

APPROACHES TO STUDY ADOPTED BY SCHOOL-LEAVERS

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ABSTRACT

The Approaches to Study Inventory (ASI) was administered to 231 secondary school pupils at the end of their final year of schooling. Support was given for deep and surface approaches to study, with some evidence for Ramsden and Entwistle's (1981) disorganised approach.

While intrinsic motivation was associated with deep processing strategies (Biggs, 1981), extrinsic motivation was not related to surface processing. This form of motivation does appear to exert both a positive and negative influence on study strategies.

Preliminary analysis was done on students' orientations to university.

INTRODUCTION

Considerable effort has been put into exploring the intellectual development of students undergoing tertiary education. With the shift in emphasis from a concern with quantitative performance to the quality of the learning outcome, interest has focused increasingly on the quality of processing. It seems clear that a strong link does exist between the quality of the processing undertaken by the student and the quality of the learning outcome. This relationship has been explored in great detail by Marton and his co-workers at Goteborg (Marton and Saljo, 1976). Taking a 'phenomenographical' approach they focused on the student's perception of what was taking place when reading an academic article. Despite some questioning of their methodology and atheoretical approach there is general agreement that two basic levels of processing can be identified (Laurillard, 1979; Ramsden and Entwistle, 1981).

1. Deep level processing. The student searches actively for meaning, attempting to form relationships between the ideas contained in the article and also with prior knowledge and experience.
2. Surface level processing. The student tends to see the article in isolation and is concerned with memorizing facts and details.

Marton's work on deep and surface processing was incorporated into the 'Approaches to Study Inventory' (ASI)¹ (Ramsden and Entwistle, 1981). The inventory is largely based on an assumption that there is a link between motivation and strategy (Entwistle, *et al.*, 1979). Independent work by Biggs (1979, 1981) seems to confirm this. Students with a particular motivation to study will be more likely to adopt a congruent strategy than an incongruent one.

The ASI consists of 16 dimensions, including deep and surface processing (refer Table 2). It is designed to reflect a student's general style of learning. The assumption being that while a student may utilize different strategies depending on course requirements, their general approach to study will remain invariant.

Entwistle identified three main orientations or approaches to study.

1. Reproducing Approach - Embodying surface processing strategies, such as rote learning and syllabus boundness, associated with extrinsic motivation
2. Meaning Approach - Closely identified with deep processing strategies and intrinsic motivation
3. Achieving Approach - A more strategic emphasis. The student is goal oriented and selects strategies which will achieve a particular purpose, usually attaining high grades.

Whilst the existence of the reproducing and meaning approaches have been demonstrated using a wide variety of students (Ramsden and Entwistle, 1981; Watkins and Hattie, 1983). There is uncertainty as to the validity of the achieving approach.

Ramsden and Entwistle found that this approach was divided in two. (1) 'Disorganised and dilatory, with high loadings on disorganised study and negative attitudes. (2) The second factor

¹The authors gratefully acknowledge permission given by Paul Ramsden to use the latest version of ASI.

was closer to their original description of the achieving orientation, with high loadings on strategic behaviour, extrinsic and achievement motivation.

The work done by Watkins and Hattie (1983) gave further support to the existence of deep and surface strategies, although their factor structure was somewhat different. They questioned the assumed link between motivation and learning strategy. It may be necessary to take a broader view of 'motivation'. This has been done by Taylor, Gibbs and Morgan (1980) at the Open University. They adopted a concept which reflected the quality of the relationship between the individual and the institution, rather than a trait. The concept of orientation was first used by Beaty at the University of Sussex to describe

'all those attitudes and aims that express the students relationship with a course and the university' (Taylor, *et al.*, p. 3).

This should not be confused with Entwistle's use of the term 'orientation'. He uses it to describe a general approach to learning.

Taylor, *et al.* used four categories of orientation

1. Vocational - reflecting a concern for future employment
2. Academic - an interest in the subject matter
3. Personal - a desire for personal development
4. Social - social aims

The first three have extrinsic and intrinsic characteristics. It should be noted that Taylor, *et al.*, found it quite common for students to exhibit two or more orientations at once.

In line with the current debate as to the influence of context on approaches to study it seems quite possible that orientation is similarly affected.

Using interviews, they demonstrated that a student's orientation affected the quality of their approach to study. It was this point that seemed to warrant further investigation, particularly to explore possible relationships between orientation and ASI scores.

This study forms the first stage of a project designed to examine the study processes of university students in detail, with particular emphasis given to the development of processing skills as the students progressed through their degree courses.

To date the few longitudinal studies in this area have begun their research during the first year of university study. It may be more useful to monitor the transition stage from school to university in more depth. It therefore seemed appropriate to begin the study at the end of the seventh form year. (In New Zealand schools, the seventh form is designed as a preparation for university study). It was expected that the majority of these students would indeed go on to university, thereby forming a sizeable group for further investigation.

AIMS - STAGE 1

1. To identify the study approaches of students at the completion of their secondary schooling
2. To determine whether the factor structure of the study dimensions of school-leavers was comparable to those obtained by Ramsden and Entwistle (1981)
3. To explore the possible relationship between approach to study and orientation

METHODOLOGY

Slight modifications were made to the ASI as used by Ramsden and Entwistle (1981), to make it appropriate for New Zealand secondary school pupils. The students were also asked to complete several open-ended questions including one which asked:

'Please give your reasons for wanting to attend university'

The answers to this question were used to determine students' orientation.

The ASI was administered to 231 seventh form pupils during October 1982. They attended seven Wellington schools, the sample comprised 76.2% of the total seventh form population of those schools.

All the questionnaires were completed at the individual schools and collected at the same time.

Of the 231 students in the sample, 75% indicated they definitely intended to go to university in 1983, 10% were unsure. 198 of these students indicated a choice of university. Of those, 71.79% (n = 141) intended to study at Victoria University of Wellington. Those who actually enrolled at Victoria University of Wellington in 1983 formed the basis for further study.

TABLE 1

DESCRIPTION OF THE SAMPLE

Wellington schools		Sex of sample	
Single sex	- Boys 2	Female	47.2%
	- Girls 3	Male	52.8%
Co-educational	- 2		

Numbers planning to attend university in 1982

Yes	74.7%
No	14.7%
Unsure	10.4%

TABLE 2 APPROACHES TO STUDYING DIMENSIONS

(N = 231)

Dimensions	Factors				
	I	II	III	IV	V
Deep processing	.77				
Relating ideas	.71				
Use of evidence	.79				
Intrinsic motivation	.51				-.56
Surface processing		.65	.27		
Syllabus boundness		.54	.32		.38
Fear of failure		.66			
Extrinsic motivation			.69		.40
Disorganisation				.49	.49
Strategic approach	.49		.33	-.30	
Negative attitudes					.81
Achievement motivation			.79		-.28
Comprehension learning	.39			.66	
Globetrotting		.32		.70	
Operation learning		.71			
Improvvidence		.72			
Eigen values	2.53	2.40	1.51	1.39	1.73
Percentage total variance	59.7%				
Factor I	Deep processing				
Factor II	Surface processing				
Factor III	Achieving				
Factor IV	Disorganised and superficial				
Factor V	Negative attitudes				

ANALYSIS

The ASI was subjected to principal components analysis under varimax rotation. The number of factors extracted was determined by eigen values (>1.0). Loadings of >0.25 were included in the results.

The responses to the orientation question were analysed using a grid system. The four main orientations of Taylor, *et al.* (1980) formed the basis for the framework. Each orientation was divided into a number of more specific sub-categories.

e.g., Academic Orientation

- Sub-categories:
- Independent study
 - Interest in the subject(s)
 - Enjoyment of study
 - Continue learning in specific subject area
 - Way of thinking

Further education (general)
 Gain understanding of subject
 Intellectual development

The use of a grid system made it possible to categorize the many multiple responses that were given. As these results are still in their preliminary stages only the four main categories will be used here.

RESULTS AND DISCUSSION

In general these results support those obtained by Ramsden and Entwistle (Table 2). Factor I can be identified as the Meaning Approach with its loadings on deep processing, relating ideas, use of evidence and intrinsic motivation. There was also agreement with their two-way split in the Achieving Approach. Factor IV closely resembles Ramsden and Entwistle's 'Disorganised and dilatory' approach with loadings on globetrotting, comprehension learning and disorganization. However unlike the above authors this factor was not associated with negative attitudes to studying. Factor III has positive loadings on strategic behaviour and extrinsic and achievement motivation and therefore can be seen as the Achieving Approach.

Whilst Factor II does provide evidence for Ramsden and Entwistle's Reproducing Approach, with loadings on surface processing, syllabus boundness and fear of failure, it does not give support to the suggestion of a link between reproducing strategies and extrinsic motivation (Ramsden and Entwistle, 1981). The findings of this study support those of Watkins and Hattie (1983) who also did not obtain significant loadings of extrinsic motivation on the Reproducing Approach. This seems to at least partly question the strength of the association between strategy and motive, at least between extrinsic motivation and reproducing strategies. In contrast to both Ramsden and Entwistle (1981) and Watkins and Hattie (1983) a fifth factor was extracted from the data. These five factors accounted for 59.79% of the total variance. This additional factor has been identified as a Negative Approach to studying with a very high loading on negative attitudes and loadings on disorganisation and extrinsic motivation. The most interesting point to note is the apparent negative relationship between achievement and extrinsic motivation in Factor V. From these results it would appear that extrinsic motivation is on the one hand associated with an approach that could be seen as detrimental to effective study (Factor V) and on the other a potentially more successful strategic approach (Factor III). It might be the case that the former group of students are those who did not intend to go on to university and are remaining at school longer than they would like because of the pressures of the employment situation.

The structure of the factors indicates that the dimension 'syllabus boundness' exerts a strong influence. This has not been as marked in previous studies using university students and may reflect the somewhat formal programmes run in some seventh forms. Subsequent interviews have lent some support to this possibility.

At this stage only preliminary analysis has been done on orientation, nevertheless some interesting patterns emerge (refer Tables 3-6). The results support the findings of Taylor, *et al.* (1980). Student orientations are frequently combined. Of particular interest was the very strong vocational orientation (44% of the sample were only vocationally oriented, with 82.2% expressing this orientation in combination with at least one other). The high level of unemployment may be responsible for this concern with future careers.

A surprising and somewhat unexpected finding was the observed sex differences in orientation (Table 3).

Whilst a number of seventh form girls did show strong vocational orientations, this tendency is not as strong as in their male counterparts. Girls do outweigh boys considerably in the academic orientation (75% of those primarily interested in the academic side of university study are female).

A possible explanation for these sex differences may be reflected in the observed link between vocational orientation and extrinsic motivation (Table 4).

Using ASI scores on the extrinsic motivation dimension (1 sd above the mean) 57.3% of extrinsically motivated students are solely vocationally oriented.

Although not as clear-cut, students scoring highly on intrinsic motivation tend to include an academic orientation in their responses. Again a sex difference can be observed, lending

further support to the observed link between vocational orientation and extrinsic motivation and possibly between intrinsic motivation and academic orientations. Girls certainly appear to be more intrinsically motivated than boys (Table 5).

TABLE 3
ORIENTATION AND SEX

	Female		Male		Total	
	n	%*	n	%*	n	%**
Vocational	30	38	49	62	79	44
Academic	18	75	6	25	24	13
Vocational/Academic	25	47	28	53	53	29
Other	<u>14</u>	56	<u>11</u>	44	<u>25</u>	14
Total	87		94		181	
Vocational +	62	42	86	58	148	82
Academic +	53	58	39	42	91	50
Personal +	8	50	8	50	16	8
Social +	6	60	4	40	10	5

*Relative percentage of female/male students in each orientation category

**Percentage of total students in each orientation category

TABLE 4
ORIENTATION X MOTIVATION

	Extrinsic Motivation			Intrinsic Motivation		
	n	%*	% of total** orientation	n	%*	% of total** orientation
Vocational	32	59.3	40.5	16	33.3	20.3
Academic	6	11.1	25	9	18.7	37.5
Vocational/Academic	12	22.2	22.6	16	33.3	30.2
Other	<u>4</u>	7.4	16.0	<u>7</u>	14.6	28.0
Total	54			48		
Vocational +	46	85.2	31.1	37	77.1	25.0
Academic +	20	37.1	21.9	29	60.4	31.9

*Percentage of extrinsically/intrinsically motivated students in each orientation category

**Percentage of extrinsically/intrinsically motivated students out of total number of students in each category

NOTE: 13 students scored positively on both extrinsic and intrinsic motivation

TABLE 5
MOTIVATION X SEX

	Extrinsic Motivation		Intrinsic Motivation	
	n	%	n	%
Female	21	36.2	31	60.8
Male	<u>37</u>	63.8	<u>20</u>	39.2
Total	58		51	

23% of total girls (92)

35% of total boys (105)

34% of total girls

19% of total boys

34% of all girls in the sample are intrinsically motivated as opposed to 19% of boys. This pattern is reversed for extrinsic motivation.

One could speculate that the strong vocational orientation and extrinsic motivation of boys may be an indication of the continuance of sex role stereotyping in that boys still feel more pressured to plan for future careers than do girls.

Whilst Table 4 indicates that 59.3% of extrinsically motivated students are solely vocationally oriented, it may be misleading to assume a strong positive relationship between those factors given that extrinsic motivation appears to have both positive and negative characteristics (Factors III and V, Table 2). It may be that a vocational orientation is more likely to be associated with the Achieving Approach than the Negative one. However the picture is still unclear for as Table 6 indicates 30.4% of vocationally oriented students principally adopt a Reproducing Approach.

TABLE 6
ORIENTATION X APPROACH TO LEARNING

	<u>Meaning Approach</u>			<u>Reproducing Approach</u>		
	n	%*	% of total ** orientation	n	%	% of total** orientation
Vocational	10	32.3	12.7	24	61.5	30.4
Academic	9	29.0	37.5	3	7.7	12.5
Vocational/Academic	7	22.6	13.2	9	23.1	16.9
Other	6	19.4	24.0	3	7.7	12.0
Total	31			39		
Vocational +	18	58.1	12.2	34	87.2	22.9
Academic +	20	64.5	21.9	14	35.9	15.4
Personal +	3	9.7	18.8	2	5.1	12.5

*Percentage of students with high scores on meaning/reproducing approach (+ 1 sd) in each orientation category

**Percentage of students with high scores on meaning/reproducing approach (+ 1 sd) out of total students in each orientation category

Note: Students who did not intend to go to university have been removed from these results.

Perhaps vocationally oriented students fall into two main groups, firstly those who are Strategic processors, extrinsically and achievement motivated, these I would venture to suggest are more likely to succeed. Secondly there are those who adopt surface strategies. Ramsden and Entwistle (1981) produced evidence to indicate that reproducing strategies were linked with poor academic performance which tends to suggest this latter group may be 'at risk'.

These results suggest that extrinsic motivation may be only part of a collection of attitudes and aims that make up vocational orientation; it may be more useful to use the latter term to express this particular direction of interest.

These results support those of Taylor, *et al.* (1980) by suggesting that orientation does appear to be related to approach to study (Table 6).

As mentioned above these results are preliminary and form the first stage of a longitudinal study. Further areas of interest include: Investigation of a possible relationship between degree taken (e.g., Commerce, Science) orientation and approach. A more detailed analysis of the role of extrinsic motivation in the study strategies used by vocationally oriented students. An examination of the orientation sub-categories with particular attention to reasons for possible changes in study approach over time and further exploration of the apparent sex differences in orientation.

Before assumptions can be made about the influence of variables such as approach to study and orientation on level of academic performance a cautionary note should be made. Consideration must be given to the effectiveness and appropriateness of the strategy that is being used, further work in this area is also being undertaken.

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