

Assessed Group Work: Staff and Student Perspectives

Donald Joyce

Unitec New Zealand

djoyce@unitec.ac.nz

Shirley Elliot

Unitec New Zealand

selliott@unitec.ac.nz

Abstract

Most degree and diploma computing students at Unitec have to complete group assignments as part of their assessment. After receiving some negative feedback from small numbers of staff and students, the authors conducted a survey to identify whether these views are widely shared and to help determine appropriate guidelines for assessed group work. The results are reported in this paper.

Keywords: assessment, group work, staff, students

1 Introduction

The advisory committees for the School of Computing and Information Technology at Unitec have always supported the use of assessed group work in our programmes, arguing that industry needs team players. This view is endorsed by most lecturing staff; for example Blackshaw and Latu (2005) note that “one of the driving forces behind the design and assessment of group work has been the need to expose, familiarise and equip students with the skills that they must possess to combat real world situations ... the ability to work as part of a team is one of the prerequisites for securing employment in the computing industry.”

However, two programme reviews and several monitor’s reports have highlighted issues concerning assessment of group work. Each time the views reported have been those expressed by a small minority of staff or students. As part of a review of our policy concerning assessment of group work, we decided to gather views more widely by surveying staff and students. In this paper we summarise the views expressed in their responses.

2 Background

The School of Computing and Information Technology at Unitec uses assessed group work in the Bachelor of Computing Systems (BCS), Graduate Diploma in Computing (GradDipComp) and Master of Computing (MComp) programmes. For example, BCS has a capstone industry project and most projects are undertaken by teams of two to four students. Until this year, the MComp programme committee has required that all level 8 MComp courses have at least one group assignment and at least one individual assignment (Joyce, 2001).

This quality assured paper appeared at the 20th Annual Conference of the National Advisory Committee on Computing Qualifications (NACCQ 2007), Nelson, New Zealand. Samuel Mann and Noel Bridgeman (Eds). Reproduction for academic, not-for profit purposes permitted provided this text is included. www.naccq.ac.nz

3 Methodology

Questionnaires were sent to 24 staff and 288 students involved in BCS, GradDipComp and MComp courses at levels 5 to 9. We received 86 responses (from 14 staff and 72 students). The questionnaires were designed so we could compare staff and student views and see if the views varied between groups of students. Thus questions 3 to 9 in the staff questionnaire (Appendix 1) are identical with questions 7 to 13 in the student questionnaire (Appendix 2). Responses were recorded in Excel then summarised for presentation in tabular form.

4 Staff Perspectives

Table 1 summarises the responses of the 14 lecturers who completed questionnaires. The numbers indicate how many staff made that response (not all respondents answered every question and some questions allowed multiple responses, see Appendix 1).

Three staff do not set group work assignments. Of those who do, four stated that it was a requirement of the programme and one mentioned “advice from advisory committee”. Otherwise, the most common reasons given for using assessed group work were to prepare students for “the real world” and enhance their learning and/or skills (communication, negotiation and teamwork). Some staff noted that students could tackle bigger or more challenging or more complex tasks in groups and would be exposed to different ideas and perspectives. Nearly half of the staff noted that using group assignments could result in less marking and one expressed a strong view that this was not a good reason. One staff member liked nothing about group work. The dislikes focussed on problems concerning different expectations, individual contributions and group dynamics. One staff member did not think that “our group work simulates team work in the workplace”.

The great majority of staff (11 out of 13 responses) thought that the marks awarded should reflect individual contributions and that there should be an upper limit (between 25% and 50%, with a mode of 50% and a mean of about 44%) on the percentage of assessed group work in an individual course. A smaller majority (8 out of 11 responses) held the view that there should be an upper limit (between 10% and 50%, with a mode of 40% and a mean of about 34%) on the percentage of assessed group work in a degree or diploma.

Opinions about the best size for a group varied, with nearly all responses in the range two to four and a mode of three. Several staff pointed out that smaller groups could have problems with disagreements or dominance and that larger groups could run into co-ordination problems. Three staff stated that the best group size depends on the level and/or task. The great majority of staff (13 out of 14 responses)

were of the opinion that students should have some say in forming groups, and many of them observed that students would know better which class mates would be compatible group members. Two noted that the lecturer could ensure the appropriate mix of skills.

Table 1: Summary of staff responses

Question	Response
Programme	12 BCS, 4 GradDipComp, 4 MComp
Reasons	5 advisory committee / requirement, 4 allows setting of big /complex tasks, 10 learning / skills / team work, 4 realism
Likes	2 challenging task / deeper result, 3 different perspectives / share ideas, 7 learning / helps students / skills, 7 less marking
Dislikes	10 group problems, 9 identifying contributions
Should marks reflect contributions	11 yes, 2 no
Upper limit on percentage in course	11 yes, 2 no
Upper limit on percentage in degree/diploma	8 yes, 3 no
Best size for a group	1 eight, 2 four, 4 three, 1 two-seven, 2 two-four, 3 two/three, 1 two
Groups chosen by lecturer or students	2 both, 3 lecturer (lower levels or 1 st time) & students (higher levels or 2 nd time), 1 random draw, 8 students

5 Student Perspectives

Table 2 summarises the responses of the 72 students who completed questionnaires. The numbers indicate how many students made that response (not all respondents answered every question and some questions allowed multiple responses, see Appendix 2).

We note that females, EFL students (those with English as their first language) and MComp students were over-represented among the respondents. A majority of students (38 out of 69 responses) stated that their grades for group assignments were about same as their grades for individual assignments, but nearly a third stated that their grades for group assignments were lower. The most common reasons given for liking assessed group work were sharing and discussing ideas, realism, team work, learning, and

developing skills. Four students liked nothing about group work. The most common reasons given for disliking assessed group work were variable contributions and unfair grades, co-ordination problems, and different expectations or ideas. One thought it was unrealistic.

Table 2: Summary of student responses

Gender	20 Female, 51 Male
First language	17 Chinese, 36 English, 6 Indian, 13 Other
Age	22 21-24, 11 25-29, 20 30-39, 9 40-49, 6 50 plus
Programme	37 BCS, 9 GradDipComp, 35 MComp
Grades compared to individual assignments	4 higher, 38 about same, 6 variable, 21 lower
Likes	3 big / challenging tasks, 27 learning / skills / team work, 10 discussions / diversity 2 less work, 7 motivation / social, 10 realism, 41 help each other / share ideas
Dislikes	23 co-ordination / integrating, 15 different expectations / ideas, 7 group problems, 14 unfair grades, 39 variable contributions
Marks reflect individual contributions	48 yes, 6 depends, 18 no
Upper limit on percentage in course	52 yes, 7 no
Upper limit on percentage in degree/diploma	54 yes, 9 no
Best size for a group	1 five, 1 four-six, 5 four, 1 three-five, 7 three/four, 20 three, 1 two-four, 16 two/three, 11 two
Groups chosen by lecturer or students	18 both, 4 either, 14 lecturer, 34 students

A clear majority of students (two-thirds of responses) believed that the marks awarded should reflect individual contributions and the great majority (more than 80% of responses) thought that there should be upper limits (between 0% and 80%, with modes of 30% and means of about 32%, both lower than those for staff) on the percentage of assessed group work in an individual course and in a degree or diploma.

As with the staff, opinions about the best size for a group varied, with nearly all responses in the range two to four and a mode of three. Several students noted that smaller groups could experience difficulties with disagreements or dominance and that it could be hard to co-ordinate, or reach agreement in, larger groups. A clear majority of students (52 out of 68 responses) held the view that students should have some say in forming groups. Many of them observed that students would know better which class mates would be compatible group members. A small minority thought that lecturers would know how to balance the students' skills. We note that the opinions expressed by our students are quite similar to those reported by Drury, Kay and Losberg (2003), who used focus groups as well as questionnaires.

6 Issues Identified

Group formation

Various approaches to group formation have been suggested (see Fincher, Petre, & Clark, 2001), including student selection and lecturer guidance. Joyce (2001) found that most MComp students preferred to form their own groups after they had had a chance to get to know each other's strengths and weaknesses. Blackshaw and Latu (2005) concluded that "while students preferred to put themselves into groups, teachers should be involved and give students guidance about the capability of each individual student and the various skills that are needed to complete group activities." As noted above, most staff and students who responded to the survey held the view that students should have some say in forming groups. In fact majorities of staff (8 out of 14) and students (26 out of 46 responses) thought groups should be chosen by students alone.

Group management

When many students undertake paid work and some are geographically distant, considerable use is made of electronic communication (chat rooms, discussion boards, email and telephone) in managing the group work process. Occasionally the lecturer may get involved when a group shows signs of behaving in a dysfunctional manner. In one particularly difficult case the Programme Director and the Head of School were also called in to adjudicate (Joyce, 2001). A clear majority of staff who responded to the survey (9 out of 14) identified group management problems as an aspect of assessed group work that they disliked. Similarly, nearly a quarter of the students who responded to the survey had experienced difficulties with group co-ordination.

Assessment

Issues concerning assessing the contributions made by individuals to a group assessment item have been widely discussed for many years (Comins, Fitzgibbon & Boersen, 1999; Lejk, Wyvill, & Farrow, 2001; Parsons & Kassabova, 2002; Verhaart, Hagen & Giles, 2006). Blackshaw and Latu (2005) noted that "teachers were not considered by students as the experts in assessing group work because they did not know much about the contribution made by individual members of the group" and recommended that "self evaluation, peer assessment and individual assessment techniques should be used when assessing group work." Clear majorities of staff and students thought that assessed group work should comprise no more than 50% of the assessment for a course or degree or diploma and that the marks awarded should reflect individual contributions.

At level 8, when submitting an assessment item that is the result of group work, the students in the group are offered three options:

- agreeing that all group members receive the same mark,
- agreeing "zero-sum" mark variations for group members
- completing self and peer evaluations.

As noted by Joyce (2001), most groups choose the first option, a few have chosen the second option and only one group has ever chosen the third option. If all students in a group choose the first option they are given the same mark, unless the instructor has evidence that their contributions were significantly unequal. If all students in a group choose the second option the variations must sum to zero and are usually 5% or 10% (for example, if an assignment completed by three students is worth 64% and the variations are +10, 0 and -10, the students will score 74%, 64% and 54% respectively). If all students in a group choose the third option, or if they cannot agree on any option, the instructor awards grades based on the students' self and peer evaluations and any other available evidence.

Several students commented in their survey responses that group members were usually reluctant to select the second or third options, because of the possible negative impact on course grades. However, on an earlier occasion one group admitted that they had deliberately used the second option in such a way that one group member obtained a better course grade without affecting the grades of the other group members!

7 Conclusions

The survey indicates that most staff and students consider that assessed group work has both benefits and drawbacks. They want the weight that is placed on assessed group work to be limited and the marks awarded to reflect individual contributions. They prefer students to choose their own groups possibly with some guidance from staff.

The survey results are being taken into account in reviewing the school's assessment policy. As a trial in semester 1 2007, two of the four elective MComp courses

have no group assignments. Also two of the four MComp compulsory courses have two individual assignments and a group assignment in which tasks will be allocated to individual members who will be marked on the tasks that they complete (there may be some tasks that they share the marks for). The proportion of assessed group work in the other five MComp courses ranges from 15% to 40%.

The authors intend to drill deeper into the data in order to see whether student views varied between groups (e.g. female/male, EAL/EFL, younger/older, high achiever/low achiever, undergraduate/postgraduate). A comparison can then be made with the results reported by Drury et al. (2003)

8 References

- Blackshaw, B. and Latu, S. (2005): Group work and group work assessment for computer courses: A systems analysis and design case study. *Proc. 16th Australasian Conference on Information Systems*, Sydney, Australia.
- Comins, N., Fitzgibbon, P. and Boersen, R. (1999): The development of a peer marking system for group assignments. *New Zealand Journal of Applied Computing and Information Technology* 3(1):23-30.
- Drury, H., Kay, J. and Losberg, W. (2003): Student satisfaction with groupwork in undergraduate computer science: Do things get better?. In T. Greening and R. Lister (Eds.) *Conferences on Research and Practice in Information Technology*, (Vol. 20, pp. 77-85). Canberra: Australian Computer Society.
- Fincher, S., Petre, M. and Clark, M. (eds.) (2001): *Computer science project work: Principles and pragmatics*. London, Springer.
- Joyce, D. (2001): Managing and assessing group work at postgraduate level. *Proc. 14th Annual Conference of the National Advisory Committee on Computing Qualifications*, Napier, New Zealand, 307-310, NACCQ.
- Lejk, M., Wyvill, M. and Farrow, S. (2001): Group learning and group assessment on undergraduate computing courses in higher education in the UK: Results of a survey. *Assessment and Evaluation in Higher Education*, 22,1,81-91.
- Parsons, D. & Kassabova, D. (2002): Group work and fair assessment: A case study. *Proc. 15th Annual Conference of the National Advisory Committee on Computing Qualifications*, Hamilton, New Zealand, 341 – 347, NACCQ.
- Verhaart, M., Hagen, K. and Giles, O. (2006): A comparison of two assessment methods used to evaluate an individual's performance in group work. *New Zealand Journal of Applied Computing and Information Technology* 10(1):89-99.

Appendix 1

Staff Questionnaire

1. Where have you used assessed group work?
BCS GradDipComp MComp Other (please specify)
2. Why do you use assessed group work?
3. What do you like about assessed group work and why?
4. What do you dislike about assessed group work and why?
5. Should group members' marks reflect their individual contributions? Why / why not?
6. Should there be an upper limit on the percentage of assessed group work in an individual course? If so, what?
7. Should there be an upper limit on the percentage of assessed group work in a degree/diploma? If so, what?
8. What is the best size for a group? Why?
9. Should the groups be chosen by the lecturer or by the students? Why?

Appendix 2

Student Questionnaire

1. What is your gender?
2. What is your first language?
3. What is your age?
17-20 21-24 25-29 30-39 40-49 50 plus
4. Where have you experienced assessed group work ?
BCS GradDipComp MComp Other (please specify)
5. Your usual grade for individual assignments is?
C- to C+ B- to B+ A- to A+
6. Are the grades you get for group assignments usually higher than the grades you get for individual assignments? same as the grades you get for individual assignments? lower than the grades you get for individual assignments?
7. What do you like about assessed group work and why?
8. What do you dislike about assessed group work and why?
9. Should group members' marks reflect their individual contributions? Why / why not?
10. Should there be an upper limit on the percentage of assessed group work in an individual course? If so, what?
11. Should there be an upper limit on the percentage of assessed group work in a degree/diploma? If so, what?
12. What is the best size for a group? Why?
13. Should the groups be chosen by the lecturer or by the students? Why?