

Implementing Peer Assessment to Improve Teaching and Learning

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Abstract

The paper describes several cycles of action research on the use of peer assessment in higher education. Two forms of peer assessment were introduced into several subjects taught in the department of Education Studies at the Hong Kong Baptist University. These forms consisted of an assessment of individual contribution to a group project and of an assessment of group presentations. Student reaction to the peer assessment was solicited by means of a questionnaire and semi-structured interviews. Students were asked to comment on the appropriateness of the method, its fairness and the way it was implemented. They were also requested to suggest ways for improving the method. Students who participated in peer assessment more than one time were asked whether they felt more confident doing it again. The students' feedback and recommendations were considered during the reflection phase of each cycle and changes were made accordingly. Results showed an overall acceptance of the method. Students found peer assessment to be an appropriate method for their studies. Suggestions made by students referred to various aspects which could affect the use of the method such as the group size and the criteria for assessment. In addition, there was an increase in the students' favourable attitudes and confidence as their experience in peer assessment increased. Students participating in the method for the second time were found to be more confident in assessing their fellow students. Results are discussed in light of the importance of using peer assessment as a channel for developing student critical thinking and self-direction. Recommendations are made to further examine the use of the method in different groups of students to best utilise its benefits for student learning and future development.

Introduction

Assessment of students by their peers can bring some benefits to the students involved. Through their assessment of others' work, students can be exposed to a range of answers to problems (Gibbs, Habeshaw and Habeshaw, 1986) and can become more critical in the way they appraise others (Jacques, 1984). Students' involvement in the assessment procedure may also shift their role from passive recipients to more self-directed learners (Knowles, 1990). Previous research into the use of peer assessment in higher education indicated that peer assessment is both valid and reliable, especially in terms of student marking (Sivan, Yan and Kember, 1995). Further recommendations were made in this research to adopt peer assessment in a wider variety of settings and to examine students' reactions to its introduction.

Based on the above recommendations, the method of peer assessment was introduced in two subjects which are taught in a post graduate studies programme. The present report describes two cycles of the implementation of the method. Both the methodology and results of the study are presented in the form of the four stages of an action learning cycle. As part of the reflection phase, the paper discusses some of the major findings of the study and describes future plans.

Methodology

First Cycle

The description of the action learning project on peer assessment starts from an initial reflection explaining the underlying reasons for implementing this method.

Initial Reflection

The importance of developing student self reliance and critical appraisal skills were the underlying reasons for implementing peer assessment. In the specific context where the method was introduced, all students were teachers studying in the Postgraduate Diploma in Education Course offered by the Department of Education Studies at the Hong Kong Baptist University. The use of peer assessment aimed at encouraging their active participation in the learning process as well as facilitating the reflective aspect of assessment.

Plan

Plans were made to introduce peer assessment into one of the subjects taught in the Postgraduate Diploma in Education Course. The assessment of this subject comprised two components: course work (60%) and a term paper (40%). A decision was made to introduce peer assessment in the course work component which involved a group project.

Act

In the first cycle, the method of peer assessment was introduced in the subject of 'Curriculum Studies', which is a common core subject offered to all students in the first semester of the second year of their Postgraduate Diploma in Education Course. Two forms of peer assessment were introduced.

Students were required to write a project in groups of three to five and present it to the class. In the first form of assessment, students assessed the overall performance of each group in the presentation. In the second form of assessment, students within each group assessed the contribution of their fellow students to both the written work and the oral presentation. Based on the contribution ratings, the mark of each individual student was then calculated using a method which was developed by Goldfinch and Raeside (1990) and later simplified and improved by Conway, Kember, Sivan and Wu (1993). Both forms of assessment were based on a set of criteria using a five point Likert scale ranging from 'outstanding' to 'poor'.

Students were asked to assess their groupmates and classmates based on criteria which were set by the lecturer. Each student was given two separate forms. The criteria set for the assessment within each group referred to the level of participation of the individual in six different tasks. These included the summary of each individual's work, organisation and combination of the individuals' work, writing the combined group paper, producing a clear explanation in the written description, organisation of the presentation and contribution to the presentation. Students were also given the option to add or substitute tasks which they felt were important for their project.

The criteria for assessing the groups' presentations referred to the content and context of the presentation. The criteria were established based on the themes on which students were asked to write their project. In this specific case, the themes related to reflection on an existing syllabus with which students were familiarised. Students were asked to evaluate the syllabus in terms of its aims and objectives and factors affecting its development. Five criteria related to the content of the presentation and three criteria related to the context of the presentation. Concerning the context of the presentation, students were asked to assess the presentation in terms of its clarity, how interesting it was and also the extent to which they understood the material.

The form for assessing the contribution of an individual to the group project was distributed to students. They were requested to return this form together with their written projects. To maintain confidentiality, students were given the option to submit the completed form directly to the lecturer. The assessment of each group's presentation took place immediately after the presentation.

Observe

The students' feedback on the peer assessment was examined by means of both questionnaires and semi-structured interviews. The following section is a detailed description of the observation strategies employed to solicit student comments on the method of peer assessment.

Questionnaire

A closed questionnaire was used to solicit the students' reaction to the method. It comprised eight statements on the clarity of the forms of assessment, the appropriateness of the method and its fairness. Students responded to the statements on a five point Likert-type scale ranging from 'definitely agree' to 'definitely disagree'. The questionnaire also included an additional question on previous participation in peer assessment and an open-ended question about students' views of the peer assessment method in general. Students were asked to complete the questionnaire.

Interviews

Nineteen students were interviewed to shed more light on the appropriateness and fairness of the method, to solicit their views on the strategies of implementation and to obtain their suggestions for improvement. Participation in the interviews was on a voluntary basis. All interviews were individually held and were conducted by a trained interviewer.

Results of the questionnaire were analysed using the SPSS Statistical Package (SPSS, 1990.) The interviews were transcribed and the transcripts were analysed using the Nudist qualitative analysis package (Microsoft, Macintosh Aladdin Systems Inc., Raymond Lau, Los Aptos, 1994).

Reflect

The overall return of the questionnaire was 39 out of 50 (78%) in the first cycle and 28 out of 29 (96.6%) in the second cycle.

Analysis of the data gathered through the questionnaire showed that overall students accepted the method and thought that they should play part in the assessment. Students also regarded the method as fair, especially the form of assessment of the contribution of the individual to the group work. Figure 1 shows the mean response to each of the statements of the questionnaire.

Answers to the open ended question supported the students' positive views on the method. Of those who participated in the first cycle, 71.8% had experienced peer assessment before.

Interviews

The follow up interviews held with the students provided an extensive picture about their views of the method and its implementation. The majority of the students agreed in principle with the method and supported its implementation. They regarded it as objective, fair and a good mechanism to motivate all students to contribute to group work.

I certainly appreciate peer assessment. I appreciate the concept and the spirit in assessing others. And, I think peer assessment can in some ways assess the student's performance more effectively and objectively and not only from the teacher's point of view.

peer assessment to me is only an additional tool to supplement any defect or drawback of what we have done. For example, what the lecturer cannot see is how much every member has contributed, so we give the lecturer another small bit of the picture

I think it is good to make the individual work harder and contribute to the group work and not to harm the whole presentation of the group.

Although most of the students generally supported peer assessment, some raised concerns with regard to their ability to assess their fellow students, pointing out that they were not professional. These comments were made mainly by students who participated in peer assessment for the first time. In addition, those students expressed their concern that the objectivity of their assessment of others may have been affected by personal relationships with their fellow students.

In my opinion, sometimes that may be a concern if those in my group are my friends. I even know that I may tend to give them higher marks. But for those that I don't know, well, I may be a little bit more objective.

Students indicated that some practical problems existed in the application of the method. These were included the insufficient time allocated for group presentation and the size of the group which was regarded as too small:

In general, I think that the method of peer assessment is quite fair, but its function is quite limited for a small group size...it is much better if the group size is bigger. For example, if the group has about six to even eight members, each member of the group will have a more objective opinion to the other group members because the sample size is greater.

Several suggestions were made concerning the ranking procedure and the use of certain criteria:

Maybe give a mark total rather than a mark on every criterion, because everyone's strength is different.

I think that the criteria could be developed with the students, although it will depend on the maturity of the students.

Second Cycle

Plan

Students' suggestions were considered in the second cycle of action learning. Plans were made to involve students in setting the criteria for the peer assessment and to enlarge the group size.

Act

The second cycle was held during the second semester in the elective subject of 'Effective Communication', which was attended by some students who participated in the first cycle. In this cycle students were briefed on the method and two sessions were dedicated to establishing the criteria. The lecturer shared with the students the previous experience of peer assessment including student feedback and solicited their views on setting the criteria for assessing their classmates. After brainstorming in class, the students arrived at an agreeable set of criteria for assessing the group presentations. The criteria set by the students included the organisation of the presentation and its relevance to the theme under investigation and to the teacher's job. Clarity, interaction, time-keeping and presenting in an interesting way were also criteria set by the students.

As for the group size, students could form groups with no limit to the size. As a result, there was one group which consisted of six members.

Observe

Both the questionnaire and interviews were used to evaluate the second cycle of implementing the peer assessment.

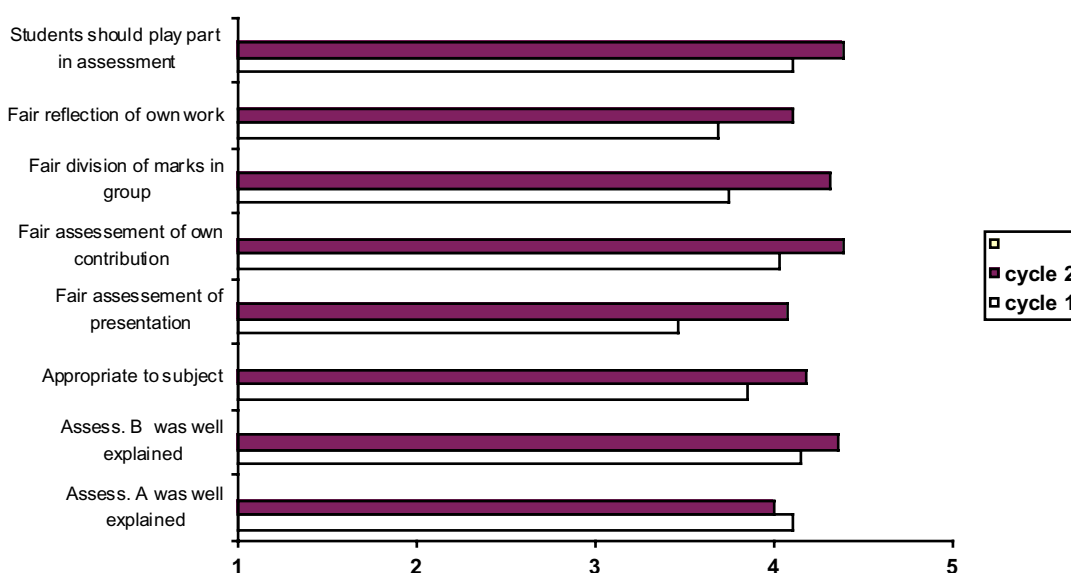
Reflect

Questionnaire

The overall return of the questionnaire was 28 out of 29 (96.6%) in the second cycle.

Data gathered through the questionnaire showed an increase in the mean response to almost all the statements. Figure 1 shows the mean response to the statements on peer assessment in the two cycles. Of those who participated in the second cycle, 89.3% had experienced peer assessment before. This rate was higher than that of students in the first cycle.

Figure 1: Student feedback on the peer assessment



Interviews

Student feedback, which was solicited through interviews, suggested that the involvement of students in establishing the criteria for their own assessment was highly appreciated by the students. Comments made by students who participated in both cycles highlighted the implications of involving them in setting the criteria for assessment:

Last time most of the criteria were set by the lecturer and this time, the lecturer invited us to set the criteria by ourselves. This is the major difference, because we can voice out our opinions, which in a sense is good for us.

I think I am more familiar with the criteria and what is going on...when we prepared our presentation, we knew exactly what our presentation should be like, which helps make our work easier.

If the lecturer himself set the criteria, maybe there are some occasions in which one or two members do not agree with some of the criteria. If we all agree with some criteria and all accept it, then it is all right and makes the assessment more convincing.

One student suggested to have additional input from the lecturer to the criteria of assessment:

It is pretty good that the lecturer can add one or two criteria so that we can follow and think about what the lecturer requires us to do or to pay important attention to it. If the lecturer does not talk about the criteria, then we just set it by ourselves, perhaps the lecturer will somewhat disagree with what we want.

Reactions of students who participated in the two cycles of action learning suggested that their previous experience in the same forms of peer assessment during the first cycle increased their confidence in the method.

When I did it first time, I needed longer time to think about what grade I should give to this group. Besides, I worried a lot whether I gave a fair mark to others. However, I can do it quite quickly this time...The more you do, better you can do it.

Discussion

The above two cycles of action learning on the implementation of peer assessment showed that overall it was successful. In both cycles, students were found to be in favour of the method. When compared with results of the previous study where students had not participated in peer assessment before (Sivan, Yan and Kember, 1995), the current level of agreement among the students seemed to be much higher. This finding could imply that previous exposure to peer assessment may contribute to students' confidence in assessing their peers. Moreover, the increase in the favourite attitudes towards the method during the second cycle may be an indication of an increase in students' confidence through participating in the two specific forms of assessment used. However, this assumption needs to be further examined. The support given by the students who participated in the two cycles to the changes made in the strategies of implementation, especially to the establishment of the criteria, may have also contributed to the effectiveness of the method. The strategy of involving students in the development of the criteria for assessment can be an effective channel to develop their self-direction and thus improve both their learning and teaching.

As part of the reflection phase, results of the study were presented in various forums at both Faculty and University wide levels. The method is currently being used in several subjects taught in the Postgraduate Diploma and Master in Education Courses as well as at the undergraduate level. In the postgraduate courses, students are given the choice of developing their own criteria for assessment. The method has been approved by the University Course Accreditation and Review Committee as a recognised part of the assessment of the Postgraduate Diploma in Education Course. Student feedback on the method continues to be solicited with the intention to further observe and reflect on its contribution to teaching and learning in higher education.