

Paper presented at Joint Conference AARE/NZARE
Deakin, Victoria, November, 1992

The context for learning: A developmental perspective on student
perceptions of their school life and learning goals.

Mary D. Ainley
Department of Psychology
University of Melbourne

Abstract

Analysis of the effects of student motivation on learning has drawn attention to the influence of an individual's goals on learning. The general goal orientation which a student brings to their learning affects their construction of the task, the learning strategies they employ, and the learning outcomes. This investigation explores the interrelationships between student perceptions of the quality of their school life and the development of general goals in learning. Canonical correlation analyses were used to explore the associations between these two sets of variables. The findings from a group of secondary students monitored from Year 7 to Year 11 will be presented along with comparative data from different student cohorts.

The context for learning: A developmental perspective on student
perceptions of their school life and learning goals.

This investigation is part of a wider study which is exploring the nature of student motivation within a formal school setting. It is concerned with distinguishing some of the important motivational processes operating in students' responses to schooling, and with determining how those processes fit in to the overall learning process. This investigation is specifically concerned with the pattern of association between students' general orientations to learning and their perceptions of the nature of their school environment. Canonical correlation analyses were used to assess the patterns of association between these sets of variables.

Student motivation in learning

In any formal learning setting students come equipped with a particular view of what school learning is all about. They bring with them views of the purpose of their learning and a particular view of themselves as learners. From a motivational perspective the student's construction of meaning and purpose in their learning is most often represented in terms of goal or belief variables (Maehr & Pintrich, 1991). The model of student motivation in learning which is basic to this research proposes that the

particular goal orientations an individual brings to their learning combine with that learner's perception of the learning environment, and the nature and demands of the learning tasks, to influence the learning strategies they adopt and the learning outcomes. Ainley (in press) has shown that distinct patterns of beliefs and goals in learning, represented as styles of engagement with learning, are associated with important differences in the strategies students report using when preparing for exams, and also with differences in achievement outcomes.

This investigation explores the pattern of association between students' general orientations to learning and their perceptions of the nature of their school environment. Student purposes in learning and their views about themselves as learners were measured in this study by the Learning approach scales of the Learning Process Questionnaire (LPQ, Biggs, 1987) and their perception of their school environment by the Quality of School Life Scale (QSL, Ainley, Reed & Miller, 1986; Williams & Batten, 1981).

Student orientations to learning

The LPQ (Biggs, 1987) distinguishes three approaches to learning - surface, deep and achieving, representing different constructions of student purposes in learning.

The deep approach is centred around a student's interest in their learning and the items represent learning as mastery of an interconnected set of understandings which are likely to extend the student beyond the boundaries of prescribed work. The achieving approach is based on motivation in the form of ego-enhancement through good grades. The items represent learning as meeting high standards of performance, the outcome of careful attention to meeting prescribed task requirements. The surface approach implicates motivation which attempts to balance avoiding failure against working too hard. Items for this scale represent learning as compulsory schoolwork which the student does to an extent they perceive sufficient to meet imposed requirements.

These approaches closely resemble the distinctions made between orientations to learning described in a number of major research programs. The deep and achieving distinction shows a strong similarity to the mastery and performance orientations widely cited by Dweck (1986; Elliot & Dweck, 1988; Dweck & Leggett, 1988). The deep, achieving and surface approaches are parallel to the task-mastery, ego/social, and work avoidant goals used by Nichols, Patashnick & Nolen (1985) in their study of student goals in specific classes.

An important issue of concern in understanding student approaches to learning is the question of how these different goals and purposes in learning operate in real learning contexts. A number of studies have used the LPQ to investigate student approaches to learning and learning outcomes (e.g. Biggs & Rihn, 1984; Ramsden, Martin & Bowden, 1989; Watkins & Hattie, 1990). In most studies the approaches to learning have been used as

separate variables and their links with outcome variables assessed independently. A complementary perspective has been proposed (Ainley, in press) which suggests that an important direction for analyses of student

motivation in learning, is to consider how different patterns of goals may function as interconnected sets in their influence on learning. The present study views the three approach variables identified by Biggs (1987) as a set when assessing the links between students' orientations to learning and their perception of the school life.

Student perceptions of school life

Many research programs have shown that there is an important association between the perceived school environment and student approaches to learning. Some contextual factors which have been shown to be linked with deep, and achieving, or combined deep-achieving approaches are a positive perception of the school or academic department (Ramsden, 1979; Ramsden & Entwistle, 1981; Watkins, 1982), a good relationship with the teacher (Prosser & Trigwell, 1990; Ramsden et al., 1989; Selmes, 1986) and, less formal assessment and teaching methods (Selmes, 1986; Watkins, 1982).

Ramsden et al., (1989) found that perceived school environments offering supportive teaching, coherent structure, and an emphasis on autonomy and moderate stress on achievement were associated with an active search for understanding, organized study methods and avoidance of superficial approaches. Schools that were characterized by an extreme emphasis on formal academic achievement in which teaching was narrowly focussed on formal academic achievement were associated with a tendency towards minimalist, reproductive and very competitive approaches to learning.

A recent study by Ainley & Sheret (1992) found a significant association between students' achievement growth and their use of a deep approach to learning. This finding of a significant relationship between approach and achievement growth is an important finding as the index of achievement growth represents the change in actual achievement in the senior years of schooling after allowance has been made for the contribution of earlier achievements. The same study indicated that achievement growth was associated generally with more positive views of the quality of the school environment. The Ainley & Sheret study (1992) used a shortened version of the LPQ to measure approaches to learning and obtained scores for only two of the three approaches.

These findings suggest that an important issue for understanding student motivation in learning is to investigate in more detail the patterns of relationships which hold between students' general orientations to learning and their perceptions of the quality of school life. In the present investigation canonical correlation analyses will be employed to determine the pattern of relationships which hold between these two sets of variables.

Developmental perspectives

Student orientations to learning have been represented here in terms of the general goals and purposes that students perceive for themselves, the ways in which they relate themselves to learning demands. Paris & Newman (1990) have proposed that by approximately 10-12 years of age students have developed their own "theories of schooling", sets of beliefs that become the motives for action. They suggest that these "theories" undergo modification in response to important transitions in schooling. Theories of adolescent development which have charted the course of changes

in the self-concept (Marsh, 1989) suggest that there is a general decrease in some of the major components of self-concept around the middle secondary school years (especially Year 9). This decrease is generally followed by an increase in those same components of self concept in the later years of secondary schooling. A similar pattern of change has been found over the secondary school years in the general feelings students have about the quality of their school life (Ainley et al., 1986).

In order to investigate how the association between students' general orientation to learning and their perception of school life might vary across the secondary school years the same form of canonical correlation analysis will be performed on sets of data from students at different stages of their secondary schooling as well as on data from different year cohorts.

Method

Sample

The participants in this study were students from a large girls' independent secondary college. The school caters for students from predominantly professional and middle to upper-middle class families. For the year cohorts tested all of the students present at school on the day of the testing were invited to participate. The cohorts tested include two year seven groups, two year nine groups, and three year eleven groups. Table 1 shows the groups included in the testing and the sequence of testing across successive years. During 1987 the LPQ and the QSL were used in a study of secondary schooling in NSW (Ainley & Sheret, 1992). The same canonical correlation analysis was able to be applied to that data set providing a comparison group to aid in interpretation of the patterns from the more selective sample.

Table 1 about here

Measures

Students' general orientations to learning were assessed using the Learning Process Questionnaire (LPQ, Biggs, 1987). This is a 36 item questionnaire requiring responses on a five-point likert scale, and was scored in terms of the three approaches to learning - surface, deep, and achieving. The Quality of School Life Scale (QSL, Williams & Batten, 1981; Ainley et al., 1986) is a 40 item questionnaire requiring responses on a 4 point likert scale and is structured to assess students' perceptions of important aspects of their school life. The QSL distinguishes feelings of well-being (positive affect), general dissatisfaction (negative affect), and perceptions of specific domains of schooling. The domains are:

- teachers - feelings about the adequacy of interaction between teachers and students
- opportunity - belief in the relevance of schooling
- status - the relative degree of prestige accorded to the student by significant others
- identity - a sense of learning to get on with others
- achievement - a sense of confidence in ones ability to succeed at school.

Procedure

The LPQ and the Quality of School Life scales were administered to each of the year cohorts within a larger battery of tests during class time as part of a continuing evaluation of the educational provision within the school.

Results

Canonical correlation analyses using the SPSSx package (MANOVA-SPSSx, 1988) were used to assess the patterns of association between the learning approach and school environment variables. The learning approach measures were entered as the dependent variables and the quality of school life scores as the covariates.

Canonical correlation is a multivariate technique that allows one set of variables to be simultaneously related to a second set of variables. The variables within each set are combined to form a linear composite. These composite variates are derived such that the correlation between variates is maximized. After constructing the first pair of variates further variates are created to a maximum number equal to the number of dependent variables (in this case three), and subject to the restriction that they are all unrelated to all previous pairs of variates. A summary of the important statistical indices associated with the first significant canonical variate is presented in Table 2.

Of particular importance in interpreting the strength of the relationship between the two sets of variables indicated in the canonical variate, is the Stewart-Love index of redundancy. This is a measure of the amount of variance in one set of variables that can be explained by the variance in the second set (Hair, Anderson, & Tatham, 1984). Hair suggests that as canonical correlation examines the amount of shared variance in both sets of variables, this index presents a more accurate indication of the significance of the canonical relationship between the two sets of variables than does the canonical correlation coefficient.

Table 2 about here

The results presented in table 2 indicate some strong similarities in the shape of the association between learning approaches and perception of school life across most of the year cohorts. The meaning of the association between learning approaches and perceptions of school life within these data can be determined by considering the size of the correlations between the first canonical variate and each of the variables entered into the analysis. These correlations show a strong linkage between endorsing deep and achieving approaches, and perception of school as a positive place providing opportunity and a sense of achievement. This pattern is evident in all but two of the year groups. - 9A and 11D. For both of these groups the pattern of linkage between approaches and the school life variables shows the surface approach to be the strongest correlate of the canonical variate.

Inspection of the trend across the different year groups suggests that there are some changes occurring during the secondary school years. One

change which is apparent in the data is a curvilinear pattern in the percentage of the variance shared between the two sets of scores. Both Year 7 groups show approximately 25% shared variance, this drops below 20% in the Year 9 groups, and returns to a level of 25% or higher in Year 11. This pattern is consistent over the separate year groups as well as the groups that have been followed over successive years (7A - 9A - 11A, and 7B - 9B).

A second change across the years of secondary schooling sampled in this investigation is the changed relationship of the surface approach scores to the first canonical variate. Leaving aside for the moment 9A and 11B which were the exceptions to the main pattern, there is also a curvilinear trend in the correlation between the surface approach scores and the first significant canonical variate. The low correlations of the year 7 samples (-.22 and -.46) diminish to a zero order (-.11 and .02) at year 9 and then return to a higher level at year 11 (-.56 and -.36).

Two of the groups show a very different pattern of association between the approach and school life variables - one Year 9 group (9A) and one Year 11 group (11D). One possible explanation for the difference in the pattern observed in these groups might lie in the level of scores on the deep approach scale for these two groups. Table 3 displays the means and standard deviations for all of the groups on the three approach variables. Year 9A and Year 11D are distinguished by lower mean scores and less variance on the deep approach than other comparable year groups. Of interest is the fact that when the students of the 9A group are Year 11 students (11A) their mean score on the deep approach has 'recovered'.

Table 3 about here

Conclusions

Canonical correlation analyses of sets of variables representing students' general orientations to learning and their perceptions of the quality of their school life in this investigation have shown that there are important associations between the approaches to learning endorsed by students and their views about the context in which that learning occurs. There are of course many qualifications which need to be placed upon the interpretation of these results. However, they do clearly suggest that when students see themselves as working towards mastery and achievement they also have a sense that school is a positive place which affords them opportunity and a sense of competence.

References

- Ainley, J., Reed, R., & Miller, H. (1986). School organization and the quality of schooling. Hawthorn, Vic.: ACER.
- Ainley, J., & Sheret, M. (1992). Progress through high school: A study of senior secondary schooling in New South Wales. Hawthorn, Vic.: ACER.
- Ainley, M. D. (in press). Styles of engagement with learning: A multidimensional assessment of the relationship between student goals and strategy use and school achievement. *Journal of Educational Psychology*.
- Biggs, J. B. (1987). Student approaches to learning and studying. Hawthorn,

Vic: ACER.

Biggs, J. B. & Rihn, B. (1984). The effects of intervention on deep and surface approaches to learning. In J. Kirby (Ed.), *Cognitive strategies and educational performance*. New York: Academic Press.

Dweck, C. S. (1986). Motivational processes affecting learning. *American Psychologist*, 41, 1040-1048.

Dweck, C. S. & Leggett, E. L. (1988). A social-cognitive approach to motivation and personality. *Psychological Review*, 95, 256-273.

Elliott, E. S., & Dweck, C. S. (1988). Goals: An approach to motivation and achievement. *Journal of Personality and Social Psychology*, 54, 5-12.

Hair, J. F., Anderson, R. E., & Tatham, R. L. (1984). *Multivariate data analysis*. (2nd edn.) New York: Macmillan.

Maehr, M. L., & Pintrich, P. R. (1991). *Advances in motivation and achievement*. Vol. 7, Greenwich, Connecticut: JAI Press.

Marsh, H. (1989). Age and sex effects in multiple dimensions of self-concept: Preadolescence to early adulthood. *Journal of Educational Psychology*, 81, 417-430.

Nicholls, J. G., Patashnick, M., & Nolen, S. B. (1985). Adolescents' theories of education. *Journal of Educational Psychology*, 77, 683-692.

Paris, S. G., & Newman, R. S. (1990). Developmental aspects of self-regulated learning. *Educational Psychologist*, 25, 87-102.

Prosser, M., & Trigwell, K. (1990). Student evaluation of teaching and courses: Student study strategies as a criterion of validity. *Higher Education*, 20, 135-142.

Ramsden, P. (1979). Student learning and the perception of the academic environment. *Higher Education*, 8, 411-427.

Ramsden, P., & Entwistle, N. J. (1981). Effects of academic departments on students' approaches to study. *British Journal of Educational Psychology*, 51, 368-383.

Ramsden, P., Martin, E., & Bowden, J. (1989). School environment and sixth form pupils' approaches to learning. *British Journal of Educational Psychology*, 59, 129-142.

Selmes, I. P. (1986). Approaches to normal learning tasks adopted by senior secondary school pupils. *British Educational Research Journal*, 12, 15-27.

SPSS-X, (1988). *User's Guide*, 3rd edn. Chicago: McGraw-Hill.

Watkins, D. (1982). Factors influencing the study methods of Australian tertiary students. *Higher Education*, 11, 369-380.

Watkins, D., & Hattie, J. (1990). Individual and contextual differences in the approaches to learning of Australian secondary school students. *Educational Psychologist*, 10, 333-342.

Williams, T., & Batten, M. (1981). *The quality of school life*. Hawthorn, Vic.: ACER.

Table 1

Cohorts of Students from Years Seven, Nine, and Elevena

Year of Testing	Year Level		
	7	9	11
1	7A		11C
2	7B		
3		9A	11D
4		9B	
5			11A

aSame letter indicates the same group of students.

Table 2
Correlations Between Learning Approach and School Life Variables with the
First
Significant Canonical Variate for all Year Cohorts

	7A	7B	9A	9B	9NSW	11A	11C	11D
Approaches								
Surface			-.22	-.46		.94	-.11	-.02
-.36	-.56	.99						
Deep			.90	.72		.77	.59	.85
.90	.92	.48						
Achieving		.86	.83			.79	.98	.91
.86	.73	.65						
School Life								
Positive Affect			.85	.81		.60	.64	.86
.87	.89	.86						
Negative Affect			-.31	-.48		-.23	.04	-.24
-.50	-.41	-.06						
Opportunity			.71	.89		.87	.56	.61
.71	.86	.65						
Teachers			.43	.71		.41	.63	.63
.42	.59	.27						
Status			.50		.49		.35	.25
.37		.61		.63	.28			
Identity			.25		.54		.36	-.04
.67		.30		.21	.22			
Achievement			.89	.89		.77	.75	.80
.77	.79	.67						
Significance of								
Variate (p)			.000	.000		.05	.000	.000
.000	.000	.000						
Canonical r								
			.69	.73		.51	.64	.49
.72	.77	.67						
r ²								
			.48	.54	.26	.41	.24	
.51	.59	.45						

Redundancy										
Index			26%		25%			18%	18%	12%
29%	34%		25%							
N		102	118		95	108	997			74
114		125								

Table 3
Means and Standard Deviations on the LPQ Approach Scales

	7A	7B	9A	9B	9NSW	11A	11C	11D
Surface		34.59	35.36		36.84	34.74		36.22
33.86	32.84	36.59						
		(7.10)	(6.61)		(6.49)	(6.09)	(6.59)	
(5.71)	(6.69)	(6.32)						
Deep		37.42	38.96		32.65	36.09		35.81
36.72	37.13	34.46						
		(7.65)	(6.74)		(5.62)	(6.91)	(8.37)	
(6.43)	(7.59)	(5.24)						
Achieving		40.32	42.41		37.40	37.80		37.37
36.93	35.42	37.37						
		(7.13)	(6.41)		(5.64)	(7.07)	(8.36)	
(6.43)	(7.59)	(5.24)						