

EXAMINATION INTO THE USE, PLACE AND EFFICACY OF GROUP WORK IN UNIVERSITY COURSES:

A Work in Progress Report of a Current Research Project

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In Tertiary Education Systems we often find ourselves using groups. These groups may involve students researching an area together, constructing a project together, presenting a tutorial together or any one of a number of other learning tasks. One of the imperatives for students working together is the demand from employers for teamwork and interpersonal skills (NBEET 1992). Other advantages lie in enhanced student learning through depth of topic, sharing of knowledge and experience, as well as in lecturer workload (Jaques 1991, Gibbs et al 1986, Freeman 1993).

We may have different reasons for using these groups as part of our instructional system and the outcome of their use may vary according to the goal. But we believe that all of us have at one time or another been presented with dissatisfaction with an instructional system which includes group participation. Main concerns identified at the Tertiary level are with the assessment of group project work in terms of equity of contribution and appropriate marking schemes (Gibbs, Habeshaw and Habeshaw 1986, Trigwell 1992, Roberts et al, 1994).

Group work is a central part of courses in Health Education and Community Counselling; and group projects are assessable components of many of the units in these courses. As part of the dynamic on-going process of course evaluation and self-reflexive praxis, we sought to examine the use, place and efficacy of group projects, as assessable components in these courses. As the courses have a strong basis in cooperative/non competitive learning we felt that it was important to clarify any tensions which might arise from the use of cooperative teaching methods in a traditionally competitive (adult) academic environment.

Our overall approach in this project is based in action research whereby action is "intentionally researched and modified, leading to the next stage which is then again intentionally examined for further change, and so on." (Wadsworth 1991 p.63).

This paper describes our beginning stage. It is organised in a research format which allows the initial exploration to be clearly contained. We draw on the extensive research on group learning at the primary/secondary level using an analysis framework which focuses our

attention on managing our instructional system. Much of the research surrounding this analysis has addressed the three elements of interdependence, rewards and individual accountability (Slavin et al 1985, Cohen 1994).

This orientation to group work is also evident in group work in Higher Education. Typically in project work the intention is for group or team members to contribute equally (Gibbs et al 19) with recognition that contributions may be valued for ideas, for leadership, for data collection, for the ability to contribute to communicating the outcome.

We suggest that responsibilities and the range of contributions are not always articulated clearly. This becomes clearer when we factor

in assessment.

Concern about the awarding of a grade which truly reflects an individual's level of achievement has given rise to a number of grading schemes many of which include peer assessment. Gibbs et al (1986) suggest a satisfactory solution is to "build in mechanisms" for allocating different marks (p.104). These include a shared group grade where the groups may allocate an individual component, negotiating the process within the group, or through a peer assessment with clearly imposed criteria. Various systems, some with quite complex statistical formula, have been presented for the calculation of the individual component directed at fairness in effort (Earl 1986, Goldfinch and Raeside 1990, Conway et al 1993).

Group work at the Tertiary level means incorporating principles of adult learning where students take more control of their learning, context where choice and autonomy are important issues. There is a challenge here in structuring the learning environment to recognise and make full use of the different experiences and learning styles which individuals bring to the group.

Instructional systems provide the means by which skills, processes, and information are further developed in students. These instructional systems include both Task structures and Incentive structures (Slavin 1983). The way in which lecturers and tutors set up activities to promote student learning provides the Task structure, and the means of motivating the students provides the Incentive structure. The use of groups is a description of the Task structure.

Typically in tertiary settings, the use of groups is in the form of an instructional system which provides for collaborative learning. Collaborative learning is where two or more students are required, rewarded, or permitted to work together on an academic task.

Collaborative and Cooperative Learning

Using this framework we can say that cooperative learning is one type

of collaborative learning (Cooper 1990). Cooperative learning requires both a cooperative task structure, one where 2 or more students can work together but may or may not receive rewards based on the groups performance; and a cooperative incentive structure, where the group is rewarded based on the performance of all group members .

Cooperative learning differs from collaborative learning in three very important ways. Firstly it focuses on structures which are designed to ensure student-student interdependence. Secondly it emphasises individual acceptability rather than undifferentiated group grades for team work, and thirdly it fosters cooperative behaviour in which each participant facilitates other participants. Cooperation and team work are important, as is the valuing of each individual's contribution.

Many of our students will move into professional areas in which team work is highly valued and promoted. Often this team work is seen to be the result of cooperative behaviour in which each member contributes to the fullest and the resultant product is greater than individual effort could have produced. We also work to reduce the amount of enforced or teacher directed structure and wish to promote an intrinsic motivational system and self directed learning

In our courses cooperative behaviour is therefore one of the goals of our instructional system. We seek to have students participating and coordinating their efforts and communicating such that each student facilitates the task performance or goal attainment of the other

students. We seek to instil or build upon a cooperative motive where there is a predisposition to act cooperatively in a situation which allows students the choice between cooperative, competitive or individualistic behaviour. Because we work to promote a choice where there is a predisposition to act cooperatively, we may neglect the focus on the instructional systems which actually promote cooperation. Further, because our basic incentive system, grading, is typically competitive rather than cooperative this may also interfere with the goal of cooperative learning.

Structuring Cooperative Learning

In examining the research literature for the K - 12 are there are a number of structuring principles which arise for cooperative learning.

Interdependence

Firstly each student's goal attainment needs to be dependent on each other student's goal attainment. The structure must be such that each student needs and expects some assistance from each other member in order to attain the goal.. A group mark does not necessarily promote interdependence. Group marks lead to a higher grade than individual marks but this is not necessarily because of the interaction or motivation. This result may be because if any individual can solve the

problem, then all group mates get credit regardless of their own particular participation or learning. Where the group mark is the only incentive for collaboration, the smarter group will allow the smartest student to complete the task providing useful support and then take credit for the achievement. All students do not need to learn. Only one student needs to perform.

Cooperation can increase performance when coordination of efforts is vital to effective functioning in a short duration (Slaven, 1977). Competitive structures are at least as effective when coordination of efforts is not important. Therefore the task must be clear to all, as is the role of each person in the group and the relative contribution of the group activity toward the course grade. Furthermore there needs to be a retention of individuality within the group and a way of assessing the individual contribution of each student. One way of doing this would be that group grades only account for a small proportion of the overall mark. Most importantly attention needs to be paid to 'diffusion of responsibility', ie. the possibility for an individual to be rewarded even if they did very little and another who did a lot not be rewarded. Diffusion of responsibility is the highest when group members can substitute one for another and when the group size is larger. Lecturers need to facilitate processes to increase individual accountability.

Focus on the Goal of the Group Experience

Whether the goal is defined by the lecturer and/or the student group. If cooperative behaviour is the goal then focus on this goal and provide the learning environment which supports this goal. If producing a product is the goal then focus on this goal. If learning a process or content is the goal then focus on this goal. The more goals the more work in focussing on goal attainment. Thus lecturers may need to 1) work with students to ensure the development of clear and relevant goals and to keep them in perspective, 2) make sure cooperative learning tasks are perceived by students as relevant to the course and not busy work or an attempt by the lecturer to avoid work, 3) to make sure students understand and operationalise the criteria for success and can specify the desired outcomes. Cooperation has many different connotations and uses and even in situations of choice and self-directed learning clear criteria for success act as an important motivator.

Supervise and Structure Group Experience

There is a need to optimise the size, duration, and make up of the group. If freedom of choice is an important element of the structure, then lecturers need to help students to make wise choices and evaluate their experiences such that they can learn from the experiences for future group work. This may require the lecturer to monitor the

student's progress and to intervene, if necessary, to teach cooperative skills and prepare students with the necessary social and communication skills. A criteria referenced evaluation system may be the best system when using cooperative learning methods.

Process

We sought a methodology for this project which was consistent with our Courses philosophy of participation, cooperation and self-direction (Team doc 1993). The Action Research approach provided a match with the cooperative/consultative nature of appropriate group experiences. The two researchers were also convenors of units so were particularly mindful of a number of dilemmas in using this approach:

- ensuring every voice is given equitable hearing
- guarding against bias in expression
- recognising and valuing of the subjective experiences (of teachers and students) and at the same time evaluating those experiences in a manner which allows values (notions of appropriate and inappropriate practices) to be placed on specific uses of Group Projects.

A graduate who had been involved in units the previous year joined us as a research assistant for the initial stage. He brought important insights into the courses and was able to conduct interviews with students and with teaching staff. The process began with an open-ended survey completed voluntarily either at the end of class time or in students own time. Students were invited to identify themselves for a follow-up interview.

56 students from 6 units in Community Counselling and Health Education completed the survey with questions about the nature of the group, how students selected their group, what were the students understandings of the rationale for using group work and the assessment process, what were the advantages and disadvantages of group work and knowledge and application of group theory. All units were units where group work was an assessable component. Half the units used an Ungraded Pass assessment and the other half used a typical HD, DI, CR and P system of assessment.

Follow-up interviews were conducted with 9 students. 5 teachers were interviewed including the two researchers.

RESULTS

Survey 56 Students from 6 units in Counselling and H.Ed.

The students reported that the size of groups varied from two members to 11 members and that the members of the group were chosen based on topic (25 responses), friends (10 responses) and people (9 responses).

The students understanding of the rationale for the group work was as follows:

Share and expand ideas/learn from each other, learn to cooperate - 33 responses

Learn group processes - 16 responses

Cover more ground - 5 responses

Save resources - 5 responses

When asked if the assessment process fitted with their understanding of the rationale for the use of the groups, 16 students stated that it fitted well and 16 stated that it did not fit very well. This answer was not significantly different for units with UP marking or standard HD, DI, CR and Pass marking. 23 students gave no answer to this question.

When asked about the benefits and disadvantages of group work students' answers fell into the following categories:

Benefits - Shared knowledge and ideas - 16 responses, social benefits - 12 responses, learned cooperation - 11 responses.

Disadvantages - Difficult to meet 12 responses, and individuals did not pull their weight - 7 responses.

32 students felt that they had done units which had previously outlined group work theory and 18 students answered that they had not done such work. Of the 32 students who answered yes 18 answered that they could link the theory and the practice and 14 answered that they could not.

Only 9 students answered that there was a need to formalise the above process and 8 students answered that the process didn't need to be formalised?

Other comments from interviews -

Students were asked "Did any conflict or really positive dynamics arise at all in your group? If so, what was it about, or how did it occur?"

All students talked about conflict. Some stated that they dealt with it quickly or did not bother and just finished the project and continued disliking each other. It appears that the shorter the time frame and the more task oriented the group, the less conflict arose.

Some still had ill feelings with their group members years on. 1 respondent experienced major conflict, with fierce shouting matches and nothing was ever really resolved. Virtually all of this conflict arose due to people in the group not doing their work. Some students did mention a few positives although they were far outweighed by negatives. Some felt that the amount of time for the project was just too short for groups to develop properly.

"Were there any members that stood out particularly?"

All but one respondent had one or more people that stood out in their group. Most mentioned that one or more members had done little or no work for the group., yet shared in their good marks.

The following table shows the comparisons of the student survey results with both the indepth interviews with staff and students.

Comparisons of student (56) and staff interviews (5), and in-depth interviews (9)

Students Lecturers In-Depth

1. Size of groups

2-113 to 4-62-5

2. How are groups selected?

25 topic topic and people 7 topic

10 friends 3 people

9 people

3. Rational for groups? None mentioned cooperation but in depth

interview with students

learning group process (16) negotiation skills (8) learn cooperation
build networks

cover more ground (5) planning, decision making, assertiveness,
communication skills, conflict resolution etc. save resources (5)

4. Does assessment fit with the rationale?

16 yes 3 no (graded) 5 no

16 no 2 yes (ungraded) 4 yes

5. Was there previous teaching of group processes?

32 yes 4 yes 9 yes

18 no 1 no (not correlated to student answers)

6. Do students link previous group training with group experience?

18 yes 2 yes (cc) 4 yes

14 no 3 no (HEd) 5 no

(not correlated to student answers)

7. Should the link between theory and practice be formalised?

9 yes 4 yes 8 yes

8 no 1 no 1 no

8. Benefits

Survey of students: shared knowledge and ideas (16), social benefits
(12), learned cooperation (11)

Interviews with students: Learned to cooperate (4), covered more ground
(4), teamwork (2), making friends (4)

9. Disadvantages

Survey of students: difficult to meet (12), individuals did not pull
their weight (7)

Interviews with students: diffusion of responsibility (5), difficult to
meet (3), too competitive (1)

Note: Not all students answered all the questions.

CONCLUSIONS

Most of the studies have looked at achievement or performance as outcome measures of cooperative group experiences, this study choose to look primarily at student experience and management of assessable group projects.

All the groups were collaborative in structure and most of the groups had a cooperative task structure but there was no evidence of a cooperative incentive structure. The groups fostered some student - student interdependence but none emphasised individual accountability because all gave an undifferentiated group grade. (Diary in some) Cooperation, as such, was not mentioned by the lecturers as the rationale for the groups and group process skills seemed to be the major emphasis. In the in-depth interviews with students, most students mentioned cooperation as a major rationale. This may imply that the lecturers were interested in providing skills which they believed would lead to a cooperative motive on the part of group members. However clearly specifying the criteria for cooperation was not foremost in the lecturers' goals.

Interdependence

In terms of the important structures for cooperative learning, interdependence was not fostered by the incentive. Students agreed that when the task duration was short that cooperation increased, and that coordination increased as the time for the completion of the goal approached. The lecturers seemed to organise the task but not the roles of persons in the groups nor did the lecturers assess the individual contribution. This seemed to lead to diffusion of responsibility as the biggest problem for the students. There seemed to be little staff organisation to increase individual accountability which might have decreased the impact of the diffusion of responsibility. The goal of the group experience seemed to differ

from unit to unit. Often there seemed to be multiple goals. The cooperative goal was not clearly stated but the students seemed able, never-the-less, to perceive the cooperative goal and felt that it was relevant even if not always achievable. Lecturers, especially in Community Counselling, were more optimistic than students about the achievement of the goals. The criteria for success and the desired behaviours for cooperation were not clearly articulated.

Supervision and structure of group experiences

Most work took place outside the class time and therefore outside of direct supervision of the lecturers. From comments made by students in the in-depth surveys, it would seem that greater monitoring of the group performance may have resulted in fewer social problems. Lecturers may have needed to intervene to teach more cooperative skills. How this would have affected the (content) learning outcomes is not known. From the reports in the literature the group size seemed

to be optimal as did most of the length of the group experience.

Groups chosen by friendship groups do not maximise the heterogeneity of the group. However, we have no evidence if groups chosen by topic were more heterogeneous than groups chosen by friendship.

In terms of previous group experience and theory, most students felt that they had been prepared. However, the linking of the preparation to the practice seemed tenuous at the most.

There seemed little difference in student responses in graded and ungraded units, with the exception that the hostility over time seemed to be less in the ungraded units.

Lecturers reported many dilemmas because of the assessment and the difficulties in mixings cooperative and competitive system in an adult learning environment.

One of the most positive results, however, is that even with all these difficulties over half of the students found the group experience provided them with positive outcomes which could be classified as cooperative. It would seem that despite stated difficulties students valued what they had learnt. The survey did not ask students what they needed or wanted to learn from the group project, but focused on staff goals, expectations and management of the assessment process. Therefore we have no specific information on whether students needs were met.

Major problem from students point of view diffusion of responsibility and the current structure provides little or overcome such diffusion.

Researching the Next Stage

The conclusions which have emerged have provided two different action paths:

- The first involves working with our peers. In reporting back to our teaching team and to the academic staff the need emerged for lecturers to share their experiences and needs in working with groups. A workshop is planned which will enable lecturers to work together to clarify goals and outcomes for their units where students work in groups, to examine options for structuring their group work and the assessment of student outcomes.
- The second action involves working with our own students in managing their group project work more effectively. In one unit this modification of practice began when students were presented with the results of our analysis. The students engaged in a wide ranging discussion on the implications of our findings for their group work.

The lecturer and students discussed goals and expected outcomes, the options for monitoring and assessing their progress and negotiating

changes to the way the group work was structured.

We continue to examine the use, place and efficacy of group work in university teaching and in line with action research, this project is evolving and may continue in varied directions.

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