Assessing Individual Contribution to a Group Project

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Abstract

Group projects are commonly used in tertiary education as a learning method and a form of assessment. The assessment of individual members contribution to the final product is however, difficult and several ways to assess the members’ contribution and to award individual grades to the group members have been reported in the literature. A method of assessing members’ contribution to a group project has been developed and used in the Bachelor of Science in physiotherapy course at the Hong Kong Polytechnic University since 1993. Students’ opinions about the procedure and appropriateness of the format have been sought by using a questionnaire. In 1996, a group of final year students involved in the group project were also interviewed.

The aim of this study was to find out whether the inclusion of the contribution marks to the final project marks made a difference to individual group members’ marks and to explore what were the students’ opinions about the self and peer marking procedure which was used to assess the team members’ contribution to a group project. At the same time questions were asked about the practice and assessment of a group project in general. The peer and self-marking was implemented twice in the course of the group work and the supervisor of each project group also marked the members’ participation. During the second session of peer and self-marking, the students were also asked to complete an opinion questionnaire seeking their views about the peer and self-marking. Seventeen students were then randomly selected and invited to face-to-face interviews, which were recorded on the audio-tape with the interviewee’s consent. General open-ended questions about the practice of group projects and the assessment of the project were asked first. More in-depth questions were asked about the practice and procedure of peer and self-assessment of group members’ contribution to the project. The interviews were transcribed and analysed by using NUD.IST software programme.

The result of the peer and self-assessment of members’ contribution to a group project and the participants’ opinions, obtained with the questionnaire and in the interviews, will be presented here.
Introduction

Working as a member of a team is an essential characteristic in many professions but this ability does not always develop naturally and should therefore be practised (Jacques, 1991). The cognitive abilities with emphasis on the development of transferable skills rather than specialist subject knowledge are often practised through group work. Group projects are commonly used in tertiary education to practise team-work. The objectives of group work depend on the context in which it is applied and therefore the assessment may take different formats. Most commonly a written project report compiled by the group, is assessed. The learning and contribution by individual students are therefore not known and cannot be assessed. If the group work is assessed for grading, it does not seem fair if all the members are awarded the same grade without considering their individual input. This has raised a need for alternative assessment models such as collaborative peer, self and tutor assessment (Falchikov, 1986). Apart from the actual report, members’ performance, individual students’ effort during project work and presentation may be assessed if it is relevant to the objectives of the task. The tutor or project supervisor who works with the group knows who is active in the tutorial sessions and may be able to assess individual members’ involvement during the tutorial meetings. However, students who are confident in verbal communication are often the ones who speak out in the tutorials but they may not be the ones who do the work. What actually goes on during the project work is known only to the students working in the group and therefore group members should be involved in the evaluation of their own as well as their peers’ effort and contribution.

Projects are often used as a learning as well as an assessment method in undergraduate courses. If the objectives are stated clearly, the assessment should be relatively simple and reflect the objectives (Working Party on Teaching Methods, 1975). The question arises though about what is assessed; students’ learning, self-efficiency, nature of evidence, that is, the report, team cohesiveness or the effort and time put into the work. The evaluation should be made not only against the teacher’s criteria but also against students’ own objectives (Boud and Falchikov, 1989).

In many undergraduate courses students engage in different kinds of group projects. One of the advantages of the group project as opposed to an individual one is that it gives an opportunity for students to work as a team for a period of time. When students conduct group projects, they usually allocate the tasks among the members. Whether the students work with partners or in a group co-operation is very important. This is one of the aims in undergraduate projects since in the real world people often work in teams to achieve common goals. The group members have to accommodate their own interest with that of the other members of the group, and compromise and negotiation skills are needed for smooth and effective group functioning. The students have to externalise their thinking and communicate with the group members effectively. Conway et al. (1993), reported that students in an optometry course at the Hong Kong Polytechnic University found group projects interesting and more effective than lectures for most aspects of learning. They claimed that group work made better use of resources in terms of equipment, space and supervisors’ time and therefore allowed for a wider scope for each project.

A disadvantage of the group project compared with an individual project is that it may allow the
less enthusiastic students to be carried along by their colleagues. It may also put an excessive pressure on the more able group members who feel that they have to shoulder the responsibility for the whole group. In the study by Conway et al. (1993), this was considered by the students to be the only significant negative element in the group work if everybody in the group is awarded the same mark.

Students are often required to submit an individual report on the whole project, but sometimes a group report is accepted. The assessment of the project report, whether it is produced by a group of students or an individual student, has its difficulties, since all the projects are different. Depending on the level of the course, objectives of the project work and the type of the project, different aspects in the assessment are emphasised. Often the individual students’ mark is the same as that awarded to a group report but this does not seem fair as was expressed by the students in the study of Conway et al. in 1993. The hard-working students do not receive the mark they deserve and the students who have not contributed much are rewarded for the work they have not necessarily done (Conway et al. 1993; Goldfinch and Raeside, 1990). In the case of a group report the contribution of the group members and the learning that has taken place during the process cannot be assessed objectively. Several attempts have been made to devise a scheme to award an individual mark to the group members.

Assessment of individual students’ input into the group work is difficult when the assessor is not able to follow the process and the working of the group and only the students know how much each has contributed. Despite the difficulties involved in conducting, supervising and assessing group projects they are seen to have great educational value.

**Assessment of group projects**

Assessment should match course objectives. Rowntree (1987) claims that one of the objectives in tertiary education is that the graduates are ready to take responsibility for their own actions. They should be able to evaluate their performance and outcomes and accept their colleagues’ criticism and approbation. He continues that tertiary education should give the students opportunities to develop criteria for assessing themselves and encourage them to make decisions based on this assessment because this will prepare students for life in which they are expected to have some control over their own destiny.

Boud (1991) professes that self-assessment is fundamental to all aspects of learning and must be an integral part of all learning activities. He adds that assessment by peers, staff, expert practitioners and others are essential in assisting learners to form sound judgements, but they are subordinate to self-assessment. He refers to self-assessment as a term, which includes a great variety of practices. It is much more than allocating marks or grades and is often entirely separated from the formal assessment of students. Self-assessment may be included in the procedures of formal assessment but it may also be used as a learning method alongside other course requirement. In Boud’s opinion students should be involved early in their course in formative assessment of their own and their peers work before they participate in the summative assessment so that they are familiar with the process. The use of self and peer assessment in formal assessment for grading is still a controversial issue.
Boud and Falchikov (1989) define self-assessment as the learner’s involvement in making judgements about their achievements and the outcomes of learning. Self-assessment includes the identification of criteria and the making of judgement about the extent to which these criteria have been met. Woods, Marshall and Hrymark (1988) say that mature self-assessment concern performance and not the person and could therefore be called self-performance assessment. Self-assessment is not just self marking or guessing what mark the lecturer will give. It is aimed at helping the student in developing the ability to monitor his/her progress in learning. Gibbs has said that if students are to learn to take some responsibility for their learning they have to be given responsibility of some aspects of assessment (Boud, 1991). In practice self-assessment often refers to the students’ marking of their work or contribution against teachers’ criteria (Elton and Gilbert, 1988).

To develop self-assessment skills, an alternative viewpoint provided by the peers may assist in setting realistic criteria. Thinking through the process of assessment and referring to the criteria gives an insight to the assessment process through peer assessment and will assist students in developing a reflective attitude to their own work. It is difficult for students to take the responsibility of their own assessment or the assessment of their peers work at once when they are used to having the criteria set and their work marked by their teachers. The process can be started step by step. Heron (1988) opines that an intermediary stage between traditional, unilateral assessment by lecturers and independent self-assessment by students themselves might make the process easier and more acceptable to all parties. He calls it “collaborative assessment” where students assess their own work according to the criteria agreed with the teacher. The teacher uses the same criteria and the final mark is then negotiated between them. He suggests that the collaborative assessment is incorporated with the peer assessment and argues that this model could be implemented quite quickly even in a system where most of the teachers are authoritative and where criteria have already been set. The students’ involvement and responsibility can first be increased by engaging them in setting the criteria for peer assessment and then using it for self-assessment. This may be less threatening for the students and would be easier to accept by the teachers.

Students’ self-assessment has been practised for more than fifty years and like any assessment procedure, it should meet certain criteria. It should be valid, reliable, fair, practical and useful to students (Percival and Ellington, 1984; Falchikov, 1986). There are studies reporting the reliability of student self grading of written work and some have shown that students can assess reliably their own and their peers’ work. Literature on self and peer assessment on students effort in project work is scarce.

A case study of peer and self marking of contribution to a group project

In the final year of the physiotherapy course at the Hong Kong Polytechnic University, students are required to undertake a group project. The aims of the project work are to further develop students’ knowledge and skills in the methods of inquiry and deepen their understanding in a subject area of professional studies. It is also important to practise working as a team for a period of time because that is a fundamental requirement in health care. The assessment should therefore
focus on these main objectives; how the students apply the methods of inquiry to researching a physiotherapy related topic and how they are working as effective teams where members have their own roles but in the end are able to provide a good group report of their work.

Small groups of three to six students with similar interests work together for about twelve months, starting in the second term of the second year of their studies. Each project group has a supervisor who is a member of the physiotherapy teaching staff. The supervisors suggest topics in the area of their expertise and interest and the students choose their own area of interest out of the proposed topics. They then discuss and negotiate the title and scope of their study with the supervisor.

Previously the supervisor and another physiotherapy lecturer assessed the group report, which was handed in towards the end of the third year, and all the group members were awarded the same mark. Since the project constituted a substantial part of the students’ final year studies and they spent considerable time and effort doing it, it was felt that assessing only the end product was not adequate. It was also observed that while most students concentrated very hard in completing the project well, some of them rarely attended the tutorials and seemed to know little about what was going on with their project.

In 1993 a new assessment scheme was implemented, whereby the members’ contribution to the group project was taken into account in determining the project mark for each individual student. In this calculation the mark for the report which previously contributed 100 per cent to the students’ project mark now constituted 80 per cent. The individual student’s contribution (20%) was a combination of the supervisor’s assessment for involvement (10%) and the members’ self and peer assessment for contribution during group work (10%). Only the student’s self and peer assessment will be discussed here. At that time marks out of a hundred were used in the assessment of students’ work and examination papers. At the end of the year, the marks were combined under each subject and then converted to grades, as will be shown later.

A marking form was developed to be used as a guideline or criteria (Appendix 1). Students were asked to allocate grades to each group member and to themselves according to the contribution during the process of project work. Both peer and self-assessment was included in this form to encourage the students to reflect on their own input as well as their peers’. The form was designed based on the process of project work and seven tasks were assessed: from choosing the study area to writing the report. The form also asked the students about the members’ contribution to the teamwork including participation in meetings, contribution to the team spirit, etc. A separate question in the form asked the students to rank the members regarding their overall contribution. The marking form went through several changes since 1993, including ranking and grading. These will not be discussed here since all the different ways of allocating grades or marks have their problems and has been discussed extensively in literature. The self and peer assessment took place twice, midway through the project and at the completion of the work. The grades were converted to numbers and scaled to represent 10 per cent and were added to the report mark. The supervisor’s mark out of ten was also added to the report mark. The validity and reliability of these grades have not been ascertained and is questionable, one reason being the complicated calculation which included converting marks to numbers and then to percentages. The calculation of the marks is not relevant here and is presented elsewhere. The process of involving students in their own
assessment was seen as important and therefore the students’ marks for contribution were included in the final mark but only constituting a small portion at this stage.

At the end of the second marking session when the students had finished the project, they were asked to complete a questionnaire, which sought their opinions about the peer and self-assessment procedure (Appendix 2). The completion of the questionnaire was voluntary and done anonymously, and the students were assured that whatever answers and comments they provided would not affect their project marks.

Seventeen students were then chosen randomly, one from each project group, for an interview. The interview was also voluntary and a research assistant conducted it in the students’ first language. The interviews were audio taped with the permission of the interviewees and the tapes were transcribed in English. The interview questions focussed on the students’ opinions of the assessment of the project in general and the self and peer assessment practice in particular.

Results of the peer and self assessment of contribution

To find out the effect of contribution marks to the individual students’ marks, the previous and current marking systems were compared. Previously each member of the group was awarded the same mark based on the assessment of the report (OM). In the new system the mark for each student (FIM) is composed of the group report mark (80%), the supervisors’ mark for involvement (10%) and the peer and self mark for contribution (10%). The following presents the comparison of these two marking systems where the marks are based on the calculation of OM and FIM for each student.

<table>
<thead>
<tr>
<th>The final mark (FIM) given to the individual student</th>
<th>The report mark only (OM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>80 per cent written group report</td>
<td>100 per cent report mark to all members</td>
</tr>
<tr>
<td>10 per cent Supervisor’s mark for individual student</td>
<td></td>
</tr>
<tr>
<td>10 per cent self and peer mark for contribution</td>
<td></td>
</tr>
</tbody>
</table>

Table 1 shows that the distribution of the two sets of marks is very similar as can be expected. The Wilcoxon Matched-Pairs Signed-Rank test confirmed that statistically there was no significant difference between the two sets of marks (p< .05). The correlation coefficient by Pearson’s test showed a value of .91 indicating a statistically significant correlation between the two sets of marks (p< .001). Therefore the inclusion of the contribution marks to the final project mark did not have a great influence on the whole group of students and did not disadvantage them when compared to the previous year groups.
Table 1. Distribution of project scores

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>SD</th>
<th>Mode</th>
<th>Median</th>
<th>Min</th>
<th>Max</th>
<th>Range</th>
<th>Varian</th>
<th>Skew</th>
</tr>
</thead>
<tbody>
<tr>
<td>OM</td>
<td>64.30</td>
<td>7.98</td>
<td>55.00</td>
<td>65.00</td>
<td>50.00</td>
<td>78.00</td>
<td>28.00</td>
<td>63.71</td>
<td>0.11</td>
</tr>
<tr>
<td>FIM</td>
<td>64.65</td>
<td>7.28</td>
<td>60.00</td>
<td>64.00</td>
<td>51.00</td>
<td>78.00</td>
<td>27.00</td>
<td>53.02</td>
<td>0.06</td>
</tr>
</tbody>
</table>

The effect of contribution to the individual student’s mark is more important to the students than the similarity or correlation of the two sets of marks and therefore the two marks for individual students were compared in pairs. The drop line graph (in Figure 1) shows the differences in the two marks for each student, that is, the group report mark alone (OM) and the group report mark and individual contribution mark combined together (FIM).

The graph shows that the biggest difference between the two marks is eight for student ID number 44. Only seven students would have had the same mark in the two marking systems. This means that majority of the students were affected when the contribution marks were included into their final project mark as calculated according to the present system. Thirty-eight students obtained a higher mark and 27 students a lower mark when contribution marks were included.

Figure 1. Drop line graph of project marks

In the students final transcripts only grades were shown. The grades were assigned according to the following conversion, which was stipulated by the University: Grade A > 75 marks (%), Grade B 74 - 65 marks (%), Grade C 64-40 marks (%) and Grade F = Fail < 40 marks (%).

It can be seen in figure 1 that when contribution marks were included into the final project mark, two students would have been up graded from C to B and two students from B to A. Five students would have been down graded from grade B to C and four students from A to B when contribution was taken into account. This effect on grades is summarised in table 2.

Table 2. Effect on grades

<table>
<thead>
<tr>
<th>Change in grade</th>
<th>C to B</th>
<th>B to A</th>
<th>B to C</th>
<th>A to B</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Students</td>
<td>2</td>
<td>2</td>
<td>5</td>
<td>4</td>
</tr>
</tbody>
</table>
The inclusion of the contribution marks in the student’s final project mark did not have statistically significant effect on their marks. This result was not a surprise since the contribution marks formed only a small percentage (20%) of the total mark. However, most of the students’ final mark for the project and the grades of 13 students were affected when the contribution marks were included. The contribution marks in this calculation included both the supervisor’s mark for each student and the self and peer marks which were collected in two sessions. Even though the effect of the contribution mark was small, the new scheme was able to award each student an individual mark, which in the majority of the cases was different from the group report mark.

**Students’ opinions about the peer and self assessment of contribution**

Peer and self-assessment should involve students in all aspects of the assessment including identification of the criteria, making judgement about the extent to which these criteria have been met and the procedure of implementation of the assessment (Boud and Falchikov, 1989). Therefore students’ opinions are of great importance when developing peer and self-assessment.

Students’ participation in a formal assessment has not been used previously in the physiotherapy course at the Hong Kong Polytechnic University, and that was one reason to seek their opinions. A separate questionnaire (Appendix 2) soliciting students’ opinions about the peer and self-assessment was given to the participants after they had completed the peer and self marking the second time after completing the project. The students were asked to indicate their agreement or disagreement with the statements about the students’ involvement in the assessment of the members’ contribution to the group work, their ability to assess fairly, whether or not their assessment should count in the final mark, whether the peer and self-assessment should be implemented earlier in the course and about the appropriateness of the assessment format as it was implemented then.

The completion of the questionnaire was voluntary and anonymous, and 69 out of the 72 students (95.8 %) returned the completed questionnaires. The results of the questionnaire are presented in table 3.

Majority of the students agreed with five out of the seven statements in the questionnaire. The highest agreement frequency was 91 per cent and disagreement frequency 20 per cent.

One student from each project group was selected randomly and invited to participate in the interview, which was conducted by a research assistant. The interviews aimed at clarifying the questions asked in the questionnaire and also explored further what the students thought about the assessment. It gave the students a chance to express their opinions and feelings freely since the questions were open-ended. The interview lasted about 30 to 40 minutes and was conducted in the evenings at the place and time chosen by the students. All students were interviewed in their mother tongue. The interviews were recorded with the permission of the interviewees and then transcribed in English. The students were again assured that their discussion would be confidential and anonymous. The results of the questionnaire and the interviews will be discussed here.
Table 3. Students’ opinions about the self and peer marking

<table>
<thead>
<tr>
<th>Answer</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>21</td>
<td>13</td>
<td>47</td>
</tr>
<tr>
<td>Agree</td>
<td>42</td>
<td>34</td>
<td>25</td>
</tr>
<tr>
<td>No opinion</td>
<td>3</td>
<td>13</td>
<td>31</td>
</tr>
<tr>
<td>Disagree</td>
<td>2</td>
<td>8</td>
<td>12</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>69</td>
<td>69</td>
<td>69</td>
</tr>
</tbody>
</table>

Students’ participation in the assessment of their own and their peers’ contribution to a group project

When asked whether students should take part in the assessment of their own and their peers’ contribution to the group project, the majority of the students (91%) agreed that they should. Twenty-one students agreed strongly with the statement and only three students disagreed. Three students did not have an opinion on this question (Table 3).

All the students, (17) who took part in the interviews confirmed that the effort or contribution of the members should be assessed since they knew the process of the work and therefore were the best judges on what had been going on. Few interviewees expressed an opinion that since the project is supposed to be a group effort the members should be assessed as a team. Most of the interviewees felt that it was important that students assessed their peers’ (13 interviewees) as well as their own (11 interviewees) contribution to the group work because it encouraged the members to share the workload and work hard. Students who did not support the self-assessment (6) felt that many of them would give a high mark to themselves even if they did not contribute much. Some of them did not see that as a problem saying that the marks from the other team members would average out the difference.

Some participants found that peer and self assessment provides a good opportunity for them to express their views about the process and at the same time to evaluate their own performance. One student said:

“If it is peers’ (assessment), then you can see different opinions or different work loads. I think it is a good way of expressing your views. If it is self (assessment) then you have some self-evaluation on your performance and you will know whether you did the work well or not. I think this is one form of expressing one’s choice and opinion”.

Some of the interviewees thought that it would be good if students participated in the assessment of their own reports also so that they could give another point of view in the assessment. One
student said:

“I think there should be some chance for the students to assess their project report. I know that this could have been done by the supervisor and lecturers, but the students also have another point of view. I think this is quite good.”

However, many of the interviewees thought that it was not appropriate for the students to assess the project report because they might not be objective in their assessment and they would not know what to assess. The students thought that it was enough that the supervisor and the other lecturer mark the written report as was expressed by one of the interviewees:

“I think it is difficult for a student to objectively say what is the relevance of their project’s content, whether it is good or bad. It’s too close for that. And then, if we didn’t think it was good, we wouldn’t have included it in the first place. We’ve done the best we can”.

The majority of the interviewees (12 of 17) thought it was a good idea to have the assessment twice. The assessment during the course of the project work would help to monitor the process and the students, who did not contribute enough in the beginning, could still work hard in the latter part. It would also provide a chance to recall what initial contributions each team member had made and the level of performance and therefore everybody would know their own and each other’s workload. It would also be fairer to all the members so that those who worked hard in the early part would not be forgotten in the assessment. The peer and self-assessment at the completion of the project would give an overall indication of the whole process. If the product is good, it indicates that the effort has been adequate.

Only one student said that the peer and self-assessment should only be done at the end because only at that time the overall contribution of each member can be seen, and doing it twice would complicate the picture. Four students preferred more frequent assessments, one suggesting a monthly assessment, which would encourage the members to become more active and provide feedback about their input.

The questionnaire results showed that two thirds of the respondents (68%) supported the idea of including peer and self marks into students’ final project mark (Question 3) and 13 students agreed strongly with that statement. Only nine students (13%) opposed the idea.

During the interviews, 12 students indicated that the weighting of the self and peer assessment should be increased from the current 10 per cent to 30 per cent to better present the effort that the members put into it during the year. They also felt that it would motivate to work harder and become more serious about the work. One student saw the higher weighting as a reward to the hard-working members saying:

“It is also nice to know that after all the hard work, you will be ‘rewarded with high grades’.”
Five interviewees would like to keep the current weighting of 10 per cent or even lower it. The reasons were the inherent subjectivity in the grading, the pressure that would be imposed with higher weighting and because the project work is more of a learning process rather than just passing the course. The grades may not necessarily present the actual effort and the emphasis should be on learning and not on the grading, said one student.

Boud (1989) puts forward two arguments advocating the inclusion of students’ marks into the grading. He says that the students learn to assess themselves in situations where they may not agree with the criteria or may not even know them. He argues that this helps the students to learn to interpret the often arbitrary requirements they need to meet. The context of assessment should therefore be recognised. He also bases his argument on “expediency” meaning that when students mark their own work they are encouraged to reflect on their own work and the standard with which it is being assessed.

When assessing contribution to group work, these two arguments seem very appropriate because the process is the main focus of the assessment. Students are encouraged to evaluate their own working practices, their relationships with their team members and their roles in the team. The final product, that is, the project report is the result of the process and therefore the group work is a very important part of the learning process and should be acknowledged.

Students’ involvement in their own assessment has been advocated by many educators but perhaps because of the practical difficulties in implementing it and the uncertainty of its validity and reliability it has not been used as often as it could have been. The results of the questionnaire and the interviews in this study indicate clearly that the final year physiotherapy students at the Hong Kong Polytechnic University strongly supported the idea of involving them in their own and their peers’ assessment at least as far as contribution to group work is concerned.

**Fairness, confidence and competence of student assessors**

The result of the questionnaire showed that more than half of the students (57%) felt that they were able to assess the members’ contribution fairly (Question 2). However, two thirds (64%) of the students indicated that they needed more practice to be competent and confident in the assessment of their work (Question 7). One third (32%) did not have a firm opinion about their ability and only eight students (12%) felt that they were not able to do it fairly.

When asked whether peer and self-assessment should be introduced earlier in the physiotherapy course (Question 6) less than half of the students (48%) said yes and nearly the same number (45%) had no opinion. Five students were against the idea.

During the interviews, 13 students felt that their assessment was reliable when assessing their peers and that they gave and received the grades they deserved. Many of them set their own baseline and criteria for assessment, which were related to the effort (input) as well as result (output). They felt that in self-assessment the bias was greater than in peer assessment. Some students commented that the standard of grading varied between groups as well as between the members of the group. Therefore, the grades may not be comparable between the groups. Five
students mentioned that the maturity level, the mood, friendship and trust between the members would have affected the reliability of the grading.

During the interviews some of them said that mature university students were able to be objective and unbiased in their peer assessment but it might be difficult to be objective in assessing their own work:

“I think it is better to just leave it to the team members. Because you cannot really judge objectively. . . . If you assess yourself to be the highest, it would be unfair, especially if the other team members can see what you are doing . . . most of the time you will just put yourself in the middle and that does not reflect the true mark that you are supposed to have. That’s why it is useless. But if other members assess you it is fairer. At least they are not as subjective as you are.”

Most of the interviewees were confident that they themselves had assessed their peers and their own contribution fairly but were not sure about the other members. Some of them would have liked to see the peer and self-assessment results in order to compare the marks among the group.

The students were given the final mark of the project and also shown the supervisor’s mark and the peer and self mark after calculation. They did not know, however, the marks given by individual group members.

To give more opportunities to the students to get involved in the peer and self-assessment is obviously one way to improve the reliability of students’ marking, and as Heron (1988) suggested, a progression from “collaborative assessment” through peer assessment to independent self-assessment including setting the criteria may be the way to go. This needs a long-term plan where all the parties, that is, the students, teachers and administrators who set the rules for assessment should work together. This was the first time that the students in the physiotherapy course were involved in the formal assessment, and their marks were taken into account. This same set of students had practised peer assessment, by marking each others’ written assignment using a marking form during their first year of study, but that time the marks did not count. They had also assessed group presentations in an informal way during their second year of study. Therefore they had some practice before and were familiar with the idea of peer and self-assessment. This may have contributed to their confidence of fairness in assessment. Boud (1991) observed a lack of confidence in some New South Wales University students who felt that they had not had enough experience to assess themselves objectively.

Appropriateness of the format and clarity of the procedure

The procedure to complete the assessment was explained on the reverse side of the marking form and the main points were also explained verbally at the beginning of the marking session. The criteria for grading were given with qualitative and quantitative descriptions in the form and the students were reminded to refer to these criteria frequently. The form was developed based on some literature, past experience, objectives and the process of project work. Students had not been involved in designing the form, but the teaching staff of the course were consulted and their
comments taken into consideration. When the form for this study was modified from the original 1993 version, the comments by the previous students on the form were considered and amendments made, for example, more items were included, more descriptive words were used in the criteria and the ranking system in the original form was changed to grading.

When asked about the procedure of the peer and self-assessment, the replies to this question showed that 77 per cent of the students found the explanation clear and only five students (7%) thought that the procedure was not explained clearly. This was the only statement that nobody disagreed strongly with. During the interviews, some students expressed that it was difficult to determine the grade because different assessors may have used different criteria and therefore the grades were not comparable.

Question 5 concerning the appropriateness of the assessment form for assessing group members’ contribution had the highest disagreement rate. One fifth (14 students) felt that the assessment form was not appropriate for assessing members’ contribution to the project, more than one third of the students (38%) had no opinion and only four students felt strongly that the form was appropriate. Some respondents in their written comments on the forms claimed that the main difficulty in completing the form was to give different grading or ranking to students whose contribution was very much the same in quality and quantity. Some respondents wanted more items and elaboration on the items in the form. One respondent felt that the form was focussing more on the quality and proposed that quantity should be taken into account too.

During the interviews the students expressed that both the time spent and the quality of work should be assessed. Each member has a different input, and the team spirit is the most important consideration according to one of the interviewees. Because of the delegation of duties, members may have had varying amount of work to do at different stages of the project.

The criteria or the guidelines given in the marking form were helpful to standardise the assessment according to some of the students but others said that the standard between the members in the group and between the groups might be different.

One respondent felt that the peer and self assessment scheme was a “good method”, one thought that it trained independent thinking and one student was wondering whether any warning or punishment was given to those who did not contribute.

Although nearly half of the students (42%) found the assessment form appropriate, there is room for improvement. As Bond and Falchikov (1989) stated, the students should be involved in deciding the criteria to take some ownership of the whole assessment process. With the students’ input, the assessment would reflect better their own objectives and indicate the extent to which the objectives should be met. An attempt was made to involve the students in developing and improving the assessment form. At the meeting with the students, when they were first informed about the peer and self-assessment at the beginning of their project work, the form was given to them. The purpose and the procedure of the peer and self-assessment of contribution to group project was explained briefly and the students were asked to study the form and make recommendations to amend it. They were encouraged to contact the author who was in charge of
the peer and self-assessment but none of them neither contacted nor returned the form. Unfortunately students in many university courses are overloaded with work and hardly have time to complete their assignments between their busy schedule in attending lectures and tutorials and therefore have no time to concentrate on tasks that are not compulsory.

Conclusion

The assessment of individual students’ contribution to a group project is difficult. Students may feel that all the members have not had an equal share of the workload and still receive the same mark. Therefore those who have not done much are rewarded for the work that they have not done, and those who have worked hard have not been appropriately and adequately acknowledged. It is also difficult to evaluate what the students have learnt during the process which often takes several months and is only assessed through the final product.

Students’ peer and self assessment of contribution to a group project was implemented in order to facilitate students’ evaluative thinking in the process of project work, and also to award individual marks for group members. In this study students assessed their own and their peers’ contribution to a group project by using criteria set by the teachers. The analysis of the effect of peer and self marks to individual students’ final project marks showed that even though there was statistically no significant effect, the individual student’s mark was influenced by the contribution marks.

In order to find out the student’s opinions about the current method, an opinion questionnaire was implemented. A group of students were also interviewed to further explore what aspects of the project work should be assessed, and by whom and what would be their preferred method of assessment. The questionnaire results showed that the students were quite satisfied with the current method and thought that it was important to involve them in the assessment. They also supported the idea of including the students’ marks in the final project mark. The majority of the students would like to be involved in the assessment of members’ contribution to a group project and nearly half of the respondents would like to be involved in the assessment earlier in the course. More than half of the respondents felt that they had been fair in their assessment but they would need more practice to be confident and competent in assessing themselves and their peers. Most of the respondents felt that the assessment procedure was clearly explained but more than half thought that the form was not appropriate for this purpose. The majority of the students in the class (95.8%) completed the questionnaire and therefore the answers may be seen as representative of this year’s group of physiotherapy students. The interviews confirmed and enforced the questionnaire answers but also gave a better insight into the students opinions about the project work as a whole and that of its assessment in particular.

The interviews showed that students felt that it is important to include them in the assessment of contribution because only the group members knew what was happening during the work. They also believed that by assessing the contribution some students would be more willing to work harder since they knew that it affected their own mark. They did not feel that it was necessary to involve them in the marking of the report since two teaching staff were already marking it. The interviewees felt that they were able to assess their members’ contribution fairly and objectively but doubted the objectivity in their self-assessment. They appreciated the chance to be involved in
their assessment and realised that they had learnt self-evaluation and critical thinking while doing
the assessment.

The outcome of learning through the peer and self-assessment was clearly expressed by many
interviewees. They felt that among other things, they had learnt to evaluate their own and their
peers’ work and at the same time received feedback. Some of the students said:

“. . . the other thing that I have learnt from this assessment is to be able to look at the
good points of others.”

“I became more critical with my work and we also learnt how to work with other
people and the virtue of co-operation.”

Students should be involved in their own assessment in order to become reflective practitioners
(Boud, 1991). They should take part in all stages of assessment so that they can claim ownership
of the process. This study presented here is a part of the continuing development of physiotherapy
students’ involvement in their own assessment at the Hong Kong Polytechnic University. The
results are encouraging indicating that the students found the topic important. Some of the
interviewees were able to appreciate the project work as well as the assessment practice as a good
learning process and not just a method of assessment.

“Actually, for me, this final year project practice is just a practice for the students to
learn. I think it is the ongoing process of learning that is more important, rather than the
final report. I think they should not put a lot of emphasis on the final report itself. . . . If
you did well in the process then you have a good product”

Acknowledgement

I am most grateful to the physiotherapy students at the Hong Kong Polytechnic University for
participating in this project over the years and helping me to develop the assessment scheme for
their group project.

My sincere thanks are due to my research assistant Jenilyn Ledesma Ang for her help in
interviewing the students and transcribing and analysing the data. Without her conscientious and
impeccable work this project would not have been possible.

I also owe my thanks to Professor John Biggs who invited me to participate in this project thus
showing his belief in me.

Lastly, I express my gratitude to the ESEP management team for granting me the funds to conduct
the project.

References


# Appendix 1

## PEER AND SELF ASSESSMENT FORM

### PART A

**B. Sc PT Final Year group project peer and self assessment**

<table>
<thead>
<tr>
<th>Project Title</th>
<th>Greatest contribution</th>
<th>Name</th>
<th>CI No</th>
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**Supervisor**

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<th>Group size</th>
<th>Second greatest contribution</th>
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**Fourth greatest contribution**

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**Fifth greatest contribution**

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**Sixth greatest contribution**

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**Group members’ full names and class numbers**

### PART B

#### Task to be assessed

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**Grades:**

- **A+** Exceptionally active and constructive all the time, excellent ideas and organisation skills, exceptionally good in communication
- **A** Very active and constructive all the time, excellent ideas and organisation skills most of the time
- **B+** Active and constructive all the time, very good ideas and organisation skills
- **B** Active and constructive most of the time, good ideas and organisation skills
- **C+** Participated and had good ideas sometimes
- **C** Attended and participated in most meetings
- **D** Was sometimes absent and did not participate
- **E** Did not contribute and was unreliable
- **F** Rarely attended meetings, was disruptive for team work
NOTES TO THE STUDENT ON SELF AND PEER ASSESSMENT OF THE GROUP PROJECT

One of the aims of physiotherapy education is to help the students to learn to work in different teams. Good understanding of the roles and functions of the team members, ability to communicate and solve problems and work cooperatively are essential qualities on an effective team member. Individual members also need to develop a reflective attitude and evaluative skills for their professional practice and take responsibility for your actions. This ability is one of the factors differentiating professionals from technicians. Self and peer assessment are essential tools in developing reflective attitude and ability to evaluate one’s own and team members’ work. Students who are able to monitor and judge effectively their own and peers’ performance are more likely to continue their learning independently and take appropriate actions to improve their practice. Facilitation of self-reflection during education will improve these skills, which are essential in modern health care where professionals are continuously confronted with new knowledge, problems and situations.

This assessment form is designed to help you to assess your team and your own contribution to the process of group project work. You should think about the quality and not only the quantity of the contribution. The intention is for you to evaluate the contribution made by individual team members to a particular task, not to make personal comments.

The marks awarded for each member will be calculated from the forms and will contribute (10%) to the total marks (100) for the project. Try to be critical, objective and honest when assigning grades to your group members and yourself. Take time to complete the assessment for, forcing yourself to be objective and unbiased. Do not give the same grade to several group members unless their contribution is absolutely equal both in quality and quantity. Try to use the whole range of grades form A+ to D (E, F if necessary) to differentiate between the members’ contribution to each individual task. The individual responses will be kept confidential.

In the assessment form first rank your team members in the order of overall contribution to the project work (Part A).

In Part B your are asked to give a grade to each member of your group, including yourself, for the contribution to each particular task. The highest grade to be given is A+ and the lowest grade is F. (See explanations of the grading overleaf). Think about the quality of the contribution of each group member in the eight (8) different tasks/stages of the project work separately, since it may vary. In task eight “Team work” some sub-topics which may help you to think of the different aspects of team work, have been included for your reference, but enter only one grade to this column.
Appendix 2

OPINION QUESTIONNAIRE

Development of students’ peer and self assessment is the topic of my own educational project and therefore I have also included a questionnaire to solicit your opinions about the peer and self assessment. Please tick (✓) the box that most closely reflects your opinion and add any comments and recommendations you think appropriate. You may remain anonymous and the answers in this form will not affect your peer assessment marks.

1. Students should take part in assessing their own and their group members’ contribution to a group project

2. I am able to assess fairly my own and my group members’ contribution to our group project

3. It is fair to take the self and peer assessment marks into account when allocating marks to each student for the project

4. This self and peer assessment procedure is clearly explained

5. This assessment form is appropriate for assessing the group members’ contribution the project

6. Self and peer assessment should be used earlier in the physiotherapy course

7. I need more practice to be confident and competent in assessing my own and my group members’ contribution

Please write any comments or recommendation in the spaces provided.

Thank you for your time and help. The individual answers will be kept confidential but if you want to know about the results of this project please contact me at any time.

Ms. Raija Kuisma, Room GH 523, Tel: 2766 5395

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