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Poster presentations as an approach to implementing a 'flipped learning' pedagogy in introductory physics

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'Flipped learning' or 'flipped classroom' pedagogies are gaining prominence in undergraduate science learning [1]. With the growing access to information through the internet, the traditional model of the teacher as the only facilitator of knowledge has become inadequate [2]. Lage et al [3] considers the key purpose of the flipped classroom to be to shift the focus from rote learning to the students' application of conceptual understanding.

This presentation reports on a class group activity using poster presentations as a flipped classroom teaching medium. Poster presentations, a popular technique of displaying research at conferences, are being used increasingly as a teaching method [4]. In their teaching of mathematics, Denson [5] suggests that poster sessions are beneficial in that the preparation thereof promotes learning, it is an excellent alternative medium for developing communication skills, it encourages students to investigate a topic thoroughly, it provide opportunities for peer-learning and promotes a positive attitude in students.

In this work, prior to making the posters each student would submit a chapter summary before the topic was discussed in class. For the execution of the poster presentations students were placed in smaller groups of three to four students to make a group posters. When they presented their poster it was in a smaller venue with another group of three to four students who would serve as their audience and a facilitator who would record the presentation. Hereafter the audience would presents their poster and the previous group who had presented would become the audience. The video recordings of the presentations were then placed onto the University online learning facility with the restriction that only those six to eight students were allowed to view, and review for peer assessment. Nichols et al [6] in their paper on using video in nursing education says that, depending upon the use intended by the instructor, a video may be able to tap all three domains of learning: cognitive, affective, and psychomotor. Barry et al [7] looked at how to develop a protocol for video recording student group oral presentations, for later viewing and self-assessment by student group members. Their investigations revealed that watching the video of their group presentation was an effective method of feedback and could improve both group and individual performance in the future [7]. The purpose of the video recording of the presentation in this work is to provide the students opportunity to reflect on their presentation skills and to possibly use the video recording as a useful study aid.

This presentation will discuss the extent to which this poster presentation intervention served as a means to assist students in improving their presentation skills, understanding the course content and to become better, skilled communicators of course-related material/physics concepts.

Apply to be
 considered for a student
   award (Yes / No)?

No

Level for award
 (Hons, MSc,
   PhD, N/A)?

N/A

Primary author: Dr SQUARE, Lynndle (University of the Western Cape)

Co-author: Mr VAN DE HEYDE, Valentino (University of the Western Cape)

Presenter: Dr SQUARE, Lynndle (University of the Western Cape)

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