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# Study Behaviour and Tertiary Academic Achievement

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## *Abstract*

Sufficient time and effort expended in study have been shown to be essential pre-requisites to satisfactory examination performance at tertiary level. This paper presents the results of an investigation into the relationship between academic achievement and the variables of student attitudes toward study, effort expended in studying, the availability of a study room and scholarship status. All these variables were significantly related to examination performance during various years of the courses studied. The effects of the study variables operated differentially for males and females in the sample.

## *Introduction*

The term "study behaviour", for the purposes of this discussion, will be taken to mean not only the actual techniques of study but also the amount of time spent in study and the degree of organization demonstrated by a student.

Adherence to a systematic method of study has been shown to be highly significant for success in university and college examinations. Small (1966) investigated a group of New Zealand students and found that although not all of the study methods employed were the most efficient ones, the fact that a student devised and consistently used some sort of study system, even an inferior one, was of great assistance. In other words, any organization is better than none at all, when it comes to studying for examinations. Similar evidence in favour of some system of organization comes from Pond (1964) who found that high-achieving students were notably better organized in their work (and also leisure) activities than were low-achieving students.

An important part of the degree of organization of study activity is the actual amount of time spent in studying. Small (1966) divided students into three groups; those who pass all their examinations, those who fail some and those who fail most of their examinations. He found that the students who failed most of their examinations spent significantly less time in study than the other two groups.

Part of the explanation of the poor academic performance of most part-time students may be that they have much less time to devote to their studies, even though their subject load is smaller, as was found for British students (Parkyn, 1963). In the same study it was also found that students who spent part of their vacation periods engaged in studying obtained better examination results, indicating perhaps a seriousness of purpose and a desire to succeed. Of the considerable amount of research devoted to study factors, the consensus of opinion seems to be that it is the actual amount of time spent in study

that distinguishes the successful from the unsuccessful examination candidate (Miller, 1970).

The relationship is not quite as simple as the findings reviewed seem to indicate, however. Even the most successful students vary greatly in the amount of time spent in study, and some unsuccessful students claim that they spend quite a lot of time in private or group study. The efficiency of the study technique employed is probably the intervening variable. In turn, the degree of organization brought to bear on the study task is the factor which determines the degree of efficiency achieved. Finally, the degree of organization employed depends on the student's intellectual abilities (Miller, 1970). A detailed analysis of some of the study skills that successful students possess was provided by Loftus (1973) in his longitudinal study of students attending the University of Newcastle. Work knowledge, note-taking ability and linguistic intelligence were some of the skills underlying efficient study habits and also eventual examination success.

Efficient study habits are also associated with a favourable attitude toward learning in general. Beliefs in the value of intellectual pursuits and in the importance of education are positively related to academic performance (Lavin, 1965; Miller, 1970). An important aspect of a student's attitude toward education is the value he sees in what he has to learn. In Flecker's study of Engineering students (1963) the question was posed: "On the basis of the work you have covered to date (mid-year), how valuable do you feel each of the units of the course is for the practising engineer or for engineering training?" The responses indicated that, with the exception of Chemistry, the units of study in the course were seen by about 90% of students as being either quite or extremely valuable. The relationship between these value-judgements and academic performance was inconsistent, however, indicating that not too much importance should be attached to student's claims of high or low regard for a subject, where prognostic significance is concerned.

Pond (1964) also investigated the relationship between student attitudes and examination performance and found another discrepancy between high and low-achieving students. High-achieving students had a more positive attitude toward study in that they detected and reacted positively to the favourable aspects of the situation they found themselves in, while the low-achieving students tended to be fault-finders, reacting to the negative aspects of study such as distractions and minor annoyances. The high-achieving students found tertiary work an interesting challenge and accepted the restrictions and conformed to the demands made upon them more readily, while the low-achievers appeared to lack high-level motivation. The more successful group was also found to be more realistic and discriminating in their assessment of those situations which were highly relevant to scholastic achievement, such as discipline and work priorities and they were better organized in both their work and leisure activities. The possible effects of differences in student ability were not isolated in this investigation, however.

Apart from the influence of study methods, degree of organization, time spent in study and attitudes toward learning, physical conditions such as the availability of a quiet room in which to work have also been shown to be

related to academic achievement in that the more successful students study under better conditions. This relationship need not necessarily be a causal one though, because it is possible that in some cases the inadequacy of the study conditions may have been of the student's own choosing and may therefore be indicative of a poor attitude toward work (Small, 1966).

This paper presents the results of an investigation into study factors related to tertiary academic achievement over three years of a sample of Arts and Science students from the University of Adelaide and a sample of student teachers from Salisbury C.A.E. The variables investigated were attitudes toward study, study effort, study facilities and scholarship status.

### *Method*

#### SAMPLE

The study group was a sub-group from a larger investigation concerning the academic progress of students who matriculated for university and college entry at the 1970 South Australian Matriculation Examination and who commenced tertiary studies in 1971 (Otto, 1974).

Questionnaires were distributed to a randomly selected sample of students in the faculties of Arts and Science at the University of Adelaide and another random sample of student teachers at Salisbury C.A.E. Both samples were taken in 1971. Table 1 indicates the size of the groups relative to the population taken in the larger investigation, as well as the questionnaire returns related to this study.

TABLE 1

Course	Population <sup>1</sup>	Sample	Returns	
			No.	%
Arts <sup>2</sup>	233	144	76	52.8
Science <sup>2</sup>	316	65	39	60.0
Dip. Teach. <sup>3</sup>	234	93	61	65.6

1. Comprising all full-time entrants
2. University of Adelaide
3. Salisbury C.A.E.

#### *DATA COLLECTION AND PROCEDURE*

Examination results were obtained for the first, second and third years of a course and the academic performance criterion chosen was the average of the examination marks (percentages) obtained in each year of the course. From the questionnaire, details concerning the student's study habits, attitudes and facilities were obtained, as well as information concerning scholarship status.

## STATISTICAL ANALYSIS

Cross-tabulation analyses were performed on the data for males and females separately, to control for the effects of sex of student upon academic achievement (Otto, 1976). The test of association which was considered most appropriate for the data was Lambda (asymmetric) (Mueller, *et. al.*, 1970). As there was no independent test of significance for Lambda, the significance level obtained from application of the Chi-square test to the data was taken as indicating the significance of Lambda. Although this procedure is open to error, the inaccuracy is not so great as to render the technique inappropriate for the exploratory nature of this study.

## RESULTS AND DISCUSSION

Taking each of the study variables in turn, results were as follows: (a) attitudes toward study and effort expended — males taking Science who stated that they were not considered to be "bookworms" by their fellow students obtained higher marks in their second year of the course than those who felt that they were perceived in this way by others (Lambda 0.01, sig. level 10%, N = 15). Females who reported that they spent extra time on interesting assignments at least occasionally or fairly often passed more of their first year subjects than students who expended less effort (Lambda 0.50, sig. level 10%, N = 15). Table 2 contains the proportions of students in each of the response categories.

There was no significant difference in achievement between those students who habitually delayed commencing work on difficult or uninteresting study assignments and those who commenced work early. Similarly, the degree of importance which students claimed they attached to their grades was also unrelated to their academic achievement (Table 2).

(b) Study facilities — the availability of a study room or a quiet place to work was significantly related to the achievement of Arts degree and college students, in that third year males who had such a facility obtained higher marks than those who did not have the use of a study room (Arts — Lambda 0.14, sig. level 5%, N = 14; Salisbury C.A.E. — Lambda 0.20, sig. level 5%, N = 13). Proportions of students in each of the response categories are contained in Table 3.

(c) Scholarship status — it might reasonably be expected that students studying under a scholarship which was granted to them on the basis of academic promise and financial need might perform better than other students who are not officially recognised this way. Although this was found to be the case for some faculties, there were some inconsistent trends that came to light. In first year Arts, females who were studying under a scholarship obtained higher marks than non-scholarship students (Lambda 0.01, sig. level 5%, N = 53). By the time that students reached the second and third years of the Arts course, however, the performance of scholarship and non-scholarship students did not differ significantly. This would appear to suggest perhaps that the motivating effect of the receipt of a scholarship operates

### TABLE II

#### Numbers of Students in Questionnaire Response Categories Related to Study Attitudes and Effort Expended in Studying

	Study Group		
	Arts	Science	Dip. Teach.
Delayed difficult assignments:			
Fairly often	9	3	7
Occasionally	17	14	12
Rarely	21	14	17
Never	28	8	17
Delayed Uninteresting assignts:			
Fairly often	14	6	12
Occasionally	22	15	16
Rarely	20	9	11
Never	17	8	14
Was perceived as a bookworm:			
Yes	24	3	14
No	43	33	30
Spent extra time on interesting assignments:			
Fairly often	25	10	18
Occasionally	31	19	20
Rarely	13	6	12
Never	4	4	1
Importance attached to grades:			
Not much	10	0	1
Moderate	17	19	22
Quite a bit	34	13	22
Great deal	12	7	7

### TABLE III

#### Numbers of Students in Questionnaire Response Categories Related to Study Facilities

	Study Group		
	Arts	Science	Dip. Teach.
Suitable study place available:			
Yes	69	30	36
No	4	8	17

mainly in the first year of the Arts course and tends to diminish after that. In the Faculty of Science, however, the situation was opposite to that in Arts. In the Faculty of Science males who had been offered a scholarship performed better in their first year of studies than students who had not been recognised in this way (Lambda 0.05, sig. level 10%, N=12). The possible influence of differences in tertiary entry qualifications (matriculation score) was investigated and this was found to be a factor operating in one of the cases mentioned. Females doing first year Arts under a scholarship had higher matriculation scores than non-scholarship students. However, this factor was not influential for any other group (t-test for significance of a difference between sample means). Table 4 contains the proportions of students in each of the response categories.

TABLE IV

Numbers of Students in Questionnaire Response Categories Related To Scholarship Status

	Study Group		
	Arts	Science	Dip. Teach.
Received offer of Scholarship:			
Yes	39	17	8
No	35	21	45
Studying under a Scholarship:			
Yes	17	8	8
No	57	30	45

### Conclusion

The present results confirm the findings of earlier investigations, in that significant and positive relationships were found between academic achievement and the amount of time and effort students expended in study. Rightly, this is no more than one might expect to be the case. What is new, however, is the revelation that the variables of study time, the availability of a study room, and the kind of scholarly reputation a student had with his peers, influenced the academic achievement of males and females differently. In addition, these variables operated differently in various courses of study. Another interesting finding was that some aspects of student work habits and attitudes towards study that have traditionally been considered by teachers to be outward signs of superior scholarship, namely making an early start to assignment work and attaching high importance to one's grades, were both unrelated to the final level of academic achievement. These results appear to suggest some promising avenues for further inquiry.

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