

Involving students in assessment

NANCY FALCHIKOV¹
University of Edinburgh, UK

The importance of assessment and the centrality of students within the process are emphasised. The changing role of the student is discussed and a number of suggestions made on how to involve learners productively by means of self, peer or collaborative assessment. Studies of self assessment are reviewed and the role of psychology explored. Similarly, peer assessment studies are reviewed and key variables identified. It is noted that the benefits of involving students go beyond their ability to produce marks which resemble those awarded by teachers. Stages in the process of implementing and evaluating a self or peer assessment study are elaborated. Frequently encountered problems in practice are identified and some ways of dealing with these suggested. Some wider issues are discussed: quality, education versus training, and working in groups. The need for further research is emphasised.

INTRODUCTION

Assessment carries more salience, perhaps, than any other process in higher education. It dominates student learning (e.g. Brown, Bull and Pendlebury, 1997) and too often overwhelms teachers, required to complete marking of large numbers of assignments or examinations in too short a time scale. Unsurprisingly, researchers have produced alarming statistics which point to lack of reliability of marking (e.g. Newstead and Dennis, 1994). Assessment has come under the critical eye of quality watchdogs as well as those of teachers and researchers. The quest for improved assessment procedures has led to the establishment of government agencies, the production of thousands of words and the destruction of acres of forest. By any measure, assessment is important.

At the centre of any debate about assessment must be the student. Our task as teachers is to help students learn and we can harness the power of assessment to achieve this end by involving them in the process. Of course, students have always been involved in assessment. What is beginning to change, however, is the role they play in the process. Traditionally, the student was a testee, a provider of material for teachers to evaluate. The process of marking was hidden, left in the hands of the 'experts' whose experience enabled them to recognise worth when they encountered it. It is, perhaps, not surprising, therefore, that generations of researchers have found us wanting (e.g. Cox, 1967; Hartog and Rhodes, 1935; Laming, 1990). Once teachers have completed their task, students are reunited with their work, resplendent with a mark, a few ticks and question marks and, if they are lucky, some written feedback to help them improve the next time. It seems to be the case, as Taras (2002) argued, that we are sending out the wrong message to students. Little wonder that, too often, their main focus of interest is the grade.

There are other, more beneficial, ways of involving students in assessment which have the power to improve assessment procedures at the same time, by making procedures explicit and transparent. Such methods include self and peer assessment.

WAYS OF INVOLVING STUDENTS MORE PRODUCTIVELY: SELF, PEER AND COLLABORATIVE ASSESSMENT

In self assessment, students are required to rate their own performance against a standard, while in peer assessment they rate the performance of their peers. Schemes of assessment involving students may also include some degree of collaboration between staff and students, depending on whether, how and to what extent the criteria of assessment are discussed and agreed by both parties.

Although many early studies of self and peer assessment relate to individual work, both may occur in the context of group work. There are three different types of peer assessment of group work: intra-group, inter-group and assessment of groups by individuals (e.g. Earl, 1986). Intra-group peer assessment can take place when some measure of individual input is required for groups of students who have been working together (e.g. Falchikov, 1993; Goldfinch and Raeside, 1990; Lejk and Wyvill, 2002). Inter-group assessment may occur when groups of students assess their own or other groups as a whole (e.g. Freeman, 1995; Zimitat and Mifflin, 2003). Self assessment is an individual activity, but can also take place in the group setting.

It is possible to involve students in the assessment of work or performance in three distinct areas: traditional academic activity, performance in academic settings and professional practice. In the first of these, a traditional academic product such as an examination or coursework essay, laboratory report or multiple choice test is assessed, while in the other two categories, a process is the focus of assessment. Assessment of

¹ Correspondence concerning this article should be addressed to the author: Department of Higher and Continuing Education, The University of Edinburgh, Paterson's Land, Holyrood Rd, Edinburgh EH8 8AQ. Email: nancy.falchikov@education.ed.ac.uk

performance in academic settings may take the form of rating class participation, group process analysis or evaluation of presentation, oral communication or interpersonal skills. Assessment of professional practice typically takes place in medical, paramedical, clinical dental or teaching contexts and the focus of assessment may be practical skills in surgery or anaesthesia, residency performance, physiotherapy or occupational therapy skills or classroom teaching (Hounsell, McCulloch and Scott, 1996). Self assessment and some peer assessment is carried out by individuals, but the majority of students who are involved in assessment carry out peer assessment in the group context. A more recent innovation in assessment which can also involve students is that of involving employers in the assessment of student teamwork (e.g. Stewart and MacLeod, 1997).

Psychology and student involvement

Does psychology have a role in student involvement in assessment? As we shall see below, the research literature indicates that many students of psychology have already experienced self and peer assessment. However, this is not the only link between the discipline and student involvement. Psychology as a discipline can exert a direct influence on teachers and researchers. For example, knowledge of psychological theory can inform practitioners' approaches to teaching and learning. Familiarity with theories of learning and knowledge of how students learn best may predispose teachers to activities which involve students as active agents in their learning. Experiences of experimental psychology can lead to the search for evidence and evaluation of innovation. Psychology has a key role to play.

A survey of student self assessment

Self assessment usually involves a quantitative element. Students are typically asked to grade their own product or performance. Reviews of quantitative student self assessment studies (Boud and Falchikov, 1989; Falchikov and Boud, 1989) located studies in a wide variety of areas of higher education: medicine and dentistry, engineering, politics, education, teacher training and counselling and to a lesser extent, history and music. However, many studies also come from psychology (e.g. D'Augelli, 1973; Falchikov, 1986; Gaier, 1961; Mueller, 1970; Murstein, 1965; Stanton, 1978). In fact, given the early involvement of psychology in self assessment, psychologists may be seen as pioneers in this field. The main focus of the reviews of quantitative studies was to investigate the degree to which student self ratings resembled those of their lecturers and to ascertain features of studies associated with high agreement between staff and students.

A meta-analysis such as that conducted by Falchikov and Boud (1989) starts with an exhaustive search for self assessment studies which contain statistical information comparing student and teacher ratings. The aim of a meta-analysis is to draw together the results of such studies and compare them using a common metric such as correlation coefficients or effect sizes.

Factors which were found to be important by Falchikov and Boud (1989) included the quality of design of the study, the level of the course of which the assessment was a part and the broad area of study. Well designed studies were associated with better agreement between teachers and students, students at higher levels of study tended to be more accurate self assessors than those in beginner courses and studies within the broad area of science tended to produce more accurate self assessment than those from other disciplines.

Of course, there are other aspects to student involvement which do not entail marking: the experience itself. Many, myself included, believe that it is in this area that the main benefits of involving students reside. However, an investigation of the reliability or validity of student self or peer marking can provide essential evaluative information. For example, it would be irresponsible to continue to use an innovative technique if it conferred no benefit or had the potential to harm. Conversely, knowledge that an innovation 'works' provides evidence with which to address fears of colleagues regarding the practice and persuade both students and sceptical colleagues to try the method.

A survey of peer assessment

Academic products and processes, as well as professional practice, have been subjected to both self and peer assessment. However, the majority of peer assessment studies are carried out in the group setting and relate to processes rather than products. Along with medical and dental students and various paramedics, clinical psychologists and psychotherapists have tended to make more use of peer assessment than other areas of higher education (Falchikov, 1996).

Peer assessment can involve students in grading the work of their peers, but can also involve more qualitative aspects and an emphasis on feedback relating to the criteria used rather than the grade. Sometimes both feedback and grade are required. A recent meta-analytic study by Falchikov and Goldfinch (2000) investigated those studies where students had been asked to grade the work of their peers. Once again, the discipline of psychology was well represented (e.g. D'Augelli, 1973; Eisenberg, 1965; Falchikov, 1986, 1994, 1995a, 1995b; Wiggins and Blackburn, 1969; Melvin and Lord, 1995). Falchikov and Goldfinch (2000) identified key variables that might influence the outcomes of peer assessment studies as: the study design quality, population characteristics, what is assessed, the level of the module or course, how the assessment is carried out and the nature of the criteria used, the design quality and the number of peers and number of teachers involved in assessments.

Both common metrics used (correlation coefficients and effect sizes) were found to provide evidence of good agreement between peer and teacher marks. However, investigation of the influence of key variables indicated that:

- Peer assessments which required marking of several individual dimensions appeared to be less valid than peer assessment which required a global

judgement based on well understood criteria. Student familiarity with and ownership of criteria seemed to enhance the validity of peer assessment.

- Peer assessment of academic products and processes gave rise to better peer-teacher agreement than peer assessment of professional practice.
- Well designed studies were associated with better peer-teacher agreements than those with poor experimental designs, (Falchikov and Goldfinch, 2000).

Falchikov and Goldfinch (2000: p. 315) concluded that,

The combination of a high quality study, an academic task and a global judgement based on consideration of several dimensions or criteria would appear to lead to the highest correlation between peers and faculty.

HOW IS SELF OR PEER ASSESSMENT CARRIED OUT AND EVALUATED?

Setting up a self or peer assessment study requires careful preparation, monitoring and follow-up. The key stages are illustrated in Figure 1.

Preparation requires application of many of the principles of good experimental design. In order to evaluate the procedure, a dependent variable needs to be identified. Very often, researchers nominate the degree of agreement between peer and teacher marking as dependent variable, though other aspects of the exercise, such as the degree of agreement between student raters or a measure of benefits to learning experienced by participants, are possible. Additionally, some note should be taken of independent variables such as the experience of participants, the level of the course in which the assessment is to take place, gender and so on. Some knowledge of previous research, such as that provided by the two meta-analyses noted above, is desirable. Use of a control group is possible, though Kember (2003) argued that, in naturalistic studies, genuine control is impossible.

Practical preparation involves a full explanation of the rationale for the innovation to students and clear, written instructions for them to take away and refer to as required. It is also helpful to present some examples of successful involvement of students, detailing the benefits to be derived from participation, to help allay fears and uncertainties of learners regarding their ability to carry out the task for the first time. Procedures for

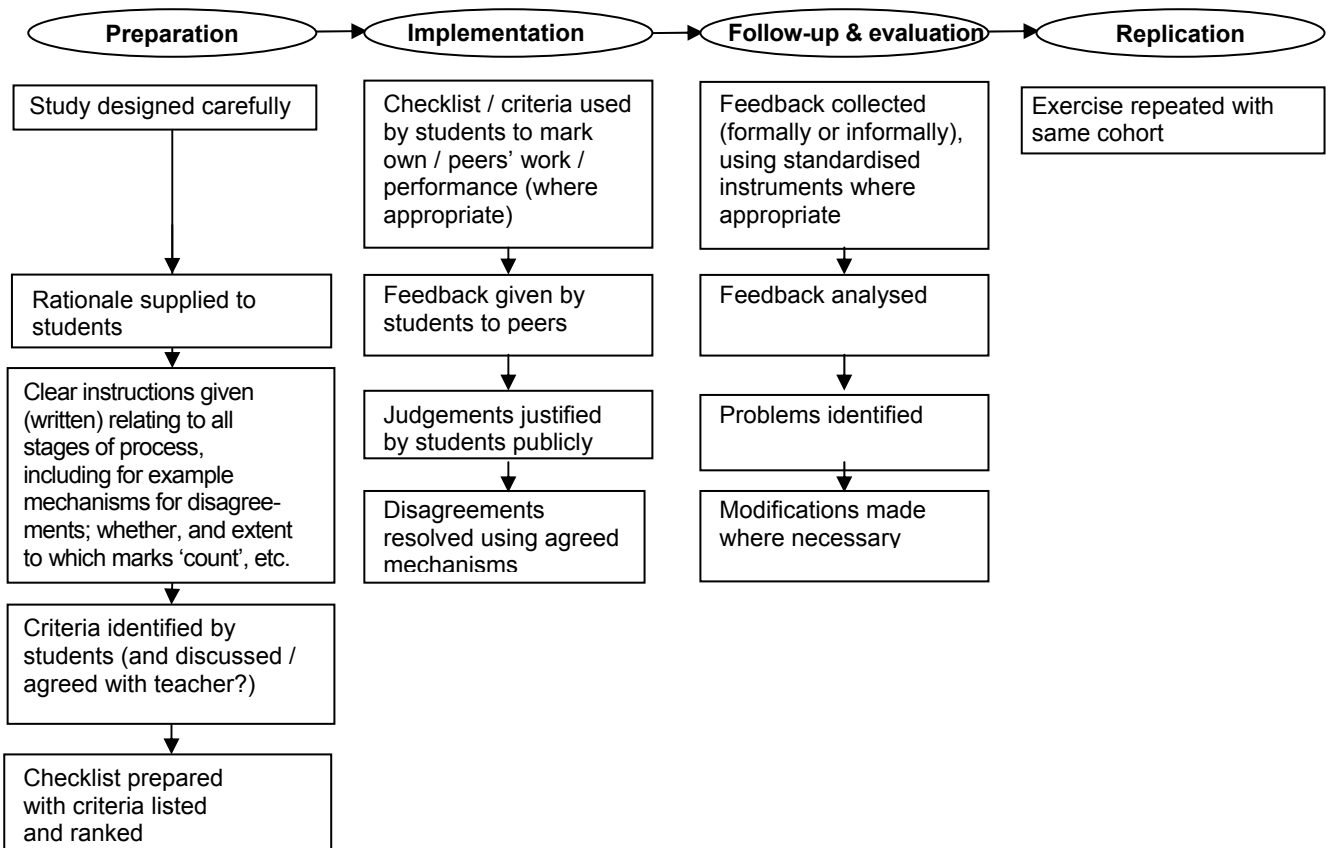


Figure 1
Stages in carrying out and evaluating a self or peer assessment study

resolving any disagreements that may arise should be made clear at this stage. Teachers might do well to have a ready response to suggestions that 'marking is the teacher's job, not mine'.

Both self and peer assessment may involve the use of rating scales or checklists. These instruments may have been designed by potential users, using criteria identified by students and agreed with the teacher. However, pre-existing instruments may also be used or modified to suit particular purposes. After self or peer assessment has taken place, feedback is given and decisions justified. Any disagreements should be resolved at this time. Evaluative feedback may be collected for developmental or research purposes. This may be formal or informal. It is important to identify any problems and make modifications to the procedure where necessary.

The final (usually absent) stage is that of replication. It is very desirable to monitor the development of student self or peer assessment skills over time. Current short modular programmes which involve a single piece of written coursework or a single presentation or demonstration make replication difficult or impossible. Recent meta-analytic studies were not able to investigate these effects, as such data as were available were dependent and were combined before entry into the analysis. An investigation of the effects of repeated experience of peer assessment is an important question to investigate in future work.

PROBLEMS IN PRACTICE

It is very unlikely that first implementations of self or peer assessment will run like clockwork, though some seem to. As in all things, we can learn from the problems we encounter and improve our practice. The following three problems seem to crop up relatively frequently.

Students often dislike either the idea or the experience of being involved in assessment

There are several reasons for this. Some students lack confidence, doubting their ability to mark fairly. Others believe that the 'job' of marking is ours not theirs. Sometimes social effects such as friendship or hostility are perceived as influencing outcomes. Some students have reported fear of retaliation in response to awarding low grades to peers. Others dislike grading friends. What can we do? We can:

- discuss these problems with students;
- prepare them thoroughly;
- require student markers to be able to justify their grades;
- consider making assessments anonymous;
- consider using self or peer assessment for formative purposes only;
- provide students with information concerning successes and benefits of previous schemes;
- help students come to see their education as being their responsibility.

Colleagues are suspicious of, or hostile to, the idea

There seem to be several reasons for lack of enthusiasm in our colleagues. They may fear that students lack the necessary experience to do the job, or fear that students will collude and award over inflated grades. Some may feel uncomfortable with the change of role necessary to allow them to give over some control to students. Sometimes fears about reliability of student marking seem to be justified. From time to time, differences between teacher and student ratings have been found, particularly when peer assessment has been used, and we cannot ignore such differences.

What can we do? We can:

- become familiar with results of reliability and validity or meta-analytic studies relating to 'accuracy' of student marking to appraise ourselves of potential problems (e.g. Falchikov and Goldfinch, 2000);
- help allay fears of colleagues by informing them about existing research that advises on best practice;
- consider using student assessment for formative purposes or reduce the amount the student derived marks 'count'; and
- help ease the change of role required by stressing the importance of the teacher in setting up, implementing and running a self or peer assessment initiative and in helping students acquire the necessary expertise.

Setting up studies involves too much time.

It is true that well designed and implemented studies require considerable input from the teacher. However, students need to be thoroughly prepared if obvious pitfalls are to be avoided. What do we do? We can:

- point out that while setting up a study is time intensive, time may be saved further down the line; and
- stress the fact that the time is well spent because of the great benefits to students.

Preparation is a vital component of any innovation, not least of all any which involves students in assessment. We shall now look at two examples of solutions in practice.

SOLUTIONS IN PRACTICE

Beaman (1998) suggested a novel way for students to rehearse peer assessment using the Egg Game. In this game, students can make mistakes and discover potential problems with peer assessment in a relaxed environment where grading is not an issue. Beaman sets students the problem of building an egg container that can be dropped from a given height without breaking. However, before starting, students have to decide on the criteria on which they are to be assessed and on the weightings of each criterion. In this way, they have to differentiate between process and product. Beaman (1998: p.54) asserted that the Egg Game

enables students to think about what is involved in peer assessment and, at the same time, to raise any problems or issues such as collusion, fairness and validity'.

Another way of reducing the discomfort students often experience when asked to carry out peer assessment is to focus on its formative aspects. My own Peer Feedback Marking (PFM) scheme was devised for just this purpose (Falchikov, 1994, 1995a, 1995b). Students are required to identify a particularly good feature in an oral presentation and provide one piece of advice on how the presentation might be improved. This feedback is written down and then given to presenters just after completion of their presentation, starting with the positive features. Presenters have their confidence boosted by hearing compliments about their work which seems to make them more receptive to the constructive criticism which follows. They are able to take away written feedback for future use.

FURTHER ISSUES AND PROBLEMS

Involving students in assessment can give rise to a number of problems, as we have seen, and bring other problems into clearer focus. We shall look at four further issues: quality, education versus training, group work and the need for further research.

Issues concerning quality

Concern has always been expressed by some educators regarding reliability and validity of self or peer assessment, often expressed in terms of the 'accuracy' of student assessments and reviews of self and peer assessment studies discussed above. Falchikov and Boud (1989) and Falchikov and Goldfinch (2000) have focused on this issue. It may be also argued that student involvement in assessment has the power to enhance the quality of assessment itself, in addition to the value it can bring to student learning. Well conducted schemes of self and peer assessment make explicit the criteria by which students are judged. This practice has been found to be useful to students in the preparation of work and may act to improve both the quality of learning and the work produced (e.g. Falchikov, 1986; Orsmond, Merry and Reiling, 2002; Rust, Price and O'Donovan, 2003). Similarly, student involvement in the provision of qualitative feedback to their peers also has the potential to improve the quality of both the educational experience and the products of education (Falchikov, 1994, 1995a and 1995b).

Education versus training

Some aspects of self and peer assessment, particularly assessment of performance or skills, have fuelled the debate concerning the relationship between education and training. 'Education' is commonly conceived of as being theoretical, while 'training' more readily conjures up images of practical skills being exercised. Peters (1975, p. 9) described the Greek ideal of 'the educated man' as one freed from 'coarsening contact with the materials of the earth', a person who develops knowledge, 'both for its own sake and in order to control himself and other men'. However, many philosophers, psychologists and educators have dissented from this

view, seeing value in activity and practical interaction with objects in the world. For example, Piagetian theory (Piaget, 1971) stresses the importance of practical concrete experience for cognitive development. Similarly, a key belief of Lewin and his followers is that human behaviour is the result of the interaction of persons with the environment (Lewin, 1935; Sherman, 1991).

Working in groups

Many programmes of study now contain some element of group working. However, cooperation, or interdependence is not a new concept in psychology and education. Slavin (1985) found research from which cooperative learning developed dating from the early 1900s. He argued that all cooperative learning methods are based on social psychological research and theory, adapted to meet the practical requirements of classrooms. Of course, group work and cooperative learning are not synonymous, though they share several features such as face-to-face interaction and practice of interpersonal skills. In order that students gain a maximum number of benefits associated with cooperation, learning should be structured to ensure positive interdependence of learners combined with individual accountability. In addition, Adams and Hamm (1996) recommended regular group processing and reflection as aids to true cooperation. True cooperation confers many benefits. Piaget (1971) argued that it encourages real exchange of thought and discussion and is essential for the development of a critical attitude of mind, objectivity and discursive reflection. According to Adams and Hamm (1996), cooperative learning also has the power to motivate students, aid skills development, and to improve academic performance and retention.

However, awarding individual grades to students who have been working in a group can sometimes be problematic, particularly when the teacher has no knowledge of the group working. In such cases, peer assessment may provide an answer (Goldfinch and Raeside, 1990; Lejk and Wyvill, 2002) and allow those who were there to do the assessment.

It is probable that some group work schemes currently in use in higher education have been introduced in response to increased class sizes or other situational demands, possibly in the absence of knowledge of the wealth of theory supporting the initiatives and the benefits to be derived from them. However, for once, it is good that an act of expediency has the potential to bring benefits to students.

The need for further research

As we saw above, in spite of the increasing use of peer and self assessment in higher education, we have scant evidence relating to the effects of repeating the experience. It is generally assumed that practice will improve performance, but we need evidence to support this view. The recent meta-analysis of peer assessment studies (Falchikov and Goldfinch, 2000) also indicated complex interactions between variables. It is, thus, highly desirable that further systematic investigations be conducted to further tease out these effects. In

addition, so far, little work has addressed gender effects. As I have argued elsewhere, gender effects occur in a wide variety of social and academic situations and there is no reason to exclude them as a possibility in the context of self or peer assessment. Further work on the effects of friendship and enmity on peer assessment is also needed.

CONCLUSION

Recent literature on self and peer assessment draws a picture of education in the twenty-first century with the learner at the centre of the stage and the lecturer off stage, in the wings ready and able to assist the learner in a multiplicity of ways. Today's student is more and more learning as a member of a team. She has more opportunities for taking decisions about her education than ever before and is encouraged to be an active participant in the learning process. While experience tells us that this may not be the whole truth of the matter in higher education today, the 'new' learner seems to differ in many respects from predecessors from earlier times. Certainly, the balance of power in education today appears to be swinging away from the lecturer as infallible expert with total decision making power, to a more democratic position where students are partners in the education process. The educational benefits of encouraging students to take responsibility for all aspects of their learning are well rehearsed and many researchers (e.g. Boud, 1995; Falchikov, 1993; Heron, 1981) have found that devolving some responsibility to students by involving them in self and peer assessment is an excellent way of enhancing the learning process.

REFERENCES

- Adams, D. and Hamm, M. (with Drobnak, M. and Lazar, A.). (1996). *Cooperative learning: critical thinking and collaboration across the curriculum* (2nd edition). Springfield, IL: Charles Thomas Publishers.
- Beaman, R. (1998) The unquiet...even loud andragogy! Alternative assessments for adult learners. *Innovative Higher Education*, 23(1), 47-59.
- Boud, D. (1995). *Enhancing learning through self-assessment*. London: Kogan Page.
- Boud, D. and Falchikov, N. (1989). Quantitative studies of student self-assessment in higher education: a critical analysis of findings. *Higher Education*, 18, 529-549.
- Brown, G. (with Bull, J. and Pendlebury, M.). (1997). *Assessing student learning in higher education*. London: Routledge.
- Cox, R. (1967). Examinations and higher education: a survey of the literature. *University Quarterly*, 21, 292-340.
- D'Augelli, A. R. (1973). The assessment of interpersonal skills: a comparison of observer, peer and self ratings. *Journal of Community Psychology*, 1, 177-179.
- Earl, S. (1986). Staff and peer assessment - measuring an individual's contribution to group performance. *Assessment and Evaluation in Higher Education*, 11, 60-69.
- Eisenberg, T. (1965). Are doctoral comprehensive examinations necessary? *American Psychologist*, 20, 168-169.
- Falchikov, N. (1986). Product comparisons and process benefits of collaborative, peer group and self assessments. *Assessment and Evaluation in Higher Education*, 11, 146-165.
- Falchikov, N. (1993). Group process analysis: self and peer assessment of working together in a group. *Educational Technology and Training International*, 30, 275-284.
- Falchikov, N. (1994). Learning from peer feedback marking: student and teacher perspectives. In H. C. Foot, C. J. Howe, A. Anderson, A. K. Tolmie and D. A. Warden (Eds.), *Group and interactive learning*. Southampton: Computational Mechanics Publications, pp. 411-416.
- Falchikov, N. (1995a). Peer feedback marking: developing peer assessment. *Innovations in Education and Training International*, 32, 175-187.
- Falchikov, N. (1995b). Improving feedback to and from students. In P. Knight (Ed.), *Assessment for learning in higher education*. London: Kogan Page.
- Falchikov, N. (1996, September). *Involving students in feedback and assessment*. Paper presented at the Assessment Strategies in Scottish Higher Education (ASSHE) conference, Stirling, UK.
- Falchikov, N. and Boud, D. (1989). Student self-assessment in higher education: a meta-analysis. *Review of Educational Research*, 59, 395-430.
- Falchikov, N. and Goldfinch, J. (2000). Student peer assessment in higher education: a meta-analysis comparing peer and teacher marks. *Review of Educational Research*, 70, 287-322.
- Freeman, M. (1995). Peer assessment by groups of group work. *Assessment and Evaluation in Higher Education*, 20, 289-300.
- Gaier, E. L. (1961). Student self estimates of final course grades. *Journal of Genetic Psychology*, 98, 63-67.
- Goldfinch, J. and Raeside, R. (1990). Development of a peer assessment technique for obtaining individual marks on a group project. *Assessment and Evaluation in Higher Education*, 15, 210-225.
- Hartog, P. and Rhodes, E. C. (1935). *An examination of examinations*. London: Macmillan.
- Heron, J. (1981). Assessment revisited. In D. Boud (Ed.), *Developing student autonomy in learning*. London: Kogan Page.
- Hounsell, D., McCulloch, M. and Scott, M. (Eds.). (1996). *The ASSHE Inventory: changing assessment practices in Scottish higher education*. Edinburgh: The University of Edinburgh and Napier University.
- Kember, D. (2003). To control or not to control: the question of whether experimental designs are appropriate for evaluating innovations in higher education. *Assessment and Evaluation in Higher Education*, 28, 89-101.
- Laming, D. (1990). The reliability of a certain university examination compared with the precision of absolute judgements. *Quarterly Journal of Experimental Psychology*, 42A, 239-254.
- Lejk, M. and Wyvill, M. (2002). Peer assessment of contributions to a group project: student attitudes to holistic and category-based approaches. *Assessment and Evaluation in Higher Education*, 27, 569-577.

- Lewin, K. (1935). *A dynamic theory of personality*. New York: McGraw Hill.
- Melvin, K. B. and Lord, A. T. (1995). The prof/peer method of evaluating class participation: interdisciplinary generality. *College Student Journal*, 29, 258-263.
- Mueller, R. H. (1970). Is self-grading the answer? *Journal of Higher Education*, 41, 221-224.
- Murstein, B. I. (1965). The relationship of grade expectations and grades believed to be deserved to actual grades received. *Journal of Experimental Education*, 33, 357-362.
- Newstead, S. E. and Dennis, I. (1994). Examiners examined: the reliability of exam marking in psychology. *The Psychologist*, 7, 216-219.
- Orsmond, P., Merry, S. and Reiling, K. (2002). The use of exemplars and formative feedback when using student derived marking criteria in peer and self assessment. *Assessment and Evaluation in Higher Education*, 27, 309-323.
- Peters, R. S. (1975). Education and the educated man. In R. F. Dearden, P. H. Hirst and R. S. Peters (Eds.), *Education and the development of reason: Part 1. A critique of current educational aims* (pp. 1-16). London: Routledge and Kegan Paul.
- Piaget, J. (1971). *Science of education and the psychology of the child*. London: Longman.
- Rust, C., Price, M. and O'Donovan, B. (2003). Improving students' learning by developing their understanding of assessment criteria and processes. *Assessment and Evaluation in Higher Education*, 28, 147-164.
- Sherman, L. W. (1991, April). *Cooperative learning in post secondary education: implications from social psychology for active learning experiences*. Paper presented at the annual meeting of the American Educational Research Association, Chicago, IL.
- Slavin, R. (1985) An introduction to cooperative learning research. In R. Slavin, S. Sharan, S. Kagan, R. Herz-Lazarowitz, C. Webb and R. Schmuck (Eds.) *Learning to cooperate, cooperating to learn* (pp. 5-16). New York: Plenum Press.
- Stanton, H. E. (1978). Self-grading as an assessment method. *Improving College and University Teaching*, 26, 236-238.
- Stewart, S. and MacLeod, L. (Eds.). (1997). *Student teamworking: involving employers*. Edinburgh: Napier University.
- Taras, M. (2002). Using assessment for learning and learning from assessment. *Assessment and Evaluation in Higher Education*, 27, 501-510.
- Wiggins, N. and Blackburn, M. (1969). Prediction of first year graduate success in psychology: peer ratings. *The Journal of Educational Research*, 68, 81-85.
- Zimitat, C. and Mifflin, B. (2003). Using assessment to induct students and staff into the PBL tutorial process. *Assessment and Evaluation in Higher Education*, 28, 17-32.

Manuscript received on 24 February 2002
Revision accepted for publication on 9 May 2003