



Perceptions of assessment: Do students realise what lecturers are trying to assess?

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Abstract: Educational research tells us that student learning is driven to a large extent by assessment. Thus many lecturers are making changes to their assessment, to encourage desirable kinds of learning. These changes will be effective only if the students recognize their implications and adopt appropriate styles of learning. In 1996, the Faculty of Science at Adelaide University conducted a review of assessment in the Faculty. Lecturers in undergraduate subjects were surveyed to establish the procedures used to assess students' knowledge and understanding, skills and attitudes, and the relative weighting accorded to these attributes. Student perceptions of assessment were also explored by surveying students in their first year of study and students who had been at University for at least five semesters. The intention was to paint a broad picture of assessment within the Faculty, rather than to obtain information about specific subjects. The research indicated that whereas lecturers believe that most of their assessment tasks require understanding and critical analysis, students perceive that most of the assessment requires rote-learning. If students believe that assessment tasks require rote-learning, they will prepare accordingly. The next phase in the research is to identify ways of encouraging students to see that their assessment outcomes will be improved by deep learning, and to find ways of measuring changes in their perception.

The role of assessment in student learning

Educational research tells us that student learning is driven to a large extent by assessment (Ramsden, 1992), but that assessment tasks are often inconsistent with the kind of learning lecturers wish to encourage (Boud, 1990). In 1996, a focus on assessment by the Faculty of Science at Adelaide University led to the establishment of an Assessment Task Force. The Task Force comprised academic staff from a range of disciplines, and a postgraduate student. Its terms of reference were:

- to obtain information about the aims and objectives of assessment, and current assessment practices in the Faculty; and
- to advise the Faculty on the merits of changing assessment practices, the nature of such changes and their implementation.

The Task Force conducted and analysed separate surveys of staff and students over a 12 month period, and produced a report advancing 16 recommendations on assessment practices in the Faculty of Science. The recommendations were adopted by the Faculty of Science Board, and were discussed at a Faculty Planning Day. Assessment has subsequently been discussed at meetings of subject coordinators at different year levels across the Faculty.

Whilst the principal focus of the Assessment Task Force was to audit and advise the Faculty, its approach was also motivated by the educational question of whether educators' and students' perceptions of assessment were aligned. Given the centrality of assessment to student learning, we sought to determine to what degree the purpose(s) of assessment were recognised similarly by staff and students. This paper describes our findings in relation to assessment tasks developed to test understanding and knowledge of disciplinary material.

Survey of staff

Since the Faculty Learning and Teaching Plan referred to students developing their knowledge, skills and attitudes, a survey of lecturers in undergraduate subjects was carried out to obtain information about subject aims and objectives which related to knowledge and understanding, skills and attitudes; information was also sought about procedures used in assessing each of these domains.

It was anticipated that assessment tools, criteria and expectations would vary significantly across disciplines and across year levels. Thus most of the questions in the staff survey were free-response questions such as those in Box 1. Such questions allowed respondents to highlight aspects of their assessment which they considered most important. Although responses to such questions were more complex to analyse than those for multiple-choice questions, they shed light on a range of areas of interest. Responses were received for about 70% of the subjects offered in the Faculty of Science, representing all departments and year levels.

What forms of assessment are used to test student knowledge and understanding in this subject?
Please include

1. a description of the assessment tool,
2. a description of the criteria used in marking,
3. which subject aims/objectives are being addressed.

Box 1. Question relating to knowledge and understanding in the Staff Survey

Staff were also asked about whether written aims and objectives existed for each subject, and whether the assessment procedures were developed concurrently with the aims and objectives. As Table 1 shows, written aims and/or objectives existed for most of the subjects, and assessment procedures were developed concurrently with them. Furthermore most staff indicated that assessment tasks had been designed to test conceptual understanding as well as knowledge.

Level of Subject (number of responses)	Written aims exist %(n)	Written objectives exist %(n)	Assessment developed with aims/objectives %(n)
Level I (8)	87% (7)	37% (3)	75% (6)
Level II (12)	67% (8)	58% (7)	75% (9)
Level III (20)	75% (15)	80% (16)	90% (18)

Table 1. Percentage (and number) of subjects for which there were written aims and objectives, and for which assessment was developed concurrently

Survey of students

Students were asked to comment on their experience of assessment at Adelaide University, by completing a questionnaire containing open-ended and Lichert scale responses. The intention was to paint a broad picture of assessment within the Faculty, rather than to obtain information about specific subjects. Students were given a series of statements about aspects of assessment, and asked to estimate the fraction of their subjects to which those statements applied. They also had the opportunity to give free responses to questions about unfair assessment procedures, and about procedures they thought were effective and fair. Examples of the survey questions which related to assessment of knowledge and understanding are given in Box 2.

With regard to each of the following statements, indicate the percentage of all Science subjects you have studied at Adelaide University for which you found the statement to be true.

1. The assessment methods used in the subject were a fair way of determining my understanding.
2. My assessment results were an accurate reflection of the depth of my understanding of the subject.

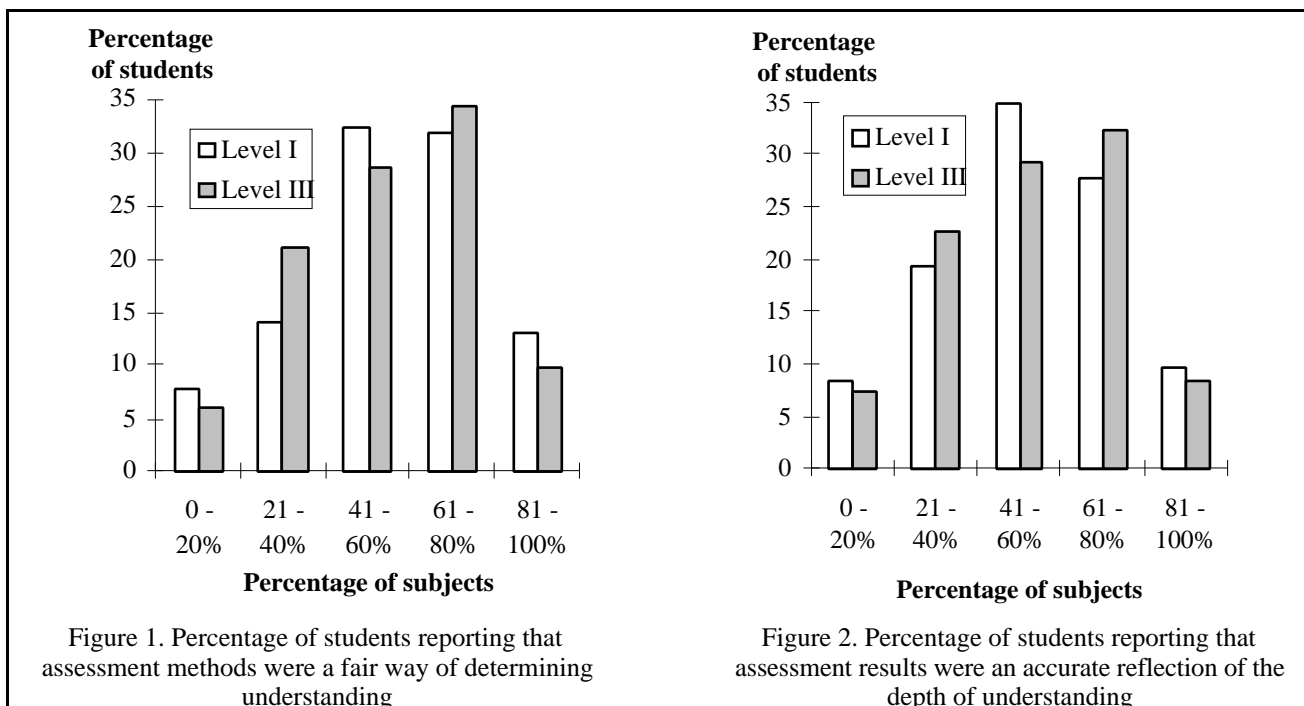
Box 2. Question relating to knowledge and understanding in the Student Survey

Responses were sought from first year students who had experienced only one semester of assessment, and also from third year students who had experienced at least five semesters of assessment. With the cooperation of Laboratory Coordinators, first year students took 15 minutes



during a Physics or Biology practical class to complete the survey. Responses were received from all the students attending the sessions at which the survey was distributed, so the 206 responses received were representative of the 430 first year Science students. Six subjects were chosen to provide a representative sample of 133 third year students.

Figure 1 shows student perceptions of the fairness of the assessment **methods**. About 10% of students considered that the assessment methods were a fair way of assessing their understanding in 80% or more of their subjects, and about 45% thought the assessment methods were fair in at least 60% of their subjects. On the other hand, around 25% thought the methods were fair in 40% of their subjects or less.



When we look at whether the assessment **result** was an accurate reflection of the depth of students' understanding (Figure 2), there is a similar pattern, with some shift to the left of the graph. This means some students consider that, while they were fair, the assessment methods did not accurately reflect the students' depth of understanding. These sentiments were reinforced, and described further, in responses to the open-ended questions, examples of which are given in Box 3.

1. Which assessment procedures in Science have been unfair, and why?
2. Which assessment procedures have been the most effective and fair, and why?
3. In what ways could assessment procedures in Science be improved?

Box 3. Open-ended questions relating to assessment in the Student Survey

Responses were given to at least one of these questions by 70% of the Level I students and by 83% of the Level III students. Table 2 shows the percentage of responses in which each assessment procedure was specified, and whether the students thought it fair or unfair. Overall, examinations were most frequently specified as an unfair assessment procedure; in their explanations, students claimed that examinations were given too much weighting, primarily because they were perceived to assess students' ability to rote-learn rather than to understand. It is interesting to note that Level III students were more firmly of this view than the more junior undergraduate students, and that they also considered assessment tasks such as essays and laboratory reports to be relatively more effective and fair in assessing conceptual understanding and knowledge.

Assessment procedure	Effective & fair (%)		Unfair (%)	
	Level I N = 125	Level III N = 98	Level I N = 122	Level III N = 94
Examinations	22	19	44	70
Tutorial/problem sheets	32	23	10	13
Practical/laboratory reports	24	25	29	10
Essays	10	33	10	3
Other, e.g. field trips, computer exercises, mid-semester tests	13	16	7	10
Continuous assessment/assignments	14	9	0	3
None (i.e. all unfair/fair)	1	0	9	1

Table 2. Assessment items chosen as being effective and fair, or unfair, by Level I and Level III respondents, and the percentage of responses in which each item was specified

Discrepancy between staff and student perceptions

Here we see an interesting and disturbing discordance. In a cross-sectional study of the degree to which students believe that the assessment of their understanding is fair and effective, we find that students perceive examinations to be unfair because they mainly test rote-learning. However, as indicated in the analysis of staff responses, lecturers believe that many of their assessment tasks, including examination questions, require understanding and critical analysis.

The argument that we cannot expect students to make the same judgement as staff about assessment may be a valid one, but that is not the point. If students believe that assessment tasks require rote-learning, they will prepare accordingly. When they encounter questions they can't answer or get incorrect, they conclude that they didn't learn the 'right' information, not that they learned for the examination in the wrong way. They continue to prepare for examinations by rote-learning, so that a large amount of their effort is spent in inappropriate learning. Therefore we need to explore ways in which staff can work towards changing students' perceptions of assessment, so that assessment works **for** the kind of learning we want to encourage, not against it.

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