

LEARNING IN AUTONOMOUS STUDENT GROUPS: LEARNING SKILLS AS A PREDICTOR OF SATISFACTION

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Staff time in higher education is an expensive resource. As staff-student ratios become less favourable the problem of staffing seminar or tutorial work with students intensifies. Is it inevitable that group sizes must be increased? A seminar with more than ten or twelve students, however, probably ceases to function in an effective sense for many of the students: larger numbers intimidate the more introverted student from participating, and the role of the lecturer as a kind of chairperson tends to become more prominent, taking responsibility away from the individual student.

Alternative learning methods are being devised to cope with this problem, including a range of teaching strategies for introducing new material and obtaining the active participation of students in discussion (e.g. Boud, 1981; Habeshaw, Habeshaw, and Gibbs, 1984; Miall, in press). One radical solution would be to dispose of staff input entirely for seminar work, requiring students to manage their own seminar groups. It is this alternative that I describe in the present paper. I offer an assessment of a unit in which most of the student's work took place in student-managed groups.

I led a year's unit in English literature, Romanticism: 1789-1824, which recruited 35 students, and for which a staffing of two lecturers was allowed. The unit is offered to Year II students taking English on a Combined Studies degree. The unit was organized mainly to operate in small, autonomous student groups. Formal lectures to the whole class occupied thirteen hours of the unit; the remaining 33 hours of class time were given over to work in student groups. The learning skills of the students were assessed on entering the unit and a detailed student evaluation of the unit was made near its end; together with the grades achieved by the students and less formal evidence, these two instruments were the principal measurements of the group system. The majority of students coped satisfactorily with this new learning environment, but a minority expressed considerable discontent throughout the year. The present study, however, enabled particular skills relevant to autonomous study to be identified, so that it is possible to offer some conclusions on how to make autonomous study of this kind more effective for all the students.

The group system was organized as follows. The curriculum for the unit was divided up into ten topics. All students were required to take one of these (a Theory topic), and to choose one of two prose topics. They then had a free

choice among seven other single author topics, of which they studied three. Students chose their topics at the beginning of the year during the introductory session. Groups of four to six students were then formed on the basis of these choices. There were five group sessions, of which the first two ran for five weeks each and the remaining sessions for four weeks. Apart from the theory topics, of which two ran simultaneously, the sessions were generally arranged so that no topic occurred more than once during a given group session. This eased the pressure on library resources. Instead of having all students, for example, studying Wordsworth during a given stage of the unit, as had been the case in the conventional system, no more than six students were studying Wordsworth at any one time. The organization of the unit thus economized both on library resources and on staff time (with 35 students, the unit would normally have required three staff for seminar work).

A comprehensive set of notes was given to all students on the unit, containing the group sessions timetable for the year, the objectives of the unit, suggestions for managing group work, and an outline of the main material to be covered in each topic. All groups were required to have one student, called the Recorder, who made seminar notes each week; these were handed to the lecturer after each session, photocopied, and returned. It was arranged that each student would have the experience of acting as Recorder once during the year. Groups were encouraged to call in one of the lecturers at any time for advice.

In the original plan for the unit it was suggested that following the introductory lecture, lectures would be given only at the express invitation of the students, who would suggest topics on which they wished to hear a lecture. This was an ideal that proved not to be sustainable after the first term. A majority of students began to feel uncertain about whether they were gaining enough basic understanding about the period and the writers being studied, and complained that much time was being spent acquiring information which could more efficiently be given through lectures. A schedule of lectures was therefore initiated for the second and third terms, in which two out of the three weekly two-hour periods would contain a conventional lecture.

It became clear in retrospect that the first few weeks of the unit had made too great a demand on a significant minority of students. The shift to a new method of learning was too radical and represented a discontinuity in their experience which caused a sense of dislocation and anxiety in these students, although other students were quick to grasp the opportunity and work effectively within it. The reintroduction of lectures largely resolved this problem, together with a closer supervision of certain groups by the lecturers. Where some students were still unhappy about the unit it seems that this may have been partly due to some or all of these problems: personality conflicts within a given group, an inability to relate lecturers' input to their understanding of their group topics, inadequate study skills (particularly systematic study methods), and a low degree of personal response to literature. These findings emerged from the study of students' learning and of their judgements about the unit which was carried out during the year.

The study was primarily made through two questionnaires. A Learning Questionnaire was administered to students during the first session of the Romanticism unit at the beginning of October. It took students about ten minutes to complete. 38 completed questionnaires were obtained, including three from visiting students who only attended for the first term. A detailed Evaluation Questionnaire was given during the 17th week of the unit, at the end of February. Of the 30 students completing this questionnaire, Learning Questionnaire data were available for 27 students. Both questionnaires provided

self-report data on a range of issues; both asked "closed" questions, but the students were invited to comment freely on their experience of the unit on the Evaluation Questionnaire, and discussions about the unit were also held at the end of the year with some students.

The design of these two questionnaires will now be described, together with the findings obtained from each. This will be followed by an analysis of the main results from comparing the data of both questionnaires.

Questionnaire on Learning

The purpose of the Questionnaire was to obtain a profile of each student taking the unit. The particular skills and interests that a student possessed, as measured by the Questionnaire, were then set beside their response towards the group learning methods of the unit. The effects of the new learning environment were measured by a self-report evaluation towards the end of the year (described below), and compared with Learning Questionnaire data.

Design of Questionnaire

The Learning Questionnaire comprised 81 items, mainly derived from the Inventory of Learning Processes (ILP) of Schmeck, Ribich, and Ramanaiah (1977), but supplemented by three further types of questions.

The ILP is a 62-item self-report questionnaire developed by Ronald Schmeck and his colleagues at Southern Illinois University, first published in 1977. It has been validated in a series of later studies that have established its reliability (test-retest scores), its relation to existing personality measures, and its value as a predictor of undergraduate achievement (Schmeck, 1983). There are four factors in the ILP, measuring a variety of learning skills. These are described by the authors of the Inventory as follows: Deep Processing measures a student's cognitive ability to organize material and to make inferences; Methodical Study assesses adherence to systematic, traditional techniques; Fact Retention shows the ability to retain detailed, factual information; Elaborative Processing deals with the ability to encode material actively and to give it personal meaning.

57 of the 62 items of the ILP were used, some rewritten to accord with English usage and the College environment. The questions in the original ILP were answered TRUE or FALSE by the student. For our questionnaire four possible answers were provided, comprising a four-point rating scale: very true/fairly true/not very true/false. As in the original ILP, approximately half the questions were written in reverse form, so that a student scoring high on a given factor would answer true and false in about equal proportions.

The 57 ILP items were supplemented by the addition of 24 further questions designed to assess level of anxiety, responsiveness to literature, and inclination for group work. The Anxiety items were derived loosely from Taylor (1953), the Literary Response questions were partly based on Purves (1970/1975), and the 10 Group Work items were written by the author. These additional questions were intended to measure the degree of anxiety shown by students in relation to their learning, to assess how much personal significance literature appeared to have for them, and to indicate whether a student felt able to work with others in a group.

The questionnaire thus measured seven factors, the first four being those of the ILP: Deep Processing (18 items), Methodical Study (22 items), Fact

Retention (6 items), Elaborative Processing (11 items), Anxiety (7 items), Literary Response (7 items), and Group Work (10 items). In the version of the Questionnaire administered to students, the order of questions was randomized across all factors, but all students received the same order.

Results of Learning Questionnaire

A correlation matrix indicating relationships between the factors is shown in Table 1. It can be seen that for this group of students Deep Processing and Elaborative Processing were highly related, Methodical Study was related less strongly to both, and Fact Retention appears to be unrelated. As expected, Literary Response showed the strongest relationship to Elaborative Processing; interestingly, it showed an almost equally strong, but negative, relationship to Fact Retention. The finding on Fact Retention appears to distinguish students of English from the populations of students previously studied (Schmeck, 1983, p. 249), where this factor normally shows a marked positive relationship to the first two LLP factors. The remaining two factors, Anxiety and Group Work, showed no correlations of significance.

TABLE 1. Intercorrelations of Learning Questionnaire Factors (N = 38)

Factors	2	3	4	5	6	7
1. Deep processing	.33*	.16	.65***	-.24	.35*	.31
2. Methodical study	--	-.02	.37*	.17	.34*	.05
3. Fact Retention		--	.07	-.06	-.42**	-.08
4. Elaborative processing			--	.27	.47***	.08
5. Anxiety				--	-.08	-.17
6. Literary Response					--	.10
7. Group Work						--

Note: Probability levels shown are two-tailed

* $p < .05$ ** $p < .01$ *** $p < .01$ **** $p < .001$

Thus, for those students reporting a high level of Literary Response, the learning skill that appeared to be the most significant was Elaborative Processing. This indicates that such students tend to translate the material of their studies into their own concepts and images. The other factors associated with Literary Response in order of importance were: Deep Processing, Methodical Study, and a disinclination for Fact Retention.

Evaluation Questionnaire

A 47-item questionnaire was given to students to complete in class time at the end of February, during the 17th week of the unit. The Questionnaire obtained students' judgments on a range of questions concerning their experience of the Romanticism unit. Thirty questionnaires were completed, including a few obtained from students absent from class that day. Free comments were also invited, and a number of students made critical or constructive suggestions

about the unit on the questionnaire.

Design of Evaluation Questionnaire

Five types of question were asked: 8 Topic Work questions, relating to students' perceptions of how well they had understood the academic aspects of each topic studied during the unit so far; 13 questions assessing the lecturers' input to the unit, including lectures and essay marking; 5 questions about the library and unit bibliography; 9 questions about students' own work outside the class; and 13 questions about their experience of working in autonomous groups.

The items in the questionnaire were presented in random order, and as in the Learning Questionnaire four possible answers were provided to each question.

Results of Questionnaire

The ratings on the Evaluation questions ranged from 1 (implying very dissatisfied) to 4 (very satisfied); thus a mean rating of 2.5 would indicate an acceptable level of satisfaction. The mean ratings obtained for each factor were above this figure, showing that the majority of students perceived the unit as a success on all the factors. The mean ratings were: Topic Work: 2.96; Lecturers: 2.98; Library: 3.01; Own Work: 2.78; and Group Work: 2.79.

In response to the specific statement "I would prefer not to have to work in a group again", 3 students replied 'very true', 6 replied 'fairly true', 9 replied 'not very true', and 12 replied 'false'. Thus a majority of the students replying (21 to 9) were ready to accept a continuation of the group system in some form.

The evaluation provided some reasons why group work was judged to be fairly successful and satisfying. Most students said that they enjoyed taking part in group discussions, they found that work with other students was easy and pleasant, and most were prepared to say that next year's students should be offered the chance to work in groups for some of the time. Among the less satisfactory aspects, students felt that members of their groups could have prepared better, there was general dissatisfaction with the working of the group Recorder, and some sensed that their ability to make the group system work for them had not improved over the year.

TABLE 2. Intercorrelations of Evaluation Questionnaire Factors (N = 30)

Factors	2	3	4	5
1. Topic Work	.60****	.21	.50**	.26
2. Lecturers	--	.29	.59***	.50**
3. Library		--	.02	-.10
4. Own Work			--	.32*
5. Group Work				--

Note: Probability levels shown are two-tailed

* $p < .1$ ** $p < .01$ *** $p = .001$ **** $p < .001$

The correlations between the factors in the Evaluation are shown in Table 2. A mean rating of each student on the combined factors of the Evaluation was computed, giving a single measure of satisfaction. This was used in the analysis to be reported next.

Relation of Learning Factors and Evaluation

Predictive Value of the Learning Questionnaire

A multiple regression analysis of the seven factors of the Learning Questionnaire, with the mean rating of each student on the Evaluation Questionnaire as the dependent variable, gave a significant result: $F(8,18) = 2.92$, $p < .05$. 57 per cent of the variance in the Evaluation was accounted for by the combined factors of the Learning Questionnaire. Taking the factors of the Evaluation separately, the Learning Questionnaire was related significantly on a multiple regression analysis ($p < .05$) to Own Work and Topic Work; the remaining factors did not reach significance. The reliability of these findings is reduced, however, by the significant level of intercorrelation among the Learning Questionnaire factors, apparent in Table 2.

Among the different factors of the Learning Questionnaire, two showed a close relationship to the outcome of the Evaluation. Students' scores for Elaborative Processing in October correlated highly with their ratings of the Lecturers in February, $r(25) = .48$, $p < .02$, and with the degree of satisfaction with their own work, $r = .45$, $p < .02$. An even stronger relationship was apparent between Literary Response scores and the same two factors from the Evaluation, where $r = .54$ and $.49$ respectively, $p < .01$. A correlation of marginal significance ($p < .1$) was also found between Methodical Study and the above Evaluation factors. These correlations offer a general view of which specific learning skills predict perceived satisfaction with various aspects of the course, although no predisposing skills were found to predict Topic Work or Group Work. Methodical Study and Elaborative Processing also showed significant ($p < .05$) correlations with the mean ratings for each student over the whole Evaluation.

Six individual questions from the Evaluation were correlated (using Spearman's correlation) against the Learning Questionnaire factors, as a way of checking students' responses over the half year. For example, two questions asked about personal aspects of response (31 and 34), and these correlated as expected with Literary Response, $p < .05$. Question 34, on relating the writings studied to one's own experience, also showed a strong negative correlation with Fact Retention, $p < .001$. Students' responses to the two questionnaires thus showed an acceptable degree of consistency.

Learning Skills of Satisfied and Dissatisfied Students

Where students reported themselves in the Evaluation as fairly or strongly dissatisfied with the unit, it was expected that this would indicate a deficiency in learning skills appropriate to the new learning method. Working backwards from the Evaluation it was possible to check the pattern of learning skills reported by the students who were the most dissatisfied. Taking the overall mean score for each student on the Evaluation, the students were divided into three groups with low, medium, and high evaluation scores. This gave nine students in each group. The mean scores of the low and high groups on the Learning Questionnaire were then calculated and the two groups compared. Of the individual LLP factors, three showed lower mean scores for the low group, Deep Processing Methodical Study, and Elaborative Processing; of these, two showed a

highly significant difference on a one-tailed test: Methodical Study, $t(16) = 3.46$, $p < .005$, and Elaborative Processing, $t(16) = 2.75$, $p < .01$. Perceived success in the unit thus appeared to depend to a significant degree on these two learning skills.

Conclusions

The two questionnaires thus provided a number of insights into the specific skills and responses appropriate to this type of study. Of the ILP skills, Elaborative Processing constitutes the key method for comprehending new material: it probably offers the most flexible cognitive process for developing an independent view of the literature being encountered. Such processing draws constructively upon the students' existing knowledge (his/her concepts, feelings, and imagery) in order to build a model of the new knowledge being offered. A student skilled in this way is better fitted to become his/her own centre of authority, provided that this tendency is supplemented by other skills that enable him/her to develop knowledge and relate it systematically to the knowledge available from the lecturers, other students, and the library. Here, as the data suggests, Deep Processing also constitutes an important skill.

The students who showed the most dissatisfaction with the unit at the time of Evaluation were those who also reported lower skill in Elaborative Processing and Methodical Study. The particular items on which these students reported markedly lower scores (as shown by the mean ratings for this group) were the following:

Methodical Study: getting down to study, maintaining regular study hours, writing an outline of material read, reading beyond assigned material, building lists of unfamiliar terms, preferring to read a summary of an article than the original, not reviewing material regularly;

Elaborative Processing: being able to think of procedures for solving problems, sitting and thinking about something just read, visualizing a situation to explain new words or ideas that are being learned, thinking of additional contexts for a new idea, daydreaming about things being studied.

Students who are less well organized and make less personal sense of their study thus find themselves poorly equipped for working in autonomous groups. In the Evaluation the students in this group then reported the following specific problems, in contrast to the high-satisfaction group (again, as shown by markedly lower mean ratings):

Lecturers: the lecturers seemed to have little time to attend to their problems, they were often unable to relate the content of a lecture to their group work, more lectures should have been given;

Own Work: feeling unable to follow their own interests properly, feeling unhappy about working adequately on their topics, working less hard for this unit than other English units, often feeling uncertain and bewildered;

Group Work: other group members hindering or obstructing their progress, group members not preparing properly for discussions, insufficient time for their views to be considered, no improvement over the year in being able to make the group system work for them.

These students, as can be seen from this list, tended to attribute their lack of satisfaction to deficiencies in the lecturers' input and to problems with other

students in their groups.

A main question that arises, therefore, is whether a careful programme of work with such students which would (a) encourage more systematic study habits and (b) provide strategies for enabling them to read more personal meaning into their study, might not strengthen their ability to profit from the autonomous learning environment. One example of such a strategy is suggested by the report of Schmeck and Meier (1984) on self-reference, in which it was shown that self-reference as a learning style can be enhanced by instruction in cases where the student does not normally use this technique. In another study (Miall, 1986), however, I showed that the effectiveness of self-reference in an incidental learning task also depends upon the type of material being studied: with emotionally coloured material learning is enhanced by self reference; but with non-emotional material self-reference is less effective than reference to a friend.

Thus no uniform strategy is likely to be appropriate for every situation. In the case of students of literature, however, the emotional aspect of response to texts seems likely to offer one reliable avenue for deepening processing strategies. More independent learning can be encouraged by a range of techniques for examining texts that encourage personal response (Miall, in press), such as instructions to find memories or images from one's own experience together with methods for using these to explore the structure and meaning of the literary text. Careful preparation of students in this way, by training them in individual and group techniques for independent study, makes it more likely that the subsequent introduction of autonomous group methods will succeed.

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References

- BOUD, D., (Ed.) (1981). Developing students autonomy in learning. London: Kogan Page.
- HABESHA, S., HABESHA, T., & GIBBS, G. (1984). 53 interesting things to do in your seminars and tutorials. Bristol: Technical and Educational Services.
- MIALL, D.S. (1986). Emotion and the self: The context of remembering. British Journal of Psychology, 77, 389-397.
- MIALL, D.S. (in press). Authorizing the reader. English Quarterly.
- PURVES, A. (1970). Literary transfer and interest questionnaire, reprinted in W.T. Fagan, C.R. Cooper, & J.M. Jensen (1975), Measures for research and evaluation in the English language arts (pp. 68-72). Urbana, Illinois: National Council of Teachers of English.
- SCHMECK, R.R. (1983). Learning styles of college students, in R.F. Dillon & R.R. Schmeck (Eds.), Individual differences in cognition (pp. 233-279). New York: Academic Press.
- SCHMECK, R.R., & MEIER, S.T. (1984). Self-reference as a learning strategy and a learning style. Human Learning, 3, 9-17.
- SCHMECK, R.R., RIBICH, F., & RAMANAIAH, N. (1977). Development of a self-report inventory for assessing individual differences in learning processes. Applied Psychological Measurement, 1, 413-431.

TAYLOR, J. (1953). A personality scale of manifest anxiety. Journal of Abnormal and Social Psychology, 48, 285-290.

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