

The influence of multimedia resources in and out of biomedical studies

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With respect to the provision of learning support materials, it is generally accepted that enriched learning environments are better than simple didactic sessions and consequently improved resources ultimately lead to better learning, which in turn leads to improved grades.

The use of a dedicated multimedia study room specifically set up to create a learning environment for biomedical science within a nursing program has been documented and correlated with the student's final mark and course retention.

The study room is a self-directed resource for study; content is directly linked to specific areas of study. This area provides a respite from mainstream activities, anatomical models and specimens, charts, computer databases, commercial software packages and pathology specimens.

There is an accepted belief that improved resources ultimately leads to improved learning, which in turn leads to improved grades. The aims of this study were to evaluate use of the study room, across several units, tabulate and correlate usage with grades in the appropriate unit and draw conclusions about the efficacy of using an enriched learning environment.

The study targeted units in the first and second years of undergraduate Nursing. Students in these units would gain most from the resources offered by the study room. These units were *Health Science II*, *Health Science III* and *Human Structure & Function*. The study behaviours were recorded for 3 years, by tabulating student use during semesters. The frequencies of usage were then correlated with semester marks and withdrawal frequency.

Results

Three study behaviours were recognised: students who did not use the study room; students who visited once; and students who visited > once. Results were analysed by t-testing between groups.

	Group 1 (no use)	Group 2 (use once)
N	237	43
Mean score (%)	56.1	55.1

t-testing did not demonstrate any significant difference between these two groups at the 0.05 significance level

Table 1. Examination scores of students who used the study room once or less

	Group 1 (no use)	Group 3 (multiple use)
N	237	203
Mean score (%)	56.1	65.0

t-testing demonstrated a significant difference between these groups at the 0.05 significance level

Table 2. Examination scores of students who used the study room extensively compared to those who did not use the resource



	Group 2 (use once)	Group 3 (multiple use)
N	43	203
Mean score (%)	55.1	65.0

t-testing demonstrated a significant difference between these groups at the 0.05 significance level

Table 3. Examination scores of students who used the study room once compared to those who used the resource extensively

	Group 1 (no use)	Group 2 (use once)	Group 3 (multiple use)
Retention rates	25/237	7/43	5/203
% not completing the unit	10.6%	16.3%	2.5%
Failure rates	49/237	7/44	17/203
% failing the unit	20.7%	15.9%	8.4%

Table 4. Retention and failure rates compared in groups of students who never used the study room, used it once or used it extensively

Failure rates and course retention rates were not significantly different between students who did not use the facility (n=237) and those who used it only once (n=47), however there were demonstrable differences between the first group and students who accessed the resource on multiple occasions (n=203) (Table 4). The accuracy of the study may be limited by some high-achievers might not perceiving any benefit from attending the study room.

Within the limitations of the study, the data does support the premise that access to dedicated teaching materials improves learning, which translates to better grades. The evidence supports the premise that students are deriving benefit from a stand-alone resource with no Internet access.

Further to this study is that the results and retention for biomedical science studies are to be further compared to studies in which the resource room would have been of no benefit. Evaluating teaching materials and educational software for their commercial potential: Issues for academics and teachers to consider.

Conclusion

It is not surprising that the students, who were prepared to devote their time to exploring alternative resources in their learning, benefited when examined. The question, which results from this study, is how would these students have performed in the absence of such a study room? The results and retention rates presented support this reasoning. As yet this is an unanswered question however further investigation of the performance of this group of students may reveal whether they are in fact benefiting from the study room or not.

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