TOPIC

INTRODUCING STUDENTS TO

PEER AND SELF ASSESSMENT

LYN PEATLING
Brindabella Christian College
Lyneham, ACT

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AUTHOR CONTACT
Ms Lyn Peatling
24 Crawford Crescent
FLYNN ACT 2615
02 62582672 (H)
02 62474644 (W)
02 62470287 (Fax)
peatling@bigpond.com
INTEGRATING STUDENTS

TO

PEER AND SELF ASSESSMENT

ABSTRACT

In this case study a group of Year 7 students in the ACT were introduced to the concepts of peer and self-assessment. They worked in groups to research one of the planets in the solar system, and then to produce posters and a class presentation. At the beginning of the unit students and teacher worked together to produce assessment criteria and scoring rubrics for use during the assessment phase of the unit; the teacher developed a reflection sheet to be used at the end. While no trends were discernible in a comparison of grades awarded by peers, teacher and self, what emerged as the most interesting part of the study were the insights provided by watching the students at work on their self and peer-assessment tasks and by comments made in the reflection sheets. These provided thought-provoking ideas about the contribution that these activities can make to the learning process. A review of some of the literature available on this topic and on the more general area of defining and implementing quality assessment strategies is included.

LYN PEATLING

24 CRAWFORD CRESCENT

FLYNN ACT 2615

02 62582672 (H)

02 62474644 (W)

02 62470287 (Fax)

peatling@bigpond.com
INTRODUCTION

This case study reports on the initial exposure of a small group of students to peer and self assessment. The twenty four students were in Year 7 at Brindabella Christian College, ACT; they were a mixed ability group with learning achievements recorded as being from very high to very low; there were two students in the group who had been assessed as having severe behavioural problems. The study took place over a period of four weeks in the Information Skills class, a class in which all Year 7 students participate in learning basic research, writing and presenting skills through a series of science projects.

There were several reasons for undertaking this study. There is a lot of published material about peer, self and collaborative assessment in higher education, and in the professional world, especially as part of mentor programmes and staff appraisals. There is an increasing body of literature detailing the innovative work being done in this area in primary schools but not a lot about the use of these assessment tools in middle school science classes. The teacher was interested in investigating how students tend to assess themselves in relation to their peers, whether small group peer assessment can be used as an aid to student learning or solely as an assessment tool, and whether peer assessment helps students to become more critical and reflective about their own work. Before beginning this work it was necessary to investigate what constitutes good assessment, and whether involving students in the practice was thought to improve any learning which took place through assessment.

LITERATURE REVIEW

Good assessment is built on current theories of learning. We no longer view students as empty vessels to be filled, we prefer to see learners as active participants in the learning process. The wealth of research in constructivist learning theory tells us that meaningful learning occurs when learners are actively engaged in constructing and expanding their knowledge, and in working out how to apply their knowledge to solve problems (Ferrara & McTighe 1992, Herman 1992, Herman 1997, Ashbacher 1997).

Instruction and assessment are intimately linked. In good assessment the assessment process itself becomes part of the learning cycle. In their recent report on classroom practice in the middle years Cormack, Johnson, Peters & Williams (1998) state that the defining marker of good assessment is an explicit link between the curriculum and assessment. In seeking to achieve this they suggest four principles:

- a close connection between instruction and assessment
- an expectation that students will produce and demonstrate their knowledge and skills
- assessment criteria which are clearly known in advance by students and staff
- acknowledgement that the products of student effort have value beyond the assessment task.

Some researchers also define good assessment by what it is not ie standard, traditional, multiple-choice items where students only choose an answer from a prepared sheet and are not involved in any constructive or reflective thinking (Herman 1992, Kane & Khattri 1995, Cormack et al 1998).

During the last decade the movement towards what is being called authentic assessment has gathered momentum, starting in the United States in the eighties and then in Australia. This movement has focused on a perceived disparity between the recently reformed goals of schooling, as exemplified in the Curriculum Profiles for Australian Schools.
and the National Statements with their emphasis on problem solving, integrated knowledge, cooperative learning and multiple intelligences, and the 'trivial, boring and inane' assessment tasks students have often been given at school (Burke, Fogarty & Belgrad 1996 pxviii).

With these new concepts of curriculum has come discussion about what authentic assessment really is. Many consider it to be any performance-based assessment ie any assessment which requires students to 'construct or generate a response' (Forster and Masters 1996 p 1) or to 'perform a task rather than select an answer from a ready-made list' (Cormack et al 1998 p 29). Some include the provision that assessment tasks must be real-world, on-the-job type of performances (Cooper 1996) and others stipulate that for assessment to be authentic it needs to be more than performance-based. It should also include the working together of students and teachers in assigning the performance tasks, formats and criteria for assessment (Stiggins 1997).

In attempting to answer the question of what constitutes good assessment a number of principles emerge from the literature being reviewed. Good assessment is synonymous with authentic assessment, sometimes referred to as alternative assessment, but it is more than just performance assessment (Cooper 1998). In performance assessment students demonstrate behaviour which the assessor wants to measure; in authentic assessment students not only demonstrate the desired behaviour but also do it in a real-life context in which some degree of inference is involved (Meyer 1992). Good assessment is intimately linked to the curriculum, it involves both teacher and student judgement, it connects to the world beyond the classroom, it involves students in both performing and reflecting on their performances, it involves across- curriculum perspectives and it helps students engage in higher- order or more complex thinking in order to apply their knowledge to solve problems (Burke 1992, Cizek 1995, Ashenden & Hannan 1996, Burke 1996, Cooper 1996, Masters & Forster 1996, Ashbacker 1997, Stiggins 1997, Cooper 1998, Cormack et al 1998, Wiggins 1998).

Authentic assessment tasks may involve students writing, giving talks, creating projects, working in a group situation, being involved in problem solving activities, making choices about what and how they learn, and using clear criteria to evaluate their own work and that of others. The tasks chosen should be appropriate to the purpose of the assessment, and to the audience for whom it is intended; they should be reliable (ie able to be judged consistently) and should be practical in terms of time and space available (Ferrara & McTighe 1992). Thought also needs to be given to assessing the process as well as the product (Peel 1992) for in some assessment tasks, eg concept mapping, the finished product is not as valuable as the thinking and working process which went into it.

This discussion on assessment is not to suggest that assessment carried out by schools for a hundred years or more has not been authentic. Thoughtful teachers realize that quality assessment has always been the mainstay of their methods for assessing student learning. Student performances and work samples, anecdotal records, self and peer assessment and real-life tasks were assessment tools in the classroom long before the current debate about 'good' assessment began (Worthen 1993). As Burke (1992) tells us 'skillful teachers have been utilizing good assessment techniques successfully long before the term authentic assessment appeared in education journals' (p 5) but the unfortunate emphasis on standardized testing has shifted the emphasis away from assessing 'real-life tools that reflect skills necessary for learning and life' (p 6).

While the alternative assessment movement is capturing the interest of educators worldwide it must be noted that, for all its attractiveness, there are many difficulties and complications. Maeroff suggests that it is like 'having to endure life with teenagers as the price for the joys of parenthood' (1991 p 274). There are no quick and easy ways to rate large numbers of
performance-based tasks; assessing done by humans rather than machines is time consuming, labour intensive and therefore expensive; and there are problems with reliability of results. It will be necessary for these new assessment models to address the issues of speed, efficiency, expense and standardization if they are to become universally accepted (Maeroff 1991, Arter & Spandel 1992, Stiggins 1997, Cooper 1998).

The major areas of student involvement in the assessment process are in the formulation of academic and social learning goals, including the compilation of assessment tasks and judgement criteria, and in self-assessment and self-reflection on the learning process. Some educators consider only self-assessment when they think of ways to involve students. It is important however, that we look further than this and that we encourage students to be involved in a much wider role. Students can work together with teachers to develop assessment goals, performance criteria and the rubrics for scoring tasks (Smith 1995, Cormack et al 1998). They can choose the work which will be assessed from a range of activities completed over a period (Burke 1992, Masters & Forster 1996). They can write sample test items and develop assessment tasks (Baird & Northfield 1992). They can conference with other students, teacher and parents about their learning (Masters & Forster 1996). Some would even suggest that students write their own report cards and conduct their own student-parent-teacher conferences (Cooper 1996). All of these activities help students to take control of their own learning, to become responsible for their learning experiences.

Many educators consider self-assessment to be a method in itself. This is not so - it is neither a method nor a technique but a process which is vital whatever assessment method is used (Cooper 1998). In teaching our students to become active life-long learners we need to encourage them in self-reflection and assist them to gain expertise and confidence in this process. From the literature available it would appear that there are a number of ways of helping students to become involved in self-assessment including:

- helping students to see the value of reflection
- beginning slowly, simply and in a way which does not threaten
- making the process a natural part of classroom practice
- making it useful and easily doable
- developing clear criteria together
- ensuring that these criteria are constructive and affirming (ie focusing on strengths)
- integrating self, peer and teacher assessment
- giving self-assessment status by taking time regularly to share and affirm learning.


As John Dewey is often quoted as saying: You don't learn from your experience. You learn from processing your experience. In this regard Cooper (1998) challenges with her statement:

Providing supportive, yet challenging learning environments with rich substantive curriculum is not enough! We must help students understand and make sense of their learning through mindful reflection

..... Metacognition (being mindful of one's own thinking and processes of learning) is evident in [the] debriefing process as students are asked
what they learned, why they learned it and how they learned it. By reflecting on [and being active participants in the formulation of] the academic goals and social goals of the learning experience, the student integrates and synthesizes the learning (p 59).

METHOD

Students and teacher discussed the possibility of peer and self assessment at the beginning of the unit and comments were noted about student feelings towards this activity. Mention was made of what would be involved in the process and of the desire to be affirming, while remaining fair and honest. They discussed what information would be required, drew up a list of criteria for each part of the project and developed a rubric for the grading process. Initially a scale of zero to eight was chosen but after lengthy discussion most thought that this would be too unwieldy for their first attempt, and settled for a three point scale. To earn a score of two students must meet all the requirements identified in the list of criteria, to earn three they must go beyond these and include new information or a new perspective.

Students were assigned to groups of 4 by the teacher and each group chose the planet which was to be the basis for their research (one of these groups split into two pairs early in the unit due to considerable incompatibility). Where more than one group chose the same planet group members negotiated a satisfactory outcome. Students researched, produced rough drafts and poster layouts which were checked by peers, and then prepared talks to accompany the presentation of their posters to the class.

During the presentations each student who was not part of the team presenting noted details about the talk and then met with his/her working group to fill in an assessment sheet for the presenting team (see next page). This assessment guideline had been generated from the class discussion at the beginning of the unit. The teacher also filled in a similar sheet as each presentation progressed. After all the presentations were completed each group was asked to fill in an assessment sheet for themselves. This guideline was slightly different in that it added the question "What would you do differently next time?" In the final lesson of the unit students were asked to reflect on their feelings about the process of peer and self-reflection in the "Assessing each Other: How did you go?" exercise (see following page). Assessment and reflection sheets were collected by the teacher and the results collated; sheets were then returned to students to keep in their work folders for future reference.

RESULTS

Numerical scores awarded for posters and presentations were converted to letter grades, in line with the school's assessment policy i.e: 0-8 = E, 9-11 = D, 12-14 = C, 15-17 = B, 18-21 = A, 21 being the highest score attainable using the student-designed rubric. Grades for each group using self assessment, peer assessment by six students from other groups, and teacher assessment appear in Table 1. The 'x' indicates that the 2 students in Group 1 were absent in the last few days of the unit when assessing was done.
A comparison of the grades appears in Table 2.

**Table 1 Self, peer and teacher assessment scores**

<table>
<thead>
<tr>
<th>GROUP</th>
<th>SELF ASSESSMENT</th>
<th>PEER ASSESSMENT</th>
<th>TEACHER ASSESSMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>C x</td>
<td>C C C B C C</td>
<td>C</td>
</tr>
<tr>
<td>2</td>
<td>C -</td>
<td>C C C B C C</td>
<td>B</td>
</tr>
<tr>
<td>3</td>
<td>B</td>
<td>B B D A B A</td>
<td>B -</td>
</tr>
<tr>
<td>4</td>
<td>B</td>
<td>C C B B B B</td>
<td>B</td>
</tr>
<tr>
<td>5</td>
<td>B</td>
<td>C C C D x x</td>
<td>B -</td>
</tr>
<tr>
<td>6</td>
<td>B</td>
<td>B C A D B C</td>
<td>B</td>
</tr>
<tr>
<td>7</td>
<td>B +</td>
<td>C B C D B C</td>
<td>B +</td>
</tr>
</tbody>
</table>

In looking at the results in the two tables it appears that the members of Group 2 have assessed both themselves and others more stringently than have other students. This group contained high achieving students who were frustrated that the need to share resources meant they could not always access the material they wanted and that the time available for the unit did not allow them to do as thorough a job as they wished. Group 4 received lower scores overall; this may well reflect the fact that the members of this group were not popular.
with other students and tended to be kept on the perimeter of classroom activities. No other trends were observed.

Students were very positive about the peer/self-assessment process. In looking at the reflection sheet 'Assessing Each Other: How did you go?' all students answered 'yes' to the question 'Did you feel assessing others was a worthwhile experience?' twenty two answered 'yes' to the question 'Did you feel being assessed by others was a worthwhile experience?', one answered 'no' and one chose not to give an answer. In response to the query 'Why?' that followed each of these questions, comments included:

- I liked having the responsibility to assess someone else, I felt important.
- If we get other people's opinions we can find out how to make our work better for others to read.
- It is better to have a wider range of what people liked, because the teacher's opinion of good work isn't the only one.
- It isn't only the teacher who can give you good ideas about ways to improve your work.
- I like to help other people with their work.
- Because adults don't have minds as creative as kids'.
- It gives me insight into what others in the class think about my work.
- It was worthwhile but I didn't really like doing it because I didn't want to be harsh or to give really high scores in case nobody else did.
- It is pressuring knowing that you could be marked hardly by someone who doesn't like you. (This comment from the student who answered 'no').

The final question on the reflection sheet asked students how they felt about the whole process. On the 'spotted Snoopy happy scale', (so named by the students) and adapted from Hopkins (p135), two students circled the 'very happy' option, eleven the 'happy' option, ten 'comfortable', and one circled 'very unhappy' but made no further comment.

**DISCUSSION**

In considering the information obtained in this study the assessment scores themselves and the comparison of them has been of little importance compared with the gains made in understanding the students’ approaches to learning. The processes of developing criteria and a scoring rubric, and of involving students in the assessment process has been extremely valuable. The learning which took place during the initial discussions was quite exciting as the group talked about what having a good layout on a poster meant, what creativity in presentation meant, and whether it meant the same for every one, and what they would consider to be suitable up-front behaviour during presentations. It was fascinating to see them gradually moving away from a "This isn't any good, I don't like it" response to something more along the lines of "You haven't explained this clearly, I can't see where your idea comes from". It was encouraging to see the enthusiasm and sense of ownership which accompanied their getting back the final version of their self-generated marking sheets after they had been printed, and storing them away carefully for later use.

Although students were very positive throughout the unit about being involved in the assessment process it was not expected that 100% would answer 'yes' to the question about whether they felt it worthwhile to assess others and 92% would answer 'yes' to the usefulness of being assessed by others. The comments that accompanied these answers gave considerable insight into the thinking of these students. It confirmed the opinions of Wilson and Wing Jan (1999) that students want to be trusted to take an active part in the
learning process, and will enjoy the learning process much more when they are encouraged to reflect on and take responsibility for their own learning. There was also an enjoyment of the co-operative nature of the assessment process with team discussion inviting individual reflection about what was done well and what needed improvement. Reflection on learning gave each student a chance to put thoughts and feelings into his/her own language, thereby giving further connection with personal learning processes.

The teacher became aware towards the end of the process that any more assessment or reflection on the part of the students may have encouraged a climate of "assessment fatigue". Care needed to be taken not to diminish the gains made by prolonging the process or by using it too frequently. At the end of the unit of work students asked whether similar assessment and reflection processes would be used with the next unit. There was considerable support for the suggestion that only the reflection sheets be used, some student comments included:

- You get sick of it if you do it all the time.
- It takes so much time that we should only do it once each term.
- It's really good but I don't want to do it all the time.
- Teachers get a really good idea and then they make you do it too much and you get sick of it.

Other advantages and disadvantages as perceived by the students followed very closely the suggestions made by Kirkpatrick and Fuller in a workshop conducted at the February 1995 Teaching Learning Forum at Edith Cowan University. Advantages cited included learning the skills of self assessment and evaluation, learning to monitor their own learning, developing the ability to judge their own and their peers' work, and finding appropriate ways to provide feedback to peers which would be affirming rather than destructive. Disadvantages included the possible reluctance of students to fully participate, a reluctance to fail peers and an uncertainty about how to handle the criteria. While none of these were perceived to be a problem in this study students noted that they could be in other situations. From the teacher's perspective the disadvantages included the large amount of time needed for discussion and negotiation in setting up the assessment criteria, the scoring rubric and the reflection guides. These disadvantages were overwhelmingly outweighed by the skills the students developed, the enhanced learning outcomes and the development of deeper approaches to thinking and learning. It was also important to see the focus of assessment shifting away from content knowledge towards the processes students use in learning.

As the classroom study progressed it became apparent that some of the literature consulted at the start took the view that self assessment was a single idea and meant the same thing to all educators. This is not the case; it is important to distinguish between self assessment, self testing and reflection on learning. It is also important to consider the purpose for which self and peer assessment might be used: is it for formative or feedback purposes, will it be used for marks as part of a summative assessment process, is it collaborative assessment or is it one-on-one marking, if it is group marking will the individual receive a separate score? In this study an attempt was made to distinguish between self assessment and reflection by separating the processes and developing different guideline sheets for each. Much of the 'learning about learning' took place as students thought about answering the question "What would you do differently next time?" Comments from students ranged from the very practical such as:

- include more pictures
- practice our talk more,
to the quite reflective in:

- we need to work better as a group and divide the work more evenly
- we should listen to each other and really work together rather than doing our own thing
- we didn't find the sort of information which was really interesting for the others to listen to.

In a final discussion with students after the unit was completed some possible strategies for next time were considered. These included an assessment by the group of each member's contribution. Students thought that this would be 'more fair' as it would discourage some individuals from contributing little and then enjoying the fruits of the hard work of the rest of the group. Some students suggested they receive a grade for the quality of their assessment, although a few did not like this idea as they felt they would not comment so freely if the comments themselves were to be 'marked'. Some requested some practice assessments so they could feel comfortable with the process before using it 'for real'. Most agreed that, although they had argued in favour of it in the beginning, the three point scale was too limiting. They would like to try a six point scale such as Cooper (1998) suggests:

1. Not used/observed
2. Needs improvement
3. O.K
4. Getting better
5. Good

They also felt that the language of 'does not meet requirements', 'meets requirements' and 'exceeds requirements' in the scale was not really their language and would have preferred 'So So', 'Good' and 'Super Good'.

The teacher suggested that the assessment process might be widened further to involve parents and caregivers being asked to take part in student-initiated conferences about their work and to make comments. Students were not keen to have parents/caregivers attend the presentations as it was thought to be a little threatening, but did give thought to involving them in judging posters. They may become more comfortable with these possibilities as they gain confidence in the processes involved in assessment and as they learn to trust themselves and to take responsibility for their own learning.

CONCLUSION

This study suggests that teaching and learning can be enhanced through using peer and self-assessment and reflection tools in the classroom. Students can improve their own chances of learning as they become more proficient at self-assessing. As they become better at this self-assessment they will also become more reflective about what and how they have learned, demonstrating increases in both reflective and metacognitive skills.

Teachers gain insights into their students' learning, and thus into their own teaching, as they watch students identify their own strengths and weaknesses and those of their peers. They may also be privileged to find out how students think of themselves in the learning context.

The move towards peer and self-assessment should not be made lightly. It takes a great deal of teacher time and energy in the early stages to lead students through the stages of
discussing and deciding on learning goals, the subsequent criteria which will be used to assess attainment of these goals and the scoring rubrics which will be used as tools. It is necessary to develop team skills and a sense of co-operation in the classroom, and to work to foster trust between students who may not be in the habit of relating comfortably with diverse members of the group. The teacher may also initially be uncomfortable with moving out of the central position and being open to challenge by the students on many issues from the designing of rubrics in the beginning to the awarding of grades at the end.

Notwithstanding these cautions, involving students in the assessment process will improve their learning because they will be involved in making decisions that affect themselves, decisions about what will be assessed and the criteria that will be used. It will help them to become active, independent learners as they reflect on their own progress and recognize their ability to learn. It will enhance relationships between teachers and students when students begin to see themselves as partners in the assessment process rather than the 'victims' of it. This student involvement in assessment is no panacea for problems in the education system and should not be viewed as such. However its potential for improving student learning may be considerable if it is implemented with sufficient preparation, care and willingness to change.
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