The Influence of Spatial Orientation on Student Performance - A Preliminary Study

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1. Introduction

The author has noted that students to the right of the tutor in an assessment venue were slower to complete than students on the left. Data was collected and analysed, and possible reasons for the demonstrated differences considered. Further data is still under collection. The results so far confirm that the effect is statistically significant, and unrelated to topic or stream.

2. Methodology

The number of students remaining during assessments was noted at frequent intervals over two topics, two streams and replicate assessments. Each assessment was then summarised to give average left and right student retention times (in minutes), and the results analysed by paired T-test.

3. Results

Paired T for Left - Right

	N	Mean	StDev	SEMean
Left	8	71.1	29.4	10.4
Right	8	79.8	31.1	11.0
Difference	8	-8.73	6.05	2.14

95% CI for mean difference: (-13.79, -3.67)

T-Test of mean difference = 0 (vs not = 0): T-Value = -4.08 P-Value = 0.005

4. Discussion

The results show a highly significant (99.5%) effect across topics and streams, but give no indication of cause. Possibilities currently under consideration include:

1. Room geography - proximity to the door; It may be that some students wish to be close to the door. However some data (not presented here) indicates that the effect is present when the door is on the other side
2. Teaching style - visibility of board; Students habitually sit in a similar position in assessment as for classes, and it may be that students on the right (for a right-handed tutor) may not see the board during class as well as those on the left.
3. Left/right brain dominance effects; An hypothesis is that left/right brain dominance affects preference for seating position, and possibly assessment time. IT topics could attract left-brain dominant students, providing a chain of preferences leading to the observed effect.

All three hypotheses can be tested with the aid of a collaborator teaching in a different environment. Her classes are art students (student teachers), the door is on the opposite side, and she is left-handed. Discussions are underway to ensure consistency of data collection, and testing methods for left/right brain dominance. We also intend to examine any correlation between seating position and assessment performance.

Streams	Left	Right
Streams 123 HF100(1) 1999	47.727	64.773
Streams 123 HF100(2) 1999	30.000	30.526
Streams 123 HF100(3) 1999	57.955	65.000
Streams 123 HF100(4) 1999	72.500	84.833
Streams 123 DT100(1) 1999	70.417	73.519
Streams 123 DT100(2) 1999	127.353	139.333
Streams 6/7 HF100(1) 2001	70.000	84.444
Streams 6/7 HF100(2) 2001	92.778	96.133