



# A new approach to confirmation of skill acquisition

Andrew Kirke, Ann Ball & Sharyn Edwards  
Faculty of Paramedic Practice, Sheffield Hallam University, UK

A case study from PebblePad's 2016 'Future Ready' conference on preparing and equipping learners for their journey.

## Abstract

*Assessment of Paramedic students' knowledge, skills and professionalism against the required standards of proficiency is conducted in a number of ways across their education journey. Practical skills associated with the role are generally assessed in an Objective Structured Clinical Examination (OSCE) format. In response to increases in student numbers, pressures on staff time, and associated increases in cost, our approach to assessing practical skills needed to change. This paper reviews our change of practice which included utilising various technologies and learning platforms within the curriculum, engaging students in the assessment process, and introducing a more cost effective and time efficient use of resources.*

## Introduction

The acquisition of practical skills in Paramedic practice has long been at the forefront of Paramedic training. However with the move of training to Higher Education, greater emphasis has been placed on the development of the students' underpinning knowledge and developing graduates in readiness for registration and practice (College of Paramedics, 2014; HCPC, 2014). Paramedic education should prepare students fully for being the first on the scene of injury or illness and for making lifesaving, patient safety related decisions. Assessment of students in the performance of these skills is a key component of their summative assessment. Even in this new state of knowledgeable execution of clinical skill, it is clear that the development of the psychomotor skills remains an essential part of Paramedic education for the creation of a competent and safe practitioner (National Patient Safety Agency, 2004). It is therefore essential that the acquisition of these skills is appropriately assessed.

The Objective Structured Clinical Examination (OSCE) was originally developed in Dundee in the mid-seventies (Harden & Gleeson, 1979) and is widely and increasingly used within health

professions (Alinier, 2003). The Harden and Gleeson model of OSCE is described as long case, multiple OSCE stations that assess various clinical skills. The style of OSCE used at Sheffield Hallam University (SHU) is perhaps more akin to the Ruessler, et al. (2010) ideas of assessing pre-hospital emergency medicine skills by Emergency Case OSCE (ECOS), in that it is more specifically related to one case or focussed on one skill managed in a single OSCE. Research shows that the OSCE is an effective evaluation tool for assessing practical skills (Sloan, et al. 1995). The OSCE is, however, time consuming and expensive (Barman, 2005).

We currently assess 18 skills via traditional OSCEs over 4 modules in the Dip HE Paramedic Practice and the program has experienced a year on year increase in commissions resulting in a current cohort size of 70 students. This has resulted in the program suffering increased staff time pressures, a majority of which are related to supporting OSCE practice and the OSCEs themselves.

## Aims

It became obvious that we needed to rethink our current approach to the assessment of these practical skills. In adopting a new approach, we had two distinct objectives in mind. Firstly, we needed to find a more efficient way of working to reduce staff engagement and overall cost, specifically in relation to the use of Associate Lecturers (AL's). Secondly we wanted to remove some of the associated 'OSCE Stress' experienced by students, which often contributes to the student not performing at their best and potentially failing the assessment (Alinier, 2003), and to create a more student focussed pedagogy in their assessment.

## Implementation

According to Northcliffe (2012) assessment traditionally consists of a subjective perspective of a member of teaching staff having reviewed the individual student's performance, at a given time in their education. Whilst some moderation may occur, often only one individual will review a student's performance. We thought that the inclusion of both self and peer assessment would add further dimensions to the assessment as well helping the student to understand the assessment process. There is also the potential for equipping the prospective graduate more fully to enter the workplace with the ability to mentor and peer review, thus enabling them to make discernible judgement about their own and others' practice.

In the current OSCE process students are mostly passive recipients in a stressful assessment process (Van Hattum-Jannssen & Lourenco, 2006). McGarr and Clifford (2013) and Lanning, et al. (2011) note that both self and peer assessment has several benefits, including enhancing the students' motivation as they become more active participants in the assessment process. It seems to foster a deeper learning of the subject matter (Lanning, et al. 2011) and a deeper understanding of the level of competence required whilst also developing self-awareness, reflective skills and an attitude of lifelong learning.

Although initially we were concerned that students may give each other an 'easy ride', the evidence (Lanning et al, 2011) suggests that rather than being lenient in assessing their performance, students are often harder on themselves and each other than the qualified assessor may have been, something supported by our subsequent findings. Including the self and peer assessment tasks can potentially also improve assessment reliability (Lanning et al, 2011).

Use of self and peer assessment has not been without its drawbacks. However, the research reviewed suggests that issues such as personality clashes, racial prejudices, increased moderation work for lecturers, and poor validity or reliability of assessment are both infrequent and are evident in other assessment formats (McGarr & Clifford, 2013; Northcliffe, 2012; Lanning, et al. 2011).

All of the OSCEs in the current course occur in the 'Learning in Practice' (LIP) modules, LIP 1A, LIP 1B, LIP 2A & LIP 2B. The skills in LIP 1A & 2A are isolated psychomotor skills that are also assessed later whilst the student is in practice, and to some extent in the scenario based OSCEs in LIP 1B & 2B. The skills in LIP 1B & 2B are of a more complex nature and are assessed by a scenario based OSCE which will still require an assessor to run and manipulate the scenarios.

The new OSCE plan was based on the premise that each of the students would be assessed via a series of video recordings of the student performing the skill. Each student was asked to use PebblePocket to record three successful attempts at each skill and upload these into a workbook, and submit the workbook to a workspace for assessment. Lecturers all have access to the submissions via ATLAS (the institutional Active Teaching Learning & Assessment Space). Following the initial assessment, internal and external moderation was easily facilitated via ATLAS access to all submitted workbooks.

One of the initial concerns was that in LIP 2A there are 7 skills to assess, which would result in 1,470 videos for assessment. This would obviously be far too much for one lecturer to assess and mark. This partly led to the decision to get the student to self-assess video 1, while another student would peer-assess video 2. The academic staff would assess video 3 and, if needed, review the other two. It was felt that the introduction of self and peer assessments would develop a more inclusive and collaborative pedagogy (Lanning, et al., 2011). As each of the students is assigned to one of the 9 lecturers on the program as their academic mentor, it was decided that each academic mentor would be responsible for marking their allocated students. Lecturers would then be able to self-manage their marking time and review the videos within the standard three-week turnaround period as per the institution's assessment regulations and this should negate the need for AL support for marking.

To further support this process and to reduce the need for staffing during OSCE practice, exemplar practical demonstrations of skills were filmed by lecturers using PebblePocket. The films were then shared via foliopages published to the web. A Quick Response (QR) code was linked to each foliopage URL and tickets displaying the QR codes were created and attached to the equipment required for the practice of the specific skill. Students could use their own devices or the tablets made available next to each skill practice station to scan the relevant code and watch the video for instruction and support.



A concern was raised regarding the assessment of underpinning knowledge around the skill, which had previously taken place during the face to face OSCEs by the examiner questioning the student. In designing our solution to this problem we turned to a number of useful PebblePad features. We utilise a workbook to create an assessment tool of the underpinning knowledge. The student completes the workbook which is set to auto submit to the module ATLAS site. This allows the module leader to keep oversight on student achievement and allows the academic assessor to mark the submission at the same time as assessing the video submission. Each skills section of the workbook ends with an evidence holder which allows the student to upload the 3 videos for assessment. A feedback template and scorecard was added to the feedback section in ATLAS to provide a standardised marking matrix.

Each student is encouraged to download PebblePocket to their own mobile device and link it to their own asset store (loan devices are made available upon request). This allows each student to use the 'Record a Video' option in PebblePocket to record their videos and load them directly into their asset store for later use.

## Results

The team implemented the trial in March 2016 with a cohort of 20 students starting the LIP 2A module. The students had already completed LIP 1A using the traditional method of OSCE assessment and lecturer lead practise sessions thus giving us a benchmark to compare against.

Following the OSCE submission, a survey was distributed to the students and 16 completed surveys were received (80% return rate). The full results can be viewed at [http://bit.ly/vid\\_results](http://bit.ly/vid_results). We are aware this is a relatively small sample and intend to repeat the process with a larger group.



In relation to the first objective of finding a smarter way of working and reducing staffing costs, LIP 2A currently has 15 hours dedicated to skills practice, staffed by 4 lecturers (60 hours in total). By using pre-recorded video skills to support learning this has been reduced to a total of 18 hours. The initial session includes two tutors plus tablets to facilitate video playback. After the initial session further sessions will have only one tutor and the tablets saving 42 staff/AL hours.

The use of the exemplar videos had a definite impact with 87.5% of students finding the videos reduced the need for tutor support, with 37.5% finding a 'significant' reduction. The videos also helped reduce the confusion sometimes created with inconsistency of multiple tutor explanations, although 31% of students still needed some clarification.

*"The videos were a useful reference tool, but need refining to produce a definitive and accurate representation."*

*"The only confusion over what was required was amongst the group. In my opinion, if the demos were the standard then I don't see the issue when using them as the example. People interpreted some things differently."*

Traditionally each OSCE Station is 30 minutes with 10 minutes for admin & change over and 20 minutes for results and feedback at the end, equating to 5 staff hours per student. We found the average marking time for the videos was 2.5 hours, a 50% saving on staff/AL hours. In addition, all marking was completed by the fulltime staff without any need for AL support. We were also able to complete an effective internal moderation and the module has now gone to the external assessor for moderation. The use of ATLAS facilitated easy access for all moderators, with both internal and external moderators being able to view the videos and the assessors' marks and feedback, and provide their own feedback all in one environment.

The second objective of reducing 'OSCE stress' was also achieved. 100% of respondents indicated a preference for the video OSCE over the traditional format. They found it less stressful. When asked to score how stressful they found both OSCE types out of 10 (10 = 'Extremely Stressful'; 1 = 'Not Stressful at all') 56% of respondents scored the traditional OSCE  $\geq 7$  with 31% scoring it 10. The Video OSCE evaluated much better with 75% scoring  $\leq 3$ .

Another important improvement in the OSCE related to the amount of time students spent practicing and perfecting the skills. 75% of students felt they spent more time practicing the video OSCE than for the traditional OSCE and 43% felt they spent significantly more time practicing. One drawback of the increase in practice time was the increase in the use of consumables and the cost associated with this. We have not yet been able to quantify the additional usage so will attempt to do so in the next evaluation.

62% of students found conducting self-assessment to be useful and 81% found the peer assessment was of value to them. 56% of students felt they had been harder on themselves and 37% harder on their colleague than a tutor would have been.

*"As much as I didn't like self-assessing my own videos for fear I was being lenient on myself, it was good to watch myself back & spot little bad habits (cleansing the site) nothing dangerous. Good to iron those out."*

*"After performing the videos, I found it useful listening to feedback from my colleagues."*

Assessment of others and providing appropriate feedback are essential skills for registered paramedics, especially when it comes to the future mentorship of students.

There was a mixed response in relation to the use of technology but most of the problems related to students using their own devices for recording the videos, insufficient storage, and HD videos creating files too large to upload. Students not using PebblePocket to record videos found issues with file compression and uploading, and the 250mb file upload restriction compounded this.

*"I used PebblePocket to send my videos to Pebble+ and attached them to my workbook from there. Found it very simple".*

*"The file transfer size needs to be larger and the ability to edit the asset in full screen mode would be beneficial".*

Overall when respondents were asked to score how difficult they found the whole process on a scale of 1-10 (1=Very Easy; 10 = Very Difficult), 75% of students scored the experience  $\leq 3$ . 94% of students believed the new OSCE process was fit for purpose in assessing their skill acquisition (The remainder were undecided).

"Better approach, tutors were always around even if support was required and I feel that students would certainly welcome this approach to learning. Few glitches but its early days and I feel it will benefit better learning outcomes."

*"Would definitely recommend and hope to use video OSCEs again."*

*"The prospect of using this method for future skills OCSEs is very exciting and I would recommend the use of video OSCEs and PebblePad."*

## Conclusions

One of the biggest barriers was changing the way we looked at the OSCEs. Some lecturers found it difficult to accept the change in approach. Some of the issues raised revolved around the security of who was performing the skill and if we could safely assume that the students were competent from watching a video. It has been clear from marking the videos that this has not been a problem.

One member of the team was concerned this could be a patient safety issue. Following discussion, we agreed that assessing the video was only acknowledgement that the student had the basic skills needed to go forth and practice them further under supervision, for full assessment and signoff.

Overall we feel that this trial has been a success and we are confident that we have made significant improvements in relation to both of our key objectives, however we have identified several issues that need to be addressed.

- As we upscale from 20 students to 70 students we need to be more structured in our approach to allocation of practice time and space to avoid bottlenecking students. To aid this we are planning to define distinct learning spaces and create a self-rostered timetable for booking the spaces.
- We need to invest in resources and consumables to facilitate the number of skill spaces available.
- We have a further opportunity to conduct the survey on a cohort of 70 students who experienced both forms of OSCE skill assessment. These students will also be able to supply comparative data. We will therefore make our adjustments and re-run and evaluate the Video OSCEs in September 2016.

We now have a variety of assessments throughout the 2 year Dip HE program that are constructed and assessed in PebblePad. We are conscious that this fragmented, valuable portfolio evidence, developed in isolated modules, could be brought together in one place. As a result, we have now constructed the Paramedic Practice Portfolio (PPP) that runs throughout the program. It commences with the first module of the program with its mandatory training portfolio, then adds the skills profiles (LIP 1A & 2A), OSCE assessment workbooks (LIP 1B & 2B), placement records (Yr. 1 & 2), and CPD record and culminates in the final module with the HCPC portfolio.

Enquires should be addressed to Andrew Kirke at [a.kirke@shu.ac.uk](mailto:a.kirke@shu.ac.uk)

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