepts that can be revisited during clinical years.

Aim:

To convert pre-existing voice over lectures into narrated e-learning modules and incorporate self-assessments taken from pre-existing question banks. To provide students with revision material on basic sciences, which can be revisited throughout their clinical years enabling continuity of content.

Methods:

Existing basic sciences voice over lectures from years 1 and 2 were reviewed. Specific material was selected based on the topic being something students were either likely to struggle with conceptually or find useful to revisit when it came to clinical years. The power point presentations, along with the accompanying clips of voice recordings were edited and arranged in a storyboard format. This enabled the file to be opened in Articulate – a software program that can be used to turn a power point project into an interactive and publishable e-learning course. The software allows the user to easily build the module by creating a timeline from slides, arranging them into scenes with various interactive exercises and triggers incorporated. Pre-written questions by senior clinical lecturers, which were relevant to the e-learning topic, were used as interactive pre and post e-learning module assessments.

Results:

The conversion of pre-existing voice over lectures into narrated e-learning modules as well as incorporating the pre-existing questions to create the pre and post self-assessments was a straightforward and easy process. The next important step will be to evaluate these resources, especially looking at the benefit of continuity of content and format; as well as assessing if the student's learning is enhanced by revisiting this familiar material, as opposed to new material. Potential further developments to the project could also include the addition of interactivity and self-assessments throughout the module.

Discussion:

As with any form of learning resource, consideration must be paid to the sustainability of the material and how often it might need to be revised or updated. We believe that this quick and easy method of recycling pre-made materials is both cost and time effective. It can be updated and amended accordingly to maintain up to date and relevant content. The converted material could also be used in multiple courses and is easily transferable to different modules as well as a stand-alone unit to revisit.

To enhance this work further, senior clinical lecturers and students could be approached to guide the production of e-learning based on: which topics are deemed to be the most difficult for students, the most clinically relevant and which topics require re-visiting throughout medical school.

DEMEC 2017 – abstract poster submissions : Category 1: E-learning

Medical education is a dynamic and developing field and with each new advance in technology we must continue to utilize the endless opportunities it brings. We believe that this method provides the educators with a unique way to enhance the learners experience in a cost and resource effective way. It creates learning material that can be accessed any time, anywhere and that are unique to the individual faculty and yet familiar to the learners.

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1-8

ENGAGING STUDENTS AS PARTNERS TO CREATE AN INNOVATIVE TEACHING ACTIVITY USING SOCIAL MEDIA

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Introduction:
Engaging students as partners in educational projects is becoming a diffuse strategy as it has been shown useful to improve the teaching quality and the students' learning experience.

Social Media are becoming more widely used to integrate other traditional teaching methods. They have the advantage of encouraging students' active learning and interaction, wherever they are.

Buckingham University offers a clinical MD in General Internal Medicine, the program involves six months of lectures and one year clinical attachment in one of six different hospitals around the country. Using social media can be an effective strategy to reach these students and provide further teaching during their attachment.

Methods:
To provide teaching two platforms were used: Whatsapp and Socrative.The weekly teaching session consisted in multiple choice questions on a specific topic. Whatsapp was used to send the text of the questions and interact with the students and Socrative was used to allow the students to reply in an anonymous way and receive immediate feedback.

After the first two sessions, a feedback questionnaire was sent to students in order to identify any issue and provide a more effective teaching. The students' suggestions were taken in account and applied to the next three sessions. After the last session, the same feedback questionnaire was sent again.

Results:
Thirty-five students were invited in taking part in the learning activities and feedback questionnaire.

The issues recognised after the first two session were three: too few questions per session, some of the questions were too easy and there was too little interaction.

In the next three sessions the number of the questions was increased, the difficulty level was adjusted according to the students' indication and the session were made more interactive.

Following these changes the percentage of students who felt the number of questions per session was right increased from 33% to 86%, none of the students felt the level was too easy compared with 25% in the previous questionnaire, and the satisfaction about interactivity increased from 25% to 86%. The results are summarised in figure 1.

Figure 1: Student's satisfaction according to the feedback questionnaire results
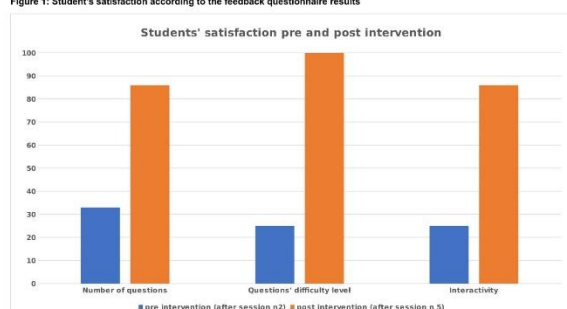
Conclusions:
Using social media can be effectively used in providing teaching, however introducing a new teaching tool can be challenging. Students' feedback is a precious resource to improve the quality of teaching.

Following this experience further mobile teaching session have been planned, regular feedback will be gathered to constantly adapt the teaching sessions to the students learning needs.

1-9

THE USE OF AN E-MODULE TO IMPROVE STUDENT PERFORMANCE ON STROKE NEURO-IMAGING

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INTRODUCTION:
Medical educators constantly face new challenges; generally, there is less time available for teaching than ever before. E-learning, involving the use of the internet to deliver knowledge, is therefore increasingly used in medical education and is appealing due to students' control of content, pace of learning and because of its multiple media forms. E-modules can improve academic and clinical knowledge, and are as effective as lecture-based methods.

Understanding of topics, if not covered extensively in the formal curriculum, can be improved by offering short e-modules to students. A study done on e-learning in geriatric neurology found that integrating such modules to medical students undergoing clerkships where there were gaps in formal teaching improved OSCE performance on the topics covered as compared to students who did not read the module.
Stroke is an important cause of mortality and morbidity worldwide. It is essential to rapidly perform and interpret neuro-imaging in order to commence management. At the level of medical education, however, radiology teaching is said to comprise part of medical school curriculum in only 22% of American medical schools. Therefore, stroke is an important starting point for essential neuro-imaging.

METHODS:
The aim of this project is to assess whether a concise, case-style e-module on the diagnosis, management, and neuroimaging of stroke can immediately improve medical student performance on examination style questions and therefore on stroke knowledge and competency. This serves a wider aim of whether similar short e-modules can be incorporated into medical education where formal teaching is lacking. Participants in this study were administered a six-mark multiple choice pre-test before completing an online module on territories, presentation, non-contrast CT interpretation and management in ischaemic and hemorrhagic stroke. They then completed a post-test and results were compared.

RESULTS:
Participants showed a mean improvement of 24.18% from pre-test to post-test (CI 3.90% -44.47%, P 0.25). All participants reported the module as helpful. 85.7% were not confident in neuroimaging prior to completing it.

IMPLICATIONS:
It is inferred that implementing similar e-modules on important topics would be successful as they would be valued and used by students. Results also reflect a potential gap in formal teaching. There was no correlation between the length of time taken on the module and the change in score, reflecting individual differences in pace and retention which are allowed for in e-modules.

CONCLUSION:
In conclusion, a short e-module on stroke essentials is effective in improving short-term knowledge and competency among medical students in their clinical years. It could therefore be an effective method of augmenting formal radiology and neurology teaching at the undergraduate level.

1-10

USING 'EDMODO ®' AN ONLINE LEARNING PLATFORM TO FACILITATE LEARNING

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Introduction: Online learning environments can enhance medical education by enabling learners to access the vast array of content available through the internet. It is advantageous enabling collaboration and sharing of resources for learners who are separated by time and/or space, to create an online learning community. It can be more inclusive with easier integration of all types of media. Online environments can be used independently or as an adjunct to attendance-based learning, creating blended learning.

Here, we will critique our experience of using an online learning platform, 'Edmodo ®' to illustrate how an online learning environment can be set up and used by clinical educators.

Our experience of using Edmodo ®

This arose out of the practical teaching project for the Postgraduate Diploma in Medical Education on Virtual Learning in Medical Education.

We integrated Edmodo ® into weekly teaching sessions by inviting learners to participate in a closed group. This was used for sharing teaching materials and further reading; updating students on course details and providing individual support using private messaging.

How our practice changed using Edmodo®

The table below summarises our findings. Overall, we found that having one central communication hub facilitated sharing a richer variety of resources, with ease in integration into attendance-based teaching.

	Prior to use of Edmodo®	Using Edmodo®
1	Difficult to contact group in between weekly sessions	Single portal for accessing and updating information accessible throughout the week
2	Difficult to access information	Easy accessibility and user friendly – intuitive use by learners
3	No agreed method to contact tutor/learners private	Improves access to tutor - Facilitates private support and tutoring
4	No record of students' work and progress	Can incorporate assessments and portfolios
5	Limited ability to highlight useful resources	Educator can access and vet online resources for reliability and educational value prior to putting it on group forum

Conclusion and potential future uses: Using an online platform for learning has created an opportunity for wider collaboration between clinical educators in different hospitals. In the future, we aim to extend the pool of experts to guide and support learners. Growing such an online community brings the potential to engage medical educators in using technology to support their practice. For students, with wider use it, could enable the creation of an online portfolio where students can showcase and reflect upon their work. Formative assessments could also be easily incorporated and updated with ease using the platform.

1-11

ENCOURAGING ENGAGEMENT: THE USE OF MOBILE APPS IN MEDICAL EDUCATION

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Introduction:
A common problem in lectures is the reluctance of the audience to vocally engage with the speaker. Increasing accessibility to smart devices and medical applications (apps) provide a tool to encourage engagement and enhance learning. We aim to harness the power of apps to bridge the gap between student and speaker.

Methods:
We designed a regional teaching course (The Final Word) for medical students in preparation for their final year exams. 234 students attended a series of 10 lectures over 2 days in January 2017. In this context, we trialled the use of 2 mobile applications:

MeeToo - An application that provided a live forum for attendees to ask questions anonymously to the course organisers and lecturers. Other users would be able to see questions asked and highlight those perceived as important. Once flagged, these could be addressed by the speaker in realtime.

Socrative - An application that allowed users to vote on Single Best Answer questions (SBAs) using their mobile phones. This allowed a lecturer to see the overall distribution of answers to a question and to discuss the answers realtime.

Feedback forms were collected, asking a range of questions regarding student confidence in asking questions and the engagement with the use of apps.

Results:
174 feedback forms were received from 234 attending students. 78.9% of students reported they would feel too intimidated or embarrassed to ask a question in a lecture consisting of over 100 people. Only 4.2% of students said they would always feel confident to ask a question with over 100 people present.

68% of the students downloaded MeeToo and 86% of the students downloaded Socrative. 95% of the students felt the course would improve their performance in finals with 89% believing that their learning experience was enhanced by the use of MeeToo and Socrative.

Conclusions/ Implications:
There is a consistent fear amongst medical students of publicly interrupting a lecture to ask questions or make comments. Students responded very positively to the use of MeeToo and Socrative and indicated their use enhanced their educational experience. By promoting the use of apps in lectures, we aim to integrate these more widely into medical education and allow as much realtime engagement as possible.

1-12

OUTCOMES FROM A REGIONAL E-INDUCTION INITIATIVE

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Introduction:
An e-induction passport scheme has been set up in Yorkshire and the Humber, an online e-induction programme to standardise learning, reduce the resources required for induction sessions, and ensure that all the trainees are confident in essential fields of practice prior to starting work.

There has been little research into the effectiveness of e-induction as a tool for the medical professional workforce. As a new programme being introduced to an e-induction naive population, an opportunity to qualitatively assess the impact of e-induction arose.

Aims:
A Likert-type scale was used to assess the confidence trainees had in core competencies before and after e-induction. These covered topics including fraud, whistle-blowing , Mental Health/Capacity Act, seclusion reviews, safety, risk-assessment and knowledge of trust protocols.

Confidence in competencies were assessed, with trainees as their own control. Using an automated spreadsheet, the data could be further broken down to be single competency specific, give a whole programme overview or be broken down into region specific data.

Method:
Trainees were asked complete a questionnaire, built into the e-learning package, rating how confident they felt in competencies before and after completing e-induction. Free text entry was also allowed.

An automated spreadsheet was created using Microsoft Excel. This collated all the Likert scale data and used Chi-Square testing to show any statistically significant differences in trainee confidence before and after completing the e-induction package.

Results & Conclusion:
97 completed questionnaires were collated.

Topics showing statistically significant improvements in trainee confidence included fraud and whistle-blowing, understanding of the Mental Health and Mental Capacity Act, rapid tranquilisation, safeguarding, seclusion reviews, legal duties, medicines reconciliation, risk assessment, prescribing and medicines management.

No change in confidence was noted in falls assessment, hand hygiene and waste management. These areas showed high trainee confidence prior to e-induction

Free text comments from trainees praised the interactivity and comprehensiveness of the e-learning package.

Future Implementation:
The cost and time saving potential of e-learning is vast. Trainees can complete e-learning in their own workplace on almost any trust computer. The removal of venue and room costs and the difficulties for trainees unable to attend induction is a major advantage of e-learning. E-learning has a significant positive effect on the confidences of trainees in a wide range of core competencies.

Further collection of data could be local, regional and national, allowing reviews of highlighted strengths and weaknesses in training programmes, such as areas trainees benefit from most. It can provide the groundwork for a national standard e-learning programme.

1-13

USING VIRTUAL LEARNING RESOURCES WHEN TEACHING WITH PATIENTS

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Introduction: The purpose of this poster is to highlight the importance of sound design principles when considering using technology to design learning experiences with patients present. These can include real patients, virtual patients and patient education programmes.

Virtual learning encompasses any modality where the learners and educators are separated in time or space or both (Moseley and Dessinger 2007). With the technologies there are an increasing number of options for clinicians to use when educating learners. How we harness them when teaching with patients can enhance the learning experience, but it is also essential to be aware of potential barriers to learning.

Methods: Empirical literature was reviewed with regards to the potential benefits and pitfalls of using virtual learning resources when teaching with patients. This included the use of virtual patients and also using technologies when teaching with patients present.

Results: Reviewing the literature revealed benefits in educating both learners and patients when using virtual learning resources. Flexibility, repeatability and accessibility were recurring themes in terms of benefits. Concerns about quality of information was also highlighted and how resources are maintained. Benefits in terms of cost-effectiveness have also been emphasised (Richards et al. 1998). It has been noted that virtual learning environments created for clinician training purposes can also be used effectively in educating patients (Jimenez et al. 2017). Research suggests that student confidence improves with real patient consultations following the use of a virtual learning consultation training tools (Naumann et al. 2016). These points highlighted could be encompassed under the broad headings of learning environment, learners, activities, learning outcomes and other people as highlighted by Beetham (2007).

Conclusions/Implications: Following Mayer's design principles (2005) in conjunction with Beetham's (2007) recommendations in all learning contexts helps produce effective learning opportunities. The challenge for clinicians is how best to make use of these new advances in technology to effectively inform and empower learners, including patients, in their continuing development. As clinicians working in educational roles we have a responsibility to continue to improve learning opportunities and hence enhance patient care.

Patients and learners will have differing contexts from which they wish to learn. However, when designing an educational programme for either, the same design principles remain.

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1-14

REWARDS AND CHALLENGES IN DEVELOPING E-LEARNING PACKAGES FOR UNDERGRADUATE PSYCHIATRY TEACHING – THE NOTTINGHAM EXPERIENCE

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Introduction:
Using information technology to enhance learning is not a new phenomenon. Both medical teachers and students tend to have mixed opinions on its usefulness. However, with the ever-expanding amount of medical knowledge, and the limited amount of time students have, e-learning may help students to receive a consistent and thorough teaching of key knowledge, and allow teachers to spend more time with students in smaller groups to develop their clinical skills.

The Clinical Phase 2 in the Nottingham Undergraduate Medical Course was changed significantly in 2016. The time students spend in psychiatry is reduced. Hence, we decided to alter our teaching delivery from traditional interactive lectures to a combination of facilitated e-learning and small group skill practice. Within six months, our team of 16 professionals (14 psychiatrists, 2 nurse educators and 2 learning technologists) have developed 24 e-learning packages of different topics to cover the whole psychiatry curriculum. Each e-learning package uses the same format, including a quiz before and after the package, as well as interactive activities and videos. This poster summarises our experience of this project and the feedback from students.

Methods:
Data were collected and analysed from the students' feedback over the 2016/17. The feedback includes how useful students find the e-learning packages and the time they spend on the packages. Free-text comments were analysed using Wordle.

Results:
The learning technologists spent about 100 hours to support this project including training the teachers to use the software. We estimate another 300 hours were used for the teachers to develop all the packages.

Overall, 45% and 52% of students who responded to the feedback at the end of the e-learning packages reported these packages "very useful" and "useful" respectively. On average, students spend 23 hours and 10 minutes to go through all 24 packages. From the free-text comments, students enjoy the e-learning because of the quiz, the interactivity and the concise and clear presentation (Fig 1). Students ask for more quizzes and interactivity to improve these packages. Students have mixed views on videos.

(Fig 1)

Conclusions/implications:
Developing e-learning packages is time-consuming and requires a large amount of planning and good leadership to ensure the quality and to meet the required deadline. However, once it is completed, the rewards are great as students enjoy this way of learning.

1-15

INTO THE BLENDER; INTEGRATING CASE BASED LEARNING (CBL) E-LEARNING INTO A TRADITIONALLY TAUGHT PAEDIATRIC ROTATION

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Introduction:
E-learning is a fast-growing area within medical education [1,2,3]. When it is used as an adjunct to traditional teaching methods, it is known as 'blended learning' and has been shown to be beneficial [4].

We identified a learning need within our students as we were frequently being asked for recommendations of online paediatric specific learning resources.

Our paediatric rotation is 6 weeks in length and students are taught traditionally with a combination of small group tutorials, lectures and large group CBL sessions.

As CBL is always highlighted by students as enjoyable and CBL has been shown to promote deeper learning [5]. We chose to develop our own E-learning resource and adopt a blended learning approach by incorporating CBL.

Methods
Research; students
> We assessed our students existing self-sourced eLearning resource use via questionnaire.

Research; technology
> We reviewed 3 software packages that allow creation of online learning material. We chose Articulate Storyline 2 as it was the most cost effective, easy to use and there is training/IT support already available through our institution. We then sent one staff member for training. This training comprised of one 8-hour session.

Development
> We created 6 emergency room cases – status asthmaticus, status epilepticus, diabetic ketoacidosis (DKA), sepsis, bronchiolitis and child with a limp.
> Each case took 6-8 hours to create; 5-6 to storyboard and 2-3 to programme.
> Each case was reviewed by a consultant to ensure content was up to date and accurate.

Launch
> These E-learning resources were launched in April 2017. Our students completed a questionnaire at the end of their rotation. We solely assessed the students' engagement with the resource as an adjunct to their learning.

Results

1) E-learning use
   - 100% used at least one online resource at least once per module
   - 75% used at least one online resource at least once a week
   - 30% used at least one online resource a day.

2) Response to CBL E-Learning

86% of our current students completed our questionnaire. 98% used the eLearning resource at least once during their rotation. 80% used the resource on multiple occasions.

The reason given for not using the resource was "not having time" (2%).

90% of students would recommend the resource to students in the future.

The table below highlights reasons the students liked the resource and what they used the resource for.

Reason for liking the resource (%)*	
Relevant to rotation	92%
Enjoy working through a case	74%
Easy to use	68%
Enjoy using E-Learning resources	62%
Reason to use resource (%)*	
Supplement their learning	72%
Check their knowledge	46%
In place of book learning	4%

multiple selections were possible.

Conclusions/implications

These findings show that overall our students have engaged with the new resources, enjoy using them and find them relevant to their study.

Moving forward we need to assess this resource to see if/how it affects overall exam performance and students' confidence in approaching emergencies.

Character count (including table, excluding spaces, pictures & references) 2500

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