



Baccalaureate nursing students' perceptions of peer assessment of individual contributions to a group project: A case study

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SUMMARY

A group project is a common method of assessment in higher education worldwide. The use of an adjunct peer assessment (PA) scheme as a means to award marks for individual student contributions to a group project has increased. However, nursing students' perceptions of PA have not been well studied. This paper examines baccalaureate nursing students' perceptions of PA in assessing individual contributions to a group project. Using a case study design with both quantitative (an anonymous survey with 123 students), and qualitative methods (six focus group interviews with 21 students), data were collected from students in a baccalaureate nursing programme. Merging of quantitative and qualitative findings indicated that students overall had positive perceptions of PA, especially its ability to reduce 'free-riding'. However, students also had some interpersonal and operational concerns about the PA implementation process. Based on the findings, we recommend: (1) further developing students' abilities to assess the contributions of others to the task and relationship functions in group work; and (2) adopting a confidential online system for submission of PA forms.

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Introduction

A group project is an important method of learning in higher education (Morris, 2001; Mellor, 2009). However, assessment of group projects can be complex, involving, for example, the debate on the fairness of awarding the same group mark to all students within the group (Barfield, 2003; Kennedy, 2005; Nordberg, 2008). Peer assessment (PA) has been increasingly applied as an adjunct to group projects in order to award marks for individual student contributions to group projects (Johnston and Miles, 2004; Nordberg, 2008). It is commonly used in nursing education; however, little is known about nursing students' perceptions of PA. This paper examines baccalaureate nursing students' perceptions of PA in assessing individual contributions to a group project.

Background

A group project is a common method of learning in higher education (Morris, 2001; Mellor, 2009). It is useful in assessing learning outcomes that demand pooling of student resources, achieving shared learning and developing teamwork (Barfield, 2003; Donnan et al., 2008). It can be summative or formative, and

in either written or oral format. However, group projects have their limitations. From a student perspective, there may be some individuals who do not contribute much to the project, causing concern about the fairness of awarding a single mark to everyone in the same group (Barfield, 2003). From the examination panel perspective, group project assessment has difficulties in meeting the expectation of grades being awarded to reflect individual achievement (Cheng and Warren, 2000; Donnan et al., 2008).

The literature has suggested that these limitations can be addressed by adopting an adjunct PA scheme to assess individual contributions to group projects (Johnston and Miles, 2004; Knight, 2004; Roberts, 2006; Willis et al., 2002). Research shows that in terms of measuring the relative contribution of individuals to a group project, students in the group are the most relevant assessors (Johnston and Miles, 2004; Nordberg, 2008; Zhang et al., 2008). In this application of PA, students assess each other's contribution to achieving the group project tasks and fulfilling the learning outcomes (Roberts, 2006). The tasks include, for example, contributing ideas (Cheng and Warren, 2000), literature review (Cheng and Warren, 2000; Johnston and Miles, 2004), project management (Johnston and Miles, 2004), and project presentation (Cheng and Warren, 2000). In the literature, this application of PA is sometimes called 'intra-PA' (Saito and Fujita, 2009) or 'participative assessment' (Papinczak et al., 2007). The literature indicates that PA always impacts positively upon the learning process (Morris, 2001). PA can be effective in increasing students' sense of responsibility, their ability to work as a team and shared learning among team members (Johnston and Miles, 2004;

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Roberts, 2006). These are regarded as higher order skills, which can be transferred to the future workplace (Creemers and Scheerens, 1994).

While the extant literature reports the positive aspects of adopting PA in teaching and learning activities, it also reports challenges such as unfair student assessments, unclear assessment criteria and insufficient confidentiality (Hanrahan and Isaacs, 2001). Although the initial purpose of introducing PA to group projects is to enable a fair reflection of individual contributions, students often doubt the fairness of the PA rating system (Arnold et al., 2005; Hanrahan and Isaacs, 2001; Kennedy, 2005; Papinczak et al., 2007; Vu and Dall'Alba, 2007). For instance, some students may reward marks to peers based simply on friendship or personal impression. In addition, research shows that very often students are not provided with clear guidelines on PA, hampering their ability to accurately judge the contribution of their peers (Bain, 2009; Mills, 2003; Raban and Litchfield, 2007; Vu and Dall'Alba, 2007). Finally, confidentiality is a major concern. Research shows that students avoid giving extreme PA ratings to 'free-riders' (those people who do not contribute individually to the group project) when they perceive their confidentiality is not being protected (Papinczak et al., 2007).

Since 1995, a nursing school of a university in Hong Kong has offered a four-year bachelor of nursing programme. Graduates are highly regarded as professional nurses and team members by their employers, as shown by in-house employer surveys. One of the expected learning outcomes of the programme is that students will demonstrate effective communication with their peers and engage in teamwork to coordinate care. As part of this learning outcome, group projects have been employed as one of the programme's assessment methods. Students conduct one to two group projects in each academic year of the programme. Since 2008, PA has been adopted as an adjunct to group projects, in order to weigh the group project mark so each student receives a PA-adjusted individual mark that reflects the student's contribution to the group project.

The PA scheme employed in the programme involves the following procedures. At the beginning of each academic term, students receive the guidelines on PA, which explain the rationale of adopting the PA scheme and the PA criteria, which generally include (i) the literature search process, (ii) contributing ideas on the project, (iii) combining the individual work, and (iv) completing the final project. Six to eight students form the project group on their own accord. A group leader, nominated by group members, is responsible for submission of the final group project along with the PA rating forms collected in sealed envelopes from members. Upon completing the project, each student assesses their peers on a given PA rating form using a six-point rating scale, with '0' and '5' indicating nil and outstanding contribution respectively. Students award a single rating to each group member but do not rate themselves. Each student then receives a PA-adjusted individual mark for the project, which is the product of the group mark weighed by the PA ratings. A statistical model has been established, with the support of educational experts from the university, so that the PA-adjusted individual mark is within 10% of the group project mark. Table 1 displays the PA-adjusted individual mark of a sample group. The weighting percentage of within 10% of the group mark was set after consultations with teaching staff, alumni and education experts. The mark awarded to each student in the same project group is adjusted upward or downward according to the student's relative contribution to the group project, as compared with the average contribution of members in the group. Such an approach to PA with varying percentages (10–50%) has been described in previous studies (Cheng and Warren, 2000; Kilic and Cakan, 2006; Sharp, 2006).

The adjunct PA scheme was implemented in the school in 2008. While continuous student feedback has been collected from course-specific evaluations, it was considered appropriate to conduct a systematic examination of the PA scheme for two aims: (i) to examine

Table 1

The peer assessment-adjusted individual mark of a sample group.

	PA rating scores given by				Individual effort rating	Total rating	Group project mark	PA-adjusted individual mark ^a
	A	B	C	D				
Student A	/	4	4	4	4.00	15.33	75	75.33
Student B	5	/	4	5	4.67			76.64
Student C	3	3	/	4	3.33			74.02
Student D	3	3	4	/	3.33			74.02

^a The statistical model: PA-adjusted individual mark = group project mark – (group project mark * 10%) + ((group project mark * 10% * number of members in the group) * (individual effort rating/total rating)). Total rating = sum of all individual effort rating.

student perceptions of the PA scheme; and (ii) to identify areas for further refinement.

Methods

A case study design was adopted to collect both quantitative and qualitative data about students' perceptions of PA. Soliciting multiple sources of data in a real-life context can give a more in-depth understanding of students' experiences and perceptions (Yin, 2003). In the quantitative study, an anonymous survey with a 3-section questionnaire was conducted with Years 3 and 4 students using total population sampling. These two years were selected because students in these years would have experience doing group projects before and after the PA scheme was adopted. The first section of the questionnaire collected demographical information (age and sex). The second section collected information on the following: (i) students' satisfaction level with PA; (ii) students' agreement with three intended outcomes of PA (avoiding 'free-riders', achieving fairness in the PA rating, and improving the quality of teamwork); and (iii) students' opinions on the appropriate weighting percentage of PA (options given were 10%, 20%, and other). The last section of the questionnaire included two open-ended questions regarding the strength of the PA scheme and areas for improvement.

Along with the questionnaire, an information sheet was sent to the students to explain the purpose of the study, confidentiality of personal data, and the students' rights to refuse or withdraw participation without any impact on their academic studies. Consent was implied when the students returned the completed questionnaires. A total of 123 questionnaires were collected, giving a response rate of 40%. The sample's mean age was 22 (SD = 2) years. 82% were female students, reflecting the current female-to-male ratio in the programme.

In the qualitative study, focus group interviews of students were used to further illuminate the questionnaire findings. Six focus group interviews were conducted using purposive sampling to recruit students who were high and low achievers (three groups each, N = 21 students) according to their accumulated grades. A semi-structured interview guide was developed to explore student perceptions. To avoid obtaining socially desirable data, the interviewers, educational experts of the university, were neutral observers from outside the school. The interviews were conducted in a private room at a time convenient to the students being interviewed. Prior to the interviews, all participants were given the information sheet again. Consent was implied when the students arrived for the interviews.

Quantitative data were analysed using descriptive statistics with SPSS version 16. Students' answers to the open-ended survey questions and in the focus group interviews were analysed using thematic content analysis. In line with the case study design, the data obtained from both the quantitative and qualitative components were

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