Lecture attendance, learning style and assessment outcome in physiology students

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It seems self-evident that students attendance at lectures should predict their performance in exams and other assessments. This has been shown in some studies, for example in dental students (El Tantawi, 2009) but the correlation is often weak. Some authors have suggested that provision of alternative learning materials, such as online lectures, may be detrimental to student performance because it reduces attendance at "conventional" lectures (Fernandes, Male & Cruickshank, 2008). Students have varied learning styles, or combinations of styles, assessed by VARK (visual, auditory, reading/writing and kinaesthetic), and this has been shown in some cases to predict academic outcomes (Dobson, 2009). However, the interaction between lecture effectiveness and student learning styles is poorly understood. Here, we have investigated the correlation between lecture attendance and student performance in different assessment tasks, and the influence of the students' learning style on this. We hypothesised that the degree of correlation of lecture attendance with academic performance will be different for students with different VARK profiles.

Second year students for the combined Biomedical, Health and Science 2009 cohort (n=120) completed a questionnaire in which they self-reported their lecture attendance and the time they spent using alternative resources to supplement their learning. Self-reported lecture attendance in the first semester of 2009 was $73 \pm 2\%$. Correlations between lecture attendance and grade outcome are shown the Table.

Grade Component	Combined Male/Female n=120	Male Only n=49	Female Only n=71
Practical	r=0.29, p<0.002	r=0.32, p<0.03	r=0.20, p<0.10, ns
Tutorials	r=0.35, p<0.0005	r=0.29, p<0.05	r=0.33, p<0.005
Exam	r=0.21, p<0.02	r=0.29, p<0.04	r=0.10, ns
Combined Grade	r=0.31, p<0.001	r=0.35, p<0.01	r=0.20, p<0.10, ns

95 students completed the VARK assessment. For these students, a greater percentage score of "R" (i.e. use read/writing as a method of learning by VARK analysis) predicted: Exam Mark (r=0.22, p<0.03), Tutorial mark (r=0.20, p<0.05), Practical Mark (r=0.19, p<0.07), Overall Mark (r=0.26, p<0.02). Females had a higher proportion of "R" compared to males (Females $=0.29 \pm 0.01$, n=63: Males $=0.25 \pm 0.01$, n=32; P<0.03).

We conclude that lecture attendance and learning styles interact in predicting overall mark, but the details, and the causal relationships, require more investigation.

El Tantawi MMA, (2009) *Journal of Dental Education* **73(5):** 614-623.

Fernandes L, Maley M, Cruickshank C (2008) *Journal of the International Association of Medical Science Educators (JIAMSE)* **18(2):** 62-70.

Dobson JL (2009) *Advances in Physiology Educudation* **33:** 308-314,