

## LEARNING APPROACHES OF FIRST YEAR DENTAL STUDENTS IN STUDYING ANATOMY

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### Introduction

Anatomy is a scientific discipline in its own right. Acquisition of knowledge mainly depends on the students' learning approach. Researchers in the field of education have distinguished two different approaches to learning; deep approach (DA) and surface approach (SA) (Marton and Saljo, 1976). The SA to learning is associated with an intention to memorise facts and recite them back in response to questions. The DA to learning is characterised by an attempt to understand the information, by seeking a structure within the material and manipulating the information to make sense of it in relation to what is known of the subject matter (Pandey and Zimitat, 2007).

The revised two-factor study process questionnaire: R-SPQ-2F developed by Biggs et al. (2001) has been used in a number of studies to distinguish surface and deep learning approaches used by students. The present study aimed at identifying the learning approaches of a batch of first year dental students and to see the relationship of it with academic performances in anatomy and with the final GPA (Graded Point Average) value obtained at the first BDS examination.

### Materials and Methods

The questionnaire printed in English, Sinhala and Tamil, was administered to first year dental students (66) during the latter part of 2<sup>nd</sup> semester. A statement of consent for using their information for the study was also included in the questionnaire. DA and SA scores of each student were calculated according to the recommendations of Biggs et al. (2001). Students' SA and DA scores were correlated with their final marks in the anatomy module and the final GPA of the 1<sup>st</sup> BDS examination using Pearson's correlation coefficient. Statistical analysis was done using MINITAB software.

### Results

Sixty two students (94%) gave consent and responded to the questionnaire. Fifty (80.65%) students showed a greater DA score than their SA score. These students were categorized as the group "X". A greater SA score than their DA score were found in 10 (16.13%) students and they were categorized as the group "Y". In two students (3.22%) DA and SA scores were equal. Mean values of students' DA and SA scores were  $31.79 \pm 6.1$  and  $22.74 \pm 5.5$  respectively.

The mean values of final marks in anatomy and GPA of the X group was higher than that of the Y group (table 1). However, either SA or DA scores

did not show a significant correlation with any of the examination marks in the study sample (table 2).

### Discussion

This study showed that majority of students adopt deep learning approach. Our result is similar to the finding of a comparable study carried out among medical students at an Australian university which reported a mean DA score of  $31 \pm 4.2$ . But the SA score ( $30 \pm 4.4$ ) of the Australian study is higher than that of ours (Pandey and Zimitat, 2007). The means of DA and SA scores of the present sample indicate that students do not practice only one type of learning approach. These results agree with the view that students may choose different approaches at different times, or a combination of approaches depending on the nature of tasks (Pandey and Zimitat, 2007). Although the present study did not show a statistically significant correlation between the learning approaches and marks of anatomy and final GPA, students whose DA score was greater than the SA score promised a better academic performances.

### Conclusion

This preliminary study indicated that students use both deep and surface learning approaches but a greater reliance on the deep approach. A better performance in examinations can be expected among students who have deep learning approaches and combination of approaches depending on the nature of tasks (Pandey and Zimitat, 2007).

Although the present study did not show a statistically significant

correlation between the learning approaches and marks of anatomy and final GPA, students whose DA score was greater than the SA score promised a better academic performances.

### References

- Biggs, J. Kember, D. and Leung, D.Y. (2001). The revised two-factor Study Process Questionnaire: R-SPQ-2F. *Br J Educ Psychol*, 71:133-149.
- Marton, F. and Saljo, R. (1976). On qualitative difference in learning: outcome and process. *Br J Educ Psychol*, 46: 4-11.
- Pandey, P. and Zimitat, C. (2007). Medical students' learning of anatomy: memorisation, understanding and visualisation. *Med Educ*, 41:7-14.

**Table 1. Means of final marks and GPA of two student categories**

Student category	Mean final marks	Mean GPA
DA score >		
SA score (X)	50.33 ± 9.36	2.49 ± 0.38
SA score >		
DA score (Y)	42.75 ± 13.91	2.24 ± 0.74

**Table 2. Correlation between learning approaches and academic performance**

Learning approaches	Academic performance	r	P
		0.2	0.1
DA	Anatomy marks	-	0.3
SA	Anatomy marks	0.1	3
DA	GPA	3	0.4
SA	GPA	0.1	6
		-	0.1
		0.1	6
		8	