The Context

We have been teaching Paramedic courses at Sheffield Hallam University (SHU) since 2003, one of the first university courses of its kind for Paramedicine in the UK. From its inception it ran as a two-year Diploma of Higher Education in Paramedic practice. Sheffield Hallam first took PebblePad on board in 2007, but it was not until 2013 that it began to be used in Paramedic Practice.

We had been looking for a way to move from paper-based placement assessment documents to an electronic format. We looked to PebblePad for a solution as it was already available to us, but a major stumbling block was the lack of offline access. Paramedics have little access to IT during the working day. There is no access to Wi-Fi in the ambulance without accessing costly 4G networks, and there is little appetite to stay behind on station to access the system after a long shift.

Fortunately, a solution was found with the release of PebblePocket in 2013. Following the design and release of the Competency template, co-created by SHU & PebblePad, students were able to get their competencies signed off on placement using the student’s own devices. The students were then able to add them to a workbook at a time convenient to them when they had internet access. This began our close working relationship between the PebblePad platform and the SHU Paramedic programme.

Following the development of the electronic Clinical Assessment Portfolio (e-CAP) online placement assessment document, that replaced the existing paper-based portfolios (http://bit.ly/e-PAD), we gradually began to develop other assessment modalities on the PebblePad platform:
• A workbook for a structured reflective assignment from clinical practice, including an anonymised patient assessment record ([http://bit.ly/LIP1A-Relection](http://bit.ly/LIP1A-Relection)).
• The very successful implementation of a new the video Objective Structured Clinical Examination (OSCE) assessment programme for simple psychomotor skills (see our presentation at [https://youtu.be/QhkowLvK2ds](https://youtu.be/QhkowLvK2ds)). This was developed to address issues we were experiencing with OSCEs, which were proving both difficult and costly to scale up with increasing cohort numbers.
• At the end of the programme the students worked towards the development of a professional Portfolio assessment for registration and for continuing professional practice (Example at [http://bit.ly/Steve-Example](http://bit.ly/Steve-Example)).

It soon materialised that the flexibility and scalability of PebblePad’s assessment modalities had superseded that of our primary VLE and all the assessments, with the exception of the Multi Choice Question assessments, became hosted in PebblePad.

When preparing to design and validate a new Bachelor of Science (BSc) Honours in Paramedic Science we took the decision to fully integrate PebblePad throughout the programme. This allowed us to develop the programme with PebblePad at the heart of our educational pedagogy and assessment strategy. This assessment strategy proved both valuable to the faculty in assessing students’ achievement of module learning outcomes and useful to the students moving forward into their professional practice.

The Problem

In designing the program for the new BSc we began with a consensus on what our ‘end product’ paramedic should look like. This provided the framework on which we constructed the learning outcomes for the programme. These Programme Level Outcomes (PLOs) represent the knowledge, skills and abilities that the student should be able to demonstrate at the end of the degree (Barr, Krueger & Aanstoos, 2006). These outcomes also had to map to the Standards of Practice (SOPs) for Paramedics, published by the Health and Care Professions Council (2014).

Once we had agreed on the PLOs we designed a range of modules to enable students to meet the PLOs by the end of the degree. Each module has around 3 or 4 Module Learner Outcomes (MLOs) against which the students are assessed by the module assessment strategy. These MLOs should in turn map against the PLOs to a greater or lesser degree. To ensure the MLOs cover all of the PLOs we undertook a mapping exercise ([http://bit.ly/PLO-Map](http://bit.ly/PLO-Map)). In this way we ensured that all of the PLOs were covered by the modular assessments.

It became apparent that although we could measure success on the programme by the students' ability to successfully pass the range of module assessments and thereby achieve the MLOs,
it was not immediately apparent to what extent the student feels confident in their ability to meet the overall PLOs. We needed to develop a system to track the students’ progress towards meeting the PLOs throughout their programme, enabling us to also evaluate the programme of teaching.

The Approach

Each of our students has a dedicated Academic Advisor (AA) or Personal Tutor with whom they meet at least once a semester. We resolved to make the end of the last semester in each year a touch point to review the progress of each student against the PLOs.

Using a PebblePad workbook we designed a self-assessment tool for students to measure their progress against the PLOs. The PLOs are grouped under the subheadings of:

- Knowledge and understanding
- Intellectual Skills
- Subject-specific and/or Professional/Practical Skills
- Transferable/Key Skills

We evaluated a number of designs using Rubrics, Capabilities, and simple ratings. Each had its strengths and weaknesses. We also considered whether the rating should be just student assessed, tutor assessed, or a student and tutor assessment of achievement.

After evaluating a few combinations, we settled on using a numeric capability block (with evidence holder). We also decided to go with the student assessment only of achievement and progression.

Figure 1: Example of numeric capability block for student self-assessment of achievement and progression.
It has been argued that self-assessment is one of the most important academic skills that students require for effective learning and for development as a future professional (Falchikov, 1997; Stefani, 1998; Taras, 2001). McDonald & Boud (2003) identified that students involved in assessing their own work felt it notably enhanced the learning and achievement involved.

The Programme Level Outcomes Tracker (PLOT) is then added into the students' overarching course portfolio, creating a single access point for the AAs to access and discuss student progression.

![Programme Level Outcomes Tracker](http://bit.ly/PLOT-18)
The students’ ratings are then exported into a CSV file via the reporting in ATLAS and converted into a year-end infographic.

Figure 3: Year-end infographic of students’ ratings in PLOT

This infographic is sent back to the student as an image file allowing it to be added to their PLOT for evidence of progression.

The Results

The PLOTs have recently been introduced as a proof of concept with a view to scaling up to the faculty-wide integrated care curriculum. To date the results have been very positive.

The individual students’ ratings have enabled staff to identify students who, although having passed their academic assessments, for one reason or another feel they are not progressing against the PLOs. This has allowed the AAs to implement action plans to support these students.

As a programme team the PLOTs have allowed us to see how the students across the whole course feel they are achieving the PLOs and identify potential areas we can strengthen the teaching within the programme (Year 1 Course PLOT at http://bit.ly/Corse-PLOT).
Lessons Learnt

Initially it was apparent that some students were unrealistic in their self-assessment, both over and under estimating their position. To address this we added a review of the students’ self-assessment, to be completed with their AA during their end of year one meeting.

The variance in student self-assessment was attributed to them not fully understanding the purpose of the tool. Dearnley & Meddings (2007) identified that to provide information and assume that it has been read and understood by students is at best optimistic. Therefore, it was felt that sharing the process face to face with students would promote a deeper understanding of the activity.

Take home messages about ‘Scaling up’

• Utilise workbooks for self-assessment of large numbers of students across multiple disciplines
• Use Groups to assign students to Academic Advisers for ease of assessment
• Export data to spreadsheets for deeper analysis (pending ATLAS reporting developments)

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References


