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GOING DEEPER

SELF- AND PEER-ASSESSMENT: A ROLE IN A SUPERCOMPLEX WORLD

Introducing supercomplexity

Chapter 1 introduced the learning society, one where skilled and flexible learners are required. Learning was seen as a continual process throughout life. Barnett (2000) begins to give some shape to the type of world higher education may have to prepare students for. He described the world we live in as complex one, where we are assailed by more facts, data, evidence and arguments than we can easily handle. However, the world that current students may one day be entering is not a complex world, but rather a supercomplex world. One where everyone is continually being conceptually challenged, and through these challenges able to discover the way that they understand themselves, the world, and how secure they feel about acting in the world. Supercomplexity is already recognisable in the world of work through terms such as 'flexibility', 'adaptability' and 'self-reliance'. The implication of this terminology is that individuals have to take responsibility for 'continually reconstituting' themselves. In other words, tutors will have to think more about the society we are becoming, their role in the work place, and how they can make any necessary changes. To prepare graduates to meet the challenge and to prosper in a supercomplex world requires a curriculum which fully embraces the domains of being, knowing and action.

*Powerful learning environments*

On first encountering the literature regarding complex worlds the reader is immediately aware of the role which self- and peer-assessment can play. This is well illustrated in a study by Schelfhout *et al.* (2004) who described a powerful learning environment which is aimed at fostering entrepreneurial skills and incorporated elements of self-, peer- and teacher-assessment. The design principles behind powerful learning environments such as supporting constructive learning processes, resonate as the core principles of self- and peer-assessment. One prime reason for using self- and peer-assessment relates to the use of feedback, 'Within the learning process it is important to give students feedback in a way that challenges their perception on how to behave within groups (learning to cooperate, organise etc.). A combination of self-, peer- and coach-assessments, followed by group discussions can be used'. Here we are reminded of Vygotsky's theories of learning discussed in Chapter 1. When tutors and students are involved in assessment, it is often referred to as co-assessment or collaborative assessment (Dochy *et al.*, 1999).

Problem-based learning (PBL) potentially allows for the creation of a powerful learning environment, developing abilities and assessing them, as it does cognitive, metacognitive (heightened awareness of one's own learning through developed cognitive processes) and social competencies. Self- and/or peer-assessment are good sources of assessment for PBL, as marking criteria often need to be developed and implemented in the judging of the learning process or product. However, PBL incorporating self- and peer-assessment is not without its difficulties, as reported by Segers and Dochy (2001). They found rather mixed results. Students involved in the study were new to both PBL and self- and peer-assessment. As a result there were a number of issues raised in the study that would be helpful to those considering similar approaches:

- there were concerns about the comments of peers;
- the criteria were felt difficult to interpret;
- the self- and peer-assessment process was not sufficiently introduced; and
- students tended not to be able to reflect on their own functioning.

The authors saw these problems in a positive fashion, identifying room for teachers to improve their educational practice and to look again at the alignment of assessment with the main goals of the programme, with specific attention to certain issues like critical reflection.

Jackson and Ward (2004) outlined a way of representing complex learning suitable for meeting the demands of a supercomplex world. They described how higher education curricula can reflect the disciplinary world of knowledge and the world of professional and work-based learning. They proposed five different curriculum-assessment environments, one of which, the 'explicit curriculum', allows students to recognise and record their own learning and achievement through Personal Development Planning (PDP). PDP may have a number of different focuses, such as encouraging students to take responsibility for their own learning, and encouraging students to understand more fully the process of learning as discussed earlier in this book. Self-assessment is seen as a universal assessment concept within these processes.

SELF- AND PEER-ASSESSMENT: ENGAGEMENT IN REFLECTION

While tutors can choose to become more effective reflective teachers as opposed to good teachers (Kuit *et al.*, 2001) it is likely that many tutors will have to facilitate reflective practice in students as part of students' Personal Development Planning. Reflection is a very important part of development planning. As considered by Moon (2001) reflection is 'a means of working on what we know already, thoughts, ideas, feelings, we may add new information and then we draw out of it something that accords with the purpose for which we reflected'. Adding new information may take place as a solitary process, or it may involve other people. The latter can lead to the development of a learning conversation where discussion may focus on learning experiences in which the learner reflects on some event or activity (Candy *et al.*, 1985).

The learning experiences, which might feed reflections, are given consideration by Schön (1983). Schön moved the reader from thinking about the concept of knowing-in-action to reflecting-in-action. Knowing-in-action relates to how people in daily life intuitively perform the actions of everyday life. When someone reflects on the situations in which they are performing, and on the know-how implicit in their performances, they are, in some cases, reflecting-in-action. Schön accepted that reflecting-in-action may not always be possible, but that these arguments admit the possibility of reflecting-on-action, that is, looking back on an experience where reflecting-in-action was not possible. Pereira (1999) and Cowan (2002) give good examples of both reflection-in-action and reflection-on-action.

Cowan (2002) identifies a third type of reflection which he called reflection-for-action. Cowan explained that this type of reflection may occur at the start of a reflective process, where aspirations are being defined or problems are being identified with the hope of finding a resolution. This type of reflection is anticipatory and establishes priorities to support subsequent learning.

Proposing a model for carrying out reflective practice, Cowan (2002) brought together the interpretation of reflection as given by Schön (whichever variant), which Cowan considered to be open-ended activity, with reflection (as interpreted by Kolb in his learning cycle), which Cowan considered to be closed, as it is part of a sequence and as such, may act as a bridge to cross between sequences. Cowan's model, therefore, is one which incorporates reflection- for-, in-, and on-action.

Further refinement of reflective practice has allowed Cowan to develop models for 'analytical' and 'evaluative' reflection.

In analytical reflection, Cowan (2002) took analysis to be a cognitive process in which it is useful to look for patterns and generalities. These then, help learning concerning a particular experience. In evaluative reflection, Cowan addressed questions such as 'How well can I do it?' or 'Should I do it better?'

Self-assessment and peer review within a reflective framework, is well illustrated by Cowan (2002). The example involved the generation of learning contracts, which required students on a weekly basis to summarise their individual personal learning objectives for that week and to produce an outline of the methods they proposed to use in order to achieve those objectives. Each student had to ask another student to comment on their personal objectives. Students were then required to consider these comments carefully but did not necessarily have to agree with them. At the end of each week, each student was asked to produce something which

demonstrated what he or she had learnt. At the end of term, students self-assessed their work by:

- summarising the standards and criteria, which they had been striving to achieve;
- describing their performance in comparable terms; and
- reporting on the process of judgement by which they compared their performance with their criteria and standards.

Asking students to make their assessment judgement in this way illustrates an important component of self-assessment, providing the equal emphasis on process awareness and development as well as on the rigorous content coverage. Their final mark was awarded against the outcome of their summative judgement, providing that all agreements in the learning contract had been met. In this way, Cowan saw this example of self-assessment involving:

- the year long experience being predominantly reflection-in-action;
- the end of term's assessments being reflection-on-action; and
- the end of term assessments, as they were completed, being reflection-for-action.

FORMATIVE ASSESSMENT AND SUMMATIVE ASSESSMENT: A ROLE FOR SELF- AND PEER-ASSESSMENT

Formative assessment

Sadler (1989) introduced the reader to formative assessment by considering the adjective formative. This implies the forming or moulding of something, usually to achieve a desired end. This is important to bear in mind, as often what is called formative assessment is nothing more than an arrangement of a set of multiple summative assessment tasks, described as if their main function was feedback, but with a considerable direct influence on the final outcome mark (Cowan 2002). Formative assessment contributes to learning by short-circuiting the randomness and inefficiency of trial and error learning. It is concerned with how judgements about the quality of student responses are shaping learning (Sadler, 1989).

Formative assessment is carried out in a series of specific stages. Students undertake an assessed assignment. They then receive formative feedback, feedback designed to inform them about their

performance, and the judgement of it. Learning takes place and student performance is assessed again. Thus feedback is the key element in formative assessment, and feedback is often defined in terms of 'information about the gap between the actual level and the reference level of a system parameter which is used to alter the gap in some way' (Ramaprasad, 1983). Sadler stressed the active closing of the gap, rather than feedback being by nature for information. For learning to take place, the gap between the student performance before and after feedback and the performance after feedback must close. Sadler (1989) argued that there are three conditions for effective feedback. Students must be able to:

- monitor their own work;
- appreciate work of high quality; and
- judge (objectively) their product in comparison.

Furthermore, in keeping with good self- and peer-assessment practice, Sadler stressed the importance of ownership of a goal (the degree of performance or excellence achieved) as playing a significant part in the voluntary regulation of performance and the involvement of students in using multi-criterion judgements.

A study illustrating the implementation of a formative assessment exercise of histology posters is described by Orsmond *et al.*, (2004). There were a number of stages involved in this study, the key components of which were.

- Students constructed criteria for marking a histology poster which had been made by a student from a previous cohort. This was the exemplar poster.
- Students were then given two criteria by the tutors. Unknown to the students, the tutors had constructed one 'worthwhile' criterion and one 'ambiguous' criterion. Students working in pairs or trios were given copies of both criteria by tutors and were asked to mark an exemplar poster.
- Tutors then marked the poster using both criteria.
- Tutors then discussed with students groups: (1) the criteria that the students had constructed earlier in the session, (2) the 'worthwhile' criterion and 'ambiguous' one, (3) the marking process, (4) further developments regarding the concept of marking criteria.

- Tutors listened to the student's perceptions of marking criteria and attempted to clarify any misconceptions.
- Tutors then discussed among themselves their individual discussions with student groups.
- Students and tutors wrote down agreed criteria along with definitions.
- A week later the tutors and students met again in the same pairs or trios. Students constructed posters and marked the posters using the criteria that had been jointly constructed with the tutor.
- Students self-assessed their own poster and peer-assessed those of their colleagues.

In this study students were able to engage in formative learning activities which required (1) discussions with their peers and tutors, (2) self-reflection, (3) self- and peer-assessment. Overall the students found the process very beneficial with the majority of the students responding in a positive way.

Complex learning can be more readily accomplished working with others, where, for example, alternative interpretation of tasks or situations is required (Boud, 2000). Working with others strongly encourages a more formative learning environment, incorporating both formative assessment and formative feedback. Support by peers is seen as very important because of the autonomy expected in higher education. There is good evidence that students help each other, but are not seen as replacements for staff (Drew, 2001).

For some, a problem for higher education is that traditional forms of summative assessment are being stretched to cover learning outcomes that resist robust, reliable and affordable summation (Knight, 2002). Rather than live with the difficulties, Knight and Yorke (2003) argued that greater use be made of formative assessment. Complex learning outcomes are also encountered where, through genuine discussion, sub-groups of outcomes can be generated as in claim-making. In making a claim, students 'claim' against the expectations set for the programme of study and justify these claims with evidence. Claim making encourages reflective practice, evaluation of learning and links in well with PDP (Knight and Yorke, 2003).

Summative assessment: the use of self- and peer-assessment

Not everyone perceives the problems of summative assessment to be as extensive as Knight and Yorke. A

more pressing concern is that because of its extensive use, summative assessment may, in some way, suppress the use of formative assessment. Thus it is important to maintain a balance between the two forms of assessment (Boud and Falchikov, 2004) and where possible integrate self- and peer-assessment. Taras (2001) advocated an interesting form of self-assessment with a summative end-point. Students submit a summative piece of work, this is marked and given written feedback by the tutor. The work is returned, but the mark withheld. The students work through the tutor feedback, through group/class discussions, and then self- and possibly peer-assessment. Students are then asked to:

- Judge their work against an agreed criteria.
- Explain how they would improve a comparable piece of work in future.
- Grade their work.

Tutors collect the students' comments and grades. The tutors then feedback how well they think the students have addressed the criteria, and provide the tutor grade. The process of self-assessment is dependent on tutor and possible peer feedback. The value of self-assessment with and without feedback provides an interesting insight into the process of assessment and has been further developed by Taras (2003).

A detailed study looking at summative assessment in biosciences is reported by Butcher *et al.*, (1995). Here both the process and product of group projects were assessed. Overall six separate assessments of performance were made. The work is interesting for a variety of reasons. It discussed issues surrounding the arrival of a single student assessment grade, with particular reference to assessment weightings. It is also a good example of authentic assessment practice, in that students undertook an assessment task that resembled assignments undertaken by professional biologists, in this case, solving an industrial problem within certain resource constraints. The case study by Brennan *et al.*, (Case Study 7) also has an emphasis on such authentic assessment.

A way of balancing formative and summative assessment is discussed by Nieweg (2004). This paper, relating to learning in physiotherapy, illustrates how self-assessment can be used in conjunction with summative assessments. It also provides an opportunity to consider using formatively assessed assignments in an authentic, realistic and meaningful way by involving external clients to give feedback.

SELF-EVALUATION OR SELF-ASSESSMENT: CONSIDERING A RICH DIVERSITY OF APPROACHES

So far in this book we have considered self-assessment within fairly well defined parameters, perhaps too well defined. Klenowski (1995), considered self-evaluation, in terms of 'the evaluation or judgement of the worth of one's performance and the identification of one's strengths and weakness with the view to improving one's learning outcomes.' Therefore, as Klenowski, explained, 'self-evaluation is used in a broader sense than student self-assessment because it refers to ascribing value to the learning experience: first, by the identification of the criteria used; second, by indicating what is considered meritorious; and third, by outlining the implications for future action.' In other words, students see what is good in their work and should come to know how to make it better. Students use the outcomes of discussions or perhaps reflections in their development and achieve higher learning outcomes. Self-evaluation is being used in 'a formative context in meeting a self-development learning function. It is a

self-evaluation to open up some interesting questions about the nature and function of self-assessment. Claxton had broad sympathy with Klenowski, but had two caveats. Firstly he stated 'mere clarification of external criteria of assessment does not develop learning acumen, though it may raise attainment'. Claxton seemed to be covering all options with the inclusion of the word 'mere'. However, the point that raising attainment is not necessarily linked to developing learning acumen is important. The other caveat, that discussion of criteria needs to be considered on 'the road towards developing an ability that is essentially intuitive', is very important. Intuitive learning is an often complex and may imply finely tailored understanding.

A comparison of the work of Klenowski, Claxton, Boud, Cowan and Sadler can be very helpful in allowing us to appreciate the rich diversity of thinking and approaches taken towards students learning, which may have implication for those implementing self- and peer-assessment. Just considering one aspect of the formative assessment process, can show rich diversity of thought, see Table 2 below.

TABLE 2. A COMPARISON OF ATTITUDES BY KLENOWSKI, CLAXTON AND SADLER IN ONE ASPECT OF COMMUNICATING WITH STUDENTS IN A FORMATIVE SETTING

<i>Klenowski</i>	<i>Claxton</i>	<i>Sadler</i>
Perceptive, guided thought about each other's work may increase 'self-awareness' or progress in learning. Self-evaluation in relation to identified criteria is best.	Self-assessment using externally specified criteria, can be irrelevant, even counter productive to learning acumen. Self-evaluation is intuitive and hindered by checklist criteria.	Strictly speaking, all methods of grading that emphasise ranking or comparison among students are irrelevant for formative purposes.

process of identifying the value of the teaching and learning experience for the individual student'.

For some, it may therefore be difficult to see how self-assessment and self-evaluation differ. Cowan (2002) employed the term 'evaluation' to describe a 'process' in which judgements are made by comparing performances with criteria or standards. Cowan restricted the term 'assessment' to evaluation which concentrates on an outcome, in the form of a grade or mark or judgement, whether formative or summative'. Klenowski, used the term 'evaluation', and generated a formal grade that was recorded.

This is more than idle banter over words. Searching for meaningful distinctions between terms can provide the opportunity for enquiry into some key aspects of the assessment process. Claxton (1995), commenting on the Klenowski paper, considered

SELF- AND PEER-ASSESSMENT: STUDENTS AND TUTORS PERCEPTION

Students' perceptions

Student perceptions of self-assessment are illustrated well by Cowan *et al.*, (1999) who studied how self-assessment can be used in the summative assessment of reflective journals and self-assessment. The paper is richly embroidered with quotes from students, which readily allow the reader to share their experiences over a year of self-assessment. For example, in this quote you really feel the exacting demands being made. 'I knew instantly that self-assessment was going to be a problem for me. I just did not know how I was going to devise a criterion to begin with, let alone assess myself'. However, while students continued to find the self-assessment

challenging they were able to comment at the end 'self-assessment did make me realise that I need to develop myself further into being more critical of my work. I tend to rely too much on feedback rather than critically evaluating myself. Self-assessment did give me the opportunity to question this'. The influence of peers was also noted in a positive way 'having to justify why I thought some aspects of the journal was really good was perhaps more difficult than saying why it was bad. It was useful having a colleague commenting on this — even if it was rather unnerving. It has been a very trusting relationship and the need for confidentiality is essential'. Sometimes the perceptions are not always viewed in a positive light, even if the process does provide a better measure of learning, such as this quote on alternative assessment methods; 'I think it tests you better, because it's not just testing your memory, it's testing your knowledge of the subject. It's all about ... being able to interpret and put your own point of view. It's a bit unfortunate, really, isn't it' Sambell *et al.*, (1997). In this Guide, comments on student's perceptions of peer-assessment are included in the case study by Rushton *et al.*, (Case Study 3).

Tutors' perceptions

Maclellan (2001) carried out a study into assessment for learning to evaluate the different perceptions of student and tutors. The tutors perceived the primary purpose of assessment was to grade or rank students, but the more developmental purposes were not discounted. However, the importance placed on the developmental formative role is not internally consistent with other views endorsed by staff. For example.

- Assessment neither took place at the start, nor could students be assessed when they felt ready.
- Self- and peer-assessment were infrequent.

Nevertheless, declarative knowledge *per se* was not the sole purpose and functional knowledge such as, formulating ideas was assessed. However, the extent to which assessment genuinely focused on students' capacity to apply, transform or evaluate the relevance of declarative knowledge in different situations could be viewed as questionable, when considering the processes through which assessment information was gathered.

SUMMARY

Very few people have a neutral view on assessment. This is because it is such an emotive issue; as indicated by many of the student quotes throughout the book.

In self- and peer-assessment, students may need to explore, at different times, rather complex emotions about themselves and what it is that they may become. The issues, which increasingly tutors are asking students to engage with are huge; and lots of students struggle to 'get their heads round them'. Self- and peer-assessment provide students, as well as tutors the opportunity to 'touch base'. At the start of their learning journey students ask their tutors questions like 'is this what you mean?' By the end of the journey, students are asking questions of themselves and seeking self justification for what they have learned.

CLOSING THOUGHTS

The old adage 'you can take a horse to water but you can't make it drink' seems lost on many in higher education who spend their time 'teaching' students rather than allowing them to 'learn'. As a result, a lot of time and money is spent assessing superficial learning. Early in Chapter 1, reference was made to Rogers' perception of the goals of education (Rogers, 2003). These goals were strongly student-centred, and as Rogers admitted 'even in our own culture these are functional goals of very few educators'. For Rogers, writing in the early 1950's, education appeared to be operationally based on the assumption 'you can't trust the student... the teacher needs to supply everything'. However, Rogers steadfastly believed you could trust the student to learn in a way which will maintain or enhance self. Boud and Falchikov (2004) considered assessment and write of their dismay at 'practice inconsistent with research in higher education and indeed institutional policy'.

Sadly, for many, very little seems to have changed in the intervening years, and we need to begin to question why this is. For those who have always had a strong interest in student-centred learning, the trend of the self remaining central to learning and assessment persists. This book documents case studies and educational research by people with a genuine concern for meaningful assessment, both of and for learning. We continue to seek some reform of many established, but outdated practices, as Rogers did; and we need to be strong advocates for student-centred assessment, which goes beyond the superficial.