

# **EGS 2013 04 02: Educational Grant Scheme Application – the use of an action research approach to develop a novel ‘flipped delivery’ of pathology teaching**

## **Flipping the postgraduate classroom – is it just another pedagogic fad?**

### **Introduction**

This study used a participatory action research approach, to evaluate the value of ‘flipping’ the classroom to support the learning process and improve the learning experiences of student. Initially the approach was delivered to students studying on an MSc Module (Diagnostic Cellular Pathology) at the University of Wolverhampton and was based around two well acknowledged teaching approaches: Just-in-Time-Teaching (JiTT) (Novak et al, 1999) and Peer instruction (Mazur, 1997). The combination of these two approaches is referred to as either ‘inverting’ the classroom or ‘flipping’ the classroom: the fundamental idea behind this approach is that more time can be dedicated to active learning with tutor and peer support and feedback being provided in-class (Bergman and Sams, 2012). Learning from this experience we then applied a similar approach in a course for trainee pathologists, undertaking gynaecological cytology training at a Birmingham Cytology Training centre.

Our research questions were:

- **Can “Flipping” the classroom improve the delivery of PG teaching to enable students to fully engage in activities and a deep learning approach - developing both their knowledge and capability?**
- **Can “Flipping” the classroom be applied in other areas of training to support learning in pathology?**

### **Methods Initial Phase – PG students**

The study was carried out with a PG module cohort of ten students. ‘Flipped’ lectures were recorded using a lecture capture system and uploaded onto the virtual learning forum along with a copy of the PowerPoint presentation for students to access prior to the sessions. For the traditionally delivered sessions the PowerPoint lectures were also made available prior to class time.

- Questionnaires, Focus groups and reflective reports were used to gather data for analysis
- Evaluation of end of module exam scripts compared achievement on questions delivered by the traditional approach and the ‘flipped’.

### **Results Analysis Initial Phase – PG students**

Students felt that both forms of lecture delivery provided the necessary material for the session in a readily available form, allowed them to meet the learning outcomes provided and ensured that they understood the topic though scored the flipped sessions higher. This positive attitude to ‘flipped’ delivery was also reflected by the analysis of the focus groups discussions.

- ‘Flipping’ addressed the needs of less confident or inexperienced students plus they provided time to become familiar with new material.
- Students found ‘Flipped’ delivery more challenging and they enjoyed taking a more participatory role.
- Tutors found the ‘flipped’ approach supported teaching more
- Students appreciated the extra time available to interact with tutors and peers in class
- Students and tutors all commented upon the social benefits of the flipping approach
- Students performed better on questions relating to the ‘flipped’ sessions

Students also the need for additional instructions at the start of the sessions as a area for further development and suggested lecture recordings should be no more than 30 minutes

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The study was undertaken on a small cohort of only 10 students but the findings are encouraging and analysis of subsequent cohorts will be undertaken to evaluate further the impact upon achievement in assessment.

### **Methods Second Phase - Trainee Pathologists**

‘Flipping’ was introduced to support the gynaecological cytology training courses for trainee pathologists. The ‘flipped’ sessions consisted of one theory based lecture session and another session providing trainees with exam ‘hints and tips’. Fourteen trainees in total took part. A focus group session was held, recorded, transcribed and analysed at the end of each session. Tutors also provided a reflective account of their own experiences and perceptions of the ‘flipping’ delivery.

### **Results Second Phase – Trainee Pathologists**

Trainees were very positive about being involved in the inquiry and found the use of ‘flipping’ to be a positive experience with certain key themes identified:

- The ability to have a reusable resource was identified as essential not only for supporting initial learning experiences but also supporting further knowledge development
- Capacity for supporting development of capability of the individual in specialist areas. By reducing contact time spent delivering lectures more time could be spent focusing upon developing application to the clinical situation
- Not only did the approach allow more time for practical application but also ensured greater engagement with the topic area and a chance to identify areas for further support – and to obtain that support from peers and tutor
- Less confident or inexperienced trainees found the ‘flipped’ approach gave them more confidence and supported their learning
- The ‘flipped’ approach is that it provides those with different learning styles and approaches to their studies the ability to make choices.

For the tutors, as with the PG study, initially there was a need to adjust to a different approach to delivering teaching sessions and the ‘hang-up’ of being recorded. However, the benefits were soon realised and both tutors noticed improved engagement and a greater depth of questioning around the topic area.

### **Discussion**

The initial aim of this study was to improve the learning experience for our students and trainee pathologists; supporting the development of greater subject or specialist knowledge as well as developing the capability of the individual. Results suggest that the ‘flipped’ approach supported greater engagement in the topics being taught and encouraged a ‘deep’ approach to learning. Students stated that the ‘flipped’ approach prepared them more for the class sessions which in turn provided them with greater motivation to engage with their peers and tutors during in-class discussions. They felt more challenged to think during the sessions rather than taking on the role of passive learner. This was acknowledged by each of the tutors in both phases of the study: students led discussions and asked thoughtful questions. In the traditional sessions questioning tended to be tutor led and guided.

We would suggest that the potential of the ‘flipped’ learning approach lies in how it allows delivery of direct instruction outside of the classroom opening up time and space inside the classroom to engage in more influential instructional practices and to individualise learning. The approach maximises the opportunity for students to

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become active learners, empowering them to take charge of their own learning. We are continuing to build upon our initial findings and to develop the approach further.

### **References**

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