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Dear Sir

One of the major challenges in Problem-based Learning (PBL) curriculum is to establish an effective PBL process and its reliable assessment. Von Bergmann showed that students who were recognized as having good process skills in PBL tutorials also performed significantly better on content acquisition tests (von Bergmann et al. 2007). However, Whitfield and Xie (2002) demonstrated that facilitators' evaluation of PBL process was not correlated with students' performance in the written examinations. This observation was attributed to the potential lack of objectivity in grading, e.g. subtle tendency for facilitators to over-rate the students. College of Medicine, Alfaisal University adopted a unique Problem-based hybrid curriculum which was designed to meet the special requirements related to maturity level of entering high school medical students. In this context, more experienced PBL facilitators were used in the early phase of the medical curriculum. We predicted that this approach would lead to a strong correlation between PBL process assessment and content acquisition tests.

We analysed the results of 54, 2nd year MBBS students of Alfaisal University who appeared in the semester-3 written examinations of 2010–2011 and ran a correlation between their scores in PBL process and their overall score in the written examinations. Our results showed that there was a strong correlation between scores of written examination of semester-3 and PBL process scores with $r=0.72$ ($p < 0.0001$). Further, there was also a statistically significant correlation between PBL scores and Multiple Choice Questions, Short Answer Questions and Objective Structured Practical Examination components of the Semester-3 written exam with r values equal to 0.59, 0.49 and 0.53, respectively.

We attribute this strong correlation to the following. First, we minimized the effect of factors which could make PBL facilitators grading unreliable by discussing the PBL process grading criterion at length with our faculty so that there was clarity and uniformity on grading system. Second, the new faculties were trained in PBL process by conduction of several

workshops by Partners Harvard Medical International (Alfaisal's collaborator) during this period. Finally, PBL facilitators managed group activity for a shorter period of time usually not more than 4 weeks; this allows them to assess the students objectively rather than on familiarity.

In conclusion, PBL process evaluation can be a useful method to assess overall performance of students provided there is proper training of facilitators and a clear comprehension of grading criterion.

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DREEM – Time to evaluate?

Dear Sir

The Dundee Ready Educational Environment Measure (DREEM) is widely used to evaluate educational environment across healthcare settings (Roff et al. 1997). The time at which the questionnaire is administered during the academic year varies greatly in published studies and the original authors do not advise in this regard. We suggest that the timing of administration of the DREEM may affect results.

All year 3 students ($n=108$) in our undergraduate medical program completed the DREEM at the end of each of the three clinical attachments ($n=324$). At any one time, over a four-month period, an identical number of students are deployed in secondary, tertiary and general practice sites for 4 weeks. Clinical attachments are described as Attachments 1, 2 and 3, referring to their temporal order. Within each of these attachments, DREEM scores represent the educational environment at an identical mix of sites. Differences on DREEM score between Attachments 1, 2 and 3 would not be expected.

Mean total DREEM scores varied significantly between first, second and third attachments ($p < 0.01$). The score rose from the first to the second attachment but fell back in the third attachment to a level below the original score. Significant differences in Perceptions of Learning, Atmosphere and Teachers were found reflecting the same pattern as the total score ($p < 0.05$). This effect appeared to be related to duration of clinical exposure as mean scores did not vary when analysed by calendar month.